

PE12-007

MCI

4-27-2012

Response 9

gregory wright - Vol. I



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August 10, 2011

Ms. Melissa Dorman
Hartline Dacus Barger Dreyer, LLP
6688 North Central Expressway, Suite 1000
Dallas, Texas 75206

RE: Cause No. 2010-03-001717-C, [REDACTED] vs. Americanos

Ms. Dorman,

Between June 30th and July 1st, I participated in the inspection of the subject MCI coach in the matter of [REDACTED] v. Americanos.

During the inspection of the subject MCI coach, the wiring of the magnetic speed sensor was traced and the condition and function of the magnetic speed sensor tested "in situ".

The wiring was traced from the sensor to a junction block in the rear junction box. From there the wiring was traced to the DDEC J1A connector which provides a signal to the engine and to the driver's junction box which provides a signal to the Tag Axle Lock System. The wires were tested for continuity and no defects found.

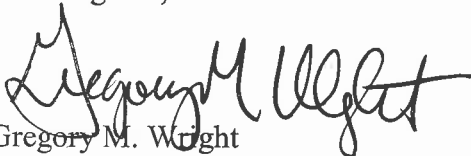
Visual inspection of the sensor was accomplished by removing the governor cover and governor. A mirror was used to initially inspect the tone wheel on the output shaft. The tone wheel was intact and undamaged. Following this, a boroscope was used to inspect and photograph the tone wheel and the magnetic speed sensor. The pictures indicate that the sensor had collected a fair amount of magnetic debris on its core.

Once inspection was complete the output flange previously installed during transmission inspection was utilized to manually rotate the output shaft for testing the functionality of the output speed sensor. Pete Sullivan, expert for On The Border Freightliner, recorded the output speed sensor testing with an oscilloscope. The magnetic speed sensor did produce a signal. Testing was performed at the terminus of each circuit and the results recorded.

Subsequently, the sensor was removed from the transmission and inspected by all parties concerned. I personally assisted Defendant's expert Aaron Jones of ITC Experts in testing the speed sensor with an ohm meter. Circuit continuity could not be established. Testing of the exemplar sensor provided by Ruhl Forensic for the inspection indicated continuity at 2.95k ohms. Testing of the exemplar sensor in the sensor tester provided by Ruhl Forensic demonstrated that the sensor readings recorded "in situ" in the coach were far below those of the exemplar.

This discovery is supported by the evidence provided by the DDEC Reports. The Last Stop, Hard Brake and daily averages all indicate that the speed sensor defect resulted in the DDEC ECM's failure to recognize the output speed sensor at lower speeds. The open circuit of the output speed sensor conflicts with DDEC's configuration of a 2 wire magnetic sensor. This may have further impacted the value of the defective sensor to the DDEC ECM.

Best Regards,

A handwritten signature in black ink, appearing to read "Gregory M. Wright", written in a cursive style.

Gregory M. Wright
Ruhl Forensic

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1 NO. 2010-03-1717-C
2 DANIEL CAMPOS, ET AL,) IN THE DISTRICT COURT
3)
4 Plaintiffs,)
5)
6 VS.) CAMERON COUNTY, TEXAS
7)
8 AMERICANOS, U.S.A.,)
9 L.L.C., ET AL,)
10)
11 Defendants.) 197TH JUDICIAL DISTRICT
12
13

9

ORAL DEPOSITION OF

10

GREGORY WRIGHT

11

FEBRUARY 29, 2012

12

13

14 -----
15 ORAL DEPOSITION OF GREGORY WRIGHT, produced as a
16 witness at the instance of the DEFENDANT AMERICANOS,
17 U.S.A., L.L.C., and duly sworn, was taken in the
18 above-styled and numbered cause on February 29, 2012,
19 from 9:37 a.m. to 12:33 p.m., before Julie I. Upton, CSR
20 in and for the State of Texas, reported by machine
21 shorthand, at the Law Offices of Hartline, Dacus,
22 Barger, Dreyer & Kern, LLP, 6688 North Central
23 Expressway, Suite 1000, Dallas, Texas 75206 pursuant to
24 the Texas Rules of Civil Procedure and the provisions
25 stated on the record or attached hereto.

25

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1 A P P E A R A N C E S

2

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13
14 FOR THE DEFENDANTS MOTOR COACH INDUSTRIES, INC. AND MCI
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be attached as Exhibit 18).....attached

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P R O C E E D I N G S

(Exhibits 1-10 marked.)

THE REPORTER: Any agreements?

MS. DORMAN: Just by the Rules.

MR. ROMERO: Just by the Rules.

GREGORY WRIGHT,

having been first duly sworn, testified as follows:

EXAMINATION

BY MR. ROMERO:

Q. Would you state your full name, sir?

A. My full name is Gregory Martin Wright.

Q. Mr. Wright, my name is Glenn Romero, and I
represent Americanos in a lawsuit that's been filed
against them by several of the passengers on the
Americanos bus that was involved in the accident.

We've never met before, have we?

A. No.

Q. Have you had an opportunity to review the
deposition Notice for your deposition?

A. I did.

Q. Do you have a copy of that?

A. I do.

Q. Okay. Attached to that -- and I've marked a
copy of that deposition Notice of Exhibit 1 to your
deposition. Is this a copy of that Notice?

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A. It appears to be a copy, yes.

Q. Attached to that document is a Subpoena Duces
Tecum. Have you brought all the documents that are
responsive to that?

A. I believe I have, yes.

Q. And earlier before we started the deposition
you mentioned to me when I asked you if you had brought
your whole file you told me that you had brought
everything including a recent deposition by --

A. By Patrick Mears.

Q. All right. Is that your file in front of you?

A. It is.

Q. May I see it, please?

A. Absolutely.

Q. While I'm looking through this, can you tell
me -- and if you have to refer to it while I'm asking
you questions, please do so -- when were you first

18 contacted about this case?
19 A. In February of 2010. That's supported by the
20 billing that's in that file.
21 Q. Okay.
22 A. It indicates first contact.
23 Q. And who contacted you?
24 A. I believe it was Melissa who made the first
25 phone call.

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1 Q. I'll get back to that.
2 A. Okay.
3 Q. Had you worked with Ms. Dorman before?
4 A. No.
5 Q. Do you know how she got your name?
6 A. My understanding is that it came from a
7 referral from the Allison Transmission Corporation.
8 It's not part of GM anymore.
9 Q. Okay. And what were you asked to do?
10 A. Initially I was asked to evaluate the HT 700
11 transmission in the subject bus. There was some
12 concerns that the transmission had suffered a
13 catastrophic failure, which resulted in possibly the
14 driveline failure, the U-Joint failure. I was also
15 asked to assist in determining the condition of the --
16 in the tail housing, the condition of the magnetic speed
17 sensor and the tone wheel that drives it so to speak.
18 Q. What did your evaluation of the transmission
19 reveal?
20 A. There were no indications of a failure of any
21 kind. How far do you want me to go into what we did?
22 There was a protocol written.
23 Q. Okay.
24 A. We followed the protocol. We removed the pan.
25 We removed the governor out of the tail housing. We

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1 inspected the tail housing tone wheel and sensor with a
2 borescope. We could get pictures in place without
3 disturbing anything. We removed the valve body from the
4 transmission which gives you access to some of the
5 clutches so you can measure clearance and check for
6 failure. And we rotated everything we could rotate, the
7 forward clutch housing and the fourth clutch housing and
8 the gear package to determine that there was no
9 restriction of movement, that everything was smooth,
10 that none of the clutches were seized. We inspected for
11 debris which is evidence of a mechanical failure. We
12 found none. The transmission, in my opinion, was
13 functioning properly and would have functioned properly
14 had we operated the bus.
15 Q. Now, the second part of your task was to
16 evaluate the magnetic speed sensor?
17 A. To assist with that.
18 Q. Who were you assisting? Sullivan?
19 A. Sullivan and Virgil Hoogestraat from MCI.

20 MS. DORMAN: I can help you with the
21 spelling after we go off.

22 A. And I actually assisted Virgil with two days
23 of work after my initial work was complete. And what we
24 did -- what I did regarding the speed sensor was, number
25 one, I made a device so that if they wanted to test it
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1 they could. And provided an exemplar, and I'm going to
2 put this contraption here on the table for you to look
3 at. There are pictures of this in the photos that I
4 submitted.

5 Basically this is a mockup of the tone wheel
6 and the speed sensor in the tail housing. This was all
7 laid out machine based on Allison's print which are also
8 in my file.

9 So that if they wanted to test the existing
10 sensor, compare it to an exemplar sensor, which is the
11 same sensor here, then they could do that. That wasn't
12 going to be part of my work other than to provide
13 something that would do the job.

14 Q. (BY MR. ROMERO) Okay. So your task was to
15 fabricate a model of how the speed sensor worked?

16 A. Correct. And provide some insight to anyone
17 who didn't understand how it worked because I've been
18 working with this for many years.

19 Q. Okay. What is the purpose of the speed sensor
20 in the bus?

21 A. This particular sensor provides an alternating
22 current signal to whatever device you want to drive that
23 will accept that signal. And basically as the -- and
24 since this is on the tail shaft, this is output shaft or
25 drive shaft speed, as it rotates it produces a frequency
0009

1 equal to 16 times the speed of the shaft because there
2 are 16 tone wheel pickups.

3 Devices are made to accept that signal and
4 convert that signal into road speed, and they do that by
5 basically the ECM of the engine as a calculator. You
6 tell it what the rear end ratio is. You tell it how
7 many revolutions per mile there are. And it takes this
8 count, this AC frequency, and converts that into miles
9 per hour.

10 Q. Where would these teeth be found in the
11 vehicle?

12 A. In the tail housing of the transmission on the
13 output shaft.

14 Q. Is it inside the transmission?

15 A. Yes, it is.

16 Q. Is the speed sensor inside the transmission?

17 A. Only the length of it below the nut, yes.

18 This would be the outside of the transmission. And from
19 where it is situated on this mounting pad, this would
20 all be inside. The borescope pictures and other
21 pictures in my file show that.

22 Q. Okay. Did you also bring a copy of your CV?
23 A. It's in my file.
24 Q. Okay.
25 A. And it's on the CD.

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1 Q. Okay. I'd like to ask you a few questions
2 about that.
3 MS. DORMAN: Do you have a copy?
4 MR. ROMERO: Yes.
5 MS. DORMAN: Okay. Great. I thought we
6 produced it.
7 MR. ROMERO: Thank you.
8 Q. (BY MR. ROMERO) Tell me where did you go to
9 high school.
10 A. High school? Pinole Valley High School in
11 Pinole, California.
12 Q. And then what?
13 A. Some college. Vocational training at the
14 local junior college and then I promptly went to work as
15 a mechanic. And beyond some college credits, no degree.
16 I took numerous classes in the industry provided by
17 Detroit Diesel, Allison Manufacturers.
18 Q. Okay. At Williams and Lane, is that really
19 one of your first jobs there?
20 A. As far as a mechanic, yes. That's where I
21 started, at Williams and Lane.
22 Q. And that's where you got exposed to Allison
23 transmissions?
24 A. And Detroit Diesel engines, yes.
25 Q. What kind of vehicles were those that you were

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1 working on?
2 A. We worked on everything from transit coaches
3 to MCI coaches, to Prevo coaches, to garbage trucks,
4 fire trucks. If it had rubber tires and had our product
5 in it, we worked on it, including military vehicles.
6 Q. And then you went to NorCal Truck Specialties
7 and Parts?
8 A. Correct.
9 Q. You were the business director. What were
10 your responsibilities with that company?
11 A. Well, I actually was one of the owners of
12 NorCal Truck Specialties. We had left Williams and
13 Lane, five of us, and opened a business. So part of my
14 work was as an owner/director. It was a corporation.
15 But basically what I did day to day was repair vehicles
16 and repair equipment.
17 Q. Okay. So when it says "business director,"
18 you had to do everything over there since it was your
19 business?
20 A. Yep. Dealt with lawyers, dealt with accounts,
21 vendors, everything.
22 Q. At Sierra Detroit Diesel Allison, Inc., what
23 did you do there?

24 A. I did a number of jobs for them. Well, we
25 closed NorCal. I went back to work and worked a year in
0012

1 the shop. And then I took over the transmission
2 department as the foreman. And subsequently became the
3 assistant service manager, which under that title I
4 basically ran the field service department and power
5 generation standby generators, things of that nature.

6 Q. Okay. This speed sensor, what was it
7 connected to on the bus?

8 A. There is a harness, a short harness, about a
9 foot long that plugs into the sensor and then it plugs
10 into a chassis harness, which goes to the rear junction
11 box. And from there the signal is branched to two
12 locations in the bus.

13 Q. Okay. And what are those locations?

14 A. The first location is the front junction box
15 at the front of the coach to control the steering or
16 latch mechanism. There is a speed switch.

17 Q. For the tag axle?

18 A. For the tag axle steering lock. And then the
19 other location it goes to is the Detroit Diesel J1A
20 connector at the engine. And it's two wires and it's
21 basically giving the engine a speed signal to do its
22 calculations.

23 Q. What is the purpose of giving the engine a
24 speed signal?

25 A. Well, a number of things. Number one, it will
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1 drive an odometer and speedometer.

2 Q. Okay.

3 A. It allows the ECM in this case to calculate
4 speed, which it then utilizes in -- and you've seen DDEC
5 Reports in this case I know. It calculates a lot of the
6 data regarding drive time, fuel consumption, because the
7 engine knows how much fuel it's using. And if it knows
8 how many miles its driven, then it knows what the fuel
9 mileage is and it's a way to manage your fleet, the DDEC
10 Report. It's an important part of calculating all the
11 data.

12 Q. Okay. Have you had courses in installing and
13 maintaining DDECs?

14 A. Oh, yes.

15 Q. And what courses have you had in that?

16 A. Well, they're factory courses at the
17 distributor level. I should tell you that Williams and
18 Lane, Sierra Detroit Diesel and Stewart and Stevenson
19 and Valley Power Systems are all -- are or were Detroit
20 Diesel distributors. So we were the link to the
21 factory.

22 We installed these engines. We repaired these
23 engines. We conducted field engineering tests for the
24 factory. Just about anything the factory would want, we
25 had direct link with the factory. So I basically worked

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1 on a factory level with DDEC and Allison transmissions.

2 Q. The courses that you have listed in your -- on
3 your CV where it says Education and Specialized Study?

4 A. Yes.

5 Q. Do those deal with DDEC or the use of DDEC?

6 A. Well, the training on the 92 engines would
7 plus there was -- there were other related training
8 that -- being the distributor, we had a training
9 department. So the training, some of it was hands-on,
10 some of it was basically a class study that they would
11 put on internally in the department. But the trainers
12 were factory trained, factory authorized.

13 Q. As an employee for Sierra and NorCal, and
14 Stewart and Valley Power, were you responsible for
15 installing software on the buses or trucks that had
16 DDEC?

17 A. Yes. I wouldn't say responsible. It was one
18 of my jobs. I wasn't the only one, but I did it on a
19 regular basis.

20 Q. Did you ever work on any Greyhound or
21 Americanos buses?

22 A. Greyhounds. We've worked on Greyhound buses
23 in the past, yes. I don't believe any Americanos buses
24 run in California that I know of.

25 Q. When was the last time you worked on Greyhound

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1 buses?

2 A. That would have been -- probably 15 to 20
3 years ago at this point.

4 Q. What kind of work did you do on those, if you
5 recall? I know it's been a while.

6 A. It would be engine and transmission work
7 basically on a Greyhound coach because they do a lot of
8 the routine work. They would do that themselves. I
9 mean, they would come to us when it was above their
10 capabilities or if they were broke down, you know, too
11 far away from one of their stores.

12 Q. Okay. So you created, you fabricated, this
13 model. Who was that to assist?

14 A. As I understood, Virgil. And as it turned
15 out -- what's his name, Dan Sullivan?

16 MS. DORMAN: I think so.

17 A. It was a way for them to test the speed sensor
18 circuitry and if there was an issue with it. That was
19 -- I believe that was based on the DDEC Reports which
20 had a -- was missing speed in a lot of the reports. It
21 was only reporting speeds above 40 miles an hour. It
22 wasn't reporting speeds below 40 miles an hour on the
23 DDEC Reports.

24 Q. (BY MR. ROMERO) Okay. What were you given to
25 review in this case? I mean, besides the inspection to

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1 the bus.

2 A. I was given a number of depositions.

3 Q. And they're all in your --

4 A. They're on the CD. I was given -- well, I was
5 given a number of things including the -- I believe
6 there were eight preliminary reports from Tamara -- I
7 believe there were eight. Photos taken by Sullivan. My
8 own photos. The DDEC Report Manual for Analyzing Data.

9 Q. Before we got started, I handed you what I've
10 marked as Exhibit 3. I want to ask you, what is that?

11 A. This is a printout from a CD, since that's the
12 only way this is available today. You can't buy it in a
13 printed form. And basically what this is is the
14 document put out by Detroit Diesel on analyzing DDEC
15 Reports. It explains what each section of the report
16 is, what triggers a specific report such as a hard brake
17 report, a last stop report. And so basically this was
18 used to just refresh my memory and verify what I was
19 looking at in the DDEC Report.

20 Q. Okay. Let me show you what has been marked as
21 Exhibit 2. Are those all the photographs that you've
22 taken in this case?

23 A. And some that I did not. There are -- the
24 first section is photographs that I took at the
25 inspection on June 30 in 2011. The next section there

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1 are borescope photos which I took during the same
2 inspection on June 30th. And then the third section are
3 pictures of the speed sensor tester functioning and what
4 results we got from the exemplar or that were available.

5 Q. Okay. Do you have the DDEC Reports that were
6 produced from the bus?

7 A. I do. I do have the DDEC Report -- well, I'm
8 going to say partial because it's not complete.

9 Q. Because it didn't record speeds under 40 miles
10 an hour?

11 A. No, because there are portions of the DDEC
12 Report that were never produced.

13 Q. What portions were not produced?

14 A. Specifically the Hard Brake Number 2. That
15 was probably the most important piece that's missing.
16 And also the engine configuration pages from the ECM
17 weren't printed.

18 Q. Let me slow you down. It's okay. I'm trying
19 to write this down. The engine configuration?

20 A. Correct.

21 Q. Reports?

22 A. Yeah. It's the data in the ECM that tells you
23 how the ECM is set up so that you can confirm that the
24 rear axle ratio, that the tire size is correct and that
25 helps you verify the data you're seeing as speed is

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1 correct and accurate.

2 Q. I was going to ask you that. Even things like
3 tire circumference are important, aren't they?

4 A. Absolutely. Revolutions per mile is vital.
5 Tires vary greatly.
6 Q. Now, should the hard brake data for Hard Brake
7 Number 2, should that have been in the report?
8 A. I would certainly expect it to be in the
9 report because it prints when you ask it to print.
10 Q. Were you present when all of that information
11 was downloaded?
12 A. No.
13 Q. Do you know what happened to it?
14 A. No.
15 Q. And with regards to the engine configuration
16 data, how would -- why is that not part of the file? Do
17 you know?
18 A. No, I do not.
19 Q. It should have been there?
20 A. It should have.
21 Q. What leads you to believe that the Hard Brake
22 Number 2 should have been there? What information did
23 you get that said, hey, all of this is here, that should
24 be here too?
25 A. When you command a print command, and you got
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1 your laptop plugged into the ECM and you tell it to
2 print this report, it prints it.
3 Q. So it's not that someone failed to call it up,
4 it should have been printed?
5 A. Yes. It should have been printed.
6 Q. When we're looking at the report, is there a
7 place that it should have been located on the report and
8 it's been deleted?
9 A. Well, I think deleted is not the correct term.
10 It's simply not here in paper form. That information
11 should still be in the ECM. What happened to it, why
12 it's not here, I really do not have a clue. But when I
13 was reviewing it, that's one of the things --
14 Q. Well, let me join you on that side.
15 A. Sure.
16 Q. So show me where the hard brake data is
17 located at. And we're looking at what tab in your file?
18 A. Tab 7. Based on the --
19 Q. And we're on Page 2 of Exhibit 10?
20 MS. DORMAN: No.
21 A. These aren't necessarily in the order in which
22 they would come out but they've been organized and they
23 have been identified --
24 MS. DORMAN: Bates stamps.
25 Q. (BY MR. ROMERO) AUSA 00126 and 1227.
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1 A. And it continues from there numerically as
2 it's organized here with no break in numbering.
3 Q. Okay.
4 MS. DORMAN: With the Bates number.
5 A. Yes. There is no break in number. Each one

6 of the reports has its own Page 1, Page 2 and the next
7 one and so on.

8 Q. (BY MR. ROMERO) Okay.

9 A. Normally you would get -- you would get one
10 last stop record.

11 Q. Okay.

12 A. Because it only records and retains one.

13 Q. Okay.

14 A. And it's the last stop. And then there is
15 hard brake reports. It only records and maintains two.
16 So whenever another one comes on, when it's recorded,
17 when it's triggered, it deletes Number 1 and makes the
18 new one 2 and makes this one 1. It keeps reloading.
19 But it's not here.

20 Q. Number 2 is not here?

21 A. Hard Brake Number 2 is not here.

22 Q. What is the last stop that it has?

23 A. Ask that one again.

24 Q. Does it show the last -- this is the last stop
25 record, right?

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1 A. Correct.

2 Q. And on the last stop record you said that it
3 has -- it only retains one?

4 A. Yes. We can safely say that this is the
5 actual last stop at the time of the incident because the
6 ECM was removed from the bus and downloaded the next
7 evening.

8 Q. Okay.

9 A. We don't know that we can trust this time but
10 we can trust the date. This time that's shown as the
11 print date at the top left of the last stop record, that
12 is pulling its date and time from the ECM of the
13 technician that has it plugged into the ECM. So this
14 data is coming from a laptop.

15 Q. Okay.

16 A. The last stop time is a date and time coming
17 from the ECM itself. It has a clock.

18 Q. Right.

19 A. We know that this is likely incorrect. For
20 starters it's eastern standard time. So we know that
21 that may be incorrect. But you can do some math and
22 figure that out if it becomes necessary.

23 So being that the ECM was removed and this was
24 printed immediately, we can safely say that this is a
25 recordation of the last stop and the last stop is

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1 triggered when the bus is stopped for 15 seconds. To
2 the ECM stopped means no speed. We lost speed -- here
3 is 15 seconds on the bottom of zero speed. That
4 triggered this report.

5 Q. Right.

6 A. But we have to remember that it didn't record
7 speed below -- on the hard brake event 40 miles an hour.

8 If we look at Hard Brake Number 1 you see 39.5. It
9 dropped to zero which triggered the hard brake. So each
10 of these reports has a different trigger mechanism.
11 Both relate to vehicle speed. So when the vehicle is
12 seen to be sitting still for 15 seconds, this report is
13 set in memory. If you start up and drive again, the
14 next time you stop this is replaced.

15 Q. Okay. Now, would the drive shaft becoming
16 disconnected from the transmission have an impact on the
17 speed sensor?

18 A. Very possibly. I would expect it to. Not an
19 impact on the speed sensor. Sorry. Impact on the
20 recorded speed at ECM.

21 Q. And how would it impact that?

22 A. Well, because, if you notice here on the last
23 stop record, the engine's at idle. If the engine's at
24 idle and this sensor is defective and it's not recording
25 anything below 40 miles an hour our output shaft is not
0023

1 spinning fast enough for DDEC to see it. In a vehicle
2 with a properly functioning sensor, I do believe we
3 would have seen speed here. Some speed. Because even
4 at idle in gear the transmission shaft is going to turn.
5 Assuming that you -- and that's assuming -- and as long
6 as there is fluid in the pan that the transmission can
7 pick up and continue to function even if it was running
8 with the bus on its side. It changes the dynamics of
9 how the transmission operates.

10 Q. Do you have any idea why the engine RPM would
11 drop 500 RPM in less than a second or in approximately
12 one second?

13 MS. DORMAN: Object to form.

14 A. Well, it would be total speculation, but it
15 could be the point at which the U-Joint failed.

16 Q. (BY MR. ROMERO) But if the U-Joint fails, you
17 would think that the opposite might be true. That is,
18 at the moment of failure the motor is free to spin up.

19 A. It could. It could. And again, the problem
20 we have here is with a malfunctioning sensor there is
21 certain data here that we can't extrapolate.

22 Q. Okay. Let's go back to your statement that
23 the second stop is not available.

24 A. The second hard brake event.

25 Q. That would have preceded the hard brake event
0024
1 of the accident?

2 MS. DORMAN: Object to form.

3 A. It would have been -- well, the hard brake
4 event would have been triggered if the bus was on its
5 wheels, based on what I see here, below 40 miles an
6 hour. So if the Hard Brake Event Number 2 indicated
7 something different, you could compare it to the last
8 stop record because they would have happened virtually
9 simultaneously. Since a hard brake is triggered by a

10 drop in speed, de-acceleration, in excess of 7 miles per
11 hour per second in this case is what I understand it was
12 -- I believe it was a default setting of 7 miles per
13 hour per second.

14 Q. But don't you have the last event on both
15 reports?

16 A. No. You have the last stop record and you
17 have Hard Brake Number 1. This happened previously.

18 Q. So you don't have hard brake for the accident?

19 A. We don't have --

20 MS. DORMAN: Object to form.

21 A. We don't have the hard brake event that should
22 have been at the time the bus suffered its incident.

23 Q. (BY MR. ROMERO) Okay. When did that one take
24 place?

25 MS. DORMAN: Object to form.

0025

1 Q. (BY MR. ROMERO) And I'm talking about the
2 Hard Brake Event Number 1.

3 A. All we can do is the math which I have not
4 done. The incident time was 3-16 at 12:29 a.m. but we
5 know this time is not correct. So all we can do is say
6 that this incident happened at basically 30 minutes
7 after midnight according to this clock. And this one
8 occurred at 2:00 a.m. So we're talking an hour
9 and-a-half previous.

10 Q. Okay.

11 A. So there was a point at which the ECM saw a
12 drop in speed that triggered the event. All that means
13 in this case with the sensor that was in that vehicle,
14 that we dropped below 40 miles an hour. Every time that
15 vehicle dropped below 40 miles an hour, it triggered a
16 hard brake event. It's erroneous. But this computer
17 can only do what it's told based on the logic that's
18 ingrained in it.

19 Q. So Hard Brake Event Number 2 should have
20 been --

21 A. Should have been in very close proximity to
22 the last stop.

23 Q. Right.

24 A. Correct.

25 Q. But if we -- if -- so if I understand your

0026

1 opinion here, it's that because the sensor is not
2 functioning properly every time the vehicle dropped
3 below 40 miles an hour it would trigger a hard brake
4 event.

5 A. That's correct.

6 MS. DORMAN: Object to form.

7 A. Approximately 40 miles an hour. That's the
8 data we have in this report.

9 Q. (BY MR. ROMERO) Okay. Now, both the reports
10 suggest that the bus -- that this accident happened
11 early in the morning hours according to the time on that

12 report.

13 A. According to the ECM time.

14 Q. But that could be wrong?

15 A. Well, we pretty much know it to be incorrect.

16 Q. Right. If this was a consistent problem, that
17 the -- every time the bus dropped below 40 miles an hour
18 it recorded a hard brake event, then this would suggest
19 that the last time that the bus went below 40 miles an
20 hour before the accident was how many minutes apart?

21 A. I believe it's an hour. Hour and-a-half
22 approximately.

23 Q. An hour and-a-half. Okay. The documents that
24 you have before you on the hard brake, should it have
25 had a report that said DDEC Report Hard Brake Number 2?

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1 A. Correct. It should be -- it should look
2 exactly the same except it would simply say Number 2 at
3 the header.

4 Q. So certainly we know that Hard Brake Number 1
5 probably was not the event because the vehicle was only
6 traveling at 46 miles an hour?

7 A. That would be correct.

8 Q. And is it also safe to say that there was an
9 event before this where the bus may have been going
10 faster or slower but it dropped below 40 miles an hour
11 according to the hard brake event?

12 A. Correct. The DDEC Reports even support that
13 by the very high number of hard brake events recorded.
14 It tells you how many --

15 Q. And how many did it have?

16 A. -- in a given month. Well, let me find that.
17 Okay. This gives monthly activity. This is an overview
18 of the monthly activity. In January of 2010 there were
19 549 hard brake events. In February of 2010 there were
20 945 hard brake events. In March, which was only 16 days
21 of 2010, there were 177 hard brake events.

22 Q. Okay. Would the speedometer in the bus
23 reflect this sensor problem?

24 A. I don't believe so in this bus. I believe
25 that the -- we'd have to confirm this with Virgil -- but

0028

1 I believe in this coach the speedometer is driven off
2 one of the front wheels so they don't use this signal to
3 drive the speedometer.

4 Q. They might use an analog type?

5 A. Correct.

6 Q. How was the data from the ECM stored?

7 MS. DORMAN: Object to form.

8 Q. (BY MR. ROMERO) Is it stored in the hard
9 drive in the bus or on a memory chip?

10 A. It's stored on chips in the ECM itself. There
11 is no secondary device. There's no black box so to
12 speak. The DDEC Reports were never designed to be a
13 black box data recorder. It was designed as a fleet

14 management tool so in the case such as these hard brake
15 events you could say, hey, driver, we're seeing all
16 these hard brake events. What is going on? You're
17 hammering the brakes all the time. So that was its
18 original purpose when it was developed.

19 Q. Okay. And to download the data you have to
20 take a computer or laptop right to the bus?

21 MS. DORMAN: Object to form.

22 A. No. There are different ways to do it. That
23 is one way. You can take a laptop with the proper
24 software and plug directly into the bus, or you can
25 remove the ECM, take it to a shop and do it on a bench.

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1 We used to do it all the time. We would get a loose ECM
2 with no vehicle. And we had a device for plugging it in
3 and doing whatever we had to do on a bench.

4 Q. (BY MR. ROMERO) Have you ever seen the ECM to
5 this bus?

6 A. No.

7 Q. So besides creating this model, what else did
8 you do with regards to evaluating the data from the ECM?
9 You told me about the hard braking. What else have you
10 discovered, sir?

11 MS. DORMAN: Object to form.

12 A. Only that the data in the DDEC Reports support
13 the fact that the speed signal was not sufficient to
14 record in the ECM -- I mean, there's a lot of data in
15 here that has to do with speed histograms where it shows
16 how long you've been at 50 to 60 or, you know, it shows
17 that in graph form. Those graphs don't include low
18 speed time.

19 Q. (BY MR. ROMERO) Okay.

20 A. So basically the only thing -- the primary
21 reason I reviewed the DDEC Reports was to make sense of
22 what was happening and what we needed to do to establish
23 why it was happening.

24 Q. Earlier you mentioned that the speed sensor is
25 connected to two parts of the bus.

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1 A. Correct.

2 Q. Two different junctions. One of them also
3 affected the steering of the tag axle.

4 A. That's correct.

5 Q. How would the speed sensor in the bus made the
6 basis of this lawsuit have impacted the tag axle?

7 A. It's possible that it wouldn't function
8 properly at the correct speeds -- and again, this I
9 would have to -- I would most likely defer to Virgil on
10 the specifics because we didn't -- I didn't actually
11 test that switch. But my understanding is that that
12 speed switch operates well below 40 miles an hour. And
13 if the ECM wasn't getting a signal sufficient to
14 function, it's very possible that that speed switch
15 wasn't getting a sufficient signal. But again, on the

16 specifics I have to defer to MCI on that.

17 Q. But what would it do if it wasn't getting the
18 right signal? What would be the result of it not
19 getting the right signal to the tag axle?

20 A. If it got an improper or insufficient signal
21 it wouldn't function.

22 Q. And by not functioning, what would it result
23 in?

24 A. Well, its purpose for being there would be to
25 feed it. And as I understand it -- and again on

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1 specifics I'll defer to Virgil -- it operates the
2 steering lock.

3 Q. Okay. And how does that work?

4 A. Well, the speed switch --

5 Q. I'm asking you this so that if we read your
6 deposition the jury understands.

7 A. That's fine. The speed switch, the purpose is
8 to activate another device based on its speed.
9 Electrically. And in this case there are pneumatic
10 solenoids in the back of the bus that control that lock
11 cylinder so that in essence if that speed switch didn't
12 function, the lock cylinder would never be basically
13 told when to function.

14 Q. So would it remain locked at all times?

15 A. That -- I would -- well, I'm going to say I
16 don't know because I'm not fully versed on that system.
17 But I can tell you that on this particular coach there
18 was no air to those solenoids, the pneumatic solenoids,
19 so the answer in this coach is would they have ever
20 worked? No. The lock cylinder would have been in
21 whatever position it was in. Because despite the fact
22 that we didn't have a proper signal, we didn't have air
23 to the pneumatic solenoid valves.

24 Q. What is the default position of a tag axle?

25 A. My understanding is that it's latched.

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1 Q. And locked?

2 A. And locked.

3 Q. Now, if the electrical signal is working when
4 the bus senses that it is going below 20 miles an hour,
5 it sends a signal to the solenoid and unlatches the tag
6 axle if everything is working properly?

7 A. That's my understanding.

8 MS. DORMAN: I need to object to form
9 there. Sorry.

10 Q. (BY MR. ROMERO) Did you understand my
11 question?

12 A. I believe so.

13 Q. Your testing seems to indicate that there was
14 no signal going below 40 miles an hour.

15 A. Actually, no. It was insufficient. It
16 actually was producing a signal.

17 Q. I was going to ask you about that later. I'm

18 glad you told me that.

19 A. It wasn't no signal. It was a much less
20 intense -- the amplitude was much lower. It was not
21 building voltage basically, which is what it's making is
22 AC voltage. So it wasn't nonexistent. It was
23 insufficient for DDEC to see it. That's what we know
24 for a fact.

25 Q. Is there any way of knowing that --

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1 notwithstanding the situation with the air pressure, is
2 there any way of knowing whether it was sending out a
3 signal strong enough to operate the solenoids?

4 A. There is a way to test for that, yes.

5 Q. Was that tested?

6 A. No, not to my knowledge.

7 Q. Okay. Do you know why that wasn't done?

8 A. I do not. That was part of Virgil's protocol.

9 Q. Okay. Do you know if it was done?

10 A. I do not.

11 Q. It could have been done, you just don't know?

12 A. Correct.

13 Q. Okay. Very good. Assume with me, though, it
14 wasn't sending a signal after 40 miles an hour. It
15 wasn't strong enough to activate the solenoid. So it
16 would stay in the default position of being locked?

17 A. I would expect it to. But again, I would --
18 the specifics on that I would defer to Virgil. That's
19 my understanding.

20 Q. Again this may not be your area of expertise,
21 but if the bus is sending out a signal that it is at
22 zero miles per hour because it's not sending out any
23 signal --

24 A. No, it is sending a signal.

25 Q. It would even be sending a signal that it was

0034

1 going 1 mile an hour?

2 A. If the sensor was not defective.

3 Q. Right.

4 A. We did have a signal. It was simply
5 insufficient for the DDEC ECM to recognize it. DDEC ECM
6 has a minimum voltage.

7 Q. Do you have an opinion as to whether or not
8 the speed sensors, the speed sensor in this bus, caused
9 any -- caused this accident?

10 A. No, I don't.

11 Q. Do you have an opinion as to whether or not
12 the data from the second hard stop would still be
13 available on the ECM?

14 A. It should be if the internal battery is not
15 dead or some other damage has been done. It should be
16 there. Even a year or two after it's been removed and
17 set on a shelf.

18 Q. And even with a dead battery couldn't you just
19 replace the battery or would all the information be

20 lost?

21 A. I don't know. You would have to consult with
22 Detroit Diesel on replacement of that cell, that
23 battery.

24 Q. Okay.

25 MS. DORMAN: Would this be a good time
0035

1 for a rest room break?

2 MR. ROMERO: Sure, if you want.

3 (Break taken from 10:27 a.m. to

4 10:34 a.m.)

5 (Mr. Green leaves the deposition

6 proceedings.)

7 MR. ROMERO: Back on the record.

8 Q. (BY MR. ROMERO) Mr. Wright, I'd like to turn
9 your attention now to the report that you produced in
10 this matter. The inspection that took place on June 30
11 -- between June 30 and July 1st, where was that?

12 A. That was in Louisville, Kentucky.

13 Q. Had you ever been there before to the garage
14 there?

15 A. No.

16 Q. One of the things that you did was to trace
17 the wiring from the sensor to the different junction
18 boxes?

19 A. Yes. I assisted Virgil.

20 Q. Okay. And you found that there was no problem
21 with that?

22 A. Actually, I witnessed the testing by Virgil
23 and Mr. Sullivan.

24 Q. You did no independent testing?

25 A. I did not do independent testing but I was

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1 there helping them trace the wires, locating the points
2 and then witnessed the test with the ohmmeter.

3 Q. Earlier you mentioned that there was no air to
4 the solenoids.

5 A. Correct.

6 Q. Did you do any testing with regards to that?

7 A. In essence, yes. I was basically Virgil's
8 hands throughout this two-day inspection. So I was the
9 one who was actually disconnecting hoses, removing
10 pieces from the vehicle that everyone agreed needed to
11 come out and be on the bench. So, yes, I was hands-on
12 in that inspection.

13 Q. What was the cause or the problem?

14 A. There were two issues with the lack of air to
15 the cylinder -- or to the solenoid, sorry.

16 One, there was a brass T where a number of air
17 lines came together at the back of the engine and it was
18 plugged. Initially when we removed the hose from the
19 pneumatic solenoids there was no air coming out, and I
20 personally witnessed and inspected that.

21 So we were trying to determine why there was

22 no air. There should have been air. So we removed the
23 hose at its other end at the brass T and low and behold
24 no air was coming out of the brass T. But if I removed
25 one of the other hoses on that T, air was coming out. I
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1 was a little confounded. It's not a very common thing
2 unless there was -- it's rare to see anything like that
3 that plugged up. We couldn't see it. We removed that T
4 from the bus, but in its place there was absolutely no
5 air getting past that port in the T that fed the hose
6 that fed the pneumatic solenoids.

7 Q. And correct me if I'm wrong, but I'm assuming
8 since it was a T it also fed some other device.

9 A. Yes, that's correct, but there was air --
10 there was air in the T but not coming out of that port
11 that fed those valves.

12 Q. What other instrument or machine was operated
13 by that T?

14 A. We didn't trace -- unless we made notes -- we
15 didn't trace everything because there was a problem with
16 the entire auxiliary air system. And our focus was
17 simply is there air -- the other issue with restricted
18 or no air to those solenoid valves is that the hose that
19 ran from the T to the pneumatic solenoid valves had
20 deteriorated or was plugged inside. Most likely
21 deteriorated swollen and had shut off basically.

22 Q. So not only was it plugged at the T but the
23 hose was plugged?

24 A. The hose was -- I'm going to tell you it was
25 definitely extremely restricted and may have been
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1 totally plugged in place because as they manipulated the
2 hose, you know, outside of the coach they started to get
3 a little more air out of it. They were able to blow
4 through it with their mouth into like a -- I believe we
5 used some water or something -- to see if we could get
6 bubbles. And initially there was little to none and as
7 they manipulated the hose they were able to get a little
8 more, which is typical if you've got a hose that's
9 deteriorated.

10 Q. Do you know what was plugging the T?

11 A. No. I removed the T. I handed it off to
12 Virgil and Aaron. And by the time they handled it,
13 whatever was there must have become dislodged. Because
14 then they were unable to identify what had been in
15 there. So I'm assuming it may have fallen out. That
16 specifically -- I got it out and handed it off.

17 Q. How much air pressure is in that -- in that
18 unit down that hose?

19 A. Typically it should be whatever is in the air
20 tank, which could be routinely -- under normal operating
21 conditions 90 to 110 pounds.

22 Q. So a significant amount?

23 A. Yes, absolutely. That's why I was somewhat

24 perplexed as to why there was no air coming out of that
25 fitting.

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1 Q. Where does the air come from?

2 A. We did not trace the source of the air to the

3 T. Again, our focus was not where the air came from but
4 rather where it went. And again, the other reason they
5 didn't dive into all that is because the auxiliary air
6 tank in the back of the bus that would have normally fed
7 that had no air getting to it from its normal source
8 because the check valve was in backwards. So a check
9 valve off of the main air tank that fed the auxiliary
10 was in backwards and blocking air flow, so apparently it
11 had been replumbed so that air was going to those
12 devices but I don't believe Virgil traced those or Mr.
13 Sullivan traced those. And again, I'll submit that I
14 wasn't driving the inspection at that point. I was
15 working with Virgil, Aaron, Mr. Sullivan, on
16 facilitating what they were doing.

17 Q. What is the purpose of the auxiliary air tank
18 in the bus?

19 A. It feeds what you would call auxiliary
20 equipment such as shutters for the radiator or -- any
21 air device that's not part of the brake system.

22 Q. Okay.

23 A. I'll generalize it that way.

24 Q. I'm not trying to hold you to anything.

25 A. I don't know every widget that's in the back

0040

1 of that bus. But the locking and latching solenoids,
2 they're fed from auxiliary air. The belt tension or for
3 the AC. Things like that.

4 Q. Okay. Is there any redundancy built into the
5 air tanks, the auxiliary tanks, or the master tank?

6 MS. DORMAN: Object to form.

7 A. Define "redundancy."

8 Q. (BY MR. ROMERO) That's good. If one unit
9 doesn't work, if one air tank fails, does the other one
10 take over or how --

11 MS. DORMAN: Object to form.

12 A. I'm going to say routinely. We're talking in
13 general terms, not this bus. Tanks are protected by
14 check valves so that if a tank fails a check valve may
15 protect it. Auxiliary systems are protected by pressure
16 protection valves. Which if there is a mass of
17 differential in pressure will shut off so that, let's
18 say, one of those auxiliary devices failed and was
19 blowing air everywhere. If it has a pressure protection
20 valve, it should shut off the supply of the air thereby
21 save the system. But it could be however someone wants
22 to design the system.

23 Q. (BY MR. ROMERO) Okay. And do both of them
24 work off the same compressor?

25 MS. DORMAN: Object to form.

0041

1 A. There is --

2 Q. (BY MR. ROMERO) The auxiliary tank and the
3 main tank for the brake.

4 A. I'll answer it this way. There is only one
5 compressor on the engine.

6 Q. Okay. That answers the question. And where
7 is the -- so I'm a little bit -- the air has to come
8 from outside of the bus someplace, right?

9 A. Which air?

10 Q. Through the compressor. The air that's being
11 pumped into the different tanks.

12 A. Actually it doesn't come from outside
13 literally. In this case, the inlet to the air
14 compressor is plumbed into the intake manifold of the
15 engine so that the air that is supplied to the
16 compressor is theoretically clean. In this case, in
17 this bus, it's my opinion there was a problem that was
18 causing that to be compromised in that there was a
19 rubber elbow in the air inlet system that was not
20 connected to the air filter. So it could have been
21 sucking up dirt and dust from the engine compartment,
22 the entire engine and the compressor as well.

23 Q. Okay. If that's correct, then dirty air would
24 enter the compressor?

25 A. True. It can.

0042

1 Q. But before it gets to the tanks it has to go
2 through the compressor, doesn't it?

3 A. Yes, it does go through the compressor.

4 Q. Okay. And then it would have to go through --
5 would it be then routed to both individual tanks, the
6 auxiliary tank and the tank that feeds the brakes?

7 A. No. It doesn't quite work that way. The
8 compressor feeds -- we'll call it the main air tank for
9 the vehicle.

10 Q. Okay.

11 A. Because you don't want it connected to
12 something else. You're establishing a point of
13 catastrophe -- not catastrophe, but if something goes
14 wrong in that little auxiliary system the rest of the
15 system is compromised.

16 Q. So if something plugged the T, it would have
17 had to go through all of those things, through the
18 master tank to the line that feeds the auxiliary tank to
19 the T?

20 A. True.

21 Q. Have you ever seen something like that happen
22 before?

23 MS. DORMAN: Object to form.

24 A. The plugged T?

25 Q. (BY MR. ROMERO) Yeah, where a T or a hose on

0043

1 a remote part of the auxiliary system is plugged due to

2 dirt.
3 A. I'm going to answer that yes, but not on --
4 not necessarily on a coach. On air systems in general
5 I've seen contamination ruin valves 50 feet downstream
6 and contamination includes dirt, water and then the
7 water creates corrosion. I mean, it's a never ending --

8 Q. I noted from your resume that you've worked on
9 I guess heavy equipment that is exposed to all kinds of
10 environment, right?

11 A. This is correct.

12 Q. Okay. Certainly more severe than this bus was
13 exposed to I would imagine?

14 MS. DORMAN: Object to form.

15 A. Possibly.

16 Q. (BY MR. ROMERO) Okay. Going back to your
17 report, Mr. Wright, on the fourth paragraph it talks
18 about your -- let me get back to the second one.

19 All the wires that you tested on the -- in the
20 third paragraph regarding the wires were tested for
21 continuity and no defects were found. That's what you
22 observed, right?

23 A. Correct.

24 Q. Okay.

25 A. Do you want to know how we did that or is that

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1 important?

2 Q. Sure. Let me hear about that.

3 A. We disconnected the speed sensor harness at
4 the pigtail. So we left the pigtail attached to the
5 speed sensor. They measured -- we measured from that
6 connector to the junction box in the rear. They
7 recorded the resistance readings and then they went to
8 each end of the bus, the engine and the speed switch in
9 the front of the bus, and measured the resistance and
10 found them to be intact, good continuity, no excessive
11 resistance.

12 Q. Okay. Let's go to Paragraph 4. You describe
13 how you went about inspecting the sensor in the unit
14 itself, right?

15 A. Yes.

16 Q. And it says -- the last sentence it says, The
17 pictures indicate that the sensor had collected a fair
18 amount of magnetic debris on its core.

19 A. Correct.

20 Q. What does that mean?

21 A. Well, the sensor is a magnet with a coil
22 around it. So it's magnetic. And the transmission of
23 course being metal, rotating, wearing, any magnetic
24 debris, any metallic debris will, and can, find its way
25 to that magnet. It's -- I mean, it's what a magnet

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1 does. It collects metal.

2 And so with a borescope we were able to look
3 inside and see that there was in fact in position before

4 we pulled it through the little hole when we removed it,
5 there was a fair amount of debris. And one of the
6 reasons we wanted to see that is that one of the things
7 that can make this sensor not work is if that magnetic
8 core touches this wheel. You lose -- basically you no
9 longer are changing the magnetic field if you ground the
10 core.

11 Q. Right. So was that debris touching the wheel?

12 A. From testing I'm going to say it did not
13 appear to, no. And after we removed it and photographed
14 it, it did not seem excessive enough to create that
15 issue.

16 Q. Do these big Allison transmissions -- in the
17 old days, we used to get the screw on the bottom of the
18 oil pan would be magnetic.

19 Do they have any devices like that to pick up
20 the loose metal shavings from the motor?

21 MS. DORMAN: Object to form.

22 A. Allison does, but not in this model. They do
23 use that.

24 Q. (BY MR. ROMERO) Okay. Were you surprised by
25 the finding metal on the unit?

0046

1 A. Absolutely not.

2 Q. Going now to the fifth paragraph, Once the
3 inspection was complete, the output flange previously
4 installed during the transmission inspection was
5 utilized to manually rotate the output shaft for testing
6 the functionality of the output speed sensor.

7 What was that? Was that just a device that
8 you used to spin the transmission?

9 A. I had brought -- since the original output
10 yoke had been basically obliterated by the
11 metallurgists, I brought an output flange so that we
12 could -- it's not real easy to rotate, so we could
13 rotate it, feel the gear package, make sure everything
14 moved properly.

15 Subsequently, they wanted to test it without
16 removing it to see if it was producing a signal. So
17 basically what I did is I got the flange on, put a bolt.
18 This was what they call a companion flange so it has
19 a -- as opposed to the yoke it has a row of bolts, a
20 circle, eight bolts.

21 So I put a bolt in there. I got a ratchet and
22 an extension and basically manually spun it. And I spun
23 it at about 50 RPM. That's about best I could do. And
24 we did that over and over until they were satisfied that
25 they had a reading at the junction box, they had a

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1 reading at the end and they had a reading at the front
2 of the bus and they were consistent. So we were able to
3 establish at 50 RPM what the amplitude and frequency
4 was.

5 Q. Now, this is 50 RPM at the back of the

6 transmission?
7 A. Correct. The output shaft.
8 Q. Is there any way of knowing what kind of speed
9 that might have translated into on the bus?
10 A. Sure. You could do the math.
11 Q. But it wouldn't have been very fast, would it?
12 A. It would have been slow.
13 Q. Very slow?
14 A. Right. 50 RPM divided by 3 and then times
15 that number times the circumference of the tires.
16 Q. Right. You must have had quite a workout out
17 there.
18 A. Yeah, I did. They kept testing.
19 Q. So it said that Pete Sullivan, the expert for
20 On The Border Freightliner, recorded the output speed
21 sensor testing with an oscilloscope. And it said the
22 magnetic speed sensor did produce a signal.
23 This is the signal, though, that we expected
24 the ECM to record, right?
25 A. Correct.

0048

1 Q. Now, you don't say whether or not this
2 particular signal was strong or weak.
3 A. No. It simply did produce a signal. The
4 recordings made by Pete Sullivan show at 50 RPM
5 basically what the voltage or amplitude was and the
6 frequency. That's how I determined how fast I was
7 turning it by doing the math on frequency, which is
8 cycles per second and then times 60 to get speed per
9 minute.
10 Q. And then testing was performed at the terminus
11 of each circuit and the results recorded. Do you have
12 the record of that?
13 A. No. I do not have a specific record. That
14 was done by Pete and Virgil.
15 Q. Okay. Then it says -- we go on to the next
16 paragraph. It says, Subsequently the sensor was removed
17 from the transmission and inspected by all parties
18 concerned. I personally assisted defendant's expert
19 Aaron Jones of ITC Experts in testing the speed sensor
20 with an ohmmeter. Circuit continuity could not be
21 established.
22 What does that mean?
23 A. It's open. It's an open circuit. So if you
24 -- there's specifications for resistance. This is a
25 coil.

0049

1 Q. Okay.
2 A. And so when you measure it across these two
3 wires you should record -- you should record a
4 resistance. You should show continuity. In the case of
5 the subject sensor with the pigtail attached, there was
6 no continuity. So there was an open somewhere in that
7 pigtail and sensor. And that pigtail has to my

8 knowledge never been removed. It was bagged and put in
9 the bus per Alex and all persons there to just bag it
10 and put it in the bus and leave it after that occurred.
11 And they never installed it in the tester and duplicated
12 what we did in the bus.

13 Q. What does that mean to you?

14 MS. DORMAN: Object to form.

15 A. What does the open mean to me?

16 Q. (BY MR. ROMERO) Yes.

17 A. Well, the open means there's a broken wire. A
18 completely bad contact. A lack of contact perhaps where
19 the pigtail connects to the sensor.

20 Q. Okay. How does that work with the fact that
21 when it was in place you were getting a --

22 A. Well, it will still produce a signal. There
23 still is a coil. This is my theory. I'm not an
24 electrical engineer. But it's designed to be a
25 continuous circuit which increases the amplitude and
0050

1 increases -- it won't change frequency. Frequency is
2 just how many times, you know, the lump passes the
3 sensor.

4 We did put the oscilloscope onto this device
5 and basically I just spun it by hand about the same
6 speed I was doing down below. And the voltage was quite
7 high. And again, that would have been something
8 recorded by Pete and Virgil. Without doing the in-depth
9 testing, my personal opinion is that it was still
10 producing a magnetic field that varied and inducing a
11 current into the halves, we'll say the halves, of the
12 coil, if that's where the separation was. It still
13 produced the signal but not as designed.

14 And again, we didn't do extensive testing of
15 that to find out exactly, you know, what the disconnect
16 was. We didn't take the pigtail off.

17 Q. Then you tested the device against an
18 exemplar?

19 A. Tested which device?

20 Q. The one that was in the bus, the speed sensor.
21 And then the testing of the exemplar sensor and the
22 sensor tester provided by Ruhl Forensics demonstrated
23 that the sensor reading recorded in situ in the coach
24 were far below those of the exemplar.

25 A. That's correct. That's when they put the
0051

1 oscilloscope on this tester device with the exemplar
2 sensor and we spun it manually by hand because it's hard
3 to get 50 RPM out of this little motor and make it hold.
4 So we did it with a finger to -- at about the same speed
5 that I was down there turning it. As I understand it,
6 they recorded the voltage that they were getting from
7 this versus what we got from our in situ testing.

8 Q. Much different?

9 A. Much different.

10 Q. You didn't record the differences yourself?

11 A. No. No. I was facilitating and witnessing as
12 opposed to keeping the notes and the data from their
13 protocol.

14 Q. And who was primarily responsible for
15 recording the data and obtaining the data?

16 MS. DORMAN: Object to form.

17 A. Well, we were following Virgil's protocol.
18 And I'm not sure if Pete Sullivan had a written protocol
19 in place.

20 Q. (BY MR. ROMERO) Okay. Then on your last
21 paragraph I guess everything -- the testing that you did
22 to the speed sensor supports your reading of the DDEC
23 Reports. Is that right?

24 A. That's my opinion, yes.

25 Q. So I want to get really clear on this, and if

0052

1 I make a mistake with saying or stating your opinion
2 please correct me, Mr. Wright.

3 First, that the speed sensor unit was not
4 working properly, was defective in that at below 40
5 miles an hour it was not sending a signal to -- that was
6 being recorded by the ECS.

7 MS. DORMAN: Object to form.

8 A. ECM.

9 Q. (BY MR. ROMERO) I'm sorry. ECM.

10 A. Yes, it is my opinion that the defect in the
11 sensor simply caused an insufficient voltage to where
12 DDEC couldn't see it until the amplitude reached a
13 sufficient number.

14 Q. Okay. Another opinion that you have is that
15 the DDEC Report is incomplete?

16 A. That's correct.

17 Q. Okay. There are two things that are missing.
18 The second hard brake, which would have been this
19 accident?

20 MS. DORMAN: Object to form.

21 A. It very well should be.

22 Q. (BY MR. ROMERO) Should be. And the engine
23 configuration with the tire sizes and the gearing and
24 everything else?

25 A. Those are two things that are not part of the

0053

1 report.

2 Q. That should be?

3 A. That should be.

4 Q. Anything else?

5 A. At this time -- and again, I didn't -- I'm not
6 100 percent sure because I haven't gone that deep into
7 every aspect of the DDEC Report.

8 Q. And the third thing is that you're not here to
9 render any opinions with regards to how the speed sensor
10 might have impacted the tag axle steering?

11 MS. DORMAN: Object to form.

12 A. I'm going to say at this time that's correct.
13 Q. (BY MR. ROMERO) Let's take a little break. I
14 may be done.
15 MS. DORMAN: Okay.
16 (Break taken from 11:04 a.m. to
17 11:12 a.m.)
18 Q. (BY MR. ROMERO) Mr. Wright, let me show you
19 what has been marked as Exhibit 10 to your deposition.
20 Is that a copy of your file?
21 A. Yes. It is a copy of my printed file.
22 Q. May I see it again? Do you plan on testifying
23 live at trial?
24 A. If necessary.
25 Q. Okay. And what is your hourly rate?

0054

1 A. You know, I'm not 100 percent sure. You would
2 have to look at the bills. I don't do the invoicing.
3 Q. Do you charge a different rate for trial
4 testimony?
5 A. I know they do that.
6 Q. Okay. And what about for depositions? Is it
7 the same rate?
8 A. I believe it is.
9 Q. Okay. Did you review any other documents
10 besides those in your file and those that you brought
11 here today in preparation for your deposition?
12 A. The only thing that I reviewed that is not in
13 there that came to mind was the page in the Detroit
14 Diesel DDEC 4 Application and Engineering book that
15 shows the specification for minimum and maximum voltage
16 for this sensor.
17 Q. Okay. And when did you look at that?
18 A. That was over a month ago.
19 Q. Okay. I meant specifically --
20 A. It was over a month ago.
21 Q. Okay. And let me show you what is
22 Exhibit 5 and ask you what is this.
23 A. This is the existing list of cases that I gave
24 depositions on between 2007 and 2011.
25 Q. Okay. And what is Exhibit 6?

0055

1 A. Exhibit 6 was a previous list -- and the
2 date's actually wrong -- this is from 2002 to 2005 -- of
3 cases that I gave depositions in.
4 Q. Exhibits 7, 8 and 9?
5 A. Are examples of advertising that Ruhl does on
6 behalf of its experts. These are mailers.
7 Q. And I think we've gone over the other
8 exhibits.
9 Mr. Wright, have you understood my questions?
10 A. I believe I have.
11 Q. Thank you very much, sir.
12 EXAMINATION
13 BY MS. DORMAN:

14 Q. I have just a couple of questions for you,
15 sir.

16 Mr. Wright, I want to go back to the
17 inspection that took place on June 30th and July 1st of
18 2011.

19 Do you remember who was there on behalf of
20 Greyhound Lines and Americanos?

21 A. Yes. It was Alex Cook, as I understand, MCI
22 engineer.

23 Q. MCI or Greyhound?

24 A. Excuse me. Greyhound engineer.

25 Q. Who else?

0056

1 A. Aaron Jones.

2 Q. And did you understand what his role was?

3 A. Yes. He was expert for Greyhound and
4 Americanos in the case.

5 Q. And did they participate in the inspection and
6 testing that you've described here today?

7 A. Yes, they did.

8 Q. Can you describe for us briefly what they did?

9 A. Well, Aaron particularly was involved in
10 pretty much every phase under the bus basically
11 witnessing what was being done by Pete and by Virgil.
12 In the case of the speed sensor, he and I worked
13 together to check it and agree that there was an open
14 circuit, that he wasn't missing something.

15 Q. "He" meaning --

16 A. Aaron. So they worked hand in hand with us
17 all day on what was to be done, variations from the
18 protocol. Photography.

19 MR. ROMERO: Objection. Nonresponsive.

20 Q. (BY MS. DORMAN) And could you describe for us
21 what Alex Cook was doing at this inspection and testing,
22 if you recall?

23 A. I would characterize it as supervising,
24 witnessing. He wasn't a lot hands-on but he was there
25 throughout the day helping me with questions about what

0057

1 to do with the pieces when they decided not to
2 reassemble the transmission. We boxed them, boxed the
3 pieces, the fluid to his satisfaction.

4 Q. Do you remember what position the tag axle
5 lock cylinder pin was in when they removed those parts
6 from the tag axle assembly?

7 A. I believe -- and I'm not 100 percent sure to
8 be quite honest -- but I believe it was that the tag
9 axle castoring lock was in the forward driving position
10 I believe.

11 Q. And I'm asking about the tag axle locking
12 cylinder. Do you remember when they took the clamping
13 plates --

14 A. For the steering?

15 Q. Correct.

16 A. For the steering, well, the -- it was in the
17 down position but it also had been pretty much
18 dismembered so it was no longer intact as an assembly.
19 The pin was down.

20 Q. Right. And did you participate at all in
21 removing the plate and the lock assembly from the coach?

22 A. Yes, I did.

23 Q. And who assisted you with that on the
24 Greyhound side, if anyone?

25 A. I believe they witnessed that. I pretty much
0058

1 took all that loose by myself.

2 Q. Okay. Let's talk about now some testing --
3 actually I want to go back to that inspection. You
4 described for us the testing of the air system that the
5 parties conducted.

6 Do you remember that?

7 A. Yes, I do.

8 Q. Can you describe for me all of the reasons
9 that you believe the air system was not functioning
10 properly and not supplying air to the solenoid valves
11 for the tag axle cylinders?

12 A. Well, based on the inspection and disassembly,
13 the point that -- the T that feeds the hose that feeds
14 these pneumatic solenoid valves was plugged. The hose
15 was plugged and subsequently we found that the valves
16 were inoperative.

17 Q. The solenoid valves?

18 A. The pneumatic solenoid valves were
19 inoperative. They could not make them work electrically
20 even after supplying an outside air source.

21 Q. When you say "they," who is they?

22 A. They would be myself, Virgil and Pete.

23 Q. Okay. Do you know what party Mr. Sullivan was
24 appearing on behalf of?

25 A. He was working for On The Border Freightliner,
0059

1 the company that had installed the transmission in that
2 coach last.

3 Q. Okay. And as you understand the tag axle
4 steering system to work, what do the solenoid valves do?
5 What is their function?

6 A. Well, their function is to command the
7 latching or locking of the caster system and the
8 steering system.

9 Q. Do you have an idea of how long the air system
10 that fed the solenoid valves to the latching and locking
11 cylinders had been plugged or inoperable?

12 A. An exact length of time, it would be pretty
13 much impossible, but I can tell you that based on the
14 condition of the hose it wasn't a recent occurrence.
15 This had been going on for some time. And it would be
16 my estimate that it had been in that condition for
17 possibly as long as a year. This stuff was really

18 plugged and deteriorated.

19 Q. Did you have an opportunity to review some of
20 the driving tests that Greyhound and Americanos
21 conducted in January of this year?

22 A. I did.

23 MS. DORMAN: Glenn, I'm going to cue up
24 the video from the undercarriage folder two. It's GO
25 01005. And if you want to come around you're welcome
0060

1 to.

2 Q. (BY MS. DORMAN) Before we start this video,
3 could you describe for us the position of the latch arm
4 assembly?

5 A. Currently it's in a -- it actually appears to
6 be a bit hyperextended but it's technically in the
7 position for reverse operation.

8 Q. Okay.

9 A. You can see what they call the horn here and
10 you can see what they call the tongue plate, what I
11 would refer to as the latching plate here. Normally
12 this would never be that far extended.

13 Q. Tell us why it would never be that far
14 extended.

15 A. Well, there is a -- I'm going to call it a
16 safety capture part of the design of this mechanism that
17 does not allow the horn even in a failed situation to go
18 past a given point, a design point. And it's missing.
19 It's been cut off of this bus. So this horn, which is
20 the actuating mechanism for caster on the tag axle is
21 beyond where it would ever naturally be even if the
22 mechanism failed completely.

23 Q. Under normal circumstances and as it was
24 originally manufactured?

25 A. As it was originally designed and built.

0061

1 Q. All right. We're going to start the video.
2 There we go.

3 THE REPORTER: I assume you don't want me
4 to write what the video is saying?

5 MS. DORMAN: There are no words.

6 Q. (BY MS. DORMAN) Undercarriage folder two, the
7 DCM file, the GO profile and we're looking at GO 01005.
8 There we go.

9 While I'm trying to get this rebooted, I'm
10 going to show you some photographs.

11 MS. DORMAN: There is a copy for you.

12 (Exhibit 11 marked.)

13 Q. (BY MS. DORMAN) Can you tell us what is
14 depicted in Exhibit 11?

15 A. Exhibit 11 is a new -- would be an exemplar
16 caster mechanism that includes the clevis that's
17 connected to the air cylinder and what they call the
18 horn, which are actually the part that latches in what
19 they call the tongue plate that lays above it.

20 Q. Can you mark or write down "clevis" and "horn"
21 so that we can show the jury when they see this later?

22 A. (Witness complies.)

23 Q. And would you write here in the white space --
24 actually right up here put your initials and the date?

25 A. (Witness complies.) This would be the 29th?

0062

1 Q. Yes. Leap day. And tell us just briefly how
2 this assembly works when the air cylinder is activated
3 for the latch arm assembly.

4 A. When it's activated in the -- into the
5 position to drive in the forward direction, the clevis
6 pulls the axle back. And in doing so, it disengages the
7 latch plate and then when the horn reaches the back of
8 the axle frame, the latch plate will drop down and these
9 two latch points will then index in the plate and that
10 is what holds it against braking because the tendency of
11 braking is to rotate this axle. Any brake force wants
12 to move it, roll it forward or move it backwards.

13 Q. Earlier in the deposition I believe there was
14 a question about latching and unlatching at below 20
15 miles an hour. Does the speed threshold have anything
16 to do with the latching and -- or the latching function
17 of the latch arm assembly?

18 A. That I'm not 100 percent sure on. I believe
19 it does but I would have to defer that to either more
20 investigation on my part or Virgil.

21 Q. The function of this caster mechanism is
22 controlled by the position of the coach in forward or
23 reverse?

24 A. I believe so.

25 Q. And the latch -- I'm sorry, the tag axle

0063

1 locking cylinder is what's activated when the coach is
2 traveling above or below about 20 miles an hour?

3 MS. DORMAN: Objection to form.

4 A. That's right. It's a function of speed.

5 Q. (BY MS. DORMAN) Okay. And so just to get a
6 clean record, describe for us what activates the tag
7 axle lock assembly.

8 A. The steering?

9 Q. Yes.

10 A. That's activated by speed.

11 Q. Okay. And how is the latch arm assembly
12 activated?

13 A. I believe it is operated by the position of
14 the shifter, by the gear that you're in. The range,
15 excuse me.

16 (Exhibit 12 marked.)

17 Q. (BY MS. DORMAN) All right. I'll show you
18 Exhibit 11. I'm sorry. Exhibit 12. We just looked at
19 11. And describe for us what we see in that photograph.

20 A. That picture includes the air cylinder, the
21 clevis and the horn. It's a wider shot. And it also

22 includes the restraining device, the part of the weld
23 that restrains the motion of the horn to prevent
24 excessive movement.

25 Q. Is that the -- the loop or the --
0064

1 A. That's the steel strap that's welded here and
2 then goes around the front of the horn and is anchored
3 to the structure of the axle.

4 Q. Okay. Is Exhibit 12 just a photo taken
5 farther away of what is depicted in Exhibit 11?

6 A. That's correct.

7 Q. Okay. I show you what I'll mark as
8 Exhibit 13.

9 (Exhibit 13 marked.)

10 A. 13 is a top view of what they call a tongue
11 plate or -- I would refer to it as a latch plate -- that
12 when the axle is casted into one position or the
13 other, this plate then restrains the movement of that
14 axle. Limits it.

15 Q. (BY MS. DORMAN) Okay. And the loop or the
16 outer band that you were testifying you saw in
17 Exhibit 12 at the bottom of the page, do you see that in
18 Exhibit 13?

19 A. Yes.

20 Q. And describe the path or the placement of that
21 loop.

22 A. It basically is attached to the structure of
23 the axle. And it goes forward and around the horn part.
24 And in the event of a failure, it would limit the travel
25 of the horn.

0065

1 Q. Okay. And going back to Exhibit 12, is this
2 the cylinder on the right side of the photo?

3 A. Yeah, the round cylindrical object. That is
4 the air cylinder.

5 Q. The shiny silver?

6 A. Yeah.

7 Q. And the loop or the guard that you were
8 testifying about, that comes around at the bottom of the
9 photo and up to the top left?

10 A. Correct. And it goes basically out and around
11 the horn.

12 Q. It almost reminds me, the shape, of the thing
13 that you put around your billiard balls before you --

14 A. True, it is triangular in shape.

15 Q. Yes. And describe for us the appearance of
16 the horns as they come up through these two holes in the
17 tongue plate.

18 A. This view is the top of the tongue plate. And
19 you can see that the cylinder is and the axle is in a
20 forward drive position and the latch plate has set in
21 place to retain -- basically to retain the axle in its
22 design location.

23 Q. And are there any lips or ridges on the horns

24 as they are originally manufactured?

25 A. Yeah. The horn has nice square sharp edges

0066

1 that actually are indexed onto replaceable stops in the
2 tongue plate to give you a good flat solid connection so
3 that it does retain it.

4 Q. And do you see those in Exhibit 11 as well,
5 the closeup picture of the horn?

6 A. Yes.

7 Q. I'm now going to show a photo that I'll mark
8 as Exhibit 14.

9 (Exhibit 14 marked.)

10 Q. (BY MS. DORMAN) And I'll represent to you
11 this is one that Kevin Granite took of the coach that
12 was used for testing that we see in the video. GO
13 01005. His photo number is 6430. Again I've attached
14 it as Exhibit 14.

15 Can you describe for us what is shown in
16 Exhibit 14?

17 A. Well, this would be a tongue plate and horn
18 assembly as viewed from the bottom showing the actual
19 area that would latch onto the tongue plate. And you
20 can see that it's worn in this picture. The extent of
21 the wear is not possible to say right now but you can
22 see that that is worn.

23 Q. What exactly is worn?

24 A. The edge -- the mating edge or latching edge
25 of the horn.

0067

1 Q. The forward horn or the back horn?

2 A. This would be -- this would be the part of the
3 horn furthest forward in the bus.

4 Q. If we call those two things fingers on the
5 horn, the things that come up and latch in the tongue
6 plate, that's the forward finger, is it not?

7 A. That would be an apt description.

8 Q. Okay.

9 (Exhibit 15 marked.)

10 Q. (BY MS. DORMAN) And Exhibit 15, could you
11 describe what is depicted in that photo? And that is
12 Kevin Granite's Photo 6425.

13 A. This is another view from in front of the axle
14 of that same finger on the horn. And you can see --
15 again -- you can see that there is wear there. So these
16 pieces are by no means indicative of what a new or
17 maintained piece would look like.

18 Q. In any of the photos of the test coach, do you
19 see the protective guard or the loop, the triangular
20 piece that we talked about, being part of the original
21 equipment of 102DL3?

22 MR. ROMERO: Objection. Form.

23 A. No, it is not evident in the picture. It's
24 evident that it's gone because it would obstruct the
25 view of the forward horn finger. It's simply not

0068

1 present in the photo.

2 Q. (BY MS. DORMAN) All right. Just for a clean
3 record, tell us what's missing from this latch arm
4 assembly in Exhibit 15.

5 A. The restraint -- I'm going to call it a
6 restraint piece similar to a driveline loop that would
7 stop the forward motion of this axle in the event that
8 the latching mechanism or cylinder completely failed.
9 It would not allow it to move forward in excessive
10 position.

11 (Exhibit 16 marked.)

12 Q. (BY MS. DORMAN) I'm going to show you what
13 I'm marking as Exhibit 16. This is Kevin Granite's
14 Photo 6433. I don't know if I identified 15 but it's
15 6425 just in case I didn't.

16 Exhibit 16 is Photo 6433. What is depicted in
17 that photograph?

18 A. What's depicted here is an additional
19 driveline guard that has been added to this coach to
20 basically extend what they call the horseshoe collar
21 forward to capture more of the driveline.

22 Q. So it looks like the modifications made to
23 this tag axle assembly were to remove the protective
24 guard or loop from in front of the tongue plate and to
25 add a protective loop in the drive shaft area?

0069

1 MR. ROMERO: Objection. Form.

2 A. Based on what I've seen, yes, that's correct.

3 Q. (BY MS. DORMAN) I'm going to try this video
4 again. GO 010005. See if I can get this to play.

5 A. There you go. It's thinking.

6 Q. Okay. I'll let it think. Again, just to
7 refresh our memory, what position is the horn in with
8 the two fingers?

9 A. In this case it's in the position for rearward
10 travel but it's hyperextended in that the guard is
11 missing. And so it appears that this being the rear
12 finger of the horn should actually be up and latched in
13 this plate and it's not. And with the guard or
14 restraint missing, the axle is allowed to pitch forward
15 in excess of its original design.

16 MR. ROMERO: Objection. Nonresponsive.

17 Q. (BY MS. DORMAN) What is the effect of the
18 horn being out of its normal position for rearward
19 travel as depicted in the beginning of GO 01005? What
20 is the effect of that?

21 A. The effect of excessive caster, it would tend
22 to create a dynamic on the wheels where they would want
23 to move.

24 Q. And would that be beyond any normal operation
25 of a coach in a rearward position?

0070

1 A. In this case, yes. What we're seeing here is

2 an axle that has been casted well beyond its design
3 parameters.

4 Q. And when I say "rearward," I mean rearward
5 travel.

6 A. Correct.

7 Q. I'm going to try this one more time and then
8 give up.

9 MS. DORMAN: We can go off the record
10 while I reboot this up again.

11 (Break taken from 11:42 a.m. to 11:48
12 a.m.)

13 MS. DORMAN: Let's go back on.

14 Q. (BY MS. DORMAN) I want to ask you very
15 quickly about -- I'm going to put these in order.
16 Exhibits 11, 12, 13. What model coach, if you know, did
17 those come from? What are those found on?

18 A. That's a good question. I believe these are
19 the DL models, the long coaches. 45-foot coaches with a
20 steering axle.

21 Q. And is this the original type equipment that
22 you would see on a 102DL3 if it were still being made
23 today?

24 A. That's what I would expect to see, yes.

25 Q. And Exhibits 14, 15 and 16, is it your

0071

1 understanding that the Americanos Greyhound test coach
2 is also a 102DL3?

3 A. I believe it is. It's a mate to the subject
4 coach.

5 Q. Okay. And looking back at Exhibit 13, seeing
6 the horn in the two holes, what position of travel is
7 this positioned for?

8 A. For forward travel.

9 Q. And for rearward travel, which photograph
10 shows, if you've got one, shows that configuration?

11 A. We do not.

12 Q. We don't have one with the --

13 A. Not with the tongue plate and the horn
14 latched.

15 Q. If it were to move for the reverse travel,
16 what would the horn do?

17 A. The horn would move forward relative to the
18 bus. And the rear fender of the horn would be latched
19 in the forward latch area of the tongue plate. So when
20 it moves forward, it would -- this would latch into here
21 and the forward latch would actually be hanging free of
22 the tongue plate in front of it.

23 Q. But in no circumstances as designed would both
24 fingers of the horn be outside of the tongue plate,
25 would they?

0072

1 A. That's correct.

2 Q. All right. Let's see if this will go now.

3 A. Why does it want to stop? Can you move it

4 forward?

5 Q. I'm going to try that.

6 A. Or is it even responding?

7 Q. It's not.

8 A. It's not responding. It's refusing to assist.

9 Q. Let me try this. Let me try to open it with
10 another program.

11 A. But it stopped again. It's like it's
12 buffering or something. It's like having a download
13 speed of zero. But as you can see, we'll point out
14 while we have it still up here. You can see when the --
15 now this is the extreme. In the testing of the coach,
16 the horn is free of the clevis. It has been forced
17 forward to where it disengaged the clevis all together.
18 This piece here, this finger in the horn, should be
19 engaged by the clevis and pin. And you can also see
20 that the leading edge of the finger that should be what
21 latches into the tongue plate is -- has no sharp square
22 edge.

23 So it appears that it's worn to the point
24 where it can't capture in the tongue plate and it's now
25 disengaged completely from the cylinder and clevis. And
0073

1 it's in an extreme -- if we hold, just compare -- if we
2 compare Exhibit 13 with the restraint in place, we can
3 see that the forward end of the horn is well forward of
4 any position it should ever be in, even in the event of
5 a failure of the entire latching mechanism. It should
6 stop it far back of where it is now.

7 And this is how the tests were conducted.

8 MS. DORMAN: Let's go off the record real
9 quick. I'm going to get a network cord. I'm thinking I
10 know the problem. Sorry guys.

11 (Break taken from 11:53 a.m. to
12 12:02 p.m.)

13 MS. DORMAN: Let's go back on.

14 Q. (BY MS. DORMAN) Mr. Wright, looking at
15 Exhibit 13, can you write on the tongue latch piece and
16 just label it for us?

17 A. (Witness complies.) I even misspelled tongue.

18 Q. And then also the cylinder. If you'll write
19 "cylinder" on there.

20 A. (Witness complies.)

21 Q. And do your initials and date somewhere --

22 A. (Witness complies.)

23 Q. -- on the photo. All right. I'm going to try
24 to skip it to about 14 because it starts and stops.

25 We're at 13 minutes, almost 14 minutes. What's the
0074

1 position of the horn vis-a-vis the tongue plate?

2 A. Disconnected from the cylinder mechanism and
3 hyperextended forward for -- I'm going to guess -- about
4 4 inches.

5 Q. Okay.

6 A. Is this where they relatch it?

7 Q. I think so. I'm going to let it run for a
8 couple seconds.

9 A. In this condition you can't naturally retract
10 it.

11 Q. Here we go. What is it depicting here?

12 A. If I'm correct, they've put it in reverse with
13 the brakes locked to twist the axle to get it to
14 reengage the yoke.

15 Q. What do we see here in the bottom?

16 A. The drive shaft spinning.

17 Q. In the bottom center of the video?

18 A. Yes. And the vehicle is rolling. You can see
19 the tires move. Right now the brakes aren't applied.
20 When they apply the brakes, it attempts to relatch but
21 it doesn't have enough force to do the deed.

22 Q. So now what are we seeing?

23 A. Now we're rolling forward and the axle is
24 castered forward to where the horn is completely free of
25 the latch plate and disconnected from the cylinder

0075

1 mechanism.

2 Q. And this is the position for what direction of
3 travel?

4 A. Extreme reverse movement.

5 Q. Okay.

6 A. Beyond design specifications.

7 Q. And is it your understanding that one or more
8 of these tests that Greyhound and Americanos did were
9 with this horn hyperextended past the tongue plate?

10 A. Yes.

11 MR. ROMERO: Objection. Form.

12 Q. (BY MS. DORMAN) Did you watch the video that
13 showed the horn hyperextended past the tongue plate when
14 the coach was in motion?

15 A. I believe we did, yes.

16 Q. Looked like someone put up a sign. Did you
17 see what it said?

18 A. It was run Number 10. Something braking.

19 Q. There it is again. I'm going to skip forward
20 to about 28 because I believe they had -- they had it
21 fast idling for quite some time. Here we go. We're at
22 27:45 on the same clip.

23 A. My guess is that they're building air
24 pressure. You hear the engine running but nothing else
25 is going on.

0076

1 Q. And just so we understand what we're looking
2 at, what is the position of the horn?

3 A. The horn is in the same position as before.
4 Disconnected from the cylinder mechanism and
5 hyperextended due to the missing restraint.

6 Q. Okay. And as this unfolds, tell us what we
7 will be seeing here.

8 A. I believe we're going to see a relatching.

9 Q. What direction are they moving?

10 A. That is reverse. And we're in reverse and hit
11 the brakes causing the axle to rotate and forcing it
12 back into the clevis.

13 Q. Forcing what back into the clevis?

14 A. Forcing the horn back.

15 Q. And we're at 29:01. What position is the horn
16 in now?

17 A. Well, it's near -- without seeing the top, it
18 was near the normal reverse position.

19 Q. Okay. Now, we're at 29:16 and what position
20 is it in now?

21 A. They're attempting to put it in the forward
22 drive position, but because the brakes were set they
23 could only move it so far until they release the brakes
24 as you just saw and then it retracted to its normal
25 forward position.

0077

1 Q. About ten seconds ago we saw it go even
2 farther back in the latch plate -- I'm sorry, the tongue
3 latch piece come down. Is that right?

4 A. Correct.

5 MR. ROMERO: Objection. Form.

6 Q. (BY MS. DORMAN) So what did we see a couple
7 seconds ago when the horn moved back?

8 A. Well, we saw the axle rotate when they hit the
9 brakes in reverse which forced it back into the clevis
10 on the cylinder. Then secondarily they operated the
11 cylinder to completely retract it.

12 Q. And now as we see it on 30 minutes,
13 16 seconds, what position is the horn in?

14 A. The horn is in the normal position for forward
15 motion.

16 Q. And are both fingers of the horn inside the
17 holes --

18 A. You truly can't tell. In this picture you
19 can't see the latch parts above the opening so it's hard
20 to tell if they're actually -- I'm going to assume
21 because the latch plate is not damaged and the horn is
22 all the way back that they're at least where they should
23 be whether or not they're actually latched into the
24 plate.

25 Q. And do you know why it is you can't see the

0078

1 top of the horn?

2 A. It could be wear or it could simply be that
3 the plate isn't coming down fully. But that would be
4 something you would have to investigate.

5 Q. Okay.

6 A. To see the condition of the latch mechanism.

7 Q. Okay. Thank you, sir.

8 MS. DORMAN: That's all I have. We'll
9 reserve the rest of our questions for trial.

EXAMINATION

BY MR. ROMERO:

Q. Mr. Wright, earlier in your deposition I asked you if you had reviewed any other things besides your file in preparation for your deposition today and you told me that you had looked at a book or a DDEC book from Allison or was it Caterpillar?

A. No, that's from Detroit Diesel.

Q. About a month before. You didn't mention that you had seen a video.

A. I apologize. That totally slipped my mind. It was not intentional.

Q. And did you also review Exhibits 11, 12, 13, 14, 15 and 16 with Ms. Dorman prior to your deposition?

A. I did.

Q. So you forgot to mention that too?

0079

A. Yes.

Q. Let me ask you this. In Exhibit 11, the clevis and the horn that's shown there, what model bus is that off of?

A. I was told that it was from the -- that it is the same as 102DL3. An exact model I can't tell you.

Q. Okay. What year is the bus -- is that part from?

A. That I do not know.

Q. Who told you the model number?

MS. DORMAN: Object to form.

A. I believe Melissa and I in discussions discussed that.

Q. (BY MR. ROMERO) So Ms. Dorman told you --

A. Yes. 102DL3.

Q. But she told you that this was off of a similar bus?

A. Correct.

MS. DORMAN: Object to form.

Q. (BY MR. ROMERO) When you inspected the bus back in -- what was the date that you gave me?

A. June 30, July 1.

Q. 2010.

MS. DORMAN: Object to form.

Q. (BY MR. ROMERO) Did you inspect the plate and

0080

the tongue plate and the horn and the clevis in that bus?

A. We looked at it.

Q. Did you take pictures of it yourself?

A. No. Photography was done by others.

Q. Okay. Were you asked to render any opinions regarding that?

A. Not at this time.

Q. Not at that time?

A. Not at that time either.

Q. Okay. And have you been asked to render

12 opinions now about this?

13 A. Not at this time.

14 Q. Okay. Now, as I understand it, in Exhibit 11
15 you can't tell me the year or model of that bus?

16 MS. DORMAN: Object to form.

17 A. That's true.

18 Q. (BY MR. ROMERO) Okay. Now, let me ask you
19 about Exhibit 16. Do you have it in front of you?

20 A. I do.

21 Q. Exhibit Number 16, what is that piece that is
22 attached below?

23 A. It appears to be a rolled piece of steel that
24 is being used as a capture that Greyhound is developing
25 for the driveline.

0081

1 Q. Do you think that that is a bad idea?

2 MS. DORMAN: Object to form.

3 A. Do I think it's a bad idea? I can't say that.

4 Q. (BY MR. ROMERO) Do you think it's good to
5 have a capture device to keep the drive shaft from being
6 released and striking other parts of the bus?

7 MS. DORMAN: Objection. Form.

8 A. I do and it does.

9 Q. (BY MR. ROMERO) Now, with regards to Exhibit
10 Number 13, this appears to be a brand-new bus, doesn't
11 it?

12 MS. DORMAN: Object to form.

13 A. It's a brand-new part.

14 Q. (BY MR. ROMERO) Okay. I got you. So this is
15 not even on the bus?

16 A. Correct. As you can see in the pictures,
17 there are some pictures that you haven't seen that show
18 this as an axle assembly on the floor.

19 Q. Okay. I see.

20 A. So this is brand-new. Otherwise you couldn't
21 get this picture. It's outside of the bus.

22 Q. Because we would be looking down from the top
23 and there is no way to get that much distance?

24 A. Unless you pull the floorboards out of the bus
25 and that's no fun.

0082

1 Q. I see what you're saying. Sure. Where the
2 horn appears on Exhibit Number 13, do those teeth extend
3 beyond the tongue or are they level with the tongue?

4 A. I cannot tell you the exact distance. There
5 is a picture that shows that they appear to extend above
6 when latched.

7 Q. But we don't have that one here, do we?

8 A. Don't know. And I'll qualify that by saying
9 it doesn't necessarily have to. It would be an
10 indication that it was fully engaged.

11 Q. All right.

12 A. But there are replaceable -- I'll call it a
13 stop or a latch plate that can be replaced on the tongue

14 plate, that that is the important piece that it engages.
15 Q. Okay. Now, on Exhibit Number 12, is this what
16 we would see from below the bus?
17 A. No. This would be a view from top side, and I
18 would say top passenger side of the bus.
19 Q. Is the tongue assembly missing?
20 A. It's removed so you can see the clevis.
21 Q. So in other words, these holes here are the --
22 A. Are where the tongue attaches via the rubber
23 cushions that provide the tension to hold it in place.
24 Q. Okay. Now, do you know if the model bus that
25 was involved in this accident had this restraining
0083

1 device?
2 MS. DORMAN: Object to form.
3 A. I believe it did.
4 Q. (BY MR. ROMERO) Are you guessing?
5 A. I believe it did.
6 MS. DORMAN: Objection. Form.
7 A. I would have to review photographs to be
8 100 percent sure. It should have that strap in place.
9 Q. (BY MR. ROMERO) It should have that strap?
10 A. Correct.
11 Q. But you're not sure?
12 A. I'm not sure that -- I don't believe I
13 photographed that personally. And I would have to
14 review documents to tell you for sure that that was in
15 place in that bus.
16 Q. Now, the video that we just watched, are you
17 sure that that unit came with that strap?
18 A. Yes. Because if you look at -- do we have a
19 picture here? If you look in the video you can see
20 where the strap -- if you notice on Exhibit 12, that
21 strap is welded into the frame of the axle.
22 Q. Okay.
23 A. And on the video, the remains of the strap are
24 still welded to the inside of the gussets and you can
25 see where it's flush with the gusset. So there is
0084

1 visual evidence that something was there, that it was
2 there and had been removed.
3 Q. Okay. Now, earlier you said that it would --
4 that it went beyond the -- if it became released it
5 would go beyond the specifications as the bus was
6 designed.
7 A. Relative to caster, yes.
8 Q. Okay. Do you know if it became released on
9 any of the tests that were run?
10 MS. DORMAN: Object to form.
11 A. Define "became released."
12 Q. (BY MR. ROMERO) Completely released like we
13 saw on the video.
14 A. Well, we saw it in the video, so yes.
15 Q. But during one of the tests?

16 A. Those were one of the tests.

17 Q. Which test was it?

18 A. I do not know because the matrix of tests are
19 not specifically linked to a video.

20 Q. Okay.

21 A. So it makes it difficult to know was this
22 forward -- I mean, we can see whether it's forward or
23 backwards but as far as the other specifics in the
24 matrix it's hard to tell. I think Melissa is working on
25 getting that squared away.

0085

1 Q. What testing did you do to determine the fact
2 that the caster was engaged in this position might
3 affect the testing?

4 A. Well --

5 MS. DORMAN: Object to form.

6 A. Well, as I understand it, the purpose of these
7 tests are to establish deficiencies in design and if
8 you're going to do that you need to test it as designed.
9 I realize this is a test of the extreme -- failure of
10 everything.

11 This test would have been -- as an example, if
12 a cylinder latching mechanism failed and the restraint
13 failed, that would be a test of what they're doing and
14 the resultant wobble or whatever, autosteer, whatever
15 they were looking to tell. But certainly not a test of
16 that system as designed. And that's where -- to me --
17 where the problem lies. That if you're testing a system
18 as designed it needs to be as designed. It needs to be
19 in good shape as the picture of new parts we saw, not
20 the worn out pieces and missing pieces.

21 Q. Have you ever driven a bus like this when the
22 tag axle assembly became loose?

23 A. No.

24 MS. DORMAN: Object to form.

25 Q. (BY MR. ROMERO) Do you know what -- how the

0086

1 caster would affect the bus?

2 MS. DORMAN: Object to form.

3 A. At higher speeds without the steering latch
4 locked, it would -- you would tend to get some
5 instability in the tracking of those wheels.

6 Q. (BY MR. ROMERO) Okay. Even if it was
7 functioning as designed?

8 A. Possibly.

9 MS. DORMAN: Object to the form.

10 A. I don't have any raw data or factory data on
11 that. I simply know from my experience working with
12 front ends.

13 Q. (BY MR. ROMERO) Because caster does have
14 something to do with steering, doesn't it?

15 A. It does.

16 Q. Okay. And the tag axle, in the event the air
17 was not working to the tag axle assembly, and to the

18 caster -- first of all, the caster is only affected,
19 based upon what you testified to earlier, if the shifter
20 is placed in reverse. Is that right?
21 A. There is -- yeah, there's a command, we'll
22 say, given to allow it to autosteer.
23 Q. And is that command based upon input -- is
24 that command used in conjunction with the auxiliary air
25 tank?

0087

1 A. No. The air is always there. The air supply
2 to the pneumatic cylinders -- pneumatic solenoid valves,
3 is a constant. It's not controlled. The pneumatic
4 control valves decide where the air goes.

5 Q. Okay. But my question is this: If you put it
6 in reverse, is the command to release the caster latch,
7 is that done by air?

8 A. The command is not. It's electropneumatic.
9 So it's an electric command that operates a pneumatic
10 solenoid to function the caster operating cylinder.

11 Q. So that's not dependent on the auxiliary air
12 tank to operate properly?

13 MS. DORMAN: Objection. Form.

14 A. What is not?

15 Q. (BY MR. ROMERO) The caster.

16 A. Yes it is. Without air it's not going to move
17 when it gets a command.

18 Q. Was the air blocked to the caster?

19 MS. DORMAN: Object to form.

20 A. The air was blocked and severely restricted in
21 two areas prior to the electric pneumatic solenoid
22 valves.

23 Q. (BY MR. ROMERO) For both the caster and the
24 tag axle?

25 A. It's the same hose.

0088

1 MS. DORMAN: Objection. Form.

2 Q. (BY MR. ROMERO) Same hose?

3 A. Same hose.

4 Q. If the caster latch and the tag axle lock are
5 not getting air, what position are they in, if you know?

6 MS. DORMAN: Object to form.

7 A. Well, the caster would be in whatever position
8 it was last set in. If you can't move the cylinder, the
9 tongue plate determines which position it's being held
10 in.

11 Q. (BY MR. ROMERO) Okay.

12 A. Now, it's very possible with no air in the
13 system that if it were in the reverse position and you
14 backed up and hit the brakes, that the axle would force
15 the cylinder rearward and it could latch in the forward
16 position because there is no control anymore. If that
17 makes sense.

18 Q. Okay. Number 16, do you know where that
19 picture came from?

20 A. I was told that it was taken by Mr. Granite,
21 one of Melissa's experts, of the test -- of the subject
22 test vehicle.

23 THE WITNESS: And these pictures are
24 already in evidence in another --

25 MS. DORMAN: Don't worry about that.

0089

1 Q. (BY MR. ROMERO) And the tag lock assembly,
2 what position would that be in? I'm sorry if I missed
3 your explanation.

4 MS. DORMAN: Object to form.

5 Q. (BY MR. ROMERO) The caster would be in the
6 last position that it was in? If it wasn't getting air,
7 it would remain in the last position that it was used
8 in, right?

9 MS. DORMAN: Object to form.

10 A. That would be -- that would be correct. But
11 I'm going to throw in a caveat. If there was no air in
12 the cylinder and you were in the reverse position, which
13 is castered forward relative to the bus, when you backed
14 up and hit the brakes the axle might roll back and latch
15 then in the forward drive position because there's
16 nothing to restrict that movement. As you saw in the
17 video you might get that same effect. Initially it
18 would be wherever it was, but subsequently it could be
19 latched in the forward position just due to the braking
20 action in reverse.

21 Q. (BY MR. ROMERO) And so then if it was never
22 getting any air, when you put it in reverse on
23 subsequent occasions it would never come out of -- it
24 would never come out of the forward position?

25 MS. DORMAN: Object to form.

0090

1 A. Correct. It would not release from the
2 forward drive position.

3 Q. (BY MR. ROMERO) So for backing purposes it
4 would not work or for low speed turns it would not work
5 but it would be locked in the drive position at all
6 times?

7 MS. DORMAN: Object to form.

8 A. In essence with no air it would -- it's --
9 that's almost like all of the above or -- you not only
10 would not get caster but you wouldn't get steering
11 because the steering latch would theoretically be
12 latched and you would simply scrub the tires.

13 Q. (BY MR. ROMERO) Now, earlier you were also
14 asked a question regarding the caster lock assembly.
15 And you mentioned that you had taken that off the bus
16 yourself.

17 MS. DORMAN: Objection. Form.

18 A. The steering lock.

19 Q. (BY MR. ROMERO) The steering lock you took
20 off. What about the caster lock?

21 A. I believe I removed that as well.

22 Q. What position was it in or was it damaged also
23 in the wreck?

24 A. It was actually -- if memory serves me, the
25 caster lock had been dislodged and was no longer in
0091

1 its -- on its track -- if you look at Exhibit 15, you
2 can see that the -- there is a pin running through the
3 clevis. Can you see that part?

4 Q. Sure.

5 A. That's basically a roller, a pin and roller,
6 that rides on these ramps above it to lift the plate out
7 of the way when you make a change. These were all
8 shifted over to the side so they were dislodged.

9 Q. Okay. Was the horn still in the tongue
10 assembly when you took that apart --

11 MS. DORMAN: Object to form.

12 Q. (BY MR. ROMERO) -- in the subject bus?

13 A. Yes, it was still there. It's weldment was on
14 the axle so it would have taken a whole lot more force
15 to tear it off.

16 Q. It was not fully extended like we see in this
17 video?

18 A. Hyperextended?

19 Q. Yes.

20 A. No.

21 Q. And I'm glad you reworded the question for me.
22 So it was not hyperextended when you saw it?

23 A. No, not to my recollection it was not.

24 Q. And when you checked that bus, do you recall
25 seeing a restraint device that we've talked about in --
0092

1 I guess it's 13 and 12.

2 A. And I'm going to defer until I can review some
3 photos because at that time that wasn't something we
4 were specifically looking at. Nothing was out of place
5 so to speak. I mean, nothing was torn loose. So I
6 would have to refer to photographs --

7 Q. Okay.

8 A. -- to tell you.

9 Q. Okay. All right.

10 MR. ROMERO: Thank you, Mr. Wright.
11 (Exhibit 17 marked.)

12 EXAMINATION

13 BY MS. DORMAN:

14 Q. I'm going to show you Exhibit 17. This is
15 Photograph 242 from Kevin Granite of the subject coach.
16 And I'll just show you on the computer. Tell us what
17 number that is up at the top.

18 A. The number of that is 0242.

19 Q. Okay. What does it depict?

20 A. It depicts the tag axle in the position for
21 rearward travel with the restraint in place.

22 Q. All right. And I'll represent to you that
23 this is a photo of the subject coach taken by Kevin

24 Granite.

25 A. Okay.

0093

1 Q. And do you see the restraining loop that goes
2 around the tongue plate assembly?

3 A. Without question.

4 Q. Okay. And I gave you the original exhibit and
5 showed him the photo. So I want to make sure --

6 MR. ROMERO: I'm glad you did. I would
7 have kept it.

8 Q. (BY MS. DORMAN) So does that clarify whether
9 or not this was -- this loop around the tongue plate was
10 originally installed on the 102DL3?

11 A. Without question. It's there.

12 Q. All right.

13 MS. DORMAN: That's all I have. Thank
14 you, sir.

15 MR. ROMERO: That's all I have too, Mr.
16 Wright. Thank you.

17 - - - - -

18 (Off the record at 12:33 p.m.)

19

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0094

1 CHANGES AND SIGNATURE

2 PAGE LINE CHANGE REASON

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1 I, GREGORY WRIGHT, have read the foregoing
2 deposition and hereby affix my signature that same is
3 true and correct, except as noted above.
4

5 _____
6 GREGORY WRIGHT
7

8 THE STATE OF _____)
9 COUNTY OF _____)

10 Before me, _____, on
11 this day personally appeared GREGORY WRIGHT, known to me
12 (or proved to me under oath or through
13 _____) (description of identity
14 card or other document) to be the person whose name is
15 subscribed to the foregoing instrument and acknowledged
16 to me that they executed the same for the purposes and
17 consideration therein expressed.

18 Given under my hand and seal of office this
19 _____ day of _____, _____.
20
21

22 _____
23 NOTARY PUBLIC IN AND FOR
24 THE STATE OF _____
25 COMMISSION EXPIRES: _____
26

0096

1 CAUSE NO. 2010-03-1717-C
2

3 DANIEL CAMPOS, ET AL) IN THE DISTRICT COURT
4)
5 Plaintiffs,)
6)
7 VS.) 197TH JUDICIAL DISTRICT
8)
9 AMERICANOS, U.S.A.,)
10 L.L.C., ET AL)
11)
12 Defendants.) CAMERON COUNTY, TEXAS

13 REPORTER'S CERTIFICATION
14 DEPOSITION OF GREGORY WRIGHT

15 February 29, 2012

16 I, Julie I. Upton, Certified Shorthand Reporter in

12 and for the State of Texas, hereby certify to the
13 following:

14 That the witness, GREGORY WRIGHT, was duly sworn by
15 the officer and that the transcript of the oral
16 deposition is a true record of the testimony given by
17 the witness;

18 That the deposition transcript was submitted on
19 _____ to the witness or to the attorney
20 for the witness for examination, signature and return to
21 me by _____;

22 That the amount of time used by each party at the
23 deposition is as follows:

24 MR. ERIC GREEN.....00 HOUR(S):00 MINUTE(S)

25 MR. GLENN ROMERO.....01 HOUR(S):38 MINUTE(S)

0097

1 MS. MELISSA DORMAN.....00 HOUR(S):45 MINUTE(S)

2 That pursuant to information given to the deposition
3 officer at the time said testimony was taken, the
4 following includes counsel for all parties of record:

5 FOR THE PLAINTIFFS EFRAIN DOMINGUEZ MANNIQUEZ LEOSARDA
RAMON VALENZUELA:

6

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16

FOR THE DEFENDANTS MOTOR COACH INDUSTRIES, INC. AND MCI
17 SERVICE PARTS, INC.:

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22

23 That \$_____ is the deposition officer's charges
24 to the Defendant Americanos, U.S.A., L.L.C., for
25 preparing the original deposition transcript and any

0098

1 copies of exhibits;

2 I further certify that I am neither counsel for,
3 related to, nor employed by any of the parties or
4 attorneys in the action in which this proceeding was
5 taken, and further that I am not financially or
6 otherwise interested in the outcome of the action.

7 Certified to by me this _____ of _____, 2012.

8
9
10 _____
11 Julie I. Upton

12 Texas CSR No. 2544

13 Expiration Date: December 31, 2012

14 Firm Registration No: 60

15 Compex Legal Services, Inc.

16 11811 North Freeway, Suite 500

17 Houston, Texas 77060

18 (800) 969-6424
19
20
21
22
23
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25
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1 FURTHER CERTIFICATION UNDER RULE 203 TRCP

2 The original deposition was/was not returned to the
3 deposition officer on _____;

4 If returned, the attached Changes and Signature page
5 contains any changes and the reasons therefor;

6 If returned, the original deposition was delivered
7 to _____, Custodial Attorney;

8 That \$_____ is the deposition officer's charges
9 to the Defendant Americanos, U.S.A., L.L.C., for
10 preparing the original deposition transcript and any
11 copies of exhibits;

12 That the deposition was delivered in accordance with
13 Rule 203.3, and that a copy of this certificate was
14 served on all parties shown herein on and filed with the
15 Clerk.

16 Certified to by me this _____ day of
17 _____, 2012.

18
19 _____
20 JULIE I. UPTON

21 Texas CSR No. 2544

Expiration Date: December 31, 2012

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Houston, Texas 77060
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PE12-007

MCI

4-27-2012

Response 9

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1 STATE OF TEXAS
2 IN THE DISTRICT COURT OF CAMERON COUNTY, TEXAS
3 197TH JUDICIAL DISTRICT
4 DANIEL CAMPOS, ET AL.,)
 Plaintiffs,)
5) CAUSE NO.
)2010-03-001717-C
6 DENISE ALVARADO, INDIVIDUALLY AND)
 AS NEXT FRIEND FOR EDWARD GUZMAN,)
7 JR.; DEBORAH CHAVEZ; NOE ESPINOZA;)
 ADRIAN LOPEZ; EFRAIN DOMINGUEZ)
8 MANRIQUEZ AND LEOGARDA RAMONA)
 VALENZUELA HERNANDEZ; AND SANDRA)
9 VALDEZ; AND STEPHANIE LOHR, AS NEXT)
 FRIEND FOR ETHAN MUNOZ AND SAM)
10 MUNOZ, MINOR CHILDREN,)
 Plaintiffs/Intervenors,)
11)
 -vs-)
12)
 AMERICANOS U.S.A, L.L.C. ET AL.,)
13 Defendants,)

14
15 The Videotaped Deposition of LAWRENCE YOHE
16 Date: Monday, September 19th, 2011
17 Time: 2:04 p.m.
18 Place: DoubleTree Hotel
 123 North St. Joseph Street
19 South Bend, Indiana
20
 Called as a witness by Motor Coach
21 Industries, Inc., and MCI Service Parts, Inc.,
 in accordance with the Texas Rules of Civil
22 Procedure pursuant to Notice.
23
24 Before Dianna L. Mead, Court Reporter
 Notary Public, St. Joseph County, Indiana

0002

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On behalf of the Defendant,
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10 ALSO PRESENT:
11 Mr. Edward E. Weiss, Videographer
12
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I N D E X
THE DEPOSITION OF
LAWRENCE YOHE

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0006

1 VIDEOGRAPHER: Good afternoon.
2 This is the Tape No. 1 of the
3 beginning of the video deposition of
4 Larry Yohe. Taken in the matter of
5 Daniel Campos, et al. versus
6 Americanos, U.S.A. Pending in the
7 District Court of Cameron County,
8 Texas. Cause No. 2010-03-001717-C,
9 as in Charlie.

10 I'm the videographer,
11 Edward Weiss. The court reporter is
12 Dianna Mead. And we are
13 representing Worldwide Reporting.

14 And the deposition is taking
15 place at the South Bend DoubleTree
16 Hotel on St. Joseph Street in South
17 Bend, Indiana. Today's date is
18 9-19. And the time is 2:04.

19 Will the attorneys please
20 identify themselves.

21 MS. DORMAN: Melissa Dorman for
22 Defendants Motor Coach Industries
23 and MCI Service Parts.

24 MR. HILL: Justin Hill on
25 behalf of Campos, Dominguez, Medina,

0007

1 and Gibson Plaintiffs.

2 MR. NEVÁREZ: Poncho Nevárez on
3 behalf Santiago, Perez, and Romero
4 Plaintiffs.

5 MS. RODRIGUEZ: Tamara
6 Rodriguez for Irma Morado, Greyhound
7 Lines, Inc., and Americanos, U.S.A.,
8 L.L.C.

9 MS. BUNTZ: Jennifer Buntz for
10 Arvinmeritor.

11 VIDEOGRAPHER: What did she

12 say?
13 MS. DORMAN: Jennifer Buntz.
14 VIDEOGRAPHER: Oh, okay. And
15 will the court reporter please swear
16 the witness in.
17 LAWRENCE YOHE
18 called as a witness by the Motor Coach
19 Industries, Inc., and MCI Service Parts, Inc., ,
20 having been first duly sworn, was examined and
21 testified as follows:
22 DIRECT EXAMINATION
23 BY MS. DORMAN:
24 Q Good afternoon, Mr. Yohe. My name is
25 Melissa Dorman. We've met at a couple different
0008
1 inspections in this case; correct?
2 A That is correct.
3 Q I assume you've been deposed before.
4 A Never like this.
5 Q Okay. Well, what does that mean?
6 A Never in a civil deposition.
7 Q Okay. You have given testimony in connection with
8 your role as an NTSB investigator; correct?
9 A That is correct.
10 Q In any other circumstances, have you given sworn
11 testimony?
12 A When I was in the State Police in Pennsylvania.
13 (Exhibit 1 marked for identification.)
14 BY MS. DORMAN:
15 Q Okay. I'm going to attach as Exhibit 1 your
16 resume. And hand that to you and make sure that's
17 a current copy, if you'll take a look.
18 A It is.
19 Q All right. It looks like you have a BA in
20 sociology from Desquane University?
21 A Yes.
22 Q And you have some military experience. And as far
23 as professional occupations are concerned, can you
24 describe what you've done professionally starting
25 with your State Police work?
0009
1 A Well, I -- I was a State Trooper for 11 years. And
2 during that time, I -- I did different things. But
3 the majority of it was spent on traffic and
4 criminal investigation, traffic enforcement,
5 traffic accidents, and criminal investigation. I
6 spent nine months on minor recruitment.
7 Q Were the traffic accidents within the city or were
8 they interstate or how would you characterize that?
9 A They weren't interstate. Some of them were four
10 lane highway.
11 Q Okay.
12 A But they were not -- there were some four lane
13 highways that were constructed like an interstate,

14 but they were basically count -- rural roads, uh
15 uh, township roads, and in some smaller -- smaller
16 towns.

17 Q Did you ever investigate an accident involving a
18 rollover of a motor coach when you were employed by
19 the State Police?

20 A I did not.

21 Q After your service of 11 years with the State
22 Police, what did you do next?

23 A Well, again, during that time with the State
24 Police, I was also -- the last five years, I was a
25 motor coach operator for a company out of
0010

1 Pittsburgh.

2 Q Okay.

3 A Running both charter and scheduled service.

4 Q What was the -- sorry to speak over you.
5 What was the name of that company?

6 A Lincoln Coach Lines.

7 Q They operated inner city or interstate coaches?

8 A They -- they had interstate authority. They had
9 like 40 mile -- 40 or 50 mile commuter runs around
10 Pittsburgh, a couple of different cities around
11 Pittsburgh.

12 Q As a --

13 A And -- but I was primarily -- it was scheduled
14 service and charter -- charter services. Charters
15 could go anywhere, but because I was part-time and
16 working in the State Police, I was limited mostly
17 to where I could go, because --

18 Q Because you had to be elsewhere?

19 A Right. I didn't take any trips across the country.

20 Q I see. What was the longest haul you would run
21 when you worked with Lincoln Coach Lines?

22 A Probably the -- I had couple trips to Knoxville, to
23 the world's fair in Nashville, Toronto, New York,
24 Boston.

25 Q Couple --
0011

1 A Boston area. 600 miles.

2 Q Okay.

3 A I would say one way 600 miles.

4 Q All right. During the time you were a motor coach
5 driver, did you ever have a driveline failure?

6 A I did not.

7 Q Did you have to file out inspection forms for the
8 coach before you would start a run?

9 A Generally they were completed at the -- at the end.
10 But yes, we did pre-trip inspections.

11 Q The post-trip inspections are required by Federal
12 Law; correct?

13 A Right.

14 Q Are you familiar with the Federal Motor Carrier
15 Safety Regulations?

16 A Well, that's quite a book. I -- I -- I have some
17 familiarity with it.

18 Q Okay.

19 A I've used it both then as a bus driver, but also in
20 the NT -- especially in the NTSB. So do I know
21 every regulation, no. Am I familiar with the book,
22 in general, yes.

23 Q Would you consider yourself to be an expert on the
24 Federal Motor Carrier Safety Regulations?

25 A Well, I guess -- I guess you'd have to define

0012

1 expert. If expert means more than the average guy
2 on the street, I'd say absolutely, yes. Are there
3 people that specialize in that, that know a whole
4 lot more than -- know it a whole lot better than
5 me, I don't fall into their category.

6 Q Have you ever been responsible for enforcing those
7 regulations?

8 A Well, when I was in the State Police, we could
9 enforce them, but it was very seldom done. We
10 usually used the State Statute, the state Statutes.
11 So -- so I didn't enforce them per se.

12 Q When -- when you talk about enforcement, would
13 that -- who would be the subject of the
14 enforcement?

15 A Who would be the subject?

16 Q Yes.

17 A Like maybe a -- a trucking company, a truck
18 company. We didn't do -- we didn't do -- back in
19 those days, we didn't like do any terminal
20 inspections. As a matter of fact, the mix for the
21 motor carrier program was just getting started a
22 couple years before I left. And so back in --
23 we're talking about back in the late '70s and early
24 '80s, so you know, we didn't do a whole lot of that
25 back then.

0013

1 Q Who did the motor -- Federal Motor Carrier Safety
2 Regulations apply to?

3 A Who do they apply to?

4 Q Yes, sir.

5 A They applied to a lot of people. They apply to
6 every driver of a commercial vehicle. They apply
7 to all bus companies, truck companies, haulers of
8 hazardous material. Myself, there's -- there's
9 parts of them that apply to me as both a CDL holder
10 and a bus owner, there's parts of them that apply
11 to me, so.

12 But basically they apply to the drivers and --
13 and for hire carriers generally. Applies to
14 private carriers too. There's certain regulations
15 that apply to private carriers.

16 Q Are you aware of any instance where any enforcement
17 agency has tried to enforce the regulations against

18 the manufacturer of a coach?
19 A Nothing comes to mind. There are -- nothing comes
20 to mind under the Motor Carrier Regulations. The
21 NHTSA regulations, that's something different.

22 Q Certainly.

23 A But the Federal Motor Carrier Regulations you're
24 asking me if I know if there have been enforcements
25 of the manufacturer, I -- I don't know of any

0014

1 instances.

2 Q Are you going to offer any opinions about the
3 Federal Motor Carrier Safety Regulations in this
4 case?

5 A I can't think of anything.

6 Q Okay. You certainly haven't been asked to offer
7 any opinions today, have you, about the Federal
8 Motor Carrier Safety Regulations?

9 A Indirectly, who they apply to.

10 Q By me. But what about the your counsel, the
11 counsel that hired you to testify in this case?

12 A No, I can't think of anything. As matter of fact,
13 in my work thus far I don't recall ever even
14 referring to it for anything.

15 Q Okay. I see that you worked for a company called
16 Grace Coach Lines in Lafayette, Colorado?

17 A Yes.

18 Q That was fairly recently, 2009 to 2010. Tell me
19 what that coach lines does, where do they operate,
20 and what do they do?

21 A Well, actually I've -- I've done work for them for
22 probably ten years. But it's -- they run missions.
23 Their main thing is they run missions down in New
24 Mexico. So most of that was volunteer work. But
25 I -- I did work for them -- after I retired from

0015

1 the NTSB, I did work for them for compensation for
2 probably a year, at least a year.

3 Q In what capacity?

4 A As a driver.

5 Q Okay. And what sort of -- what -- what routes did
6 you run?

7 A It was all charter work. Ski trips up into the
8 mountains. Church trips going to camps. Senior
9 citizens going out for day trips. But it was
10 basically day -- day trips.

11 And during that time, I also did -- you know,
12 like I said, they ran buses down into Mexico, and I
13 would volunteer that part of it. But basically
14 one-day trips. A lot -- a lot of it up in the
15 mountains.

16 Q How did you get -- get started as a bus driver?

17 A Well, I wrote about an eight page article for Bus
18 Ride, and it tells the whole story -- for Motor --
19 not Bus Ride, Bus Trader, last year. They asked me

20 to write an article on my Continental Trailways
21 Eagle, and I told that whole story. So it's rather
22 long, but.

23 Q Give me the Reader's Digest version.

24 A The Reader's Digest version, just as a kid, I was
25 probably 16 years old, and I rode the bus one day
0016

1 and I heard that engine, and I just always -- I've
2 always liked transportation.

3 Q Okay.

4 A Bus, train, I've soloed airplanes alone, I'm not a
5 pilot. But I -- I enjoy it. And it was one form
6 of transportation that I could actually own one.
7 It's pretty hard to own a railroad. And it's more
8 expensive to own an airplane. But I could actually
9 own one.

10 I actually started up a commuter service
11 between Ligonier, Pennsylvania and Pittsburgh
12 through Lincoln Coach Lines. I've traveled a lot
13 of buses through my time in college and the
14 military, some since then. But I've just -- it's
15 just one of those things that some people,
16 something happens, somebody's interested in, and
17 other people aren't, so. Most people aren't. So
18 that's kind of my, uh --

19 Q Okay. How did you --

20 A That's the short version.

21 Q How did you get involved with the NTSB?

22 A I -- we -- when I was in the State Police, we had
23 what we call a ten-year limited retirement. And I
24 guess every since I was in the military, you know,
25 I just always knew I was going to move somewhere
0017

1 on, and I started hunting for a Federal job. And
2 somebody gave me a copy of this Federal --
3 Federal -- I can't remember the name of it. It has
4 all the Federal agencies.

5 And I wrote the NTSB. They wrote me back, and
6 said we have positions in New York and Seattle
7 available. And that was a no-brainer, I like to go
8 to New York, but I didn't want to live there. And
9 so that's really how that -- how that happened.

10 I applied for it, and -- you know, I applied
11 for it, and I was chosen, one -- one out of 40
12 applicants. At least that's what my boss told me.
13 Maybe he was trying to make me feel good or
14 something.

15 Q Okay.

16 A That's the way that happened.

17 Q How long did you work for NTSB?

18 A Almost 25 years.

19 Q And I understand you were an accident investigator?

20 A I was.

21 Q And what did that entail?

22 A Wow. Different things at different times. But I
23 would say for the first five years, the majority of
24 my work was, you would go out by yourself on
25 several investigations. I worked for a year and a
0018

1 half on nothing but seat belt type investigations
2 where we would use a computerized program to
3 determine forces.

4 I worked on several major trucks -- truck
5 studies, like -- like they would last about a year.
6 And you would go out on -- they would meet a
7 certain criteria, one of them had to do with
8 fatigue, one had to do with just simply a driver
9 killed. And then we had -- we had exploratory -- a
10 lot of exploratory investigations.

11 And then I would say the last dozen years
12 maybe, or even closer to 15 years, the majority of
13 the accidents I worked on, I went out with major
14 teams, and I was considered the vehicle specialist.

15 Q For those early years where you were the solo
16 investigator --

17 A Uh-hum.

18 Q -- did those involve commercial vehicle accidents?

19 A I would say after the first year and a half, the
20 majority did. After the first year and a half.
21 The first year and a half, you know, I worked a
22 few -- a handful of commercial vehicle accidents.
23 But it was a lot of cars, vans, you know, pickup
24 trucks.

25 But then after that -- I would say after the
0019

1 first year and a half, probably 90 percent of the
2 accidents I went on involved a commercial vehicle.

3 Q I understand you were involved in the Westport
4 investigation?

5 A That is correct.

6 Q All right. And I saw in your file that you
7 e-mailed the -- some of the reports to someone in
8 this case. Do you remember doing that?

9 A This is what I did. Tamara Rodriguez, the attorney
10 who asked me to come on this case said I need all
11 your e-mails. So I went to my Americanos' file, I
12 highlighted them all, right clicked, put her
13 address in, and hit send.

14 Q Okay.

15 A And I was looking at that Westport case this
16 morning, and really it shouldn't have been in
17 there. I used it. The only thing I used out of
18 the Westport case was just to -- to -- some of the
19 descriptions of the MCI bus dimensions mainly.

20 Q Okay.

21 A Mainly for dimensions of the bus, they were in
22 there.

23 Q I see. It looks like the e-mail was from you to

24 Frank Brown, Westport Vehicle Factual, and Westport
25 Vehicle Analysis?

0020

1 A The analysis, I have to tell you those are
2 considered confidential documents, I should have
3 never have mailed it. I kind of sent it partly for
4 educational reasons for Frank.

5 But the NTSB would be very displeased with me
6 if I knew I -- if they thought I was handing out
7 analysis reports in the public domain, so.

8 Q Okay.

9 A But that's what happened.

10 Q I see.

11 MS. RODRIGUEZ: Can we then
12 agree, by agreement that he can have
13 that document back if he's not using
14 it in his opinions in this case?

15 MS. DORMAN: We won't produce
16 the documents.

17 MS. RODRIGUEZ: The e-mail?

18 MS. DORMAN: I'm going to
19 attach it as an exhibit, Exhibit 3,
20 because it's communication to
21 Mr. Brown, so. There's no
22 attachment to it, so.

23 (Exhibits 2 and 3 marked for
24 identification.)
25

0021

1 BY MS. DORMAN:

2 Q After --

3 MS. RODRIGUEZ: Are you saying
4 you didn't get Mr. Yohe's e-mails?

5 MS. DORMAN: We didn't get any
6 of his attachments.

7 MS. RODRIGUEZ: Attachments,
8 okay.

9 BY MS. DORMAN:

10 Q After --

11 THE WITNESS: Excuse me. If --
12 if --

13 MS. RODRIGUEZ: Mr. Yohe.

14 THE WITNESS: Okay.

15 MS. RODRIGUEZ: What got
16 produced were are your e-mails. And
17 I guess if you forward, the
18 attachments don't necessarily
19 forward as well.

20 MS. DORMAN: So we don't have
21 them.

22 MS. RODRIGUEZ: So we printed
23 your e-mails, but we didn't have the
24 attachments.

25 So what you're concerned about

0022

1 didn't get produced, because
2 according to what they're saying,
3 none of your attachments came with
4 your e-mails.

5 THE WITNESS: Well, let me --
6 if I could clarify this, I went
7 through every one of those e-mails
8 that had attachments, and I took the
9 attachments, and I put it on the
10 hard drive.

11 MS. DORMAN: Oh, okay.

12 THE WITNESS: The only case was
13 the Westport, and I deleted
14 everything, except one -- a couple
15 of paragraphs where I describe
16 the -- the 102DL3 motor coach.

17 So that should be -- that
18 should be in that -- on that -- that
19 jump drive or flash drive that I --

20 MS. DORMAN: Oh, okay.

21 THE WITNESS: -- gave you.

22 MS. RODRIGUEZ: And I don't
23 have those.

24 MS. DORMAN: Okay.

25 THE WITNESS: But I did take --

0023

1 MS. RODRIGUEZ: He's obviously
2 producing them today.

3 THE WITNESS: Like I said,
4 every one of those attachments, I
5 put it on the jump drive.

6 MS. DORMAN: Okay. I'll let
7 Mr. Hill run through those.

8 THE WITNESS: Okay.

9 BY MS. DORMAN:

10 Q When did you retire or leave -- did you retire from
11 the NTSB?

12 A I retired. I retired.

13 Q Okay. What year was that?

14 A I retired -- let's see, this is 2011. 2009, I
15 believe it was the end of April. I believe it was
16 April 28th.

17 Q And from there it looks like you went to ABC?

18 A Well, that's not -- that wasn't till more than a
19 year later.

20 Q Okay. You were working with Grace Coach Lines in
21 Colorado?

22 A I was. I was working for Grace Coach Lines. I was
23 using my own bus for various charitable things, you
24 might say.

25 Q Okay. Why did you retire from the NTSB?

0024

1 A Why did I retire from the NTSB. Well, I was tired.

2 But to answer that question honestly and as fully,
3 there was some internal political things. We had a
4 boss came in that would try to undermine me. And
5 it's-- it's like one day, I just said, life is
6 short.

7 Q Absolutely.

8 A And I said life is short. And I was eligible to
9 retire. As a matter of fact, I'd always looked
10 forward to retiring at 62. And so I thought, you
11 know, I'm going to take this off my shoulders. And
12 so -- so I left without ill feelings toward
13 anybody. They had a nice retirement party for me,
14 a couple different places. And -- but that's why.

15 That's I was -- don't misunderstand me, I mean,
16 I was thinking about leaving, you know, some time
17 within -- I was at the place where I had the
18 freedom to leave. And it just -- I had other
19 things that I thought I wanted to do. And -- and
20 so I put in my retirement papers, and haven't
21 looked back.

22 Q Other than the Westport crash, what other motor
23 coach crashes or accidents did you investigate as a
24 member of the NTSB investigation team?

25 A The first one I did was back in the -- probably
0025

1 about 1985. A -- one of the Trailways affiliates
2 out of Portland, I had a part in that. And then I
3 did a -- I worked on -- let's see, I've worked on
4 motor coach accidents, oh, my goodness, you know,
5 there's -- there's quite a few of them.

6 I worked on a Greyhound accident in Arizona in
7 19 -- I believe it was 1987 or '88. I worked on a
8 Sierra Trailways accident in Canon City, Colorado.
9 That was -- I believe that was December of 1999. I
10 worked on a power steering failure accident in 1988
11 in Augusta, Maine, just outside of Augusta, Maine.

12 I worked on Morrilton, Arkansas, a -- I believe
13 that was a 96A coach -- a 96A coach. I worked on a
14 runaway bus accident in Sante Fe, New Mexico, and
15 that would have been around 1999 or 2000 -- 1990 or
16 2000.

17 I worked on one in Morrill -- did I say
18 Morrilton?

19 Q Yes, Arkansas.

20 A Yeah, that's not Morrilton. I can't remember the
21 name of the town in Arkansas. That was a -- it was
22 like near West Memphis, just north of West Memphis.
23 That is not the name -- name of it.

24 It was a Morrilton, Arkansas accident that I
25 did with an MC7. The one in -- in -- I said near
0026

1 West Memphis, that was like a 15 fatality accident.
2 And I'm trying to think of the -- I can't think of
3 the name of the town right now.

4 Let's see. Uh, let's see. I worked on the New
5 Orleans Mother's Day crash of, I believe it was
6 around 2000, a 23 fatality accident there.
7 Involved in 45-foot motor coach.

8 There are others, I can't think of them all
9 right now.

10 Q I understand.

11 A But there are -- there are other ones that I've
12 worked on. And numerous school bus accidents.

13 Q Other than Westport, what comes to mind, if any,
14 involving a 102DL3 that you've investigated?

15 A Where I actually went out on scene -- where I
16 actually went out on scene, you know, I can't say
17 there haven't been more. I mean I usually do
18 remember them all in number. I just -- it just
19 none of them come to mind right now, you know.

20 The -- you know, most of the accidents we did
21 were charter buses. And -- and the 102DL3 is not a
22 popular charter bus, it's a great -- it's a
23 scheduled inner city bus. That's -- that's all
24 that comes to mind right now is -- that I actually
25 went out and did a report.

0027

1 I've referenced other accidents, but -- and
2 I've made up limited reports. What we call a
3 telephone report, we get a police -- we call it a
4 limited investigation. We get a police report, and
5 maybe get some photos -- some photos, and we view
6 those documents, and say, yeah, this happened, it
7 looks like it fits this issue. I've done that a
8 couple of times.

9 But as far as the -- as far as actually
10 investigating a 102DL3, I believe that's the only
11 one.

12 Q Other than this case, have you ever specifically
13 investigated a case involving the steering capacity
14 or effect of a steerable tag axle?

15 A Where that was an issue, or that the bus was
16 equipped?

17 Q Where it was an issue?

18 A No. No.

19 Q Do you know how long MCI has been making coaches
20 with steerable tag axles?

21 A I don't think any of the 40 footers had it. So I'm
22 going to say '92, '93. When the DL3 came out, I
23 believe that's the first I heard about it. You
24 know Setra makes it -- makes it. But that would be
25 my guess.

0028

1 Q Do you know if Setra is a self-steering steerable
2 tag or a forced steering?

3 A It's a different system, it's a ZS system that's
4 somehow connected -- I don't know whether it's
5 electronically or mechanically to the -- to the --

6 to the steering wheel, so. But they do have one.
7 I've driven them, and --
8 Q Have you studied them?
9 A Not really studied them. I've felt the effects of
10 them.
11 Q Did you study one in connection with your work on
12 this case?
13 A With this case?
14 Q Yes, sir.
15 A No. No.
16 Q I'm going to hand you what I've marked as your
17 report, Exhibit 2. And if you'll just take a look
18 and make sure that comports with what you have in
19 your records as your report.
20 A I would say it is.
21 Q All right. Before we get into your report -- you
22 may hang onto that, sir.
23 A Okay.
24 Q Or if you want to -- if you've got yours in front
25 of you, your copy. I think your folders are over
0029
1 to your left. There it is.
2 A Okay.
3 Q Are both copies the same in your file, by the way?
4 A I believe they are. I don't know of any reason
5 they'd be any different.
6 Q Did you send Miss Rodriguez a draft report before
7 you finalized it?
8 A I did.
9 Q Was anything changed from your draft to your final
10 report?
11 A One small thing. We were -- it were -- it was
12 repetitive. I was talking about training. And I
13 ended up taking -- taking some superfluous stuff
14 out.
15 Q What was the gist of the -- the wording?
16 A The gist of the wording was that -- if I can
17 remember. That the -- that a driver in this case
18 to evaluate this condition and take the proper
19 course of action, it would need specialized
20 training, that was the gist of it.
21 Q Do you think that people who drive for Americanos
22 or Greyhound should be specially trained in how to
23 handle driveline failures?
24 A The reason I would say no is because this was the
25 first time I've ever encountered it. There's so
0030
1 many things to train for. And in my mind, we'd be
2 training for an isolated event. And I just -- and
3 in my mind, it would require training on a track,
4 experimental training on a track. And I -- and I
5 feel that it would be impractical.
6 If driveline failures were as frequent as
7 failed tires, and even that -- even that people go

8 20 years without a tire failure, the drivers. But
9 if they were that frequent, I would say yes. I
10 would say yes.

11 Q Now, bus companies don't usually train their
12 drivers on test tracks for tire failure events, do
13 they?

14 A They don't. They give them advice.

15 Q Right. They give them written --

16 A They give them advice.

17 Q -- written materials, instruction, things of that
18 nature?

19 A Right.

20 Q Would it be possible for the bus companies to offer
21 some written instruction or -- or advice on how to
22 handle a -- a driveline failure?

23 MS. RODRIGUEZ: Objection,
24 form.

25 A Well, I would say this, it -- it certainly would be
0031

1 possible you could put information in there. But
2 to me it wouldn't have -- serve much of a purpose,
3 if you didn't experience it. If you didn't
4 actually experience it.

5 It's also difficult, because like I said, it's
6 such a rare event, in my mind. And like I said,
7 it's the first accident I've ever heard of. It's
8 such a rare event, you're talking about, here's a
9 driver going down the road, and hears something,
10 and the bus shakes, and they have to analyze that
11 problem.

12 Now having said that, you know, with special
13 testing -- special failure mode testing and they
14 could hear those noises and maybe watch a training
15 film and be cautioned, you know, on if the bus is
16 going this way, the right or left, to gradually
17 maneuver the steering wheel. I'm not saying it
18 wouldn't help. I don't -- it's -- there's some
19 unknown variables in there.

20 MR. HILL: Objection
21 nonresponsive after yes.

22 BY MS. DORMAN:

23 Q Would you consider yourself to be a human factors
24 expert?

25 A I would say -- I would say I've certainly had a lot
0032

1 of experience at it -- at it. And I've had
2 training. I've never been in that -- like when I
3 was with the NTSB, we had it divided up; vehicle
4 expert, highway people, who measured the highway,
5 vehicle expert, we had motor carrier experts, we
6 had a human factors experts, survival expert.

7 So I've never served, specifically been given
8 that title. But as a -- a generalist, which
9 included the majority of accidents, I still had to

10 fulfill that role, so. And -- and still have had,
11 you know, some training for it.
12 Q But you were with the vehicle group when you were
13 with the NTSB; correct?
14 A I was with the vehicle group for at least 10 years,
15 10 to 15 years. Probably my last 15 years, I was
16 with the vehicle group.
17 Q Have -- you're not an engineer, are you, sir?
18 A I'm not, ma'am.
19 Q Have you ever taken a course in human factors?
20 A I have.
21 Q How many?
22 A Oh, I'm trying to think the one we did down at the
23 -- it was a Federal course down in Georgia on -- on
24 questioning. I've taken related courses on
25 fatigue, on driver fatigue.

0033

1 Q Are these all --
2 A In fact, probably more than one on driver fatigue.
3 Driver fatigue is a big thing. Questioning of
4 individuals is another thing. So those two things
5 I've had -- had training on.
6 You know, I can't specifically recall. I mean
7 there's been a lot of little training seminars over
8 the years. And those are the only things I can
9 specifically recall.
10 Q Other than little training seminars that would last
11 a couple hours or a day or two?
12 A Well, the one in Georgia was a week.
13 Q One week. Okay. Is that the longest that you've
14 had?
15 A That's the longest I've had, yeah.
16 Q So you've taken a human factors course offered at a
17 college or university?
18 A Other than -- other than the courses in psychology
19 that I -- psychology and sociology that I've had in
20 college.
21 Q And that was part your sociology degree?
22 A That was part of my degree. It was actually
23 sociology with a specialty in criminal justice,
24 because I was a State Trooper at the time.
25 Q Okay. In this case, did you consult with anyone

0034

1 who is -- has been qualified as an expert in human
2 factors?
3 A I did not.
4 Q And have you, yourself, ever been qualified as an
5 expert in human factors by a court of law?
6 A Well, I've never really been -- I'd say, no, I have
7 not.
8 Q What level of accident reconstruction training did
9 you receive while you were in law enforcement?
10 A There's -- there's basically three levels. You
11 have at scene and advanced. I had advanced when I

12 was in -- in the State Police.

13 Q You mentioned there were three levels; at scene,
14 advanced?

15 A And the third level is reconstruction.

16 Q And so you reached Level II, which was advanced?

17 A When I was in the State Police.

18 Q Okay. And then any additional accident
19 reconstruction training after you left the State
20 Police?

21 A Yes. I took all three of them again; at scene --
22 at scene -- in the State Police, they didn't
23 actually call it at scene, they called it basic --
24 basic accident investigation.

25 Q Uh-huh.

0035

1 A And then when I was in the NTSB, I took at scene
2 through correspondence. And then I took advanced
3 and reconstruction at the University of North
4 Florida IPTM, at University of North Florida.

5 Q IPTM stand for?

6 A It's the International Police, IP -- I knew it at
7 one time. It's part -- like I said, it's
8 associated with the University of North Florida.
9 It's drawing a blank.

10 Q That's okay. I just wondered if it was some
11 popular accident reconstruction acronym.

12 A Well, I think reading Mr. Stauffer's deposition, I
13 think he -- reports, I think he taught -- he did
14 some teaching there.

15 Q Okay. And that leads me to another question. Have
16 you ever taught accident reconstruction?

17 A I've not taught reconstruction, no.

18 Q When you say you've been trained in reconstruction,
19 would that include using prism based machines to
20 try to gather data points for an accident?

21 A No. I think what you're referring to -- you mean
22 like a total -- something like a total station?

23 Q Like a total station. Yes, sir.

24 A No. We had -- we had -- we had a couple of people
25 that that's all they did when I was with the NTSB.

0036

1 So everybody wasn't trained in that.

2 Q So you weren't responsible for gathering that data.
3 Were you ever responsible for interpreting that
4 data?

5 A Well, let's put it this way. For the most part, I
6 never did a vehicle exam without looking at the
7 highway marks, because you can't do everything on
8 every vehicle. So you want to look and see what
9 you have out there. It often gives you a basis
10 what to look for.

11 Q And so did you ever interpret the data that was
12 gathered by the folks that operated the total
13 station type equipment?

14 A Well, it wasn't my official job. Although, I had
15 input into it. You know, I had input into it. I
16 mean they -- the people that ran the total station
17 were actually -- like they were considered -- like
18 I was considered vehicle expert, they were
19 considered highway. And so they wrote the reports
20 about -- about that. They -- they drew the
21 diagrams.

22 And we circulated -- if anybody had pictures,
23 we circulated them amongst ourselves. So, you
24 know, I was familiar with -- with the roadway
25 evidence. I would say in pretty much every case

0037

1 I've ever done. I would never say there isn't, you
2 know, a couple exceptions, but. The two go
3 together.

4 Q Your status as a vehicle group person, would
5 that -- would you describe yourself as more of a
6 vehicle expert than an accident reconstruction
7 expert?

8 A Well, I -- I would. I mean, you know, like I said,
9 a lot of it goes together. But that's what I was.
10 I wrote the reports about the vehicle. It was my
11 job to -- if there was anything about that vehicle
12 that caused or contributed to an accident, it was
13 my job to find it, describe it, and in certain
14 cases make safety recommendations about the
15 vehicle.

16 Q Would you --

17 A Or a component. Vehicle or a component.

18 Q Okay. Would you consider yourself to be an
19 accident reconstruction expert?

20 A Well, again, depends what you call an expert. I
21 did not -- like I said, you know, after -- after I
22 became -- even though I went through all those
23 courses, worked out the formulas, you know, I
24 didn't do a lot of that my last 15 years.

25 So I would consider myself knowledgeable. I

0038

1 would never consider myself, you know, an expert.
2 I don't know how to run computerized programs. I
3 understand vehicle dynamics. I -- I feel I have a
4 very good understanding of that. But I would be
5 hesitant to -- to call myself like an expert
6 reconstructionist.

7 Q You're not going to --

8 A Who's current.

9 Q Okay. You're not going to offer any accident
10 reconstruction opinions in this case, are you?

11 A Well, I will.

12 Q Really?

13 A I -- I will -- I will -- I will offer an opinion
14 concerning the tire marks on the highway.

15 Q Okay. And why don't we get that out of the way.

16 What is your opinion concerning the tire marks on
17 the highway?

18 A Well, I would say the -- the very first tire mark
19 we see that comes from a right wheel, which others
20 have described as a dual wheel mark. I would be
21 willing to say categorically that that's a single
22 wheel mark. It's a single wheel mark, and it is
23 one that would never be duplicated through skid
24 testing. That is my assessment after a study of
25 the -- the photographs.

0039

1 Q Did you visit the accident scene?

2 A I did not. I did not.

3 Q Did you interview any of the officers who
4 investigated the accident?

5 A No. I read -- you know, I read a couple
6 depositions.

7 Q And is that the extent of your accident
8 reconstruction opinion in this case?

9 A I am going to say that the -- that that right tire,
10 the very first right tire was from the right tag
11 axle. And in my mind, that's the only tire that
12 could have made that mark.

13 Q And what --

14 A Yes, I will say that.

15 Q Okay. What is that based on?

16 A First of all, the way the tire starts out. The way
17 it starts out. You see like a finer line to the
18 right, and it looks to me like a turning tire. It
19 gets heavier, and then it kind of straightens
20 itself out again. But it's -- like there's
21 sideward movement. And then like I said, it kind
22 of straightens -- straightens itself out, even
23 though it's never -- we never get a clear print out
24 of it.

25 Q All right.

0040

1 A When I say clear, I mean like not clear like a
2 braking mark. You can see some striations in it
3 like from the ribs -- the ribs, the tire ribs.
4 Eventually you can see some light striations, like
5 it changed movement. But -- but it's not a braking
6 mark.

7 Q In your opinion?

8 A In my opinion. In my assessment, yes, it's not a
9 braking mark.

10 Q All right. In just a minute we'll -- we'll get
11 some of your pictures, and I'll have you --

12 A Okay.

13 Q -- show me what you're talking about.

14 A Okay.

15 Q I think I know, but just so we're all on the same
16 page.

17 You mentioned that you understand vehicle

18 dynamics. Have you taken any courses at a
19 university or a college about vehicle dynamics or
20 handling?
21 A We have had vehicle dynamics taught in the NTSB,
22 often by guest instructors. I haven't gone to --
23 well, accident reconstruction and advanced accident
24 investigation, there's always a certain amount of
25 vehicle dynamics in that. But we have had -- we
0041

1 have had courses where -- where it has been
2 taught -- where it has been taught.
3 Q And how long would these courses last?
4 A A couple of days.
5 Q Would you characterize these courses as in-depth or
6 overviews or -- or how would you characterize them?

7 A It's been so long ago. I -- I would say -- I would
8 say that they were -- and there's a number of
9 courses that go -- that involve vehicle dynamics.
10 But I would say some of them were pretty in-depth.
11 Q Okay.

12 A Like I said, when -- even when you take advanced
13 accident, accident reconstruction, you're talking
14 about vehicle dynamics.

15 The one thing that -- the one thing that's
16 probably lacking, and it's a total different field
17 is when you talking about vehicle dynamics,
18 especially like a tractor trailer. A bus really is
19 simpler than a tractor trailer vehicle dynamics.
20 But I have had courses, but it's been a long --
21 it's been a long time ago.

22 Q How long ago?

23 A I would say 15 years.

24 Q So in the last 15 years, you've not had any courses
25 in vehicle dynamics?

0042

1 A I don't think so.

2 Q In this case, what did you review? That's a very
3 broad question. And maybe I should just tell you
4 what I've seen in your file material --

5 A Sure.

6 Q -- since we -- since you arrived.

7 A Sure.

8 Q I saw photographs of the accident scene?

9 A Uh-hum.

10 Q Showing the vehicle on its side?

11 A Uh-hum.

12 Q I've seen photographs of -- taken during some
13 inspections?

14 A Uh-hum.

15 Q I've seen some depositions you were sent of looks
16 like Trooper Wesley Cooper, Trooper James Kellert,
17 Lieutenant Timothy Lite.

18 What about officer -- or Trooper Hughey, does
19 that ring a bell?

20 A I read Trooper Hughey's deposition. I read
21 Corporal Olives --
22 Q Olive, okay.
23 A -- Olive's deposition. I haven't really -- I read
24 hundreds of pages. But I haven't -- those other
25 three depositions, I haven't really read them.

0043

1 Q Did any of the trooper depositions give you any
2 insight or -- or information that you found useful
3 in your analysis in this case?

4 A Well, let -- let me -- let me say this. I didn't
5 feel I needed. But I will -- I will quote Trooper
6 Olive, if you want me to.

7 Q Okay.

8 A If I -- if I may. Let me see where I -- Corporal
9 Olive.

10 Q Corporal Olive is the one who testified that he
11 thinks the driver should have been able to control
12 the coach; correct?

13 A I am aware of that.

14 Q Do you disagree? And you disagree with that;
15 correct?

16 A I do. I do.

17 Q All right.

18 A If we go to -- now his deposition, the way it's
19 printed is different than most of them I've had.
20 So this is the way my copy is printed.

21 Q Okay.

22 A It was e-mailed to me. So there's like a -- like a
23 Section 89. I think there's -- out of 160 -- 167.
24 I think there's about 169 of these sections. So
25 there's like -- it looks to me like there's like

0044

1 maybe two sections on each page.

2 Q Okay.

3 A So I'm reading from Section 89. And quite frankly,
4 I don't know who's questioning him.

5 Q Okay.

6 A It may be you, I don't know. Yes, I think it is
7 you. Let's see. Okay. Corporal Olive, earlier
8 you mentioned that one of your findings was the
9 mechanical failure on this bus had a negative
10 effect on the tag axle. And I want to clarify that
11 mechanical failure involves the U-joint; correct.
12 And his answer was, correct.

13 And the next question was. And what negative
14 effect do you believe that it had on the tag axle.

15 And his answer was, it appeared that once the
16 U-joint had failed, the tag axle had been struck by
17 something, and I can't say what it was. And we
18 base that on the fact that it -- it was bent when
19 the bus came to final rest. And then also we don't
20 think it occurred as the vehicle was coming to
21 final rest, because we found some odd skid marks up

22 on the roadway that appeared that the tag axle was
23 kind of trying to fight it -- to fight against
24 itself.

25 And then it goes on here a little bit. But
0045

1 basically he recognized -- in my mind, he
2 recognized something. But -- but just to be clear,
3 that was kind of like a little bit of what I felt
4 was supportive things. Not that I didn't feel it
5 was needed, but it was an interesting observation
6 for somebody who's out there.

7 Q Did you review any of the passenger depositions?

8 A Not the passenger depositions. I read most of the
9 passenger statements.

10 Q The statements that were collected by the DPS?

11 A Yeah, the handwritten -- the handwritten
12 statements.

13 Q And those are in your reports and statements?

14 A I believe it's in there, yeah.

15 Q I -- I will mark this notebook, if that's okay with
16 you, as Exhibit 4 to your deposition. And with
17 your permission, what we'll do is we'll have the
18 court reporter make copies, return the originals to
19 you, and attach the copies to your deposition.

20 Is that acceptable?

21 A That's acceptable.

22 Q Great. Thank you.

23 And just for the record, these exhibits are
24 Plaintiff's Exhibit, I'm just crossing that out,
25 because we're doing consecutive Exhibits; is that

0046

1 okay?

2 A Yes, that's fine.

3 Q So I'm not taking any side, I'm just marking.

4 A That's fine.

5 (Plaintiff's Exhibit 4 marked for
6 identification.)

7 BY MS. DORMAN:

8 Q All right. Looks like we have the driver's
9 statement. A statement from Rogelio Garcia. Maybe
10 a Valerie Ortega. Deborah Chavez. Saul Arre- --
11 Arreguin, I'm butchering that, A-r-r-e-g-u-i-n. I
12 cannot read this one. Daryl Champagne. Karlo
13 Castillja. Sandra Valdez. Guadalupe Cruz.

14 MS. RODRIGUEZ: Did you just
15 pass another one you couldn't read?

16 MS. DORMAN: No, I didn't.

17 I -- this is not signed. And it
18 just has minors listed.

19 MS. RODRIGUEZ: Okay.

20 MS. DORMAN: So it doesn't
21 appear to be a statement. It
22 appears to be a note from a Trooper.

23 But just to summarize it, it

24 says Rewertz, Christine Marie.
25 Decena Ashli. And it describes
0047
1 where they were seated and what
2 injuries. And then a Marlis
3 Johnson, guardian, grandmother in
4 presence.
5 BY MS. DORMAN:
6 Q This one I cannot read. This one I cannot read.
7 And then another Irma Morado in Spanish. Margarita
8 Miromontes. Paul Edward Guzman. Oh, Denise
9 Alvarado, who's the mother of Paul Edward Guzman,
10 Jr. Leonor Aguilar. And that appears to be it.
11 What did you -- what information did you gain
12 from these witness statements. And if you'd like
13 to review them -- or rather the passenger
14 statements?
15 A I -- I read them. It's been awhile.
16 Q Okay.
17 A And everybody heard a loud bang. I mean if -- I
18 mean obviously, I could go through each one
19 individually and reread them. But -- but it's like
20 the common thread was, I believe, that they heard a
21 loud bang, and it was shaking, and the bus was
22 going to the right.
23 I don't think anybody had any -- I don't recall
24 reading anything that -- that gave like the
25 specific kind of information, like of an
0048
1 investigator of exactly what the driver was doing.
2 I'm not saying there isn't some more than that in
3 there. But like I said, I -- I -- I read them all,
4 and that's kind of my -- my recall.
5 If you want to -- if you want me to review a
6 specific statement, again, I'd be happy to do that,
7 but. Like I said, it's been -- you know, I did
8 that prob- -- I probably read those about six
9 months ago. Other experts have kept me busy the
10 last few weeks.
11 Q Understood.
12 A The last few days, I mean.
13 Q Yeah. Saul Arreguin mentioned the bus started to
14 veer off to the right side, and I thought the bus
15 was going to stop.
16 Did you take into account that at least one of
17 the passengers thought the driver was going to try
18 to stop the coach instead of losing control?
19 A Well, I thought the driver was going to stop. I --
20 I -- I -- I guess, you know, from an accident
21 investigation standpoint, we know it didn't stop.
22 We know that she braked, there's no question about
23 that. And that probably gave that passenger an
24 impression that, you know, it was going to stop.
25 Q What about the comments from some of these

0049

1 passengers that the ride was very bumpy, and the
2 driver was going fast?

3 A Well, that's a very, very interesting topic,
4 because people -- in my experience, passengers will
5 say a bus wasn't going fast, when it was. And
6 other times, they'll say it was going fast.

7 We know what the -- I guess I -- the reason I
8 don't put a lot of credibility in that, because in
9 this case, you know, it's pretty obvious the bus
10 was governed around 68 miles an hour. According to
11 the DDEC, it was 69 and 69.5, and the speed limit
12 was 70. So I just felt like there's no place to go
13 with those statements.

14 Q The -- do you remember what the Westport bus was
15 governed at?

16 A It was governed at 68, 68 or 70.

17 Q And do you know how fast it was going when it lost
18 control?

19 A I do.

20 Q What was that?

21 A It was -- when it actually lost control, I'd say it
22 was around 67. It reached a maximum of 78.

23 Q I was just going to say 78's the number I remember.

24 A Yes.

25 Q Of course, he was passing on a grade too, wasn't

0050

1 he?

2 A Well, he was going down a 5 percent grade, and --
3 because the bus would never have gotten that fast.
4 And -- but he -- as a matter of fact, since you
5 brought it up. I actually test drove a bus on that
6 hill. And even with my foot off the throttle, it
7 would continue to -- it would continue to gain
8 speed. And so I got one up over 80 miles an hour
9 on that hill. But you know, it's an interstate
10 highway, and yes, that was the -- the speed.

11 Q What was the grade of the axle -- of the roadway
12 where this accident occurred, the accident?

13 A Well, it looks like we were about a minus -- I
14 believe what I read was like a minus 1.7 -- about
15 minus 1.7, so. I mean that would be considered
16 a -- a hill, but certainly not a steep hill in any
17 way -- in any way. You know you're going down
18 grade.

19 Q All right. Have you ever spoken with Irma Morado,
20 the driver of this bus?

21 A I have not.

22 Q I understand you've read her two depositions?

23 A I read --

24 Q Or the two parts?

25 A I read basically Part 2. I read --

0051

1 Q Not Part 1?

2 A Actually, I never got Part 1. And I could have
3 asked Tamara to resend it, but it was sent in a --
4 a format that I couldn't open. So they resent Part
5 2, and I followed the testimony, and I could see
6 that there was a lot of lead up to that. And so I
7 just -- so I could see it -- it started into the
8 accident. Part 2 started into the accident. So
9 like things she'd been doing that morning. You
10 know, I don't -- what happened at the station and
11 that, I -- you know, I didn't read that.

12 Q So you haven't read the first day of her
13 deposition; is that correct?

14 A I haven't read the first day, no.

15 MS. DORMAN: We need -- okay.
16 We need to change the tape.

17 VIDEOGRAPHER: Okay. This is
18 the end of the first hour of
19 Larry Yohe. And the time is 3:01.
20 (Short recess taken.)

21 VIDEOGRAPHER: All right. The
22 time is 3:21. This is the beginning
23 of the second hour of the video
24 deposition of Larry Yohe.

25 You may continue questioning.

0052

1 MS. DORMAN: Thank you, sir.

2 BY MS. DORMAN:

3 Q Mr. Yohe, before we took our break, we were talking
4 Irma Morado, the bus driver in the case that we're
5 here about today.

6 A Right. Right.

7 Q Do you understand that she also is a Plaintiff's in
8 this case, asserting claims against certain
9 parties?

10 A I did -- did not know that.

11 Q All right.

12 A It may have been so. I don't give that a lot of
13 attention. But I did not know that.

14 Q As a Plaintiff, you understand, she has something
15 to gain if no one criticizes her driving?

16 A That makes sense.

17 Q Okay. I saw in your e-mails that Aaron Jones, one
18 of the experts for Americanos, e-mailed you about a
19 Federal Motor Carrier Safety Regulation about some
20 equipment on the coach. Specifically a guard for
21 the driveshaft, do you recall that?

22 A You know what, I don't recall the e-mail. But I
23 recall him taking about it.

24 Q Did you-all talk on the phone about it or in
25 person?

0053

1 A You know, I can't honestly -- honestly remember.
2 We probably talked about it in a limited nature
3 in -- in person when we were down in Louisville.

4 I do remember one thing that he said, if you're
5 asking.

6 Q Actually, I wanted to ask you first --

7 A Okay. Go ahead.

8 Q Okay. About your trip to Louisville.

9 A Okay.

10 Q This was back in -- at the end of June of this
11 year?

12 A Weekend of the 4th of July.

13 Q Right. June 30th --

14 A Right.

15 Q -- I remember meeting as you came in --

16 A Right.

17 Q -- the afternoon there. Was that the first time
18 you had seen the accident bus?

19 A It was.

20 Q How long did you actually inspect the bus that day?

21 A Well, my inspection -- I went down there for one
22 reason. I wanted to see with my own eyes if that
23 locking pin was -- was in the up position or
24 withdrawn position.

25 So even though I looked around, I looked in the
0054

1 driver's compartment. I took photographs. That
2 was the primary purpose of my trip. I wasn't doing
3 an inspection per se. I mean I did go to look at
4 that. I wanted to see the -- see the locking
5 mechanism.

6 Q Okay. And what did you find when you saw the
7 locking mechanism?

8 A Well, the locking cylinder was tilted somewhat, and
9 the pin was -- was jammed in the upper position, or
10 unlocked position.

11 Q It was in the unlocked or locked?

12 A Unlocked position.

13 Q So it's your position that the pin was not
14 extended?

15 A When I saw the bus in Louisville, the pin was not
16 extended.

17 Q And as the bus -- as the locking plates and the
18 clamping -- locking plate and clamping plates were
19 configured, the actual locking plate was positioned
20 below the clamping plate; is that correct?

21 A I would have to look at the photograph to --

22 Q Okay.

23 A -- you know, determine that.

24 Q Is it your testimony that the locking pin was fully
25 retracted?

0055

1 A It was in the up position, which is the unlocked
2 position.

3 Q Do you know how it got there?

4 A I -- I could only speculate. And I -- I feel like
5 I'd rather not, because, one, it would be

6 speculation. And two, I don't plan to testify
7 about how it got there.
8 Q Great. Do you -- have you seen photographs of the
9 lock cylinder and the pin after it was removed from
10 the coach?

11 A No, I have not.
12 (Exhibit 5 marked for identification.)

13 BY MS. DORMAN:

14 Q I'm going to attach as Exhibit 5, the copy of your
15 e-mail correspondence with Aaron Jones. He, on
16 July 9th, sent you a link to the Federal Motor
17 Carrier Safety Administration Rules and
18 Regulations.

19 And you respond to him and say, "It obviously
20 has one guard. Not sure what is meant by a spline
21 or other device to keep it from whipping around."

22 Aaron says, the way I read it, that it -- this
23 it's supposed -- let me back up and start over.

24 "The way I read it is that it's supposed to be
25 near the slip yoke of the shaft."

0056

1 And you write back, "Bottom line is, I don't
2 know. I suppose we need a DOT interpretation."
3 And then you say, "I meant Aaron apology No. 27."

4 Does that -- did I characterize your
5 correspondence back and forth with Mr. Jones?

6 A You have.

7 Q Okay. And have you sought any kind of DOT
8 interpretation?

9 A I have not. I didn't even go into the link that
10 he -- that he provided.

11 Q Do you have an opinion of whether or not the
12 regulation he's citing applies to the -- the
13 carrier versus the manufacturer?

14 A I do not.

15 Q And since you were e-mailing with other experts in
16 this case, would you presume that those other
17 experts would have copies of the e-mail exchanges
18 that you-all had together?

19 MS. RODRIGUEZ: Objection,
20 form.

21 A I -- I never thought of it one way or another.

22 BY MS. DORMAN:

23 Q That's the -- the first I've seen of any e-mail
24 correspondence between you and Mr. Jones. Do you
25 have any other correspondence with Mr. Jones?

0057

1 A Yes.

2 Q And is it contained within your -- the documents
3 that you provided to us, or was it after we
4 received them?

5 A It was at about the time, I would say maybe like
6 the middle of -- it was after Louisville. I
7 believe it was after Louisville.

8 And do you want me to describe it?
9 Q Yeah, if you can remember the subject matter --
10 A Yeah.
11 Q -- and generally what was said.
12 A Yeah. Well I --
13 Q Found it.
14 A -- I expressed a concern that -- that Mr. Fugger
15 was misinterpreting a -- a -- a skid mark -- a skid
16 mark. And so I did -- I either talked or e-mail
17 him or both. And so I sent an e-mail to Aaron. I
18 didn't realize all these are so discoverable, but
19 you got it.

20 I said, it looks like Tom is trying -- it looks
21 like Tom is trying to lock us -- is going to lock
22 us in the corner. I says, I need -- I said, but if
23 that's the case, I says, we'll fight it out in
24 private or public. Or we'll discuss it in private
25 or public. So that's what I -- and I e-mailed --

0058

1 yeah, you know, that's the e-mail I sent. And he
2 wrote back and said, don't worry about it. He
3 says, these things happen in cases.

4 (Exhibit 6 marked for identification.)

5 BY MS. DORMAN:

6 Q I'll hand you what I marked as Exhibit 6 to your
7 deposition. Is that a correct copy of the e-mail
8 string that you were referencing?

9 A It is.

10 Q All right. And what skid mark do you think
11 Mr. Fugger was misinterpreting?

12 A The very first one that I -- that I told you right
13 now is from the tag axle.

14 Q Mr. Fugger thinks that that is more likely made by
15 one of the dual tires; correct?

16 A I think that was initial thoughts.

17 Q All right.

18 A I don't know that he thinks that now. But I think
19 that was his initial thought. And -- because he
20 couldn't get it lined up in his program he was
21 using, as I understand it.

22 Q And as far as his deposition is concerned, have you
23 heard anything about how he testified about that
24 issue?

25 A I have not. I've not seen his deposition, nor have

0059

1 I talked to he or Aaron in probably six weeks, I'm
2 guessing.

3 Q This -- this e-mail from Mr. Fugger to you, you
4 assume he would have a copy of it as well since he
5 sent it to you?

6 MS. RODRIGUEZ: Objection,
7 form.

8 A You know, I don't know.

9 BY MS. DORMAN:

10 Q Unless he scrubbed his computer?
11 A Well, you know, it's like I've talked to different
12 people about this, because quite frankly -- quite
13 frankly, like I says, I wasn't aware that
14 everything was discoverable. When Tamara told me
15 it was, like I said, I went down the column, right
16 clicked on it, and sent her everything I had, so.

17 BY MS. DORMAN:

18 Q If -- if only everyone did that --

19 A Well --

20 Q -- we'd all have a matching record.

21 A And -- and the reason --

22 MS. RODRIGUEZ: We're waiting
23 for your experts too. And
24 Mr. Hill's expert's e-mails. I
25 don't think we got any from

0060

1 Mr. Hill's experts.

2 A And -- and the reason that that's true --

3 MR. HILL: I don't know if
4 that's true. Just want to put stuff
5 on the record.

6 A Can I say that?

7 BY MS. DORMAN:

8 Q Yeah. Yeah, go right ahead.

9 A And the reason that concerns me is because in any
10 investigation earlier on, people are -- it's like
11 you don't have all the answer, you know, on Day 1.

12 Q And --

13 A And sometimes you don't on Day 100. But you
14 discuss things back and forth. And I could see
15 that e-mail is probably not the best way -- not
16 necessarily the best way to do that.

17 Q And --

18 A Not that there's anything to hide there, in my
19 opinion, but.

20 Q Sure.

21 A Okay.

22 Q And as late as July 9th of 2011, you-all are still
23 talking about some disagreements that you have
24 about the evidence --

25 A And that --

0061

1 Q -- is that fair to say?

2 A And that as far as I know is the last -- the last
3 official communication I had with him about the
4 accident.

5 Q Okay.

6 A I did get another e-mail on something else, totally
7 unrelated to the -- to the accident, but that --
8 but I haven't talked to him. Or Mr. Jones, I
9 haven't talked to him.

10 Q That's fine.

11 A Okay.

12 Q That's fine.
13 A All right.
14 Q I'm not trying to beat you up about it.
15 A It's okay.
16 Q I just wanted to find out what you know and what
17 you've got. And we have a copy of what you sent
18 Miss Rodriguez, so I'm -- I'm confident that we've
19 got what you've -- what you provided her.
20 Do you know anything about the maintenance
21 history of the Coach 60630, the one that was
22 involved in the accident?
23 A Very limited.
24 Q What do you know?
25 A Well, you know, the one question was -- that came
0062

1 up, you know, I guess it had been serviced
2 within -- within maybe a couple days. And -- and
3 so I was wondering myself if the -- how long it had
4 been since the driveshaft was greased. And so I --
5 I read a report, it's Capias, C-a-p-i-a-s.

6 Q Capias.

7 A Capias.

8 Q If that's who you're talking about?

9 A I read his report. And I have no idea, who he
10 works for in this case. But he did say that it --
11 that there were signs of fresh grease. He didn't
12 seem to think everything was adequate, but there
13 were signs of fresh grease that the driveshaft had
14 been greased. So I was -- that's as far as my
15 knowledge goes on the maintenance at Americanos.

16 Q Okay. Bear with me one second.

17 Do you know why the -- the coach you used in
18 the test runs didn't have a certification plate in
19 the front of the bus?

20 A You mean a VIN plate?

21 Q Yeah.

22 A I do not. And we got the VIN number actually
23 through the -- I believe -- I believe it was the --
24 in the -- I forget if it was the first or second
25 luggage compartment, if that's where the additional

0063

1 VIN number is. But I do not know.

2 But we've had several come in from Greyhound
3 that way, people steal them, you know, for various
4 reasons. But we've had -- we've had several come
5 in like that.

6 Q You mean to ABC?

7 A Yes.

8 Q Let's talk about your work at ABC. How did you get
9 involved with them?

10 A Well, I knew a couple people at ABC. I knew
11 Lee Loper. I've given -- I'd given presentations
12 on bus fires that he paid my way to get down to
13 Florida when I was with NTSB, and they were short

14 of money.

15 I've known Lou Hotard for years, who told me
16 that -- that I would be a likely candidate for that
17 if I wanted to do it. And Alex -- Alex Cook. Alex
18 initially asked me. He says, hey -- he says, but
19 I -- you'd be working for ABC.

20 And so I can't remember whether I called
21 Lee Loper or he called me. But I said, what am I
22 doing this for, you know, I lived in Colorado. And
23 I said, well, I'll go help them get started on the
24 program. So here it is -- I figured I'd be there
25 like two months, and here it is 14 months later.

0064

1 Q What is it that you do for ABC?

2 A I started out -- his wife gave me the title on the
3 business card as chief inspector. But I really
4 don't consider myself that now.

5 Q Whose wife?

6 A His wife.

7 Q Whose wife?

8 A She works there. Lee's.

9 Q Okay.

10 A Lee's and I would say the first 60 buses, I did all
11 the undercarriage, the brake inspections, primarily
12 brake inspection on the first 60 buses. Then it
13 became more inter -- more intermittent as
14 production increased.

15 And -- and so it's turned into basically, for
16 the most part, driving. I have done several brake
17 inspections when one of the guys from Greyhound was
18 out. But it's primarily, I go through everything
19 in the bus, every switch, every light, do a
20 stationary inspection of all the fluids, the manual
21 coolant pump, the field manual -- fuel -- fuel
22 pump, everything in the engine compartment.

23 And then I take it on a test drive. And
24 ordinarily I put about a hundred miles on them,
25 sometimes more, sometimes a little less.

0065

1 But right now I would say my primary job is --
2 is a -- I was hired basically for a test driver.

3 And that's what I do more than anything else is,
4 you know, I'm a test driver. Test driver, and make
5 sure everything is functioning right, go
6 through every -- go through every switch, every
7 light, and make sure everything is working.

8 Take the bus out on the road, check it for
9 handling characteristics, steering free play, any
10 other operational irregularities, wind noises,
11 rattles. So that's kind of what I -- what I do at
12 ABC.

13 Q What brand of coaches are they working on at ABC?

14 A 102DL3s, MCIs.

15 Q What year models, do you know?

16 A Oh, I'm thinking about '97, maybe '97 to 2001,
17 something like that.

18 Q And what is the scope of work being done?

19 MS. RODRIGUEZ: Objection,
20 form.

21 And to the extent that this
22 would require you to disclose
23 proprietary information, I would
24 advise you not to do that. And if
25 you're not comfortable answering the

0066

1 question, then you don't have to
2 answer the question.

3 BY MS. DORMAN:

4 Q Let me backup and ask you this.

5 Do you have any sort of employment agreement
6 with ABC?

7 A I do.

8 Q Is it written?

9 A It's an e-mail about that long, I have somewhere.
10 I think actually it wasn't an e-mail, he handed it
11 to me.

12 Q What -- what's the gist of it?

13 THE WITNESS: I'm willing to
14 answer it. You --

15 BY MS. DORMAN:

16 Q Go right ahead.

17 THE WITNESS: Should I answer
18 this? You know, I mean it's
19 nothing -- it's not a big deal to
20 me.

21 MS. RODRIGUEZ: Well, Mr. Yohe,
22 I would only caution you that the
23 proprietary information is not
24 yours, it's ABC proprietary
25 information, because that's their

0067

1 business interests.

2 So if you think you're
3 releasing private business
4 information, confidential business
5 information unique to that shop,
6 then I would caution you from doing
7 that.

8 But if the e-mail doesn't have
9 any business information unique to
10 that shop, then she -- she asked you
11 what the gist of it was, and you can
12 describe it to her.

13 THE WITNESS: You mean --

14 A The gist was strictly -- it wasn't describing my
15 duties. It was just how much money I was getting
16 paid. And what they were -- what they were -- that
17 I get paid, you know, certain -- a certain amount a

18 day to eat on, so much for lodging. And it's
19 actually coming out of -- out of my salary. It's
20 not a lot.
21 BY MS. DORMAN:
22 Q Okay. So basically the terms of your compensation;
23 is that fair to say?
24 A Yes. And like I said, it's not a lot.
25 Q Okay.

0068

1 A But I enjoy the work.
2 Q Okay. Sometimes we do accept positions not because
3 they pay well, but because we like what we're
4 doing.
5 A Absolutely. And that's what this is all about.
6 Q Okay. Do you have any kind of confidentiality
7 agreement with ABC?
8 A No. No agreement. But, you know, they are not --
9 I feel safe in saying, I mean, they are not
10 involved in this in any way. And it just happens
11 that I work there. And that Frank works there.
12 And we just happen to be around buses.
13 But other than that, I mean, I know of no other
14 involvements, other than I saw one of the -- one of
15 the experts rented a bus from them.
16 Q Okay. Unfortunately, the involvement is the
17 connection between you and the counsel who hired
18 you. So the fact that you work there and you're
19 around these buses everyday, so to speak, you test
20 drive them, you do safety checks, things like that,
21 makes me curious about the scope of your knowledge
22 of the 102DL3.
23 Certainly you have more knowledge now than you
24 did two years ago about the 102DL3; correct?

25 MS. RODRIGUEZ: Objection,

0069

1 form. And side bar.
2 A I would say I do.
3 BY MS. DORMAN:
4 Q Okay. What -- so tell me what the scope of work is
5 for these coaches at ABC?
6 MS. RODRIGUEZ: Again, I would
7 caution you about --
8 MS. DORMAN: That is such an
9 improper objection.
10 MS. RODRIGUEZ: -- proprietary
11 information. He can talk about his
12 knowledge.
13 MS. DORMAN: He can talk -- he
14 can answer the question.
15 MS. RODRIGUEZ: He can't talk
16 about what they're doing over at the
17 plant.
18 MS. DORMAN: He can answer the
19 question. There's no protective

20 order in place. There's no
21 privilege being asserted.
22 MS. RODRIGUEZ: That doesn't
23 mean it's not proprietary.
24 MS. DORMAN: And so far you
25 haven't asked -- asked to stop the
0070
1 deposition, so the you can get a
2 protective order.
3 MR. NEVÁREZ: It was in the
4 newspaper all this stuff they've
5 done in the past.
6 MS. RODRIGUEZ: It doesn't mean
7 that it's not proprietary. He can
8 talk about --
9 MR. HILL: It's not you
10 privilege --
11 MS. RODRIGUEZ: -- what he
12 does.
13 MR. HILL: -- to protect them.
14 MS. RODRIGUEZ: And I also
15 object to form, it calls for
16 speculation. He's not overseeing
17 the operations.
18 BY MS. DORMAN:
19 Q Okay. Mr. Yohe, what -- what are they doing,
20 what's the scope of the operation?
21 A Can I describe it generically?
22 Q Yeah. Absolutely. And if I need more information,
23 I'll ask another question.
24 A Basically -- basically they are painting all the
25 buses. They're covering all the seats with a
0071
1 leather interior. They're putting Wifi in all the
2 buses. Take -- they took a row of seats out to
3 make more space in between.
4 The majority of the buses, except very low
5 mileage buses are getting a Detroit -- a new
6 engine. Basically been new brakes on all the
7 buses. Early on, you know, I -- I honestly do not
8 know right -- the transmissions, if it was an
9 Allison, basically they put in a rebuilt one. If
10 it's a ZF, they don't do anything with it, they put
11 it in.
12 Regarding anything else -- new dashes. I mean
13 new switch panels and so forth. The reason I
14 know -- you know, it's like I really don't have the
15 time to walk the floor down there, because things
16 are -- things change a little bit. But
17 basically -- basically that is it.
18 I mean, there's new -- like I said, new
19 switches, new lights. You know, a lot of exterior
20 kind of -- you know, kind of stuff. And like I
21 said, pretty much all new, you know, brake

22 components.

23 Q The coaches are being refurbished kind of top to
24 bottom, aren't they?

25 (Dial tone on phone. Ms. Buntz is now
0072

1 absent from the deposition.)

2 MS. DORMAN: Oops. I just

3 ripped this off.

4 BY MS. DORMAN:

5 Q They're being refurbished from top to bottom,
6 aren't they?

7 A You know, just -- just one thing -- my only
8 hesitancy is to get into it in-depth. I mean I
9 don't -- personally don't have any problems. You
10 know, I work for the ABC people. And I don't know
11 how, you know, it would be -- I feel out of respect
12 for them, you know, I just don't know how much I
13 should get into.

14 First of all, I don't know everything about it.
15 And you say, top to bottom, that entails a lot, you
16 know -- you know, top to bottom. They're certainly
17 doing a lot.

18 Q Did you think that when you accepted this
19 assignment that you might run into some issues with
20 this scope of work?

21 MS. RODRIGUEZ: Objection,
22 form.

23 A You mean this scope of work, like what I'm doing
24 today?

25
0073

1 BY MS. DORMAN:

2 Q Yeah. The work you're doing as a hired expert
3 versus the work you're doing working on these
4 102DL3s at the ABC plant?

5 A Never even thought about it.

6 Q Do you know if there are any additional driveshaft
7 guards being installed on the 102DL3s?

8 MS. RODRIGUEZ: And again, I
9 would caution you from disclosing
10 any proprietary information of your
11 employer.

12 A I don't know from my employer whether they are.

13 BY MS. DORMAN:

14 Q Do you know if they are adding seat belts?

15 MS. RODRIGUEZ: Same
16 instruction.

17 A No, they're not.

18 BY MS. DORMAN:

19 Q Okay. Do you know if they're adding any other
20 safety features that weren't originally on the
21 coach as built?

22 MS. RODRIGUEZ: Objection,
23 form. And with the same cautionary

24 instruction.

25 A Probably one of the big things is LED lights in the
0074

1 back. You can see a mile away.

2 BY MS. DORMAN:

3 Q In the -- on the exterior?

4 A Yeah. Like signal lights and that, that you can
5 see those a long ways away. That's one thing.

6 Q Did you ever look at the driveshaft involved with
7 our coach, the subject coach?

8 A No. I -- I -- if it was in Louisville, I don't
9 recall seeing it.

10 Q Did you ever look at the u-joint or the components
11 that were found at the scene?

12 A Other than the photographs that I cursor --
13 cursorily looked -- glanced at. I -- I didn't
14 do -- make any attempt to study those components.

15 Q The purpose of your report, as I understand it, was
16 to evaluate the actions the driver took?

17 A That is correct.

18 Q Okay. And your experience that assists you in this
19 evaluation is because you, yourself, are a bus
20 driver; correct?

21 A That's part of it.

22 Q Yes. And you're also -- you have some history in
23 law enforcement?

24 A (Witness nods head).

25 Q And you have worked as an investigator at the NTSB;
0075

1 correct?

2 A Investigated at the NTSB and State Police, yes.

3 Q And what other experience, training, or education
4 allows you to evaluate the actions taken by
5 Miss Morado?

6 A Well, you know over a period of years when you
7 investigate a lot of commercial vehicle accidents,
8 including truck and bus accidents, you see a lot
9 of -- a lot of tire marks. And you -- and you
10 learn to put that with the scenario -- with the
11 scenario.

12 The other thing -- the other thing you look
13 over hundreds of cases, and you think about evasive
14 action that people take under certain maneuvers,
15 and that -- that comes into play. You know, that
16 comes into play.

17 You do kind of put yourself in the driver's
18 seat, but on the other hand, there's a limitation.
19 When you put yourself in the driver's seat, there's
20 a limitation by saying, you know, well, this is
21 what I would have done, so this is what she should
22 do. You know, so there's -- there's definitely
23 limitations there.

24 Q Let's talk about -- go ahead. I didn't mean to cut
25 you off.

0076

1 A But -- but I'm just saying, the whole -- my -- my
2 training, both in the classroom and working with
3 Detroit Diesel, I believe gives me a good working
4 knowledge to evaluate the DDEC.

5 Q You worked with Detroit Diesel?

6 A On accidents I have, yeah.

7 Q Oh, I see. Let's talk about we know about
8 Irma Morado. What do you know about her history of
9 filling out the pre-trip and post-trip inspections
10 as a bus driver?

11 A You know, I don't know anything about what she's
12 done. I -- some of the stuff that -- that
13 Dave Stauffer wrote, I kind of glossed over it.
14 And I tried to separate all that from leading up to
15 the accident, until the time the coach rolled over.
16 So I -- I really did not get into -- I -- I
17 really have no opinion, you know, if any of that
18 stuff was good or bad. I have -- I have no opinion
19 on it.

20 MS. DORMAN: Objection to the
21 nonresponsive portion of that
22 answer.

23 A Okay.

24 BY MS. DORMAN:

25 Q The -- do -- do you have any information on her --

0077

1 the pre-trip and post-trip inspection reports that
2 she filled out as an Americanos' employee?

3 A I do not.

4 Q And do you have any knowledge of her background as
5 a bus driver, her experience level?

6 A Oh, just I -- I read that she was a school bus
7 driver.

8 Q Do you know for how long?

9 A I do not.

10 Q Do you know what her driving schedule was with
11 Americanos?

12 A I do not. I do not know what that is. I just know
13 what Dave Stauffer's comments were.

14 Q Do you know if she correctly reported her off-duty
15 hours as a bus driver?

16 A I do not know that.

17 Q You certainly think it's important for drivers to
18 be truthful on the forms that they fill out for
19 their employers, don't you?

20 A I do.

21 Q Do you know if any of the telltale or warning
22 lights on the subject coach were inoperable at the
23 time of the accident?

24 A Not firsthand.

25 Q What about second or third hand?

0078

1 A I think I read in somebody's report that maybe the

2 stop engine light -- perhaps the stop engine light
3 wasn't working.
4 Q What about the tag axle warning lights, do you know
5 if they were operable?
6 A I really don't know.
7 Q Have you ever experienced a driveline failure?
8 A I personally have not.
9 Q For the testing that you did, where did you get the
10 information on how the coach was to be outfitted?
11 A Some of it came from -- some of it came from Alex.
12 And the rest of it, Frank and I together.
13 Q Alex Cook?
14 A Alex Cook.
15 Q And just for reference, he is with Greyhound?
16 A FirstGroup.
17 Q FirstGroup?
18 A Yeah.
19 Q And he is the chief engineer; is that correct?
20 A I believe that's his title.
21 Q Okay. And you've worked with him over the years?
22 A I have worked with him several times.
23 Q What information did he provide you for the
24 outfitting of the coach?
25 A You know, I don't know whether he specifically

0079

1 provided -- provided, you know, quite frankly --
2 well, I don't want to be nonresponsive.
3 It's like the testing was basically my idea to
4 do testing, because I -- because I was hired to
5 evaluate the actions of the driver. And we felt we
6 needed to have like a -- I don't know if you want
7 to call it an artificial means of moving the tag
8 axle over.
9 And I knew Frank had worked at the Bendix test
10 track, and I ran it past him. And he said, well,
11 that's simple. You know, we just put a cylin- --
12 get a cylinder in there to move it over.
13 So, you know, I -- I don't -- Alex wasn't that
14 involved in that. You know, he really was not --
15 matter of fact, I don't even know if we discussed a
16 cylinder. But we -- but we -- we needed a way to
17 move the -- the tag axle over.

18 Q Why?
19 A Well, the first reason was because we wanted to
20 see, you know, the effect that it had on a -- if
21 the tag axle goes to the left, what happens. I
22 wanted to feel that. You know, if it goes to the
23 left.
24 Q What information do you have that the tag axle in
25 our subject accident went to the left?

0080

1 A Because if you look at the -- two things. Well,
2 several things really. If you at the tire marks,
3 the tire -- the -- the -- what looks to be the

4 tag -- the tag axle marks go to the left. And
5 there's other inborn marks. There's other inborn
6 marks that aren't the tag axle.
7 I knew that -- I knew that it was -- that the
8 looking pin was in the upper position. And I read
9 Miss Morado's statement, and she said several
10 times, albeit, there was a weakness in the --
11 probably in the interpretation, and so forth. But
12 you know, she said several times, it was like there
13 was a force in the back pushing me to the right.
14 And we could review that if you want to, to see
15 exactly what she said. But there -- but she made a
16 statement similar to that several times.

17 And so to me -- and then I evaluated -- I -- I
18 evaluated her response, and I looked at all the
19 accidents over the years and evasive action people
20 have taken. And I believe that if that was her
21 evasive action, that it was very, very unusual to
22 steer to the right. If that was her evasive
23 action, that would have been extremely unusual.

24 Q You don't think it's -- you think it's unusual for
25 a driver to try to pull over to the side of the
0081

1 road to stop a coach that's having a mechanical
2 failure?

3 A No, I do not think that's unusual.

4 Q Okay. You just don't think that's what she was
5 doing?

6 A In -- in -- but the two seconds it took her,
7 according to Mr. Irwin's report, the 1.98, I
8 believe is what he calculated that took from the
9 first skid mark -- first tire mark to where she was
10 crossing the yellow line, I would say, no, a driver
11 wouldn't be pulling over that quickly.

12 Q I put your pictures in front of you.

13 A Okay.

14 Q If you could -- are those the best pictures, the
15 ones that are clipped together right in front of
16 you?

17 A Well, there's some in my -- in my notes that I
18 was -- in my notebook that I was -- these are
19 highway patrol pictures --

20 Q Okay.

21 A -- I take it.

22 Q What I'd like for you to do is pick out for me the
23 photos that you rely upon for your -- the basis of
24 your opinion that the tag axle was turned sharply
25 to the left in the subject accident.

0082

1 A Okay.

2 Q And if you need any stickies to save a spot, I've
3 got a couple of these flags.

4 A All righty. Thank you.

5 Q Sure.

6 A I believe this is a police photo. It's marked
7 AUSA 001543, and in the bottom right-hand corner it
8 says, 30. And this is the -- I'm trying to find
9 the beginning of the -- of this tire mark.

10 Q Okay. Put a sticky on that page, if you can.

11 A Okay.

12 Q That way you can come back to it.

13 A (Witness complies).

14 There's one that I can't remember which book it
15 was in, it showed the beginning of that tire mark.

16 Q And that's the first tire mark that we see at the
17 scene?

18 A The very first one, yes.

19 You want me to pull these pictures out?

20 Q You know what, if you'll just leave them tabbed, we
21 can mark --

22 A This -- this is one right here. This --

23 Q What's the number on that?

24 A AUSA 001524. And this -- do you want me to
25 describe why, or just give you the number?

0083

1 Q I will come around, and -- and have you show me
2 what it is you're looking at.

3 A All right.

4 Q Okay.

5 A This is the one, the very first tire mark, as I
6 read Mr. Irwin's report and also his deposition,
7 this is the very first tire mark that he attributes
8 to the left inner dual tire.

9 Q Okay. And I'll tell you what, if you will take
10 that out and hold it up to the camera.

11 A Okay.

12 Q All right. And so the long mark on the left side
13 of the page is what you attribute to a tag axle
14 tire?

15 A I do.

16 Q And that would be the passenger side tag axle tire?

17 A That would be the passenger side tag axle tire.

18 Q And do you -- do you believe that shows that the
19 tag axle was in a forced over or sharply turned
20 state?

21 A In and of itself, no.

22 Q Okay. Well, what --

23 A However -- however, it lacks any striations or rib
24 marks. And -- and I -- I cannot correlate it in
25 any way to being a brake mark.

0084

1 Q So --

2 A And it's irregular. There's irregular properties
3 to it. But the main thing is, it's not -- it looks
4 to me -- it looks to me like a -- like a turning
5 tire. You know, we still need to find -- I still
6 need to find that other photo, but.

7 But basically, it's not a brake mark, it's not

8 a skid mark. And like I said, I base that upon,
9 one, the lack of any striations. And two -- and
10 two, just the approximate -- I say approximate --
11 the three seconds we have on the DDEC from the time
12 the speed -- we recognize the speed starts to drop.
13 Recognize the time the speed starts to drop, until
14 the time that she brakes, which only means the
15 stoplight switch is coming on as far as the
16 D-deck's concerned.

17 Q The stop light, what does that mean?

18 A What it means is that when it shows the brake is
19 on, on the DDEC -- the DDEC report, the last stop
20 record, when it shows the brakes on, it means --
21 the only thing you can tell from that by itself is
22 the stoplight switch is on.

23 So -- so you cannot correlate that by itself
24 with like a hard brake, a slight brake, you know.
25 You -- you just know that -- that her foot's on

0085

1 there. That her foot is on there.

2 Q And did you read any of her testimony about how
3 hard she was braking?

4 A Yes, I did.

5 Q What did she say?

6 A Basically, I was -- basically, I'm trying to
7 remember. It wasn't like as hard as she could, but
8 it was hard.

9 Q Okay. The -- if you could show me the other
10 pictures that you rely upon --

11 A Okay.

12 Q -- as well, that would be helpful. And you can
13 show those to the camera.

14 A Okay. The other thing that I would say is, I -- I
15 see no evidence anywhere of a -- of a dual wheel
16 tire mark. See, I rely -- this is more of the
17 same, but a different -- this is more of the
18 same -- that tire mark, but it's a different angle.
19 And it lacks any ribs, any tire ribs that you
20 would -- tire rib marks that you would see in a
21 brake -- a braking skid.

22 Q And what number is that, 1543?

23 A Yes, that's 1543.

24 Q Of the Americanos' documents?

25 A Right.

0086

1 Q And so, again, if you'll hold it up just briefly,
2 that way we can talk about it quickly.

3 There are dual tire marks just a short set of
4 those on the left side, and then the -- the single
5 tire mark on the right; correct?

6 A Right.

7 Q And --

8 A And the -- the dual tire mark is totally unrelated
9 to this accident, doesn't line up with anything.

10 Q Oh, you don't think it comes from the subject
11 coach?

12 A No.

13 Q Okay.

14 A No.

15 Q And so if you could show me where the dual tire
16 marks start.

17 A Like I said, I -- again, you know, I'm kind of in
18 the middle here, because I'm evaluating the driver,
19 and this does help as far as evidence. And yet,
20 I'm not doing a complete, you know, reconstruction.

21 Personally, I see no evidence anywhere of dual
22 tire marks. And the ones that look -- I can show
23 you -- let me see -- a photograph of one where it
24 looks like it's a dual tire mark. And then one
25 side changes direction, and the other.

0087

1 You know, I had three notebooks here.

2 Q Okay.

3 A Let me see if some --

4 Q This one is reports and statements.

5 A That's reports and statements. Okay. So it's
6 not --

7 Q Photos and mechanicals?

8 A Okay. Okay. But it also has highway photos too.

9 Q Okay.

10 A We're at looking Photograph AUSA 0015 -- 001518.

11 So if I could repeat that.

12 Q Sure.

13 A AUSA 001518.

14 Q And what does that portray?

15 A This shows the area where she's crossing the white
16 line. And again, there's -- there's numerous
17 photos, you know, of this -- of this general area.
18 But basically, I'm saying on the -- on this mark
19 right here, this mark right here that I have my
20 bottom finger on.

21 Q Okay. To the left of the orange circle and arrow?

22 A Right.

23 Q Okay.

24 A Right. I'm saying that -- and I don't know if
25 anybody's proposed -- what anybody is calling it.

0088

1 But I'm saying it's -- because it's deceptive, it
2 looks like it could be a dual tire mark. But if
3 you see where one side of the dual suddenly ends,
4 one side of that tire mark suddenly ends. And --
5 and I contend that that is a -- on the inside that
6 that's -- that is from the -- the left front steer
7 tire.

8 And there's other photos that show it a little
9 better where it looks like that mark crosses over.

10 This mark here crosses over this one, and it
11 becomes the -- the left front.

12 Q Okay.
13 A The left front.
14 Q And so what about those tire marks indicates to you
15 that the tag axle was forced over to the left?
16 A Well, I think even Mr. Stauffer's report he said
17 the bus -- this tire mark shows some fishtail. And
18 that was attributed -- they attributed that to
19 his -- to her braking.
20 And I would -- I would contend that -- I would
21 contend that -- that you couldn't get that -- those
22 tire marks on the outside from braking the roadway.
23 Even though there doesn't seem to be any agreement
24 about whether the road was damp, wet, or dry.
25 You know, just in explaining myself, I have to

0089

1 backup here to try and explain this. But these
2 tire marks are so well defined that if it was
3 raining -- if it was raining, and you can leave
4 tire marks in rain, very limited tire marks. But
5 I'm saying we wouldn't have that kind of well
6 defined tire marks.
7 And so I'm -- what I'm saying is, that it
8 wasn't the bus track -- the rear tracking to the
9 outside. It was the back steering the bus in. The
10 back was steering the bus in.

11 Q So based on the tire marks that you've seen, it's
12 your opinion that that tag axle had to have been
13 forced over very early in the accident?

14 A Yes. Yes, I do believe that.

15 Q Really before the -- the bus even left any marks on
16 the road?

17 A Well, that was -- I would say the very -- when
18 the tire -- when the tag axle was forced over,
19 that's where we start to see an outer edge mark the
20 right, the No. 3 tag axle. And then that tire mark
21 gets heavier, but there's never any striations.
22 There's never any rib marks. There's never any rib
23 marks in it.

24 Q So do you think the coach is traveling straight
25 down the road with a tag axle that's tilted to the

0090

1 left?

2 A Well, it's not -- it's not -- like I say, within --
3 within two seconds. We say two seconds, because --
4 I believe Mr. Irwin said it's 179 feet from where
5 the tire marks start until where they cross over
6 the -- the yellow edge lines.

7 So what he's doing, and he used that figure
8 too. And what I'm doing, is basically at -- at --
9 at 70 miles an hour, it's basically 102 feet per
10 second or 69, 68 miles an hour. We're talking
11 about almost a hundred feet per second. So all
12 this from the time we see that first tire mark to
13 the time she crosses the edge line, we're talking

14 about two seconds.

15 Q Assuming the bus does not slow down when --

16 A Assuming the bus does slow down. So there would
17 be -- obviously, there's some deceleration. Even
18 if there wasn't any braking, there would be -- any
19 time you see tire marks on a curve, there's always
20 some deceleration. There's curve resistance, so
21 there's deceleration.

22 Q Have you quantified how much deceleration there
23 was?

24 A I -- no, I have not. You know, I have not. But in
25 two seconds, the first two seconds, I would say her
0091

1 feet -- her -- just by going by the DDEC and where
2 the police have that -- where they showed the
3 first -- their first evidence, you know. And then
4 just going -- just going by the DDEC, I would say
5 she wouldn't -- her braking didn't start until at
6 some point after, you know, at some point after the
7 tire marks were being deposited.

8 MS. DORMAN: Objection to the
9 nonresponsive portion of that
10 answer, after I have not.

11 THE WITNESS: Can I ask a
12 question? You're saying I didn't
13 answer the question is that what
14 that means?

15 MS. DORMAN: Yes, sir.

16 THE WITNESS: Okay. All right.
17 Okay.

18 MS. DORMAN: But it's not a
19 personal reflection, sir.

20 THE WITNESS: It's okay.

21 BY MS. DORMAN:

22 Q The DDEC, have you been given any information as to
23 the reliability of the -- the signal that goes to
24 the DDEC?

25 A Let's put it this way, you know, the first accident
0092

1 I did involving DDEC was 1999. And that's when I
2 was -- had my initial training, basically just by
3 working with people from Detroit Diesel.

4 And I have come to rely on it as far as the
5 accuracy of -- of speeds are concerned. There's --
6 the tire wear can affect it a little bit.
7 Basically, you know, we found that there's no
8 reason to believe it's not pretty accurate.

9 Q My question was, though.

10 A Okay.

11 Q Have you received any information about the
12 accuracy of the signal going to the DDEC?

13 A Okay. And which signal?

14 Q The speed signal.

15 A The speed signal?

16 Q Yes, sir.

17 A Well, I mean I believe that it lost its speed

18 signal when the driveshaft -- when we had the

19 driveshaft failure, it definitely lost its --

20 that's when -- that's when it lost its speed

21 signal.

22 Q And what do you base that on?

23 A I base that on where I see that drop of -- of mile

24 per hour and RPMs.

25 Q You're not aware of any testing done on the -- the

0093

1 electrical system for the DDEC?

2 A In this case, you mean?

3 Q Yes, sir, uh-hum.

4 A I'm not -- I'm not aware of any.

5 Q Have you read any of the expert reports produced by

6 MCI's experts?

7 A The one that Virgil wrote, I -- you know, I looked

8 at it. But, you know, it's one of those things

9 that you'd have to spend a lot of time digesting it

10 all. You'd have to know the wiring system in the

11 bus. And so, you know, and so I didn't.

12 I mean I -- I'm not discounting, nor am I

13 favoring, you know, his report. I mean I've known

14 Virgil, and I -- I just -- I don't know -- like I

15 said, I don't know enough about the wiring system

16 and that to -- you know what I mean, to make a -- a

17 valid -- a reasonable or valid judgment on, you

18 know, what he did.

19 Q So as we sit here today, you're not prepared to

20 offer any criticisms about his findings in his

21 report; is that fair?

22 A No, I'm not. I'm not.

23 Q And what about any of the other experts that MCI

24 has had prepare reports in this case, are you

25 prepared to offer any criticisms of those reports?

0094

1 A Can we --

2 MS. RODRIGUEZ: Objection,

3 form.

4 A Can we go over who -- who they were?

5 BY MS. DORMAN:

6 Q Yes.

7 A Because I've been reading reports, and I --

8 Q Sure.

9 A -- I really don't know some of them.

10 Q Sure. We have a gentleman named Bob Rykoba or

11 Robert Rykoba?

12 A Yes, I read his report.

13 Q Okay. As we sit here today, any criticisms that

14 come to mind?

15 A No.

16 Q There's another --

17 A Oh, well, wait a minute. I'm trying to think what

18 all he said. I knew that he thought that that was
19 a single -- I believe he thought that was a tag
20 axle mark too, the first tire.

21 Q Okay.

22 A I can't remember what all he had to say. I don't
23 think I'd be very --

24 Can I ask you this, because without reviewing
25 the report, does this mean if I say today that I --

0095

1 that I'm not going to say anything about it, you
2 know, critical that when it comes time, if this
3 case would go to a jury, you know, go to trial,
4 does that mean I can't say it again basically?

5 Q Possibly. Possibly. It all depends.

6 A I -- I don't remember seeing anything that -- in --
7 in that report that struck me as negative.

8 Q Okay.

9 A Or -- negative, or you know, making any ridiculous
10 statements.

11 Q There's another gentleman named Kevin Granite, who
12 did some of his own testing on a 102DL3.

13 As we sit here today, do you have any
14 criticisms of his report or his work that he's
15 done?

16 MS. RODRIGUEZ: Objection,
17 form.

18 A Has he provided a written report?

19 Q Yes, he has.

20 THE WITNESS: Do I have that
21 report?

22 MS. RODRIGUEZ: Yes, you should
23 have all of them.

24 THE WITNESS: I should have.

25 MS. RODRIGUEZ: Why don't you

0096

1 put them in front of them.

2 And whatever reports you have,
3 you're going to need them.

4 A Is that the -- let me ask you, is that the
5 one where they --

6 MS. RODRIGUEZ: So you're not
7 guessing.

8 A -- tested quite a few hours out at the long track?

9 BY MS. DORMAN:

10 Q At Uvalde?

11 A At Uvalde, yeah.

12 Q Yes.

13 A At Uvalde.

14 Q Yes.

15 A I would probably have some criticism on, you know,
16 what all that meant. I do remember, you know,
17 watching some clips, and you know, just as our
18 testing may have had limitations, his testing had
19 limitations. I didn't see anything like -- I

20 didn't see anything like real hard braking. You
21 know, I didn't see anything like that.

22 I -- I noticed one of the tires, it looked like
23 from one photo to another, or one picture to
24 another had -- one of the rear tires had been
25 changed out that made me, you know, ask some --

0097

1 some questions there.

2 But quite frankly, you know, quite frankly, you
3 know, I looked at some clips. And -- and you know,
4 I'm not really -- really prepared to -- to say
5 anything beyond that on his testing.

6 MS. DORMAN: This is a good
7 time to change our tape. I've
8 gotten the high sign from our
9 videographer.

10 VIDEOGRAPHER: Okay. This is
11 the end of the second hour of
12 Larry Yohe's deposition. The time
13 is 4:21.

14 (Short recess taken.)

15 VIDEOGRAPHER: All right. This
16 is the beginning of the third hour
17 of the video deposition of
18 Larry Yohe. And the time is 4:36.

19 You may continue questioning.

20 MS. DORMAN: Thank you, sir.

21 BY MS. DORMAN:

22 Q Mr. Yohe, we were talking about the Motor Coach
23 Industries expert reports that you had received and
24 reviewed.

25 Have you examined any other reports, other than

0098

1 Mr. Granite, Mr. Rykoba, and Virgil Hoogestraat's
2 depositions -- I'm sorry, not depositions, reports?

3 A Well, I've examined other reports.

4 Q Okay.

5 A You know, I don't know if they're from Motor Coach.

6 Q There's one from a gentleman named Greg Wright, who
7 I believe you met up in Louisville when he couldn't
8 find his keys at Suburban?

9 A Okay. I met him at Louisville?

10 Q Yes.

11 A Was he with Mr. Hoogestraat?

12 Q He was, yes.

13 A He was working with Mr. Hoogestraat.

14 Q Yes.

15 A Okay. So I did not -- did they -- I didn't
16 understand. So they both wrote reports on that?

17 Q Yes, sir.

18 A On that. Okay. So I probably didn't read
19 Mr. Wright's report. Could we pull it out?

20 Q Certainly.

21 A But -- but once, again, if it involves the

22 wiring -- if it involves the wiring of -- if it any
23 way involves the wiring of the -- the tag axle
24 system, you know, I probably wouldn't be qualified
25 to comment on it.

0099

1 But I would like to see what his conclusions.

2 Q His were more in line of what the findings were at
3 that last inspection on June 30th and July 1st.

4 But feel free to go ahead and turn to it, if --
5 if you would like.

6 A Well, it's not in here.

7 Q Do you know --

8 A What is the name again?

9 Q His name is Greg Wright, W-r-i-g-h-t.

10 A Okay. It's not in these books. I know it's not in
11 the books -- these books.

12 But, you know, the bottom line is, I haven't
13 read it. I haven't read his report, haven't had
14 time to read it. And I don't -- I don't see myself
15 reading it and digesting it in a couple minutes
16 here.

17 Q Okay.

18 A A few minutes here.

19 MS. RODRIGUEZ: It says Ruhl
20 Forensics at the top. It doesn't
21 have his name at the top.

22 THE WITNESS: What's it say?

23 MS. RODRIGUEZ: Ruhl, R-u-h-l.

24 THE WITNESS: R-u-h-l.

25 A I don't recall that. I don't recall seeing that.

0100

1 BY MS. DORMAN:

2 Q I want to go over some more of your e-mails. I'm
3 going to mark this e-mail, dated
4 July 11th 6:03 p.m. from you to Gene Brown as
5 Exhibit 7.

6 (Exhibit 7 marked for identification.)

7 BY MS. DORMAN:

8 Q There you go. It talks about deleting a report
9 that you sent to him earlier that day?

10 A Yes. And I -- like I said, I deleted the last
11 sentence, it was repetitive. And I don't know why
12 I put down possibly troublesome. Because we're
13 making too much of an issue out of it.

14 But I said, "Please delete the copy I sent a
15 couple of hours ago, I delete the sentence of the
16 report as being repetitive and possibly
17 troublesome."

18 And that was based upon, you know, it being
19 repetitive, repeating information about the
20 training, because it could be criticized. Well,
21 there should be more training. And that's what it
22 was about.

23 Q Okay. I'll put that in the middle of the table

24 there.

25 (Exhibit 8 marked for identification.)

0101

1 BY MS. DORMAN:

2 Q And what I've marked as Exhibit 8 is an e-mail,
3 dated May 17, 2001 from you to Tamara Rodriguez and
4 Alex Cook, attaching a letter outlining what you
5 have verbally agreed upon, and what needs to occur.

6 Will you take a look at that, and make sure
7 that I'm talking about the right documents.

8 A This is what I wrote.

9 Q Did Mr. Cook, Alex Cook ever communicate with you
10 in -- by e-mail?

11 A I can't recall him doing that. I was just
12 keeping -- you know, keeping him informed of that.
13 I don't recall -- I don't recall him ever like
14 responding, or you know.

15 Q Initiating anything to you by e-mail?

16 A Correct.

17 Q It looks like you have proposed having Mr. Brown,
18 who we talked to this morning, equip a -- a vehicle
19 similar to the one involved in our accident to
20 ensure that the steerable tag axle can be unlocked
21 while the vehicle is being driven, and be free to
22 caster, and also to provide an electro-pneumatic
23 means of forcing the tag axle wheels to the left or
24 right as needed?

25 A Did I say right?

0102

1 Q Yes.

2 A We never did that.

3 Q You never talked about turning --

4 A To the right. You can only set it up basically for
5 one direction.

6 Q Okay. And then you talk about the logistics for
7 the track, and doing the test driving, and writing
8 your report and charging your hourly rate of \$150;
9 is that right?

10 A Yes.

11 Q And you required a \$3,000 retainer; correct?

12 A That's correct.

13 Q Did you -- and I think I saw that you brought your
14 invoices with you today; is that right?

15 A I did.

16 Q Do you know what you have billed to date?

17 A \$9,950.

18 Q And that's as of when? Is that as of today?

19 A No. That was as of after the report was written.

20 Q So as of July 11th?

21 A As of -- yeah.

22 Q Or mid July?

23 A Yeah, mid July. I don't know, when did I -- let me
24 just see when I sent -- sent the invoice.

25 Everything probably up to August the 5th.

0103

1 Q Okay. I'll attach your billing file as Exhibit 9
2 to your deposition.

3 A Okay. You can have this copy, if you want.

4 Q Oh, thank you.

5 A It's on my computer.

6 Q Thanks very much.

7 (Exhibit 9 marked for identification.)

8 BY MS. DORMAN:

9 Q The last page of the proposal that you sent to
10 Miss Rodriguez and Mr. Cook has a portion that's
11 prepared by Mr. Frank Brown. And it says, What we
12 talked about earlier, lock cylinder activation
13 would be accomplished using a manual driver
14 activated three-position toggle switch that will be
15 tied into the original tag axle, and air and
16 electric solenoid valves. Also the tag axle
17 steering cylinder will be locked into the normal
18 aft position by disconnecting the original air
19 lines from the solenoid valve and supplying a
20 constant air supply to the castering cylinder.

21 Do you know why that was proposed, that
22 second --

23 A Mr. Brown wrote that; right?

24 Q Yes. Yes.

25 A Okay. I'm going to ask you just one more time,

0104

1 could you repeat that last --

2 Q Certainly?

3 A -- paragraph.

4 Q The tag axle steering cylinder, the castering
5 cylinder will be locked into the normal aft
6 position by disconnecting the original air lines
7 from and Solenoid valve and supplying a constant
8 air supply to the castering cylinder.

9 Do you know why that was done?

10 A You know what, you know, I really don't. The
11 objective was to be able to lock it and unlock it.

12 Q And the lateral tag axle wheel deflection was to
13 accomplished by adding an air cylinder simply in
14 place of the original damper shock assembly;
15 correct?

16 A Right.

17 Q Did you have any conversations with Mr. Cook or
18 Mr. Brown about removing the original damper shock
19 assembly, about whether that would have any effect
20 on your testing, or anything like that?

21 A No. No, I didn't have those discussions. The only
22 discussion was, you know, how far to extend it.
23 How far to extend it. That was the -- but never --
24 I never had a discussion, because that cylinder, as
25 I understand it, in a way that would -- like you

0105

1 couldn't put both of them in there, the cylinder

2 and the --

3 Q And the damper?

4 A -- and the damper. It's like a shock. Kind of
5 like a shock absorber, I believe.

6 Q Do you know if anybody quantified how much
7 dampering effect the cylinder would have?

8 A I didn't.

9 Q Okay. And you don't know if anybody else?

10 A No, I don't.

11 Q Do you know if any testing was done on the 9-inch
12 cylinder to determine how it would operate before
13 this testing was done?

14 A The 9-inch cylinder?

15 Q Yes, sir.

16 A Okay.

17 Q The big one that was involved early.

18 A Well, I'm presuming that you -- that Frank covered
19 that. And I took it out after he had the first --
20 put that real big cylinder on. I took it out and
21 basically the tag went too far, and it bent and
22 eventually broke the tag stop on the other side.
23 And -- and in doing that, it went out farther than
24 what it was supposed to.

25 And so we had to end up replacing the cylinder.

0106

1 So we put a smaller one on. We determined we
2 didn't need such a big one, put a smaller one on.
3 And -- and we determined it should be three inch --
4 three inches was what we wanted to -- we wanted it
5 to go -- to travel. We wanted three inches of
6 travel.

7 Q Okay. Let me backup. The original cylinder that
8 was equipped by Mr. Brown was 9 inches; correct?

9 A You mean extended 9 inches?

10 Q He testified it was a 9-inch cylinder. And that
11 the second one was a 4-inch cylinder. So I'm
12 assuming he was talking about the diameter of the
13 cylinder?

14 A Can't be positive. Because both of them -- but
15 yes, that sounds about right. Because it was much,
16 much smaller. The second cylinder was much
17 smaller. It was a -- had a maximum force,
18 although, I don't think we used it, it had a
19 maximum force of 2500 pounds. Whereas, the first
20 one was 5,000 pounds.

21 Q Okay.

22 A So I kind of left that to him.

23 Q And do you know if he consulted with anyone to
24 determine how much force would be necessary for the
25 testing?

0107

1 A You know, I don't believe he did. He might have.
2 He might have. I don't -- I don't know that he did
3 or didn't.

4 Q But you-all didn't have any conversations about
5 that?

6 A You know what, I really don't remember. Now it
7 almost seems like light years away, although, it
8 was only June 8th -- June -- back in June. But it
9 just seems, you know, I can't remember those
10 conversations.

11 Quite frankly, you know, I was hoping he could
12 take care of all -- he didn't need me at all. You
13 know, that I didn't have to be, you know, part of
14 that.

15 And of course, once we broke -- once the first
16 cylinder, we had problems with the first cylinder,
17 you know, I had to get involved. And you know, and
18 went out and got the second cylinder. You know, so
19 I was involved somewhat.

20 Q The first cylinder was too big for the job. And
21 you found that out the day before these Bosch tests
22 were supposed to commence; correct?

23 A I wouldn't say it was too big for the job. I would
24 say we didn't have a limiting chain on it, which --
25 because it -- whether it was too big or not, it fit

0108

1 in there, it would have done the job if we had a
2 limiting chain on it.

3 Q But you didn't know to have a limiting chain on it
4 until you did your first trial run?

5 A Until I did my first test. And when I did my first
6 test, I couldn't get it to come back. I went into
7 panic mode.

8 Q Okay. Tell me about that, what happened?

9 A I was in -- I took it down to the -- there's a
10 gravel parking lot across from -- I think it's
11 owned by Fairmont Corporation. I just took the bus
12 down there, I didn't want to do it on the highway.
13 So just I took it in the gravel parking lot. And I
14 extended the cylinder. I was making a right turn.
15 It's a big parking lot. Making a right turn, and
16 it came out, and it wouldn't come back.

17 Q This trial run, when you say you were making a
18 turn. Can you describe the conditions for me, what
19 speed, what were your steering inputs, what were
20 your braking inputs?

21 A Yeah. Yeah. The speed was about 15 miles an hour,
22 maybe about 15 miles an hour. And I don't believe
23 I had any like hard braking inputs. I was just
24 turning to the right. Of course, I, you know, I'm
25 sure after -- and the thing went out there, it

0109

1 stuck, it kind of drug -- drug the bus along a
2 little bit. But of course, it's not getting good
3 traction in gravel.

4 And there was -- there was no intent on that
5 test run. I just -- I just wanted to see if it

6 would work. But there was no hard braking. As I
7 recall, there was no hard braking. And I was by
8 myself, so there was nothing being recorded. I
9 just wanted to simply see, you know, if it worked.
10 So I went in panic mode.

11 Q The -- the steering, how far did you steer to the
12 right?

13 A Oh, you know, I'm sure I didn't turn the wheel any
14 more than a quarter of a turn.

15 Q So if you're looking -- if you're -- you've got
16 your hands 10:00 and 2:00 or 9:00 and 3:00, a
17 quarter of a turn would be?

18 A Yeah, probably even less than that.

19 Q Not even --

20 A Probably --

21 Q Not even to 12:00 and 6:00?

22 A Yeah, I'd say something less than that.

23 Q And you estimate you were going about 15 miles an
24 hour?

25 A Probably about 15 miles an hour.

0110

1 Q Now under normal operation, the tag axle would be
2 unlocked anyway at that speed; correct?

3 A That's right.

4 Q And so during this test, did you force over the tag
5 axle to create even more tag turning?

6 A No. I created the tag -- I forced over the tag
7 axle primarily to see if it would work.

8 Q And at what point during your drive or your test
9 did you force it over?

10 A As soon as I -- shortly -- I left the blacktop
11 highway, and pulled into the parking lot, and just
12 sped it up -- sped it up a little bit, made the
13 right turn, and forced it over.

14 Q And my understanding is the tag axle went so far
15 over that it broke the steering stop?

16 A Actually initially it looked like it was bent. And
17 I just basically just touched it, put my hand on
18 it, and it came off, so it was broke. It was
19 broke.

20 Q And so you testified you went into panic mode,
21 what -- what happened next?

22 A Well, Frank was, you know, he wasn't home. He had
23 something to do that night, he wasn't home. And so
24 I went in the early the next morning, and told him
25 about it.

0111

1 And -- and so anyhow, he took time off work,
2 you know, as I did. But he's on the clock, I'm
3 not. You know, he's on the clock. He took time
4 off work. And we had to put -- well -- well, Alex
5 stopped by, and I told Alex about it. I told Alex
6 about it.

7 Q Alex Cook?

8 A Yeah, Alex Cook.

9 Q Okay. And what did he say?

10 A He stopped by. He says, well, you're going to have
11 to put another cylinder on it. And he had nothing
12 to do with -- he may have talked to Lee or the
13 supervisors, you know, to make sure we could get
14 time off.

15 But basically we took the initiative, it was
16 probably like close to lunchtime before we got
17 started. I went up and bought a new cylinder at
18 Tractor Supply, and brought it back. And then I --
19 I hired a welder to help him. It was after hours.
20 I hired a welder to help him weld it in there.

21 Q So --

22 A There was a plate in there that needed welding.

23 Q So this -- your trial run was about two days before
24 the actual Bosch testing?

25 A It was the day before -- well, wait a minute.

0112

1 Yeah, two days. Two days, right. Two days.

2 Q And if I understand correctly, the coach that you
3 used was taken out of service so that you could use
4 it; is that your understanding as well?

5 A That is my understanding.

6 Q And it arrived to you with some mechanical
7 problems, did it not?

8 A The engine was smoking, and it was a lack of power,
9 yes.

10 Q Do you know how long it had been in that state?

11 A Well, I didn't know, you know, I didn't really
12 know, you know, how long it had been in that state.
13 I wouldn't have been surprised if they sent it up
14 from -- and I can't remember if it came out of
15 El Paso or Dallas, I don't know where it came from.
16 But I would have been very surprised if they would
17 have sent us one in that condition. Because that
18 would be a long way to drive with a lack of power.

19 Q Before I forget, I'd like to mark your photo
20 notebook as Exhibit 10. If you can put that sticky
21 on the outside of your notebook.

22 A Okay.

23 Q Thank you, sir. Sorry for the reach.

24 A Okay. You know what, some of these pictures I took
25 out, and I want to put back in.

0113

1 Q Actually, those are the only ones you talked about.
2 We could just mark them separately and save some
3 copy costs.

4 Are those the only ones that you told me about?

5 A I would never say there -- you know, if this comes
6 up again.

7 Q Okay.

8 A If I see you again some day, I would never say
9 these are the only ones that I would want to use.

10 Q Understood. But today we've only talked about the
11 ones you've had in -- have in your hands; correct?

12 A Right.

13 Q I'm not prohibiting you from talking about anything
14 on this table. I just want to make sure that we've
15 got what you and I have talked about today.

16 A Yeah.

17 Q So why don't we just --

18 A Actually. The ones we -- there's like six here. I
19 think we've talked about. This is certainly one we
20 talked about.

21 Q Yes.

22 A And this is one we talked about. And --

23 Q I'll read you my numbers that I have.

24 A Yes. Go ahead.

25 Q 1543.

0114

1 A Okay.

2 Q 1524.

3 A Okay.

4 Q And 1518.

5 A And 1518, yes.

6 Q Okay. Why don't we group those three together, and
7 attached those as Exhibit 10. And I've got a --

8 A Do you have another -- do we need another green
9 sticker or not?

10 Q No, sir, we don't. That was just for your use, so
11 you wouldn't lose track.

12 A All righty. So you want me to just put this
13 like --

14 Q Sure. Up in the -- the white part would be great.
15 (Exhibits 10 and 11 marked for
16 identification.).

17 BY MS. DORMAN:

18 Q Okay. There. All righty. Okay. Here we go.
19 Exhibit 11 is another e-mail from your file, from
20 you to Dave Thompson, and David Thompson to you and
21 Tamara Rodriguez about issues with the sub -- the
22 Test Coach No. 60628.

23 And Mr. Thompson, director of operations for
24 Greyhound or Americanos is saying that the delivery
25 driver is reporting at low speed when the tag

0115

1 steers during a tight turn, it sometimes will not
2 return to center. The driver has utilized backing
3 under this circumstance to center the tag. When
4 braking at highway speeds there's a vibration felt
5 in the steering wheel. When the bus is idling or
6 turned off, the driver hears an air leak. And the
7 tag steering light is constantly on.

8 Have you take a look at that. It's right there
9 in the middle of the first page.

10 A Okay. Okay.

11 Q I just wondered if I had -- I wanted to ask you if

12 I read that correctly, the -- the items about --
13 that summarize the problems with the coach?

14 A You have. You have read it correctly.

15 Q Okay. What was done to remedy those problems?

16 A This is what I was told. When I went into Chicago
17 to pick up the bus, they told me these problems
18 were taken care of. And so I didn't question
19 beyond that.

20 I can assure you that certainly I never felt
21 any vibrations in the steering wheel, you know,
22 under any kind of braking. And quite frankly, I
23 thought the bus drove well.

24 Q So all of these issues were remedied by the time
25 you --

0116

1 A Supposedly, yeah. Because I don't remember any of
2 these problems. The only problem I had, it had
3 apparently had -- it hadn't showed up yet.

4 The only problem I had, just to get this --
5 just get this out in the open to see how this could
6 have occurred. You know, when -- when it got to
7 Chicago, you know, apparently the person who
8 brought up didn't tell them what to do with it, and
9 they sent it out on a scheduled run.

10 Q Awe.

11 A So I had to wait. I didn't -- wasn't able to pick
12 it up until late Sunday night. And that's when I
13 talked to David -- when I talked to David and said,
14 hey, the bus was sent out on a run. Because I
15 called in to Chicago to see if it was -- to see if
16 the bus was there. And I was told, you know, the
17 thing had been -- it was sent out on a run.

18 And so apparently whoever it was out on the run
19 told them he had engine -- he had problems. I mean
20 it could run. I mean it wasn't -- wasn't anything
21 dangerous, but there was a loss of power. And so
22 we had to -- I ended up taking it to a Detroit
23 facility to -- to have them analyze and fix it.

24 Q So if I understand your testimony, these problems
25 were fixed -- it was reported to you that these

0117

1 problems were fixed?

2 A That these problems were fixed.

3 Q And you took it to a Detroit facility to have the
4 engine checked?

5 A Right.

6 Q Okay.

7 A Right.

8 Q The -- this brings me to a question I have about
9 the -- about the drivers. The drivers are a good
10 source of information about what's going on with
11 the coach, are they not?

12 A Yes.

13 Q It's important for the drivers to note when they're

14 having problems, so that they can fixed; correct?

15 A That is correct.

16 Q And if a driver fails to note what problems he or
17 she is having, unless another driver down the road
18 reports it, there's little chance that that will be
19 discovered; correct?

20 MS. RODRIGUEZ: Objection,
21 form.

22 A Unless another driver --

23 BY MS. DORMAN:

24 Q Reports?

25 A -- reports it.

0118

1 Q If the first one doesn't, maybe the next run
2 somebody will say something. But unless somebody
3 reports it, no one's going to know?

4 MS. DORMAN: Objection,
5 leading.

6 A Unless it's on -- unless it's on like routine
7 maintenance they might find something. Routine
8 maintenance or a test drive. But you're right,
9 that -- that is a -- that is a primary -- that is a
10 primary method by which maintenance facilities,
11 maintenances garages and people decide what to do.
12 Is driver's -- driver's complaints, driver's
13 reports.

14 BY MS. DORMAN:

15 Q And the tag steering light being constantly on,
16 what is that telling the driver?

17 A It's telling him it's unlocked.

18 Q Okay. That's what the tag steering light is for;
19 correct?

20 A I need to have the MCI book in front of me. But
21 tag -- tag unlock is what -- is what it says. Tag
22 unlock. That's one of the telltale lights is tag
23 unlock.

24 Q So if that light bulb for the tag steering light
25 happens to be burned out, and you've got an

0119

1 unlocked tag, the driver may not know unless
2 something happens to the -- the steering of the
3 coach; is that fair to say?

4 MS. RODRIGUEZ: Objection,
5 form.

6 A The question you're asking has a lot of
7 implications.

8 BY MS. DORMAN:

9 Q Okay.

10 A You know, under -- you mean -- are you asking like
11 is it a dangerous situation, or I don't know?

12 Q Oh, no.

13 A I don't know exact -- would you --

14 Q Let me --

15 A Excuse me.

16 Q -- try it again.
17 A Pardon me, and try it again.
18 Q Yeah.
19 A Okay.
20 Q No problem. I'm -- I'm happy to -- to rephrase it
21 so it's clear. Sometimes I don't ask the clearest
22 questions.
23 Assume with me that a driver is driving a coach
24 over 20 miles an hour.
25 A Uh-hum.
0120
1 Q And assume with me that the tag axle is unlocked.
2 A Uh-hum.
3 Q That is not a normal condition in the 102DL3;
4 correct?
5 A That is correct.
6 Q Assume with me that the tag axle light bulb is
7 burned out, how is the driver going to know that
8 his or her tag axle is unlocked?
9 A Should feel it. If he's going down a straight
10 highway, he won't feel it. If he's going around a
11 curve, which has happened to me, not with an MCI,
12 but with a Setra where a tag was unlocked, you feel
13 a little fishtail. It's not severe, but you -- you
14 know something's -- something's wrong back there.
15 But you feel a fishtail, if it's-- if it's --
16 if it's not locked. Like I say, I would never say
17 it's inherently dangerous under all circumstances,
18 but a driver should be able to feel that --
19 Q Okay.
20 A -- if it' -- if it's unlocked.
21 Q Would it necessarily cause a loss of control in and
22 of itself?
23 A Only under certain -- well, let's put it this way.
24 It would not cause a loss of control under ordinary
25 highway driving. And I don't know, I've heard
0121
1 things from different drivers that -- like crossing
2 railroad tracks or something where the tag was
3 unlocked.
4 And I'm not talking -- I'm talking about long
5 before, you know, this case came up. That they can
6 feel the back end being squirrely, they call it
7 squirrely. You know, kind of moving from side to
8 side.
9 So it depends on the road conditions. I
10 believe the road, is it a rough road, is there
11 sharp turns. But under a ordinary smooth, you
12 know, road with gradual curves, you know, it should
13 present no problem. As far as, you know, causing
14 it to go out of control.
15 (Exhibit 12 marked for identification.)
16 BY MS. DORMAN:
17 Q I'm going to -- I've marked as Exhibit 12, the

18 follow-up e-mail from you to David Thompson, dated
19 Tuesday, May 31st. And it essentially telling
20 Mr. Thompson that you picked up the -- the coach.
21 And it's still having problems regarding lacking
22 power at higher RPMs.
23 And it says, "In short we're going to try to
24 make due, as we have track testing scheduled for
25 June 11th."

0122

1 Take a look at that Exhibit, and let me know if
2 that's your understanding of the substance of that
3 e-mail.
4 A I -- I wrote that e-mail to Mr. Thompson, yes.
5 Q Okay. And the substance is --
6 A Looks -- looks the same to me as when I wrote it.
7 Q Okay. The conclusion says, "In short, it was not
8 fixed in Memphis. Again, Dave, we're going to try
9 to make it work as is. Regards, Larry Yohe."

10 Is that fair to say?

11 A That's what I wrote.

12 (Exhibit 13 and 14 marked for
13 identification.)

14 BY MS. DORMAN:

15 Q Okay. The next issue that I note in the e-mails is
16 a concern about the Bosch test track being adequate
17 for the testing involved. And I'll mark as
18 Exhibit 14 an e-mail string from you to Tamara
19 Rodriguez, response from Miss Rodriguez to you, and
20 then one from you back to her.

21 Generally my impression is 65 miles an hour
22 cannot be supported on their skid pad, meaning
23 Bosch skid pad, it's not large enough to
24 accommodate speeds that high. And Tamara is asking
25 if -- you if that will be a problem.

0123

1 Will you take a look at Exhibit 14.

2 Oh, I skipped 13. I'll ask you about this in
3 just a sec.

4 A It sure looks to me like this e-mail is as written
5 by myself. And -- and what Tamara wrote, it looks
6 to me like it hasn't been changed.

7 Q Okay. And these are the e-mails that you produced
8 to Miss Rodriguez that she provided to us; correct?

9 A I believe that's the ones, yes.

10 Q Okay. And if I understand your -- your mission
11 with this testing, it was to do some higher speed
12 testing and some skid testing; is that correct?

13 A You know what, it -- everything wasn't well-defined
14 before, you know, we did it. One thing for sure, I
15 wanted to see what it feels like if the tag axle
16 goes sideways. That's -- that was -- that was
17 primary. I wanted to see if in a curve, if it was
18 unlocked and we braked what effect that would have
19 on the tag axle, on the tag axle.

20 It -- it -- obviously, it couldn't duplicate
21 the accident for a number of reasons including --
22 including a failed driveshaft. But basically it
23 was so I could feel, you know, what it -- what it
24 would be like if the tag axle was -- had gone to
25 the left.

0124

1 Q And I understand you initially wanted to do some
2 higher speed testing around 65 miles an hour and
3 some skid testing; is that correct?

4 A Well, we did do some type of skid testing. We
5 locked the wheels.

6 Q And --

7 A I would have liked to have done higher speed
8 testing, yes.

9 Q The one e-mail I want to ask you about, and I
10 forgot to show you is 13, about mentioning
11 complications. You're e-mailing David Thompson
12 letting him know that you haven't mentioned these
13 complications to Miss Rodriguez.

14 A Because I figured she would be --

15 Q Were you afraid?

16 A If I called her and said, hey, you know what, that
17 bus we -- we got they sent it on the night run to
18 Memphis. I figured she'd be freaking out, so.

19 Q Okay.

20 A You know.

21 Q So it's the mechanical issues that you didn't
22 mention?

23 A Right.

24 Q Okay.

25 A Right.

0125

1 Q It's not the logistics about the track?

2 A Had nothing to do with that. No, it was -- it was
3 a couple things, yes, the mechanical. But also --
4 let me see when this was written, because --
5 Tuesday, yeah. Yeah.

6 Well, she was going to be told about the
7 mechanical -- mechanical issues. But there was a
8 combination of mechanical issues, the -- she would
9 be worried, hey, are we going to have this bus
10 there time.

11 Q Sure.

12 A You know, that's all that was about.

13 (Exhibit 15 marked for identification.)

14 BY MS. DORMAN:

15 Q Okay. And Exhibit 15 is an e-mail to from you to
16 Miss Rodriguez saying, "I was thinking about your
17 e-mail yesterday. Yes, I think we can make our
18 point at the Bosch track in South Bend. However,
19 admittedly there are some space limitations
20 regarding higher speed testing, some of which you
21 emphasized in your e-mail."

22 You go onto suggest a transportation research
23 center in East Liberty, Ohio, as an alternative.
24 And you make a suggestion, "Would you like to make
25 a preliminary call to see what they might charge
0126

1 and any other ramifications that may be involved?
2 One thing for certain, there would be no doubt as
3 to whether they would have appropriate space for us
4 to do what we need."

5 Did I summarize that correctly?

6 A You summarized it correctly.

7 Q All right. What e-mail are you referencing from
8 Miss Rodriguez to you, do you know?

9 When it says, some of which you emphasized in
10 your e-mail, the end of first paragraph?

11 A You know what, I -- I -- I don't know. And I would
12 never say it's not possible that -- that it could
13 have got deleted. But I do not -- you know, I was
14 thinking about your e-mail yesterday. This is
15 Thursday, June the 2nd. Thursday, June the 2nd.

16 Q Actually, if you look down in the middle it says,
17 Wednesday, June 1st. That's the -- the e-mail I'm
18 talking about, the one from you to Miss Rodriguez.

19 A Okay. And what's the date of the one -- the last
20 one when I said to David Thompson, I said, Tamara
21 doesn't know anything about this.

22 Q I think it was the -- the 31st of May?

23 A 31st of May, Thursday.

24 Q Yes, 31st of May. And Ms. Rodriguez e-mailed you
25 on the 31st of May.

0127

1 A Yeah, I -- I -- I mean I think she was concerned
2 about the space. Oh, she had talked to Judy,
3 who -- who is one of the supervisors, one of the
4 top people at the Bosch track.

5 Q Yes.

6 A And -- and she had -- I know she had called me, and
7 she was concerned about the space limitations.

8 And I -- I can only say, I believe that's what that
9 was all about.

10 Q And the very last part before you close is, One
11 thing for certain there would be no doubt as to
12 whether they would have appropriate space for us to
13 do what we need. Is that correct?

14 Actually, it says, me need, but I think maybe
15 that was a typo.

16 A Okay. We need, right. One second.

17 Yes, in other words, we're talking about the
18 TRB track in East Liberty, Ohio, there would be no
19 doubt. In other words, we had some doubt about
20 there -- there would be enough space at -- space at
21 Bosch. But there would be no doubt if we had gone
22 to the TRB track.

23 Q And do you know why this testing was not done at a

24 larger track that would accommodate higher speeds?

25 A Because part of it was logistics. It worked easily

0128

1 for us at Bosch. I mean this -- if we thought we
2 couldn't get any good out of it at Bosch, we
3 wouldn't have done it there. But I mean part of it
4 was logistics. Frank worked there. It was
5 close-by. We had the bus here.

6 Looks like they had a lot stricter regimen down
7 in -- in East Liberty Ohio, which is a former DOT
8 track -- DOT track. Tom Fugger told us how strict
9 they were. And -- and you can't have one drop of
10 oil coming out. And -- and not that I noticed it
11 was leaking oil, but you know, I couldn't guarantee
12 that kind -- I don't want to get down there and
13 have problems with those people.

14 They wanted to apply their -- they wanted to
15 supply their own driver. And that would bring up a
16 whole a lot of complications for various reasons.
17 Just for this -- he would have to be at this
18 process here today. So there was -- they weren't
19 making it easy for us to, you know, to go there,
20 especially in a timely manner.

21 Q Did you ever consider coming to the Uvalde test
22 track in Texas?

23 A Not for this test. Not to this test. I mean I
24 have driven on the Uvalde track. Again, part of it
25 was a matter of logistics. I was here, Frank was

0129

1 here, we were both working up here, and this --
2 this made it easy.

3 You know, quite frankly -- quite frankly, I
4 didn't see -- I felt like we needed a big open
5 space. And actually, like Texas A & M, that would
6 be like a very ideal place for it, you know. They
7 don't have that really -- you can -- the
8 Continental track had a lot of advantages, but it
9 still didn't have that big open space, you know.

10 Q The last problem I saw with the test coach was
11 noted on June 7th of 2011, where you report to
12 David Thompson that one of the nuts came off of a
13 leveling arm while you were on the Indiana Toll
14 Road, and the bus leaned and cut into the one of
15 the air bags.

16 Is that the air bag situation you were -- I
17 don't know if you mentioned it, or if that was from
18 Mr. Brown's deposition.

19 A I don't -- I don't think I mentioned it, yeah.

20 Q Okay.

21 A I was bringing it back from Fort Wayne, and almost
22 to Frank's house, and it started to lean suddenly
23 to the right. And I could hear like some air. So
24 yes, this is my e-mail, and we had to have --
25 again, we had to get air bags, and -- and -- and

0130

1 fix that before we proceeded.

2 Q And was that fixed?

3 A It was.

4 Q Were there any other problems or issues that came
5 up with the test bus in advance of the testing that
6 you did at the Bosch Proving Grounds on June 18?

7 A You know, there was nothing about the coach that
8 made me feel, you know, uncomfortable with it.
9 Like I said, I drove it from Chicago to here to
10 Fort Wayne, Indiana, you know, back here. You
11 know, I wasn't uncomfortable in any way. And I
12 don't recall any other specific, you know,
13 problems.

14 Q The -- of course, the other problem was the day or
15 two days before when you had to reconfigure the
16 cylinder, and that -- the steering stop was broken
17 off.

18 Was there any thought of perhaps getting
19 another coach that had a steering stop intact?

20 A Well, first of all, we could have probably changed
21 that steering stop out in 20 minutes. We just
22 didn't feel we needed it with the chain on there.

23 Q Okay.

24 A That was not -- to me that was a nonissue.

25 Q Did you have any sort of written protocol of the --

0131

1 the testing parameters, the speeds that you wanted
2 to run, the -- the conditions that you wanted to
3 run, under which you wanted to run, anything like
4 that before you started on the 18th of June at the
5 Bosch test track?

6 A We didn't have anything written, no. We knew we
7 wanted to make up some type of right, you know,
8 right curve. And put the tag axle in both
9 positions, locked and unlocked, and do different
10 things, braking, you know, braking, not braking.
11 We knew we wanted to do different things. But no,
12 there was not a written protocol.

13 And part of that was it didn't -- I mean Bosch
14 didn't ask -- ask for a written protocol -- for a
15 written protocol. When -- you know, you get into
16 those situations, and you know, maybe you do want
17 to run high -- push it a little bit, run higher
18 speeds. And I didn't want to violate the protocol,
19 so we didn't put anything in writing.

20 Q Who all was involved in the decision-making for
21 what tests would be run?

22 A Basically Alex Cook and myself.

23 Q What did Mr. Cook contribute?

24 A You know, he -- he suggested, you know, various,
25 you know, turns, the locking and unlocking the

0132

1 brake. So he had input, and I had -- I had input.

2 I was the one that suggested that we run the
3 bus in a straight path -- a straight path, and keep
4 the steering wheel straight and activate the -- the
5 push out on the tag axle to see what -- what
6 happens, that was my suggestion. So both --
7 basically -- basically he and I.

8 Other people could have had input. Tom, I
9 don't remember if Tom Fugger, who was there, I
10 don't know if he made any suggestions or not. I
11 know he didn't want me to roll the bus, you know.

12 But I mean -- and I don't recall Frank
13 specifically saying why don't you do this test.

14 I -- you know, I don't recall him. It was
15 basically Alex and myself, Alex Cook.

16 Q Was that before you started the testing or as you
17 went through the testing that these decisions were
18 made?

19 A I can't recall. A lot of it, you know, some of it
20 was impromptu. Some of it we discussed ahead of
21 time. And some of it was -- was impromptu.

22 Q We saw two different run logs, Test Run Logs for
23 the Test Coach 60628.

24 A Uh-hum.

25 Q Did -- first of all, did you prepare any logs of
0133

1 the runs that were done that day on June 18th of
2 2011?

3 A No, Frank did. I was -- I had my hands full, you
4 know driving. And Frank was basically the -- he
5 and Tom Fugger were basically the record-keepers.

6 Q I'm going to clip these together, and mark them as
7 Exhibit 17, so we have them both handy.

8 (Exhibit 17 marked for identification.)

9 BY MS. DORMAN:

10 Q Have you reviewed those documents, sir? And take
11 your time.

12 A Yeah, I have.

13 Q Okay.

14 A I mean I basically have. And I've, you know,
15 looked at -- I've relooked at selected films, I
16 haven't gone through everything in the last day,
17 but I've looked at films.

18 Q Do --

19 A I pretty much know what they say.

20 Q Okay. Do you know why one is more complete than
21 the other?

22 A Yes, Frank -- he took it upon himself, I think, to
23 uh -- he -- as my recall and my discussions with
24 him, he took it upon himself, the first two that we
25 didn't video, first two or three in one -- the

0134

1 first ones, he said, well, there's no use putting
2 that in there, we didn't video it.

3 And -- and I mean I told him, Frank, bring both

4 reports. Because his -- in his final report, he
5 didn't include what you couldn't see. You know
6 what I mean, what -- what was not there in the
7 video, you know, he didn't include it.

8 So that was strictly -- I believe that was
9 strictly his decision. And so that was the
10 reason -- that's the reason for two different
11 reports.

12 Q Okay. If you will look at Test 3 in the final
13 draft.

14 A Okay.

15 Q And I think it's the same as Test 6 in the
16 preliminary.

17 A Okay.

18 Q Can you compare those, and let me know what you
19 think.

20 A You know what, do you -- I'm trying to look and see
21 which one is final. Oh, that's preliminary. Okay.

22 This is the final. Okay. So you want me to look
23 at test --

24 Q Three --

25 A -- 3 --

0135

1 Q -- in the final.

2 A -- in the final. Okay. That's the first page I
3 have here.

4 Q Yes, sir.

5 A Okay.

6 Q And then Test 6 in the preliminary.

7 A Okay.

8 Q Do those appear to be the same tests? Are we
9 talking about the same procedures?

10 A Well, I haven't reviewed them word for word, but it
11 certainly -- it looks like it -- I mean just

12 looking at the -- his word spacing here. Hold on.

13 I would say that is -- that is -- that is the same
14 test.

15 Q And in those tests, were the -- was the tag axle
16 locked or unlocked?

17 A It was unlocked.

18 Q And were there any problems controlling the coach?

19 A You know, that's one where the rear wheels, so
20 everybody tells me, it was look and actually came

21 off the ground about 6 inches maybe, as it was --
22 as it was coming to a stop.

23 Q Does it say that in the report?

24 A It says potential roll condition.

25 Q Where does it say that the wheels came off the

0136

1 ground 6 inches?

2 A It doesn't say that in the report. And in the
3 video, Frank just happens to be blocking the

4 camera. But there was one -- I'm just guessing,

5 because they -- there was one that -- that broke --

6 what they say broke air, you know, broke air. And
7 it come up off the ground a little bit. And it --
8 I'd say it's this one. The way Frank described it,
9 potential -- because that's the only one he said
10 potential roll condition.

11 Q Did the -- did the drive tires lock up during that
12 test? Drive wheels?

13 A They certainly skidded sideways. I -- I can't say
14 positively, you know. You know, if -- if the left
15 side locked up.

16 What we found out in testing, oftentimes the
17 right side will un -- it will lock, the left side
18 won't, and that's normal.

19 Let's put it this way, it's typical, because
20 when you're going around a curve you get weight
21 shifting, shifting to the left side, you have
22 weight shifting to the left side, you're unloading
23 the right side. So it takes more brake force to
24 lock the left side than it does the right side.

25 So we could show that, I mean if you want to
0137

1 look at the video, we can show that in -- I mean at
2 least one of the tests, I could look at and
3 show you -- show you that condition.

4 But -- but when the bus skidded sideways, then
5 obviously you have -- it wouldn't matter whether
6 they're locked or unlocked, it shows pretty much
7 the same type of sideways skid mark.

8 MS. DORMAN: Objection to the
9 nonresponsive portion of that
10 answer.

11 BY MS. DORMAN:

12 Q Were there video cameras on both sides of the --
13 the coach to video the conditions on -- on both the
14 driver and passenger side of the coach?

15 A I don't think so. Just the left side. Just the
16 tag axle side. Just the side with the cylinder.

17 Q Okay. Which is the driver's side?

18 A Right. The left side, or the driver's side.

19 Q Do you have an opinion about what caused the tag
20 axle to become forced over during the accident
21 sequence for the subject bus?

22 A You know, I -- I feel like I shouldn't render an
23 opinion. I mean I can see some -- if it's not
24 direct, it's at least induced damage. You can see
25 the cylinder slanted to the side.

0138

1 Q Which cylinder?

2 A The locking cylinder. In the accident bus we're
3 talking about.

4 Q Yes, sir.

5 A The locking cylinder. But to say exactly what hit
6 what, I feel very uncomfortable, you know,
7 speculating about that. And I would rather not,

8 because I don't feel -- I don't feel confident that
9 I would -- that I know for sure.
10 Q Has Mr. Cook ever expressed an opinion to you about
11 what he thinks happened to cause the tag axle to --
12 to shift to the side during the accident?

13 A Well, we have talked about it. And I, uh, you
14 know, there was a lot of banging around back there,
15 and that's kind of like we had a little
16 discussions. And I feel it was something from the
17 driveshaft, obviously, it was flailing around. And
18 exactly what component hit what, I don't remember
19 him actually saying what he, you know, what he
20 thought.

21 I mean we've had little discussions about it.
22 But it was obvious to us that you had a heavy
23 object, you know, rotating at a -- a high speed
24 and -- but like I said, exactly what hit what
25 first, I don't know. And -- and I guess I

0139

1 shouldn't render an opinion. Actually, I don't
2 have a strong opinion on what hit what.

3 MS. DORMAN: Hold that thought,
4 we have to change tapes.

5 VIDEOGRAPHER: We're going to
6 change tapes.

7 MS. DORMAN: Just sit tight.

8 VIDEOGRAPHER: The -- this is
9 the end of the third hour of the
10 video deposition of Larry Yohe. And
11 the time is 5:36.

12 (Short recess taken.)

13 VIDEOGRAPHER: This is the
14 beginning of the fourth tape of
15 Larry Yohe. And the time is 3:00 --
16 no, I'm sorry, 5:39.

17 You may continue.

18 MS. DORMAN: Thank you, sir.

19 BY MS. DORMAN:

20 Q Mr. Yohe, we were talking about theories of what
21 caused the tag axle to become forced over, so to
22 speak, during the actual accident sequence.

23 A Uh-huh.

24 Q And I asked you if you had an opinion. And you
25 said not really. What about Mr. Cook, has he

0140

1 expressed to you any opinion about what caused the
2 tag axle to go to one side during the accident
3 sequence?

4 MS. RODRIGUEZ: Objection,
5 form.

6 A If I would answer that what Mr. Cook thinks. First
7 of all, I can't even remember exactly what he said.
8 You know, I feel like I'd be misrep -- I'd be
9 taking the chance of misrepresenting his true

10 thoughts.

11 BY MS. DORMAN:

12 Q Okay.

13 A That's one thing for sure, and it had to do with
14 that -- with that -- the end of the shaft, you
15 know, striking -- striking things, so.

16 But I -- I feel like it would be a mistake for
17 me to -- first of all, like I said, I can't even
18 remember, you know, what he said, because it just
19 seemed to us, me, I think him too, because we
20 talked, it seemed obvious, it's, you know,
21 something that's turning hit -- hit -- hit directly
22 or indirectly, either through direct or induced
23 damage, the tag axle mechanism.

24 So that was -- that was a possibility and
25 that's as far as I can -- I can take that. Also --

0141

1 as far as representing Mr. Cook's thoughts, that's
2 as far as I feel like I -- I can take that.

3 Q Understood. When you say something hit or directly
4 or -- directly the tag axle mechanism, what are you
5 talking about?

6 A The end of the shaft of the yoke I guess you would
7 call it. The yoke.

8 Q The pass through, the tag axle pass through, the
9 large loop, the horse collar as Mr. Jones calls it?

10 MS. RODRIGUEZ: Objection,
11 form.

12 BY MS. DORMAN:

13 Q Or are we talking about the tie rod?

14 MS. RODRIGUEZ: Objection,
15 form.

16 A You know what, I -- as I said, I -- I -- I feel
17 like that if I say -- say that it would be
18 speculation. And I don't want to speculate on
19 something that I don't feel -- I mean, you know,
20 there was two possibilities that I saw.

21 BY MS. DORMAN:

22 Q Which are what?

23 A That could have contributed to that. I mean the
24 one possibility was through the speed sensor, if
25 everything had been working right, that's a

0142

1 possibility that unlocked it. But that's not what
2 forced it over. That will not force -- if it --
3 even if it came unlocked, you know. Something had
4 to, you know, there had to be some contact going on
5 there. And that's as far as I can, you know, could
6 go.

7 Q Did you study the contact marks?

8 A I looked at them. If you look at my pictures,
9 you'll see contact marks. But I looked at them, I
10 didn't try to determine what kind of forces. First
11 of all, I don't have that kind of engineering

12 background. What kind of forces.

13 But one thing for sure, I mean just as a
14 general statement, it was certainly indentations,
15 not just scratches, heavy metal indentations.

16 Q Who selected the speeds for the testing that you
17 did at the Bosch Proving Grounds?

18 A Well, they kept cautioning me, various ones, you
19 know, not to go too fast. Alex and I would talk
20 about it. You know, okay, let's try it at various
21 speeds. But I think after we had that -- what
22 Frank called the potential roll condition, we knew
23 we didn't want to go over that speed, if the bus
24 was going to go sideways, so.

25 And I think they had told the Bosch people, you
0143

1 know, that it wouldn't be high speed testing, so.
2 Even though I want to do it at higher speeds, which
3 I did, just for the sake of all involved,
4 decided -- you know, we didn't do it.

5 Q Was there any consideration given to doing some
6 testing without any forcing over the -- the tag,
7 with just driving straight ahead at highway speeds
8 with the tag axle unlocked to see what the
9 sensation would be for the driver?

10 A No. No. But I would be willing to say the
11 sensation would be nothing, if -- as long as I was
12 good highway, that there wouldn't be much of a
13 sensation. So we didn't think -- we didn't think
14 about doing that on the test track.

15 I suppose in retrospect that would have been a
16 nice thing to take the bus around the track at
17 higher speeds and try that, but.

18 Q It could have been done, but it just wasn't done?

19 A Yeah, it wasn't done. You know, it wasn't done.

20 Q Did anyone in your group, I guess, Mr. -- Mr. Cook
21 and yourself, consider any other ways for the coach
22 to have moved the way it did at the accident scene,
23 other than the tag axle becoming forced over early
24 on in the -- in the accident sequence?

25 A When you say in our group. You know, I have to say
0144

1 this, I mean when I saw the -- the mark -- those
2 tire marks, which I'd never ever seen anything like
3 that. Bald the tire. I mean you -- you have
4 six tire -- you have eight wheels on a bus, eight
5 tires on a bus, so you know, you can get down to
6 the process of elimination, you -- you've got so
7 many tires to pick for a certain thing.

8 I didn't -- you know, I mean I know other
9 experts have suggested other things. I've read the
10 reports, but. And I've certainly thought, I mean
11 I've certainly tried to rule out every -- in my
12 mind.

13 Q And that -- and that's my question, was there any

14 other consideration of other options for how this
15 coach moved the way it did?
16 A Uh-hum. Uh-hum. And -- and the only other option
17 you would in my mind would be what certain experts,
18 Plaintiff's experts I understand, you know, have
19 suggested that the driver braked and steered to the
20 right.

21 Q If you had to say one person was in charge of this
22 Bosch testing, who would it have been?

23 A I would say me as much as anybody. But also Alex,
24 you know, I think it was a joint -- a joint thing.

25 Q You and Mr. Cook jointly?

0145

1 A I -- I -- I believe it was, yes. I mean I never
2 tried to weigh that before. But I'd say it was
3 very much a joint thing. He did what I wanted,
4 things I suggested. And I did things he suggested.

5 Q Were you familiar with the Americanos Bus Line
6 before this case?

7 A To somewhat. I mean only because I live in -- I
8 live in Colorado. And I live about a mile off of
9 I-25, and I see Americanos buses on a regular
10 basis.

11 Q You understand that Americanos is a bus carrier,
12 they carry people on their buses; correct?

13 A I understand that.

14 Q Do you know if they sell any coaches?

15 A Sell them?

16 Q Yes, sir.

17 A Like sell used coaches?

18 Q Sure.

19 A I do not know that. But it would certainly be a
20 common practice for any bus company to at some
21 point say they want to sell this coach.

22 Q Do you know if they sell any parts for coaches?

23 A Americanos?

24 Q Yes, sir.

25 A I -- I do -- I would -- I could only speculate. If

0146

1 you wanted me to speculate, I would speculate -- I
2 would speculate, but I cannot speculate.

3 Q Just tell me what you know. Okay. So --

4 A Then I know nothing.

5 Q Okay. Looking at your report, which I've marked as
6 Exhibit 2. You've got your copy in front of you, I
7 think?

8 A Somewhere here.

9 Q Or somewhere close?

10 A Close-by.

11 Q Take your time.

12 A Okay. All righty.

13 Q I think we've covered most of the conditions for
14 the testing in our time together today. And I
15 wanted to ask you some questions about some

16 specific parts.

17 A Okay.

18 Q Under -- on Page 3.

19 A All right.

20 Q Under driveshaft failure and subsequent vehicle
21 dynamics?

22 A Okay.

23 Q Let me know when you're there.

24 A I am here.

25 Q It says, "The accident investigation conducted by
0147

1 Texas DPS, et al. has shown that there was a
2 failure in the drivetrain, which result in the
3 driveshaft coming lose and ultimately being totally
4 separated from the vehicle."

5 Do you see that?

6 A You know, I see that. And you know, there's --
7 there's one thing that I want to correct. I was
8 rereading this yesterday, and I attribute that --
9 if you read the DPS report, I'm not saying they
10 make that exact statement, but that information is
11 in there.

12 But the way I've written -- written the
13 subsections 1, 2, 3, 4, I really meant to stop, and
14 say, I don't want to attribute all this to DPS.
15 Although, I think it's all in their report.

16 Q Okay.

17 A I meant to attribute the first one, No. 1 to DPS.
18 And I cannot -- I don't want to attribute the rest
19 of it, even though I believe that they probably
20 think that.

21 But -- but I -- I looked at it, and I said, the
22 way it's reading, I'm attributing not just 1, but
23 2, 3 and 4 to DPS. And -- and I don't want to
24 attribute that to DPS. Even though, like I said, I
25 think there's probably enough information in there

0148

1 that --

2 Q Where else would you have gotten the information?

3 A That the tag axle came unlocked. Well, I looked at
4 the tag -- tag axle locking mechanism was found in
5 the unlocked position. I don't know whether my
6 attorney told me that or Alex, but I wanted to see
7 it myself. So I saw that myself. And I also saw
8 it in Corporal Olive's -- of course, that was -- I
9 read that after this was written. But I saw it
10 myself.

11 Q On June 30th, when you were --

12 A On June 30th.

13 Q -- in Louisville, Kentucky?

14 A When we met down in Louisville, right.

15 Q And then the -- under assessment of driver's
16 actions?

17 A Okay.

18 Q Your relevant questions become after the driveshaft
19 failure, what action could the driver have taken to
20 prevent or otherwise mitigate the seriousness of
21 this crash.

22 What actions do you think she could have taken?

23 A Okay. In -- in my estimation, again, as I've
24 explained, I feel like it was the tag axle that --
25 the tag axle that brought the front of the -- the

0149

1 bus was being steered basically from the tag axle.

2 And it's what brought the front of the bus around.

3 And the only thing, the only action that she
4 could have taken, and this is why I talk about
5 training is like when you have a bus that within
6 two seconds it's going off the roadway, you know,
7 obviously, she is going to brake, it's a normal --
8 I would say when somebody's going off the roadway,
9 that's a normal response. And to steer in the
10 opposite direction is a normal response.

11 How much input to put into that steering wheel,
12 you know, in an emergency situation -- in an
13 emergency situation, I say that would be a
14 difficult thing for her or any driver to know.
15 I -- I -- like I said, I tried to put other drivers
16 in that position, I'm just saying mentally --
17 mentally, and I don't know the answer to that.

18 And this is why I would liked to have done high
19 speed testing with similar curves to, you know, to
20 see how much you should turn, you know, in that
21 condition. But it -- it -- it -- it would be --
22 it's you know, a dangerous situation.

23 But that's the only thing that I see that once
24 the driveshaft failure occurred. And all -- she
25 heard all these noises, and there was shaking --

0150

1 shaking, I say that, not just because I -- I happen
2 to be down at ABC when they exploded that -- when
3 they lost a driveshaft in a test. But because you
4 could see -- there's different types of waviness,
5 but you could see in some of the tires, like it's
6 shaking -- like it's shaking. And I would
7 attribute that -- I would attribute some of that on
8 the outer edge of the tires, some of that quick
9 waviness to the bus shaking.

10 MS. DORMAN: Objection to the
11 nonresponsive portion of that
12 answer.

13 BY MS. DORMAN:

14 Q Who -- tell me what happened at ABC when someone
15 lost a driveshaft during a test?

16 A Well, there was a test down there. And I just
17 happened -- nobody told me what they were doing.
18 They were doing -- they were doing a test with the
19 driveshaft. And -- and I went over to the bus,

20 because I had been out test driving.
21 I went over to the bus, and I wasn't on the bus
22 two minutes before I -- before the driveshaft gave
23 way. So it just happened coincidentally. I guess
24 they had been running a couple of hours. And I
25 just happened to go on the bus, and probably within

0151

1 two minutes, the driveshaft gave way.

2 Q Who was doing this test?

3 MS. RODRIGUEZ: And again,
4 objection, form. And would caution
5 you from disclosing any proprietary
6 information --

7 MS. DORMAN: Oh my gosh.

8 MS. RODRIGUEZ: -- gleaned from
9 your employment at ABC.

10 MS. DORMAN: If you continue to
11 instruct your witness improperly,
12 I'm going to ask the judge for
13 sanctions. That is not a proper
14 instruction.

15 MS. RODRIGUEZ: You could have
16 gotten the judge on the phone at any
17 time during this deposition.

18 MS. DORMAN: Really?

19 MS. RODRIGUEZ: You made no
20 attempt. And it's after 5:00.

21 MR. NEVÁREZ: She's in a
22 capital murder trial.

23 MR. HILL: It's not waived.
24 It's not waived.

25 MS. DORMAN: And I'm not

0152

1 waiving it.

2 MS. RODRIGUEZ: Judge Murray at
3 our last hearing.

4 MS. DORMAN: Yeah, Judge
5 Murray's not there every day, and
6 you know that.

7 MS. RODRIGUEZ: Well --

8 MS. DORMAN: Well, maybe you
9 don't --

10 MS. RODRIGUEZ: Made no effort.

11 MS. DORMAN: -- because you
12 haven't been in any of the hearings,
13 but he's not.

14 MS. RODRIGUEZ: You made no
15 effort.

16 MS. DORMAN: Then I will make
17 an effort. You might be brought
18 back here, sir.

19 BY MS. DORMAN:

20 Q Go ahead and tell me, who was running the test that
21 you happened upon?

22 MS. RODRIGUEZ: Objection,
23 form. Calls for speculation. Same
24 instruction.
25 A I -- I don't know. I know who was in the driver's
0153
1 seat.
2 BY MS. DORMAN:
3 Q Who was that?
4 A Denny.
5 Q Denny who?
6 A Denny Hasmier, he was in the driver's seat?
7 Q How do you spell his last name.
8 A H-a-s-m-i-e-r.
9 Q And who else was present?
10 A Alex was there. And --
11 Q Alex Cook?
12 A Yeah, Alex Cook. And I -- I don't know whether one
13 of the other Greyhound people were there or not. I
14 think one of the other Greyhound people may have
15 been there.
16 Q So --
17 A But it -- I mean it was a Greyhound -- I mean it
18 was obviously a Greyhound thing.
19 Q And this was at ABC?
20 A What's that?
21 Q It was at ABC, the testing?
22 A It was -- it was on ABC -- it was on Fairmont
23 Homes' property, or ABC property -- rented
24 property.
25 Q Oh, okay. So in Nappanee?
0154
1 A In Nappanee.
2 Q Indiana?
3 A Yeah.
4 Q And so was it in a facility or was it --
5 A Outside.
6 Q -- outside?
7 A Outside.
8 Q Okay.
9 A It was just -- it was just simply, you know, I
10 don't know, I have no idea what they did to the
11 driveshaft. But they had run it, I guess, a couple
12 hours. And I just happened to get there at the
13 right time, and I stepped on the bus, and shortly
14 after that it gave way.
15 Q So they'd been testing it a couple of hours or
16 running the bus a couple of hours?
17 A That's --
18 MS. RODRIGUEZ: Objection,
19 form.
20 BY MS. DORMAN:
21 Q And was the bus moving or was it --
22 A No stationary, jacked up.
23 Q Oh, it was jacked up. Did you and Mr. Cook talk

24 about what the test was for?

25 A I didn't even talk to him.

0155

1 Q Okay. What -- did you and Denny Hasmier --

2 A I think they, you know, I know -- I know it was

3 just to see what it sounded like, and --

4 Q Do you know what they were testing?

5 A Tested -- they were trying to simulate -- I believe

6 they were trying to simulate a driveshaft failure

7 to see what it sounded like.

8 Q Do you have any knowledge of them testing any

9 additional equipment added to the coach, or was it

10 just simply to --

11 A No.

12 Q You don't have any knowledge of that?

13 A I don't have any knowledge of that, no.

14 Q And you weren't asked to be there as part of the

15 testing, were you?

16 A I was not asked to be there. I just happened to

17 step on the bus, and there was this loud explosive

18 sound, and the bus shook. And so that's what --

19 and so I -- it gave me some insight, at least a

20 little bit of insight as to what the driver, you

21 know, what she may have, you know, experienced.

22 And that's -- and that's the only relevance from my

23 standpoint.

24 Q So you're in the -- in the bus, are you sitting in

25 the driver's seat?

0156

1 A I'm standing up front.

2 Q Oh, you're standing up. And it -- once the

3 driveshaft fails and starts banging around, you

4 testified the coach shook?

5 A Yes, it shook.

6 Q Would you -- how would you quantify the shaking --

7 A Well, let's put it this way --

8 Q -- gently, violently?

9 A Let's put it this way, I mean it was -- I don't

10 know how to -- how to describe it in decibels, like

11 as far as the sounds goes. It was one loud

12 explosion, and there was definitely shaking going

13 on of the bus. I mean I -- it was a very loud, and

14 a lot of shaking.

15 Q Having experienced that with the coach on jacks not

16 even traveling down the road, do you think that

17 that event alone could have caused the driver to

18 panic in our case?

19 A You know, when you're dealing with human beings, I

20 suppose, you know, you can never say with a hundred

21 percent certainty what somebody would have done and

22 what somebody wouldn't do.

23 I would just say this, that for that to -- for

24 her reaction to be to steer off the roadway, and

25 then basically steer back to the left, and say, no,

0157

1 I don't want to go off the roadway, that would be
2 like -- in my estimation, like the most absurd and
3 unusual reaction that I've ever -- that I've ever
4 seen.

5 I mean people make incorrect evasive actions
6 like for a deer or avoid a car. But I've never
7 heard or seen anything -- anyone that would make
8 this type of evasive action, which like I said,
9 within a few seconds.

10 Because I went through that in my mind many
11 times. So she's -- if her idea is to steer off the
12 road, like why does she decide suddenly to come
13 back. You know, so it's just, I've never seen --
14 it seems counterintuitive. It's just I -- and
15 without reading her statement, I think that. After
16 I read her statement, you know, her statement, you
17 know, I even feel it more strongly with -- that
18 she -- that she didn't bring the bus to the right.

19 MS. DORMAN: Objection,
20 nonresponsive.

21 BY MS. DORMAN:

22 Q My question, sir, was, having experienced this
23 situation yourself on a bus that was not moving
24 that was on jacks.

25 A Uh-hum.

0158

1 Q Do you think that it was possible that the driver
2 in our case, Irma Morado, could have panicked
3 having experienced while actually driving down the
4 road?

5 A You mean --

6 MS. RODRIGUEZ: Objection,
7 form.

8 A You mean panicked and steered to the right or just
9 simply panicked?

10 BY MS. DORMAN:

11 Q Just panicked.

12 A I would say that would shake her up. I would say
13 very much so.

14 Q Okay. So it's possible she could have just
15 panicked after hearing that loud noise and feeling
16 that explosion, as you characterized it?

17 MS. RODRIGUEZ: Objection,
18 form.

19 A Well, panicked, and then making a certain reaction
20 are two different things. You know, I -- I don't
21 know. I know she, you know, just reading her
22 statement -- reading her statement, I mean there
23 seems to be, you know, some emotion that she -- it,
24 obviously, would -- I would say it shook her some.
25 But beyond that, I -- I don't know. You know, I

0159

1 really don't know.

2 It would be noticeable. The sound was
3 noticeable. The sound and the vibrations would
4 certainly be very noticeable.

5 MS. DORMAN: Objection,
6 nonresponsive.

7 BY MS. DORMAN:

8 Q Is there any other testing performed by anyone at
9 Greyhound or at Americanos involving a driveline or
10 a tag axle that you have any knowledge of that you
11 haven't told us about?

12 A I'm unaware of any -- any other testing that has
13 been done.

14 Q When did the testing that you just described for
15 us, when did that take place?

16 A Certainly I believe it was with -- within the last
17 two weeks. It certainly wasn't -- it may have been
18 two weeks ago.

19 Q Your last page, Page 5, where it says conclusion?

20 A Uh-hum.

21 Q If you'll turn to that page.

22 A All right. Okay.

23 Q Under conclusion it says, "After having considered
24 the evidence, it is my assessment that once the
25 mechanical failure occurred, the driver was

0160

1 basically in an uncontrollable situation."

2 What mechanical failure are you talking about?

3 A I'm talking about the mechanical failure, one, of
4 the driveshaft. And two, the effect that it had on
5 the tag axle that is evidenced by -- by what I've
6 interpreted to be the tire marks on the roadway.

7 Q Can you quantify what percentage of the driveshaft
8 failure put the driver in an uncontrollable
9 situation versus the effect on the tag axle?

10 A I would say the driveshaft in and of itself did not
11 put her in any kind of uncontrollable situation.

12 Q So that's zero percent?

13 A Very close. I would never say zero, you know,
14 because there was some shaking going on. But I
15 would say very close to. Very close to that.

16 Q So you put it almost a hundred percent --

17 A Minor.

18 Q I'm sorry.

19 A I wouldn't say a hundred percent. I would say it
20 would be very minor.

21 MS. DORMAN: Bless you.

22 BY MS. DORMAN:

23 Q On the tag axle, you put it close to a hundred
24 percent?

25 A Very close, yes.

0161

1 Q And since the testing of the -- the coach that was
2 on jacks for the driveshaft failure, have you and
3 Mr. Cook, Alex Cook, spoken about that testing?

4 A You know, we really haven't. You know, we -- I was
5 not advised what they were doing. I'm probably in
6 trouble for saying here today. But I was -- but
7 the thing is, I experienced that sound. I
8 experienced that shaking.

9 And so it was just -- it was just one more
10 piece of -- it's just one more piece of trying
11 to -- trying to recreate -- trying to realistically
12 recreate in your mind and presentation what was
13 going on.

14 Q Do you know why you weren't advised of this testing
15 before it took place?

16 A No. No, I do not. No, you know -- you know, quite
17 frankly, it's like when I'm down at ABC, I'm like
18 really -- I'm tied up from the better part of the
19 day out -- I'm not around there. I'm out with
20 buses for long trips.

21 So it's not like -- I -- I think if I was
22 around there, and I could contribute, you know,
23 maybe I would be more involved. But I'm -- I'm
24 basically not there, so.

25 MS. RODRIGUEZ: When you --

0162

1 Counsel, when you get a breaking
2 point, we've been going for awhile.
3 I need to take a break.

4 BY MS. DORMAN:

5 Q My last question is, but Mr. Cook knows that you're
6 consulting and being paid for your testimony in
7 this case; correct?

8 A Yes, he knows that.

9 MS. DORMAN: Okay. I'm going
10 to let these other lawyers asks you
11 some questions.

12 VIDEOGRAPHER: You're going to
13 take a break. All right. The time
14 is 6:07.

15 (Short recess taken.)

16 (Mr. Nevárez and Mr. Hill are now
17 absent from the deposition.)

18 VIDEOGRAPHER: Okay. We're
19 back after a recess. The time is
20 6:24.

21 You may continue questioning.

22 MS. DORMAN: Thank you, sir.

23 BY MS. DORMAN:

24 Q I thought I was going to allow some other lawyers
25 to ask you questions, but they have had to go catch

0163

1 a plane. So I'm going to continue on, briefly.

2 A Okay.

3 Q Your testing was done on dry conditions; correct?

4 A It was.

5 Q Did you attempt to do any testing on wet or damp

6 roadway?

7 A We did not.

8 Q Did you check the coefficient of friction to

9 determine if it was similar to the roadway at issue

10 in our case?

11 A We did not before. We've got some statistics from

12 Bendix afterwards. I say Bendix, from Bosch people

13 afterwards. And they sounded a little high to me,

14 but I guess they have a skid trailer, so.

15 Do you want me to give you those numbers?

16 Q No. I just wondered if you had tested or

17 determined the coefficient of friction before you

18 did this testing?

19 A No, we didn't. No, we didn't.

20 Q Okay. And what -- was your bus outfitted with any

21 recording equipment to record your steering inputs

22 or your braking or the maneuvers that you were

23 doing?

24 A No. Just cameras.

25 Q Just cameras. Where were those cameras positioned?

0164

1 A Well, there was one that would show me, the driver.

2 There was one in front of the tag wheel to show it

3 turning, the -- the tag wheel. And -- and there

4 was somebody recording, a person was recording from

5 the outside, watching the bus come down the track

6 and make the curve. So there's basically three --

7 three recording -- recordings of it.

8 Q Onboard the bus though, it was only the one showing

9 the driver, which was you. And then the one

10 outside the tag wheel?

11 A Yes.

12 Q And there was nothing in place instrument wise to

13 measure the steering inputs, the braking, any of

14 the other factors that go into this testing; is

15 that correct?

16 A No. They had a curve, a standard curve setup out

17 there at Bendix before we got there. Or Bosch

18 before we got there. And we just -- we just used

19 that -- used that curve.

20 Q But you didn't have any onboard instrumentation

21 to -- to record what the driver was doing?

22 A We did not.

23 Q Okay. You have done testing in the past that did

24 involve instrumenting the coach so that you could

25 record the steering inputs and things of that

0165

1 nature; correct?

2 A That is correct.

3 Q That was at the Uvalde test tract; correct?

4 A That is correct.

5 Q Describe for us what instrumentation was present on

6 the coach that you drove during that testing, if

7 you recall?

8 A Okay. Well, we had a -- an instrumented steering
9 wheel. It's called a load cell steering wheel. So
10 you could measure the input by the driver. And it
11 was monitored by a test engineer from TRW Steering.

12 We monitor -- we had a tire pressure monitoring
13 device from SmarTire. And we had somebody from
14 SmarTire there.

15 We also had a camera on me on. We had a camera
16 on the front -- all the -- it was -- it was failed
17 tire -- tire failure there, so we had a camera on
18 the outside of the front tire.

19 And we were tracking speed by both GPS and the
20 DDEC. GPS and the DDEC. Um, that's all I can
21 think of right now, you know, right now.

22 Q How -- how did --

23 A Those are the main -- those were the main things.
24 I'm not saying positively was anymore, but that's
25 what I can recall.

0166

1 Q Okay. Sorry to interrupt.

2 How did you measure the steering -- I'm sorry
3 the speed on the coach that you tested at the Bosch
4 Proving Grounds, was that just from what the --
5 from what you as the driver reported your speed to
6 be?

7 A I think Frank had a -- let's see, somebody had a
8 radar gun. Because it wasn't -- it wasn't me that
9 was measuring.

10 Q Do you know if that radar gun had been calibrated?

11 A You know what, you know, I -- I would like to kind
12 of withdraw that. Because I'm trying to think how
13 we did determine the speed. If somebody had a
14 radar gun. Or if there -- if somebody -- if there
15 was a GPS.

16 You know, I'm sorry, I'm at a loss. You know,
17 I can't -- I can't remember how they -- you know,
18 my -- you know, I was figuring out what tests to
19 do, and I was doing the driving. But other people
20 were keeping track of the information, speeds,
21 and -- so I'm going -- it's kind of embarrassing,
22 but I can't remember who -- who did it.

23 Q No problem. No problem.

24 A Okay.

25 Q Had you wanted to outfit the coach with more

0167

1 extensive instrumentation, you had the means to do
2 so certainly; isn't -- isn't that correct?

3 A Well, when you say had the means to do that, it's--
4 it's not that simple. It's a time consuming
5 process. And -- but yes, certainly, there are
6 other things that could have been done.

7 Q When you say time consuming, would it take a week,
8 two weeks, three weeks to get all of that together?

9 A Getting the right people involved. Like I said, it

10 would have been nice to have a -- like a load cell
11 steering wheel, you'd have something that measures
12 steer angles. Something to measure brake
13 application. Something to measure brake
14 application. That is a big one.

15 Make sure the speeds were incrementally
16 reported. Make sure the speeds were incrementally
17 reported. In other words, from start to finish,
18 make sure that was happening. Like how many Gs the
19 bus was measuring, you know, when its side -- how
20 much side force, you know, it was getting. Those
21 would be all nice things.

22 However -- well, if I've answered your
23 question, then maybe we better stop there.

24 Q I think you have. Thank you very much.

25 A I'm trying to learn.

0168

1 Q You're doing great. You're doing great for a first
2 timer. Not your first time giving testimony, but.

3 A Yeah, it's been a long time. First time here.

4 Q You wrote an article about handling instability in
5 the event of a tire failure. Do you remember that?

6 A I do remember that.

7 Q Okay. You listed some factors that come into play
8 when you evaluate someone's ability to handle a
9 motor coach. One of those is the driver. We've
10 talked about Miss Morado. Do you know what size a
11 woman she is, how big, small?

12 A I do not.

13 Q Strong, weak?

14 A I do not know that.

15 Q None of those things.

16 Do you think that the driver's strength is a
17 factor in the ability to handle a coach?

18 A I do in a tire failure. I don't in this one.

19 Q Okay. What about the steering inputs, are those a
20 factor?

21 MS. RODRIGUEZ: Objection,
22 form.

23 MS. DORMAN: Bless you.

24 A If you're asking is steering input a factor in --
25 in -- in -- in an emergency in flat -- in tire

0169

1 failures, in driveshaft failures, do you want to
2 narrow the question down or?

3 BY MS. DORMAN:

4 Q In -- in any handling instability evaluation?

5 A Well, certainly steering is -- steering is a
6 factor.

7 Q And the only thing you have to go on for what the
8 driver did as far as steering inputs is -- are
9 concerned, are what Miss Morado reported in Volume
10 II of her deposition and in the statement that she
11 provided to the DPS; is that fair to say?

12 A As far as her steering to the left, yes. Yes.

13 Q What about any steering to the right?

14 A Well, once again, I've tried to make that clear
15 that I -- I believe that she had nothing to do with
16 the bus going to the right. That it was the --
17 that the tire marks, in my mind, you know, showed
18 that the -- the tire marks coupled with -- with a
19 situation with the tag had become unlocked, that
20 those things coupled together, and her statement
21 substantiates, that yes, that she didn't steer to
22 the right.

23 And so now I'm getting to the place, should you
24 repeat the question?

25 Q Well, I -- I wanted to make sure I had the basis
0170

1 for -- for your testimony about what the driver did
2 steering wise. And the basis for that was Volume
3 II of her deposition?

4 A Right.

5 Q And then what she gave to the DPS in the form of a
6 statement; is that fair to say?

7 MS. RODRIGUEZ: Objection,
8 form.

9 A It's certainly not the only basis. It's certainly
10 part of that. It's part of that.

11 BY MS. DORMAN:

12 Q You looked at the -- you're basing it also on the
13 marks on the road?

14 A Right. I'm basing it on the marks on the roadway.
15 I'm -- I'm basing it upon being -- being such an
16 abnormal reaction to do otherwise for her, like if
17 she had done it herself.

18 But basically the physical evidence coupled
19 with her -- coupled with her statement, yes.

20 Q And what about her level of experience as a driver,
21 is that a factor?

22 A Well, that's a hard one to quantify, because you
23 can take a -- a relatively new driver, and they'll
24 do the right thing. And you can take an older
25 driver that doesn't. So I would never say

0171

1 experience doesn't count, because it certainly does
2 count. But it's a hard one to quantify and try
3 to -- try to package it up and put it it's --
4 where, you know, fit it into a certain scenario.
5 Especially when you have an unusual event.

6 Q When you compare what you know about her to what
7 you know about other motor coach drivers, such as
8 yourself, would you call her inexperienced or
9 experienced?

10 A You know, I can't remember -- how long had she been
11 with Americanos? I can't remember that.

12 Q I believe about a year.

13 A Yeah, I mean I would -- I would never say -- as a

14 motor coach driver, I would never call her a highly
15 experienced driver. But -- but if you are
16 driving -- a person could say they'd been driving
17 for a charter company, as I did, say I've been
18 driving five years. Well, somebody driving
19 scheduled service might drive for two months and do
20 more miles than you do in five years.

21 So experiences, there's a lot of things to
22 consider. A scheduled service driver, they may be
23 traveling a lot the same routes. Whereas, a
24 chartered driver in -- in -- in relative good
25 weather. A chartered driver may be driving in all

0172

1 types of weather. Be confronted with unusual
2 roadways and conditions that --

3 So like I said, I'm not trying to avoid the
4 question, but I mean experience is a relative --
5 there's a lot of variables to -- the way to say,
6 hey, this persons is really experienced.

7 Q And that's a good point. You were aware that
8 the -- the driver at issue in our case was a
9 weekend driver for Americanos?

10 A I was not --

11 MS. RODRIGUEZ: Objection,
12 form.

13 A I was not aware of that.

14 BY MS. DORMAN:

15 Q Okay. You were -- you were not aware that she was
16 a part-time driver who drove on the weekends?

17 MS. RODRIGUEZ: Objection,
18 form.

19 A No. To answer your question, I was not -- I was
20 not aware of that.

21 BY MS. DORMAN:

22 Q This accident happened over spring break, and
23 otherwise she normally wouldn't drive the
24 Americanos buses during the week.

25 Does that information change your analysis or

0173

1 evaluation of her experience as a driver?

2 MS. RODRIGUEZ: Objection,
3 form. And a side bar.

4 COURT REPORTER: Form and side
5 bar?

6 MS. RODRIGUEZ: Yes.

7 COURT REPORTER: Sorry.

8 A You know, it's hard to say, I, you know, that's how
9 I started out. So -- but it -- it really is hard
10 to say. Because sometimes you can have a full-time
11 driver, and they can be doing it so repetitively,
12 and they can get tired, they can get fatigued.
13 Whereas, a driver a who does it just part time,
14 it's like they're ready to go, you know.

15 So as far as -- again, one more time, I'm

16 trying to -- I'm not trying to avoid it, but to try
17 to quantify that and bring it into this -- this
18 formula, I'm not sure I know how -- how to do that.
19 I mean certainly experience is a factor in some
20 things. Especially like driving in the snow or
21 ice, you know, you -- you -- driving in snow or
22 ice, something like that.

23 But to answer your question, I really don't
24 know what a -- the fact that she was a weekend
25 driver, you know, I don't know what role that could

0174

1 have played in it.

2 BY MS. DORMAN:

3 Q Are you --

4 A I don't have any strong feelings one way or the
5 other on it.

6 Q Okay. Do you have any knowledge of whether she had
7 any other job in addition to her part-time bus
8 driver job at Americanos?

9 A I saw where she had driven school bus. And I
10 didn't quite pick out if she's still doing it, or
11 it was something she did in the past. So I don't
12 have a feel for that, whether she -- it may been
13 hidden in -- it may have been somewhere in -- in
14 one of those reports, but I -- I don't know if she
15 has other employment.

16 Q Were you provided with any information about
17 violations, Federal Regulation violations or Texas
18 Department of Transportation violations that
19 Americanos was provided or given because of
20 Miss Morado's conduct?

21 A No. I -- you know, that may have been something in
22 like Stauffer's report, I don't know. The motor
23 carrier stuff, I -- I -- I skimmed over a lot of
24 that stuff, you know, so I don't know.

25 Q Have you seen -- I apologize for interrupting you.

0175

1 Have you seen a deposition of a gentleman named
2 Leon Feazell, F-e-a-z-e-l-l. Does that ring a
3 bell?

4 A It rings a bell. And I'm trying to think, there
5 was a couple of them that, uh -- oh, one of them --
6 and who was he?

7 Q He was an FMCSA expert hired by Americanos?

8 A Yeah, I think I did see that. I did see that.

9 Because like he wrote a relatively short report, as
10 I recall, like just two or three pages.

11 Q It was a short report. But I'm asking about his
12 deposition that was taken a couple weeks ago. Have
13 you seen that?

14 A No, I have not. No.

15 Q Were you provided with Miss Morado's personnel
16 documents showing what training she had received
17 while at Americanos?

18 A I -- I -- you know, I don't believe I have. I mean
19 I haven't seen it. You know, there are -- there
20 are some documents that are -- you know, I had to
21 pick and choose the reports that I wanted to read.
22 So I'm not -- I wouldn't say for sure they couldn't
23 be buried in there. But I haven't seen her
24 training documents.

25 Q Is that something that you would want to review to
0176

1 be able to more fully evaluate her abilities as a
2 driver, her training and abilities?

3 A I mean I'd always want to see it. Let me answer
4 the question. Yes, I'd like to see it. If it's
5 available, I'd like to see it.

6 Q The testing at the Bosch Proving Grounds, was that
7 intended to try to replicate what you-all believe
8 happened during the accident?

9 A Not really, because we couldn't even come close to,
10 you know, we couldn't come close to duplicating
11 those conditions, especially at Bosch. And quite
12 frankly -- quite frankly, it would be a challenge
13 to duplicate that anywhere. Because we're talking
14 about, you know, failing a -- a driveshaft at a
15 high, you know, at a relatively high speed --
16 relatively high speed.

17 And I'd be willing to drive it, but that would
18 be a hard test to duplicate. It would be a hard --
19 hard test to duplicate.

20 Q What about just with the -- the tag axle situation,
21 as you believe it -- it occurred, did you try to
22 replicate that --

23 MS. RODRIGUEZ: Objection.

24 BY MS. DORMAN:

25 Q -- situation as closely as possible?

0177

1 A Never say replicate. I mean, you know, unless
2 we're going 65 miles an hour, and -- and can
3 forcefully shove that tag axle over. First of all,
4 we -- we couldn't repli- -- replicate the
5 vibration. We couldn't replicate the sound.

6 Although, that -- I still don't believe that was a
7 big part of it as far as her -- her actions go.

8 But we couldn't -- we couldn't, you know,
9 replicate the -- easily replicate those -- those
10 vibrations. It would be a extremely difficult
11 accident to replicate.

12 Q But you -- you really discounted that earlier when
13 I asked you about the -- the driveshaft failure,
14 and the effect that had on her ability to control
15 the vehicle, you put that at close to zero percent
16 of the factoring?

17 A The -- the -- the failure itself, yes. And -- and
18 I still believe that -- I still believe that that
19 was -- that was low. But you -- but the

20 mechanism -- you see, what we used out at the track
21 we used a cylinder that forced it over.

22 We don't know in the, you know, in the case
23 at -- the case in Texas, especially with the
24 driveshaft spinning around and what we believe
25 happened, was it bang, over like very quickly. And
0178

1 what the difference would be between one going over
2 like this, with the cylinder pushing it over at a
3 relatively slow speed. As opposed to what effect
4 that would have if it was, you know, put over more
5 suddenly.

6 So I mean it's -- it's a very complicated -- we
7 could do bits and pieces of the testing to learn
8 different things. But I mean to actually do
9 testing to try to replicate those situations, never
10 say impossible, but it's complicated, would be very
11 complicated to do that.

12 Q When you were first talking about what testing you
13 wanted to do, was it -- was it one of your goals to
14 try to get as close as you could?

15 A To what, replicate the accident?

16 Q Well, the -- the circumstances that you believe
17 existed during the accident involving the tag axle?

18 A The only thing in retrospect I wished we had a
19 curve set up more, that was more -- that's -- that
20 was closer to what the highway was. And I still
21 don't have any -- any -- have a curve radius on the
22 path that she actually took. Maybe somebody has
23 calculated that. But the path that bus went,
24 that's what I would like to -- that's what I'd like
25 to have seen to be able to replicate that path.

0179

1 MS. RODRIGUEZ: Objection,
2 unresponsive.

3 BY MS. DORMAN:

4 Q And the -- well, tell me what you would have liked
5 to have done had you had all of the equipment and
6 all of the information at your disposal and a
7 perfect test track, what would you have done?

8 A Oh, well, yes, I would -- if there was some way
9 to -- to bring that drive -- well, first of all,
10 we'd need a loaded bus. A way to what I believe to
11 shove that driveshaft over, you know, pretty much
12 immediately.

13 I would say we could put a load cell steering
14 wheel on. Even though I do not believe there's
15 any -- I don't think there's any reason to believe
16 that turning the wheel would have been a problem.
17 Unlike a tire failure where you have resistance on
18 one side. So I don't -- I don't even see that as a
19 problem. But just to rule -- just to rule it out,
20 put, you know, put a load cell steering wheel on.

21 And although I'd like to see a brake

22 application gauge and recorder and record that
23 information, and -- to record that information.
24 You know, we don't know exactly how hard she, you
25 know, how hard she pressed the brakes, you know.

0180

1 Like I said, she said, well, not as hard as she
2 could, but hard, something like that.

3 Probably some more cameras -- cameras.
4 Probably, you know, some more cameras on -- on both
5 the right and left wheel position, because there is
6 a difference when a bus is going around the curve,
7 and one axle is unloading -- is unloading, and
8 there's weight shift, you know, one will typically
9 walk. There's a point where one will walk easier
10 than the other. So have that.

11 And possibly a cage around the -- the driver,
12 because what you -- the other thing you want to try
13 to replicate is that counter steer. That's the big
14 one. That's the hard one, and that's probably the
15 most dangerous thing is try to replicate when the
16 bus is going off like to the right -- when the bus
17 is going to the right and following that path, and
18 you know you're going off the roadway, to have --
19 to put in the right amount of counter steer. And
20 both one, to show it going out of control. And one
21 to see if it could be with a certain amount of
22 counter steer, to see if it could be controlled.

23 Q Did you request any of these additional pieces of
24 equipment or parameters of testing of the Greyhound
25 or Americanos attorneys or personnel?

0181

1 A I did not. I did not. The main thing, I guess I
2 wanted was to, like I said, to see what it feels
3 like with the tag axle being -- being turned.

4 I mean it was -- obviously, I believe the
5 testing had value. It certainly didn't do
6 everything that I hoped for. And -- but I mean I
7 believe it had value, but it wasn't really meant to
8 duplicate the accident. Because it just, one, we
9 didn't have the track, the track for it. We didn't
10 have the space for it.

11 And -- and like I said, now I have heard a
12 driveshaft, you know, I've actually heard one. But
13 at the time, it's like I'm not even sure I would
14 have known exactly all those things to ask. If we
15 were to ever do anything -- and even if we did it
16 in the future, I don't know.

17 The big thing that I'd want to know is like how
18 much counter steer -- once you are going to the
19 right, you know, how much counter steer would be
20 reasonable, and what would it take to -- to bring
21 it -- to bring it under control.

22 Q Do you have any other testing planned?

23 A I am going to have to talk to my attorney about

24 that.

25 Q Has anyone suggested --

0182

1 A I don't know.

2 Q Sorry.

3 A I would tell you what -- like some limited testing

4 that -- some very limited testing that -- that I

5 would like to see.

6 Q What's that?

7 A Well, one of them -- one of them is that -- before

8 we continue it, I'd have to go into somebody else's

9 report here. The -- the -- like the drag -- the

10 coefficient of friction that Mr. Irwin assigned.

11 He -- he got in his pickup truck, he got between

12 .74 and .80. And then he assigned the bus a .4.

13 Well, if you do that, if you assign that bus a

14 .4, obviously, the brakes are going to lock up

15 easier than if it was a .6 or .a 8. And with the

16 bias ply tires, they were hard and you had to

17 reduce it. But with these -- with these radial

18 tires, especially Michelin radial tires, so you get

19 some very good coefficients out of there.

20 And I think -- it would be nice to take a bus,

21 take an actual bus down on the highway and skid it,

22 and see what we're really -- what we're really

23 getting. You know, try to find a similar section

24 of road where we know that has been paved over.

25 But to try to find a, you know, a section where we

0183

1 could do -- where we could have some idea what

2 those, you know, what those numbers are, and what

3 it would take to -- to lock up a tire.

4 I know it's more than you asked for.

5 Q In your opinion, were any of the tests that you ran

6 with -- with the tag axle unlocked and the braking

7 and -- and limited steering inputs, were any of

8 those -- did any of those tests result in a

9 situation where there was no yaw?

10 A There was no yaw.

11 MS. RODRIGUEZ: Objection,

12 form.

13 BY MS. DORMAN:

14 Q Yes. So we've got a tag axle unlocked.

15 A Uh-hum.

16 Q We've got the -- the braking and whatever steering

17 inputs are done by you, was there ever any results

18 where there was no yaw?

19 A In those tests, I would say no. Um, there's -- the

20 other thing about the tests, it's like once you

21 brake hard, you could see the tag -- you were on

22 the curve, you would see the tag wheels move, move

23 out. So -- and then they would try to bring the

24 bus around.

25 Again, again, what's going to happened at

0184

1 40 miles an hour or 50 miles an hour might not
2 happen at 20 miles an hour.

3 Q And you-all never got to 50 miles an hour in your
4 testing, did you?

5 A We got one to 49, so it was close.

6 Q So you never got above 49 miles an hour in your
7 testing, did you?

8 A We never got above 49.

9 Q Do you feel like you got the results that you were
10 looking for in your Bosch testing?

11 A Partially.

12 Q What -- what don't you think you got? What -- that
13 was a horrible question.

14 What do you think you were lacking?

15 A Well, again, again, we didn't -- I wouldn't be
16 satisfied with that test really unless we did get
17 it up to 70 miles an hour. And -- and you know, be
18 able to quickly force that tag axle over. Because
19 right now we got -- we have information, there's no
20 question about it, but it's limited -- it's
21 limited.

22 MS. DORMAN: Okay. Thank you
23 sir. I'm going to pass the witness.

24 MS. RODRIGUEZ: Can you pass me
25 his -- let's go ahead and change the

0185

1 tape.

2 VIDEOGRAPHER: Yeah, you want
3 to change the tape at this time?

4 MS. RODRIGUEZ: Yes, sir.

5 VIDEOGRAPHER: Okay. We're
6 going to change the tape. The time
7 is 6:54. This is the end of the
8 fourth hour of Larry Yo -- Yohe.

9 Close enough?

10 THE WITNESS: That's correct.

11 (Short recess taken.)

12 VIDEOGRAPHER: Oh, I'm sorry.
13 I'm sorry. I had any audio down.

14 All right. This is the
15 beginning of the fifth hour of the
16 deposition of Larry Yo -- Yohe. And
17 the time is 7:01.

18 You can continue now. Thank
19 you.

20 CROSS-EXAMINATION

21 BY MS. RODRIGUEZ:

22 Q Mr. Yohe, you were asked questions by Miss Dorman
23 regarding your comments to Kevin Granite and Bob --
24 Robert Rykova's expert reports in this case. Do
25 you recall being asked about those?

0186

1 A I do.

2 Q And when you were answering, you did not have the
3 reports in front of you; is that correct?

4 A That's correct.

5 Q So your comments would have been from your memory?

6 A Just from memory, right.

7 Q And have you had the time to study the reports and
8 the testing and the videos that Mr. Granite
9 provided?

10 A I have not.

11 Q Okay. For example, if Mr. Rykoba said in his
12 report that the first tire mark was a braking mark,
13 would you disagree with that?

14 A I would definitely disagree with that.

15 Q All right. So you would need to go through each
16 line of the report with Miss Dorman to let her know
17 if you disagreed with -- or -- or agreed with the
18 opinions in his report, and you haven't done that;
19 is that correct?

20 A That is correct.

21 Q All right. Now, you were asked about tag axle
22 telltale light in the driver's compartment, and
23 whether it being burned out if the driver would
24 have any way of knowing if the tag axle was
25 unlocked.

0187

1 Do you remember that line of questioning?

2 A I do remember that.

3 Q Do you know if there's a tag axle buzzer that's a
4 backup as a warning to driver if the tag axle is
5 unlocked?

6 A You know, I do not know. I do not know. And --
7 and I would think if there was a buzzer, it would
8 only be on if you were above 20 miles an hour. And
9 I haven't experienced that. And I -- I don't know.
10 I -- I would have to do some more research to.

11 Q Okay. Now you were asked about testing that you
12 did at the Bosch test track with an unlocked tag
13 axle at highway speeds without the tag axle being
14 forced over.

15 Do you recall that?

16 A I do.

17 Q All right. And in fact, if I can come around to
18 you. If we look at what Miss Dorman has marked as
19 Exhibit 17 to your deposition, that was done
20 several times by you at the Bosch test track.
21 According to Mr. Brown's log, you see he's got a
22 column for tag axle unlocked or locked?

23 A Well, there was --

24 Q Do you see that column, sir?

25 A I do.

0188

1 Q And then do you see another column indicating when
2 the tag axle was forced over?

3 A I do.

4 Q And how many times was it forced over, according to
5 that Log Run sheet?

6 A Three times.

7 Q All right. Thank you. Can I have that back?

8 A You may.

9 Q Thank you.

10 So would that indicate that you did do testing
11 with an unlocked tag axle, without the tag axle
12 being forced over every time?

13 A Yes, it would indicate that. And I didn't mean to
14 say that it was limited. I knew we had done -- we
15 did more than one test like that.

16 Q You've also mentioned a couple of times that you
17 wanted to do testing at higher speeds. Would that
18 be safe to do without outriggers on the bus?

19 MS. DORMAN: Object to form.

20 BY MS. RODRIGUEZ:

21 Q I'm asking, do you have an opinion whether it would
22 be safe to test a bus at 70 miles an hour, and do a
23 counter steer without outriggers, do you have an
24 opinion whether that would be safe?

25 MS. DORMAN: Object to form.

0189

1 A Are you asking me -- you're asking me if it would
2 be safe, or whether I'd be willing to do it?

3 I would say -- I would say there's definitely a
4 high risk, there's a risk involved. I would say
5 there is a significant risk involved in doing that.

6 BY MS. RODRIGUEZ:

7 Q What's the risk, a roll over?

8 MS. DORMAN: Object to form.

9 A The risk is in the counter steer basically. The
10 risk is in the counter steer.

11 BY MS. RODRIGUEZ:

12 Q What could be the consequence, the adverse, bad
13 consequence?

14 MS. DORMAN: Object to form.

15 BY MS. RODRIGUEZ:

16 Q If you don't have outriggers on that bus?

17 MS. DORMAN: Object to form.

18 A Depending on the friction level of the roadway
19 where you're doing it, I mean it -- it is possible
20 to -- to turn it over once it starts to go
21 sideways, as we saw in one of our tests where it
22 got close. Where it -- the wheels came off the
23 ground at least somewhat.

24 BY MS. RODRIGUEZ:

25 Q You mentioned also that you would like to see
0190

1 Miss Morado's training documents. But that's not
2 necessary for -- that was not necessary to form
3 your opinions in this case, was it?

4 MS. DORMAN: Object to form.

5 A I would say this, that -- that if I knew nothing

6 about Miss Morado, and just looked at her statement
7 and the -- what I see as the evidence -- the
8 evidence, in regards to this accident, I would like
9 to see her training just from an investigatory
10 standpoint. I mean here I'm evaluating a driver.
11 I'm giving some evaluation of the driver to her
12 actions. And it would be interesting to see that.

13 I don't know what there is on there that
14 would -- that would change anything. I suppose
15 it's possible -- if it -- if there -- if it said
16 she always did the wrong thing, or you know, I
17 guess that would be a -- something I'd consider.
18 But the training doc -- documents in an of
19 themselves, I doubt that they would have any -- I
20 doubt that they would change anything.

21 BY MS. RODRIGUEZ:

22 Q But you're assessing the conduct of what you
23 believe a reasonable driver would do under this
24 situation; right?

25 A I am.

0191

1 Q Regardless of training?

2 A I am. I am --

3 Q Okay.

4 A -- assessing the drive -- the action of what I feel
5 would be a reasonable driver.

6 Q All right. Now you were asked about, and I'm not
7 saying this to embarrass you. But I think you
8 forgot. But you were asked about whether the
9 vehicle speeds were verified, if so, how, and by
10 who. And you couldn't remember out at -- what was
11 done out the Bosch test track; right?

12 A And somebody -- okay.

13 Q Okay. Let me hand you -- do you recall that area
14 of testimony?

15 A I definitely do.

16 Q Okay. Sorry about this, but.

17 A I'm still thinking somebody had radar, but I could
18 be wrong.

19 Q Let's look at Mr. Brown's report --

20 A Let's look at his report here.

21 Q -- or Test Run Log. And it says vehicle speeds
22 verified using a calibrated radar speed gun?

23 A Speed gun.

24 Q Do you -- does that refresh --

25 A I kind of remember that, yes.

0192

1 Q Okay.

2 A I kind of remember that. I didn't -- I was trying
3 to remember who had that gun. Who was actually
4 using it.

5 MS. RODRIGUEZ: Thank you.

6 I'll pass the witness.

7 MS. DORMAN: I don't have

8 anything further.

9 Thank you, sir, for being here.

10 Appreciate your time.

11 VIDEOGRAPHER: No more
12 questions?

13 MS. RODRIGUEZ: No.

14 VIDEOGRAPHER: All right. The
15 deposition is over. This is the --
16 the time is 7:05. And this is
17 the -- this is the fifth tape of the
18 deposition of Larry Yohe.
19 (Deposition concluded and witness
20 excused at 7:09 p.m.)
21 * * *

22
23
24
25
0193
1 CERTIFICATE

2
3 I, Dianna L. Mead, a Notary Public, in and for
the County of St. Joseph and State of Indiana,
4 hereby certify:

5 That LAWRENCE YOHE, appeared before me on
Monday, September 19th, 2011, and was duly sworn or
6 affirmed to testify the truth, the whole truth, and
nothing but the truth to questions propounded at
7 the taking of the foregoing deposition in a cause
now pending and undetermined in said court;

8
9 That I further certify I then and there
reported stenographically the proceedings at the
said time and place; that the proceedings were then
10 transcribed from my original shorthand notes; and
that the foregoing typewritten transcript is a true
11 and correct record thereof;

12 That I am not a relative, employee, attorney,
or counsel; nor a relative or employee of such
13 attorney or counsel for any of the parties hereto,
nor am I interested directly or indirectly in the
14 outcome of this action.

15 IN WITNESS WHEREOF, I have hereunto set
my hand and affixed my Notarial seal this 27th
16 day of September, A.D., 2011.
17
18
19
20

21 _____
Dianna L. Mead
Notary Public, State Of Indiana
Residence: St. Joseph County
22 My Commission Expires: June 21, 2017
23

24
25
0194

1 STATE OF TEXAS
2 IN THE DISTRICT COURT OF CAMERON COUNTY, TEXAS
3 197TH JUDICIAL DISTRICT
4 DANIEL CAMPOS, ET AL.,)
 Plaintiffs,)
5)
 -vs-)
6)
 AMERICANOS U.S.A, L.L.C. ET AL.,)
7 Defendants,)

8
9 LAWRENCE YOHE
10 I hereby acknowledge that I have read the
11 foregoing deposition transcription regarding the
12 case of Campos, et al. vs. Americanos U.S.A.,
13 L.L.C., et al., taken Monday, September 19th, 2011,
14 and that the same is a true and correct
15 transcription of the answers given by me to the
16 questions propounded except for the additions or
17 changes, if any, as noted on the attached errata
18 sheet.

19 _____
20 LAWRENCE YOHE
21 SUBSCRIBED AND SWORN TO before me
22 this ____ day of _____, 20__
23 _____
24 Notary Public, State of Indiana
25 State of _____
 County of residence: _____
 Commission Expires: _____

0195

1 IN THE DISTRICT COURT
197TH JUDICIAL DISTRICT
2 CAMERON COUNTY, TEXAS
DANIEL CAMPOS, INDIVIDUALLY AND AS)
3 REPRESENTATIVE OF THE ESTATE OF)
CHRISTINA LOZANO CAMPOS, DECEASED;)
4 MARIA L. LOZANO; ANNA B.)
SCHERMERHORN; ADRIANA L. PRUITT;) Cause No.
5 AMALIA F. HEATHER; AND DANIEL N.) 2010-03-001717-C
CAMPOS, et al,) Volume II
6)
 Plaintiffs,)
7)
 vs)
8)
AMERICANOS, U.S.A., L.L.C.,)
9 FIRSTGROUP AMERICA, INC., GREYHOUND)
LINES, INC., IRMA MENDOZA MORADO,)
10 MOTOR COACH INDUSTRIES, INC., MCI)
SERVICE PARTS, INC. AND)
11 ARVINMERITOR, INC.,)
)
12 Defendants.)
)

13 The Videotaped Deposition of LAWRENCE YOHE

14 Date: Wednesday, February 15, 2012

15 Time: 10:22 a.m.

16 Place: Hilton Garden Inn
17 53995 Indiana State Road 933
 South Bend, Indiana 60018

18
19 Called as a witness by the Defendants in
20 accordance with the Texas Rules of Civil
21 Procedure pursuant to Notice.
22 Before Charolette A. Martinez, CSR 11983
 Notary Public, St. Joseph County, Indiana

23 MIDWEST REPORTING, INC.
24 1448 Lincolnway East
25 South Bend, Indiana 46613

0196

1 APPEARANCES:
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7
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12 On behalf of the Defendant, Greyhound Americanos
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13
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17 On behalf of the Defendants, Motor Coach
18 Industries, Inc., and MCI Service Parts, Inc.;

19 ALSO PRESENT: Laura Switalski, CLVS.

20 * * *

21
22
23
24
25
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1 I N D E X
2 DEPOSITION OF LAWRENCE YOHE
3 DIRECT EXAMINATION
By Mr. Dacus..... Page 199, 405

4 CROSS-EXAMINATION
5 By Mr. Hill..... Page 351
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15	Exhibit 24 - Notes made regarding each of the 288 tests performed and the conditions under which those tests were	

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17	performed for the Uvalde testing	
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6	took while under the motor coach	
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14	to the Notice of Deposition	
15	of Larry Yohe	
16	* * *	

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1 THE VIDEOGRAPHER: Good morning.
2 We're now on the record at 10:22 a.m.
3 Today's date is February 15th, 2012. This
4 is the videotaped deposition of

5 Mr. Lawrence Yohe in the case of
6 Daniel Campos, et al, versus Alvarado,
7 et al.

8 All counsel present will be reflected
9 on the court reporter's transcript.

10 Will the court reporter now, please,
11 swear in the deponent.

12 LAWRENCE YOHE

13 called as a witness by the Defendants, having first been duly
14 sworn, was examined and testified as follows:

15 DIRECT EXAMINATION

16 BY MR. DACUS:

17 Q. Mr. Yohe, my name is John Dacus. I'm here
18 representing Motor Coach Industries and
19 MCI Service Parts today.

20 And I understand that you're here as an
21 expert witness testifying on behalf of
22 Americanos USA, Greyhound Lines, First Group
23 America, and Irma Morado.

24 Is that correct?

25 A. That's correct, sir.

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0200

1 Q. You have previously given another deposition,
2 other sworn testimony, in this particular case
3 back on September 19th, 2011. Is that correct?

4 A. That is correct, sir.

5 Q. Since that time, since you gave that deposition,
6 have you done further work in connection with this
7 case?

8 A. I have, sir.

9 Q. Would you please just generally outline for us
10 what it is, and then we'll get into -- more into
11 the specifics of it?

12 A. Okay. Okay. Well, the primary thing that -- the
13 primary thing that I did was participated in
14 testing at the Continental test track in January.
15 I -- I believe those dates were about the 13th. I
16 would have to check a calendar to be sure. I bet
17 it was at Uvalde test track, where I was the
18 driver.

19 Q. All right. Any other work that you've done in
20 connection with this case, other than
21 participating in the testing around January 13th?

22 A. There is, sir. I participated with other
23 Greyhound people on a visit to the
24 National Highway Traffic Safety Administration
25 and -- and I was involved in speaking to the

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0201

1 Texas Department of Public Safety, Texas DPS.
2 I believe that's it. That's the --

3 MR. HAYNES: You've also been to the
4 accident scene.

5 THE WITNESS: Oh, and I visited the
6 accident scene, yes.
7 BY MR. DACUS:
8 Q. Before you -- approximately when did you visit the
9 accident scene?
10 A. I just visited it last Saturday. That would have
11 been, I believe, the -- was that the 10th or the
12 11th? I'm not sure. But last Saturday is when I
13 visited the accident scene.
14 Q. At the time that you prepared your report in this
15 case in July of last year, you had not visited the
16 accident scene?
17 A. I had not, sir.
18 Q. And at the time you prepared your supplemental
19 report in this case, you had not visited the
20 accident scene?
21 A. That is correct, sir.
22 Q. Any other work that you have done in this case
23 since your deposition in September of 2011?
24 A. Well, the only other work would be basically I've
25 reviewed documents in preparation for this
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0202

1 deposition today and was involved in a webinar
2 conference call about two weeks ago. I said two
3 weeks ago. It was one week ago. It would have
4 been last Wednesday, I believe.
5 Q. Does -- have you now covered all the work, or at
6 least mentioned all the work that you have done in
7 connection with this case since your
8 September 2011 deposition?
9 A. I'm trying to think. I did in preparation for
10 visiting the National Highway Traffic Safety
11 Administration. I was also in Richmond. And I
12 did look at another bus that had a drive shaft
13 failure.
14 Q. One bus?
15 A. Just one, yes, sir.
16 Q. Do you know what unit number that was?
17 A. You know, I don't know right off. It's on a CD
18 that you have. It was one that was involved in an
19 accident in Pennsylvania, and I don't recall the
20 bus number.
21 Q. And you say on a CD. I don't fully understand
22 that.
23 A. A compact disk that I -- that should be in --
24 MR. HAYNES: It's in that folder.
25 THE WITNESS: It should be in that
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0203

1 folder.
2 BY MR. DACUS:
3 Q. I'll hand you --
4 A. Yep.

5 Q. Well, there is a compact disk --
6 A. -- in there, okay. It would be on -- there's a
7 photograph of a bus that I looked at where it
8 says, "DPS Presentation." So I don't recall
9 the -- I don't recall the number of it.
10 Q. And what is on the disk that's called "DPS
11 Presentation"?
12 A. There's -- it -- there is two drive shaft tests
13 that were conducted at Nappanee, stationary tests.
14 And there was an additional stationary test. It's
15 the same test, but it was in slow motion, and I
16 couldn't fit it onto the disk. And it's
17 information that I believe you have, but it's --
18 it would be the test -- it would be the
19 un-contained test, and it's the same one. It's
20 one of the same ones there, but it's in slow
21 motion. And I was unable to -- there was not
22 enough room on the disk to -- to copy it.
23 Q. And the disk that you've handed me has three
24 numbers on it. 1, drive shaft W/O loop -- which I
25 assume's drive shaft without loop.

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0204

1 A. Without loop. In other words, that would be
2 un-contained, right.
3 Q. That's a stationary test?
4 A. A stationary test.
5 Q. Video from a stationary test?
6 A. Video from a stationary test.
7 Q. And then containment loop test is No. 2?
8 A. Right, that's where it's contained.
9 Q. And, again, that's video from a --
10 A. -- a test here in Nappanee.
11 Q. Okay. A stationary test?
12 A. A stationary test, right.
13 Q. And No. 3 is DPS presentation?
14 A. That's a Power Point, a Power Point presentation.
15 Q. Okay. And who arranged for you to make the
16 presentation to DPS?
17 A. I did.
18 Q. Okay. And who did you arrange that with?
19 A. Corporal Olive. He's out of, I believe it's
20 Kerrville.
21 Q. And who was present when you made that
22 presentation?
23 A. Well, I didn't make it, you know, myself.
24 Denny Hasamear, a mechanical -- a mechanical
25 technician or supervisor from Greyhound and

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0205

1 myself. And there were about six troopers.
2 Q. And was Trooper Olive one of those troopers?
3 A. Corporal Olive.
4 Q. Corporal Olive.

5 A. Yes. Yes, he was.
6 Q. Any others that you can recall?
7 A. You know, I can't. I really can't.
8 Q. And you did not make the -- the presentation?
9 A. I made part of it.
10 Q. Part of it?
11 A. I made part of it.
12 Q. What part of it did you make?
13 A. Well, I think I started it out, and -- I started
14 it out. Then when we got into the mechanical
15 parts of it, then Mr. Hasamear took over.
16 Q. Okay. And what was the purpose of the
17 presentation?
18 A. The purpose of the presentation was this: When I
19 read the last paragraph of the DPS report
20 concerning the driver's actions, you know, I felt
21 that there was -- that the DPS did not have the
22 information to base that conclusion on and -- and
23 I knew that my conclusions were going to be
24 different than them.
25 And, quite frankly, as a retired State
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0206

1 trooper myself, I -- I felt an obligation to tell
2 them -- give them the information that I had.
3 Q. Were you paid for this work?
4 A. I was, sir.
5 Q. And who paid you?
6 A. Greyhound. Through Greyhound.
7 Q. Okay. Was it treated as part of your work in
8 connection with this case?
9 A. It was, sir.
10 Q. Did you prepare any part of the Power Point
11 presentation that you made to the --
12 Corporal Olive in the --
13 A. Basically Denny and I did it collectively.
14 Q. Okay. Who actually did it on the computer?
15 A. Denny.
16 Q. Okay.
17 A. Denny.
18 Q. And the Power Point, we'll have an opportunity to
19 review at some point, but can you tell us the --
20 the points that you tried to make through this
21 Power Point?
22 A. Okay. Okay. The basic points that we tried to
23 make we showed the -- we showed pictures of the
24 highway, the initial -- initial tire mark, which I
25 attributed to the tag axle and -- the right tag
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0207

1 axle.
2 We -- we showed pictures of the -- of the
3 locking mechanism and tie rod from the accident
4 bus. We showed pictures of the -- the tie rod,

5 the tie rod and the locking mechanism from the bus
6 in Pennsylvania. And, I believe, there was
7 another one that we may have showed pictures of --
8 that we showed pictures of that did not result in
9 any accident.

10 Let's see. I'm trying to think. We showed
11 pictures of the -- of the stationary testing here
12 in Nappanee, the stationary testing, both the high
13 speed, the low speed, and the containment, and
14 where it was contained. And we showed a couple
15 of -- one or two clips from the testing in
16 South Bend --

17 Q. And --

18 A. -- back -- back -- that took place last June, I
19 believe it was.

20 Q. At the Bosch --

21 A. At the Bosch, yes.

22 Q. -- test track?

23 A. Right.

24 Q. And the film clips or video clips and the
25 photographs that you showed to the DPS personnel,
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0208

1 will those all appear on this disk that you
2 brought with you today?

3 A. Well, again, the slow motion is not on there. I
4 have it on my computer. Obviously, if somebody
5 has a jump drive, I'd be happy to copy it. And
6 the testing at South Bend -- South Bend, it is not
7 on there, and I would have to search for it.

8 But I believe it was Clip 14 was the main one
9 that we showed where the -- the tag axle could
10 steer the bus without any input from the driver.
11 That was the primary one that we -- that we showed
12 there.

13 I can't remember if there were any others,
14 but that was the primary one that we showed.

15 Q. And you're telling us that you don't remember and
16 have no record of what -- of what films you showed
17 beyond Clip 14?

18 A. Well, let me say this: They requested copies of
19 all that testing. And that was furnished to them.
20 That was furnished to them. He sent me an e-mail,
21 which you have a copy of it. There's a copy in
22 there. And he requested copies of that testing.
23 And it was sent to him. He was furnished with
24 that material.

25 Q. So all of the Bosch testing videos --
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0209

1 A. He was furnished with all of it. We didn't go
2 over it all, but he was furnished with all of it.

3 Q. But you don't -- as you sit here today, you don't
4 recall exactly what you showed in the

5 presentation?

6 A. Well, I recall specifically we showed the one with
7 the bus going straight and the tag axle activated
8 through the ram cylinder and holding the steering
9 wheel straight ahead and the bus going to the
10 right.

11 And I'm believing we showed one where the bus
12 is going around the -- going around the curve with
13 the tag axle locked and then brake -- and there
14 was hard braking. And I can't remember if we
15 showed any more than that.

16 Q. Okay. So at least those two?

17 A. At least those two. At least those two, but like
18 I said, they have copies of all of it.

19 Q. Did you show the Texas Department of Public Safety
20 any clips or films or data from any testing done
21 by other experts in this case other than yourself?

22 A. We did not.

23 Q. Had you seen testing performed by Mr. Granite?

24 A. I have, sir.

25 Q. Okay. Had you seen that testing before you made
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1 the presentation to the Texas Department of Public
2 Safety?

3 A. I'm trying to think. I may have. You know, I may
4 have seen that. I hon- -- when -- I can't
5 remember when his testing came out. But I
6 definitely saw clips with -- with Granite's
7 testing, yes.

8 Q. And was it a conscious decision that you would
9 only present the testing that you or
10 Greyhound Americanos had performed to the
11 Texas Department of Public Safety?

12 A. No, sir, it was not. It didn't even -- hadn't
13 even thought about Granite's testing. Obviously I
14 could give you reasons for that, but I hadn't even
15 thought of it.

16 Q. All right. When did the presentation occur?

17 A. It's on my billing.

18 Q. I'd be happy for you to --

19 A. Okay. Okay, November the 7th.

20 Q. Did you express opinions to the Texas Department
21 of Public Safety personnel that were the same as
22 those expressed in your initial report in this
23 case?

24 A. I did, sir.

25 Q. Did you obtain any commitment from
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1 Texas Department of Public Safety regarding their
2 view of those opinions or their view of those --
3 of their accident reconstruction?

4 A. Okay. Okay. I am going to ask you to repeat

5 that, okay?

6 Q. Okay. Did you obtain any commitments from
7 Texas Department of Public Safety personnel who
8 were at the presentation regarding their accident
9 reconstruction of this accident?

10 A. Like -- okay. Maybe I'm not reading you
11 correctly, but just to be clear, like they would
12 change a report or something like that?

13 Q. Change their opinions, their -- change their
14 report, any of those things?

15 A. Okay. I absolutely did not, and I made it very
16 clear to them that that was not my purpose. My
17 purpose was -- was strictly to furnish information
18 for them.

19 Q. Did -- whether that was your purpose or not --

20 A. Right.

21 Q. -- did you obtain any commitments or indications
22 from the Texas Department of Public Safety
23 personnel at this meeting that they were going to
24 change their view of this accident or change their
25 report or change their opinions?

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1 A. Well, I think they did. I think according to
2 conversations I had with Corporal Olive, I believe
3 that they have changed their view, part of it.
4 Whether they -- there was absolutely no commitment
5 that they were going to -- to change the report.

6 Q. Did those conversations take place, the ones you
7 just recounted, did those take place with anyone
8 other than Corporal Olive?

9 A. No, sir.

10 Q. All right. Just to be sure that we understand
11 exactly what was presented --

12 A. Okay.

13 Q. -- to the DPS --

14 A. Okay.

15 Q. -- in November.

16 A. Okay.

17 Q. It was the materials that are contained on this
18 disk?

19 A. Right.

20 MR. DACUS: Which I'm going to ask
21 our reporter to mark as Exhibit 18.
22 (Defendants' Exhibit No. 18 marked
23 for identification.)

24 THE WITNESS: Okay.

25 ///

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1 BY MR. DACUS:

2 Q. It was some video that was too large to be put on
3 this disk?

4 A. Right. It's the same as the un-contained failures

5 shown, but it's in slow motion and could not go on
6 the disk.

7 Q. Okay. So we have the materials on the disk?

8 A. Uh-huh.

9 Q. We have the slow motion of the stationary test
10 performed at the Bosch track -- or at Nappanee?
11 Which was it?

12 A. No. No. We -- at Nappanee.

13 Q. Nappanee?

14 A. At Nappanee. That was the stationary test at
15 Nappanee.

16 Q. Okay. With the drive shaft having no second
17 containment loop?

18 A. Right.

19 Q. Okay.

20 A. Right.

21 Q. And then you showed you can specifically recall
22 Clip 14 from the testing at the Bosch test track?

23 A. I believe that's Clip 14, the one where the bus
24 goes straight. The tag axle's activated and then
25 it goes to the right without any steering -- while

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1 you're holding the steering wheel straight. I
2 showed them that one.

3 Q. And to be clear, that particular clip is one where
4 you had the additional cylinder that you had
5 mounted to the tie rod of the bus that was being
6 tested, and you forced the tag axle to steer --

7 A. That is correct, sir.

8 Q. Okay.

9 A. That is correct.

10 Q. And that is not a condition that -- or that's not
11 equipment or a condition that was actually on the
12 accident bus?

13 MR. HAYNES: Objection. Form.

14 You have two questions there,
15 equipment or condition.

16 BY MR. DACUS:

17 Q. Okay.

18 A. Okay. It was equipment that was not on the
19 accident bus. That is correct, sir.

20 Q. Nor is it equipment that is on any 102DL3 that's
21 out there operating?

22 A. That is 100 percent correct.

23 I would like to just clarify one point. You
24 know, like I said, obviously I -- there was
25 disagreement with the DPS report and -- and I told
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1 the attorney, you know, that I would be willing to
2 talk to them. You know -- you know, express --
3 show them what I felt that I had, that we had.
4 And so it was -- it was sometime later, a couple

5 weeks, or two or three weeks later that she said,
6 "Why don't you do that."
7 And so, I mean, that -- I was asked. I just
8 didn't take it upon myself to -- you know, to, you
9 know -- to visit, but I did say I was willing to
10 do that.

11 Q. You volunteered to do it?

12 A. I did. I did, sir. I did.

13 Q. But you didn't make the decision about whether you
14 would make that presentation to --

15 A. Right. That's correct.

16 Q. -- Texas Department of Public Safety. Is that a
17 fair statement?

18 A. That is a fair statement, sir.

19 Q. When you say "she," that's Ms. Rodriguez --

20 A. Yes, sir.

21 Q. -- the attorney for Americanos and Greyhound?

22 A. Yes, right. Yes, sir.

23 THE REPORTER: Could you not talk
24 over the top of him? It would help me out
25 a little bit. Thank you.

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1 THE WITNESS: Thank you.

2 BY MR. DACUS:

3 Q. Now, you think there may have been some other
4 clips from the Bosch testing that were shown to
5 Texas Department of Public Safety during the
6 presentation in November, but you don't have a
7 record of exactly which one --

8 A. I'd say at least one. Right. I don't -- you
9 know, I really don't know. It's been a while
10 since I've looked at it, so I just simply
11 downloaded that for you. Actually, this morning I
12 downloaded. I didn't go through the presentation
13 again. I downloaded it for you.

14 Q. Let me ask this, and maybe you'll recall this:

15 The other clip or clips that were shown to
16 Texas DPS in your November presentation, were
17 those clips with the actuating cylinder to force
18 the tag axle to steer over to one side or were
19 those tests where that cylinder was not
20 activating?

21 A. Well, I can recall the -- the two that I recall,
22 one was with and one was without.

23 Q. Now, with regard to these Bosch tests, were they
24 performed with the tag axle castering mechanism
25 locked in the proper -- or latched in the proper

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1 position for forward travel?

2 A. We did it both ways.

3 Q. Okay. At the Bosch testing?

4 A. Not at -- I'm sorry. I'm sorry. At the Bosch

5 testing there was no activation of the castering
6 mechanism.
7 Q. Okay. I'm not sure I understand what that means.
8 What --
9 A. Okay.
10 Q. At the Bosch testing --
11 A. At the Bosch test track here in -- near
12 South Bend, the tests that we did last June was
13 strictly unlocking the tag axle and activating the
14 ram to move the -- move the tag axle wheels to
15 angle them left, to the left. There was no -- the
16 castering mechanism, which would ordinarily be
17 used if you're backing up, there was no -- there
18 was no activation. There was no mechanism in
19 place to unlock the castering mechanism.
20 Q. Okay. So to be a little more specific about
21 that -- and if we can -- I think we have an
22 understanding, but when you talk about the
23 castering mechanism --
24 A. Okay.
25 Q. -- is that the mechanism that can change the angle

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1 of the tag axle structure itself for purposes of
2 changing the castering point of the tag axle
3 wheels?
4 A. Yes.
5 Q. Okay.
6 A. Yes.
7 Q. And that mechanism in a 102DL3 coach has a lock or
8 a latch, which I'd like to call the castering
9 latch.
10 A. Okay.
11 Q. Does that make sense to you?
12 A. That's fine. That's fine, sir.
13 Q. And are you familiar with a castering latch?
14 A. Sir, I am. But I do not, you know, consider
15 myself an absolute -- the last word or the
16 absolute expert on it. I mean, I know how it
17 works. That -- I know that there's a lock up
18 there. I've seen it work.
19 So I will try to answer your questions the
20 best I can regarding how -- exactly how those
21 components work.
22 Q. Okay. Well, I really -- all I'm trying to figure
23 out is during the Bosch testing --
24 A. Right.
25 Q. -- that was performed here in this area --

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1 A. In June.
2 Q. -- in June of 2011, did the castering mechanism on
3 that coach remain latched in the proper position
4 for forward travel throughout all of those

5 testing -- all of that testing?
6 A. Sir, as far as I know, it remained latched the
7 entire time.
8 Q. Okay.
9 A. There was certainly no effort on our part to
10 unlatch it.
11 Q. Okay. And was it latched in the forward travel
12 position throughout all of those tests?
13 A. To the best of my knowledge and belief it was.
14 Q. Okay. Did you ever check during that Bosch
15 testing in June of 2011 the position of the
16 castering mechanism on that test coach?
17 A. Sir, I did not, you know, get down there and
18 physically check it. It was certainly locked when
19 we left Nappanee.
20 Did I physically check it, no. Do I have any
21 reason to believe it came unlocked? No, I don't.
22 Q. Okay. Were there any photographs made during that
23 Bosch testing that would show the position of the
24 castering latch mechanism on that test coach?
25 A. To the best of my knowledge, no.

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1 Q. Were there any videos made that would show the
2 position of the castering latch mechanism during
3 that Bosch testing?
4 A. There were not. It was just outside cameras
5 mounted during the Bosch testing.
6 Q. Was there any instrumentation associated with that
7 testing that would show the position of the
8 castering mechanism and whether it remained
9 latched, came unlatched, anything like that?
10 A. Sir, as far as I know, there's no documentation of
11 any type that would -- that would show that one
12 way or the other.
13 Q. Okay. And what -- what you're saying is there was
14 no intent during that testing to change the
15 position of the castering latch mechanism?
16 A. That is absolutely -- that is correct.
17 Q. Okay. And you assume that it was not changed --
18 A. That's right.
19 Q. -- from the proper --
20 A. I presume it wasn't. Right.
21 Q. Wait until I finish.
22 A. I'm sorry.
23 Q. You assumed that castering latch mechanism
24 position was not changed during any of the Bosch
25 testing because you made no efforts or -- or set

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1 up any equipment to change it; correct?
2 A. That is correct, sir.
3 Q. Okay. Now, during a deposition of Mr. Fugger --
4 A. Uh-huh.

5 Q. -- last week, he pointed us to you as the person
6 to ask about the change of the castering latch
7 mechanism and what that actually means during the
8 testing that was performed by you and Mr. Fugger
9 in January of this year at the Uvalde test track
10 operated by Continental.

11 So, with that -- with that preface, I'd like
12 you to tell us what you know about the operation
13 of the castering latch mechanism and the castering
14 mechanism of the test coach that was used during
15 the Uvalde testing.

16 MR. HAYNES: Objection. Form.

17 Can you make the question a little
18 more specific? Just everything you know?

19 MR. DACUS: Well, I'm -- I will do
20 so, but I'm kind of let- -- I'm kind of
21 giving -- you know, it may be that
22 he doesn't know anything, so I'm just --
23 I'm trying to find out generally, and I
24 promise you will ask more specific
25 questions, if you'll allow me some leeway

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1 here. I think it will go faster if he can,
2 kind of, give me his general description.
3 And then I promise to ask more specific
4 questions.

5 THE WITNESS: Okay. Okay. Just to
6 give a little background, as I
7 understand -- as I understand it, the
8 castering mechanism is basically set up to
9 basically change the angle, you might say,
10 of the king pins or the axle when the
11 vehicle is backing up, going in reverse.

12 And the reason -- the reason that --
13 and the reason that there's any concern
14 about the castering mechanism is because it
15 appears that in this accident it came
16 unlocked. So, therefore, we wanted to see,
17 you know, what the affects are with it both
18 locked or unlocked.

19 The castering mechanism is like a
20 large steel frame. It's kind of -- if I
21 can just use my hands since I'm on camera,
22 kind of goes up like this, and then there's
23 a big bar that goes across and goes back,
24 and there's a -- like a hook on it, a lock.

25 So when you put the bus in reverse,
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1 you know, through an electromatic -- little
2 electric pneumatic cylinder, that caster
3 becomes unlocked. And it changes the angle
4 of the -- like the way the wheels are

5 hitting the -- the way the axle's, like,
6 touching the pavement, touching the
7 pavement.
8 And so like I said, we wanted to try
9 it, you know, both ways, with the castering
10 locked and unlocked. So in the test bus,
11 in the test bus we rigged up an independent
12 switch to do that just by hitting a switch,
13 that -- that the caster would unlock. It
14 would unlock.

15 So I'm just going to ask you based
16 upon what I've said --

17 BY MR. DACUS:

18 Q. Okay.

19 A. -- what kind of follow up or what --

20 Q. Yes. Thank you for giving me the general
21 description, okay? I do need to ask some more
22 specific questions.

23 A. Okay.

24 Q. Mr. Fugger used the term that the castering was
25 unlocked in various tests. And you've used that
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1 term in the answer you just gave.

2 What I'm specifically trying to find out is
3 when Mr. Fugger says the castering was unlocked
4 and when you say it was unlocked, what actually
5 does that mean with regard to what happens with
6 the castering latch mechanism?

7 A. Well, when it -- when it's unlocked, when it's
8 unlocked and then -- it comes forward, you know.
9 It's not just that it's unlocked. It pushes it
10 forward.

11 Now -- now, just to -- just to put it in
12 perspective, I'm not prepared to say -- although
13 others may be -- I'm not prepared to say, like, if
14 it's -- can it be unlocked and not come forward?
15 You know, I'm -- I don't know that.

16 But in this case we had it set up so it
17 unlocked and came forward, thereby changing the --
18 basically changing the geometry, you know, of the
19 tag axle.

20 Q. Okay. Are you familiar enough with the castering
21 latch mechanism on a 102DL3 coach to recognize
22 that there are essentially two positions for the
23 castering of the tag axle on that coach?

24 A. Forward, and the rear one for going -- the normal
25 position would be going forward and the other for
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1 backing up the coach.

2 Q. Right.

3 A. Yes, I'm aware of that. That's -- I'm aware of
4 that much.

5 Q. Okay. And are you aware that in the casting
6 latch mechanism there are basically two holes in
7 the -- in the part of the casting latch and two
8 fingers, if you will, that can go into both of the
9 holes, or it has a position where only one finger
10 can go in one hole?
11 A. Sir, that -- that question would exceed my
12 knowledge.
13 Q. Okay.
14 A. And I'm going to do what Mr. Fugger did and I'm
15 going to pass it down the line. I understand
16 Mr. Hasamear, Denny Hasamear, is going to be
17 deposed shortly, and I'm going to have -- I'm
18 going to have to defer that question to him.
19 Q. Okay. So I guess what I -- just to be sure --
20 A. Okay.
21 Q. -- I understand, you're in a position where you
22 don't really know, if I'm hearing you right, what
23 exact position the casting latch mechanism was
24 in during the test when it was supposedly
25 unlocked?

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1 A. My understanding was it went forward. And I know
2 from the -- that I was notified by the beeping
3 sound up front. There was a beeping sound, and a
4 beeping sound and a red light that come on the
5 dash.
6 Q. Okay. But in terms of knowing --
7 A. Actually, right. You're absolutely right.
8 How far did it come forward, you know, when I
9 hit that -- that caster unlock, you know, exactly
10 how far it came unlocked, exactly how far it came
11 forward or -- you know, I really can't say.
12 Q. Okay. And with regard to -- I ask you these
13 questions about the Bosch testing.
14 A. Okay.
15 Q. And I need to ask you about the January testing in
16 Uvalde.
17 A. Okay.
18 Q. Did you ever get under the bus or look under the
19 bus at the rear to observe the position of the
20 casting latch mechanism during any of the
21 testing at Uvalde?
22 A. I did not, but -- but in regards to the previous
23 question, I kind of hate to say this, but when I
24 was -- when we had the bus on jacks and we wanted
25 to unlock the tag axle, I inadvertently hit the

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1 casting latch. And according to the cameraman
2 back there, he got scared because he saw
3 everything come forward.
4 So just based upon his statement, I certainly

5 presumed it came forward.

6 Q. And that's fine. I -- but the question, though:

7 Whether during that testing, either before a test

8 or after a test or before all the tests started or

9 after all the tests were over, did you ever with

10 your own eyes verify exactly what was happening

11 with the caster latch mechanism when you would hit

12 the button to unlock it?

13 A. Sir, I did not.

14 Q. Okay. And did you -- have you seen any

15 photographs or any video from testing which

16 identifies -- would identify for you exactly what

17 was happening with the casting mechanism and the

18 caster latch mechanism when you believed it was

19 unlocked?

20 A. I have not seen them. I certainly presume they're

21 in that 500 byte -- or 500 byte external drive, or

22 whatever you want to call it. There is probably a

23 couple of days' worth of information in there.

24 And, quite frankly, I just got that yesterday

25 and was unable to -- had trouble playing parts of

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1 it. I can only say I presume it's in there. I

2 haven't seen it.

3 Q. Okay. And the 500 byte drive you mention, it's

4 actually a 500 gigabyte drive, I believe. And it

5 is brought here to the deposition, and we'll try

6 to figure out how to make it an exhibit. Maybe a

7 Xerox copy of the cover or something.

8 MR. HAYNES: Yeah, because I think

9 everybody received that yesterday.

10 MR. DACUS: And -- but we'll ask,

11 whatever form we can agree on for the

12 exhibit, that be marked as Exhibit 19 to

13 this deposition.

14 (Defendants' Exhibit No. 19 marked

15 for identification.)

16 THE WITNESS: Okay.

17 BY MR. DACUS:

18 Q. Okay. And you may not know the answer to this,

19 but I have to ask --

20 A. Okay.

21 Q. -- it: Do you actually know from seeing with your

22 own eyes how the casting mechanism was changed

23 in position when you believe that it was unlocked

24 during the Uvalde testing?

25 MR. HAYNES: Objection. Form.

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1 THE WITNESS: You know, again, if I

2 understand your question correctly, you

3 know, I can't say firsthand exactly what

4 was going on back there. I only knew from

5 the driver's seat what I felt was the
6 result.

7 BY MR. DACUS:

8 Q. It's your understanding, but you don't actually
9 have knowledge of this, that the -- if I
10 understand you correctly --

11 A. Okay.

12 Q. -- that the castering position of the tag axle
13 mechanism on the test bus that you were using in
14 Uvalde --

15 A. Uh-huh.

16 Q. -- was changed using air pressure on the castering
17 cylinder that was present on that bus; correct?

18 A. I can give you my -- my scope of knowledge
19 about -- I guess I don't --

20 Q. I'm just trying to get what your understanding is.

21 A. My understanding is this: That the system that
22 was in place for it to work automatically, like
23 when you would back up a bus, that what we did was
24 we took that and wired it in a way that the driver
25 controlled it.

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1 Q. And whether that system is hydraulic or pneumatic
2 or --

3 A. Electropneumatic. I'd say electro- -- obviously
4 there's electricity involved and then there's air
5 involved to move the -- to actually move the
6 castering system. So it's electropneumatic.

7 Q. Okay. And it's your understanding that the
8 electropneumatic system involving both electrical
9 signals and air pressure is what normally operates
10 that castering mechanism to change its position
11 when the bus is put into reverse?

12 A. That is correct, sir.

13 Q. Okay. And that -- again, it's your understanding
14 that that system was modified for the purposes of
15 your testing in Uvalde, to do something that it
16 would never do as the system was set up by MCI;
17 correct?

18 MR. HAYNES: Objection. Form.

19 THE WITNESS: Yeah. It's correct
20 that the way the system is set up by MCI,
21 it certainly is not set up to automatically
22 unlock or come forward when you're going
23 down the highway.

24 I realize -- realize that, but we set
25 it up so we could do that.

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0231

1 BY MR. DACUS:

2 Q. Okay. And it's your understanding that a system
3 having air pressure to the pneumatic cylinder that
4 is supposed to change castering when you go into

5 reverse was used to actually change castering
6 during the Uvalde testing?

7 A. That's right, sir.

8 Q. Whether a new or different type of cylinder was
9 put in place to do this, do you know that level of
10 detail?

11 A. I would say positively it was not. It was -- that
12 a new cylinder was not used.

13 Q. Okay. Did you participate in any way in setting
14 up the bus with regard to the castering unlocking
15 that you wanted to do in this testing in Uvalde?

16 A. I participated in the fact that I was there. And
17 that I, you know, tested it after the mechanic,
18 you know, hooked it up.

19 Q. Tested it from the driver's seat?

20 A. From the driver's seat.

21 Q. Okay.

22 A. And, of course, I -- let him watch it.

23 There was a solenoid I -- that he replaced
24 some solenoid. But as far as the actual system,
25 it's my understanding and belief that it was set

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1 up to operate exactly the way it would as if it
2 was going in reverse.

3 Q. Meaning air pressure to move --

4 A. Air pressure to move the caster, right.

5 Q. Now, during the testing in Uvalde in January of
6 this year, did you set up the mechanism or the
7 system to change the position of the tag axle
8 steering lock during the testing?

9 A. Again -- again, that -- first of all -- the simple
10 answer to that is no.

11 Q. Okay.

12 A. I did not.

13 Q. Again, would it be Mr. Hasamear that did that?

14 A. Actually, it was -- it was a mechanic who -- who
15 received instructions through Mr. Hasamear --

16 Q. Okay.

17 A. -- at -- what we wanted to do. And, you know,
18 he -- he did it and -- and one more time it was
19 just a rewire.

20 Q. Okay. Did you ever see any electrical schematics
21 or any block diagrams or anything that would give
22 you any specifics about what was done to rewire or
23 reconfigure the castering mechanism or the tag
24 axle steering unlock mechanism for your test in
25 Uvalde?

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1 A. First part, I would say -- I would say I may have
2 seen them. Two, it wouldn't have made any
3 difference. I can't read schematics.

4 Q. Okay.

5 A. At least anything complicated. That's not
6 something I'm --
7 Q. If --
8 A. -- proficient at.
9 Q. If you saw such electrical schematics or block
10 diagrams or other engineering-type documents, did
11 you keep a copy of them?
12 A. No. You know, I'm sure that I saw him looking --
13 the mechanic at Greyhound, I'm sure I saw him
14 looking at those schematics. Obviously I did not
15 keep them. I couldn't read them, didn't
16 understand them.
17 Q. Okay. And what was the name of the mechanic that
18 Mr. Hasamear directed how to change the tag
19 axle --
20 A. Yeah.
21 Q. -- steering lock?
22 A. Well, it was actually two, and they were both
23 Vietnamese guys. The one I believe his name was
24 Tam or Tran. I'm not sure. Tran, I believe. And
25 the other one's name was Viet, Viet Lee, I
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1 believe.
2 Q. Okay. And where do those people work and who do
3 they work for?
4 A. They worked at Dallas under the -- just under the
5 general shift supervisor, my understanding.
6 Q. At the Greyhound Service Center in Dallas?
7 A. Uh-huh. At the Greyhound garage, right, in
8 Dallas; 315 Continental Avenue.
9 Q. And were you present when directions were given to
10 these mechanics about what to change and how to
11 change it in the tag axle castoring mechanism or
12 in the tag axle lock --
13 A. Uh-huh.
14 Q. -- steering lock mechanism?
15 A. I -- actually, when I got there it was already
16 underway. He had already, you know, had these
17 conversations. Obviously I helped with the --
18 with setting up the hydraulic ram, but the wiring
19 and that, it was already underway when I got
20 there. And -- and he knew what -- he was already
21 told what to do.
22 Q. Okay. "He" being either Mr. Lee or Mr. Tran?
23 A. Right. Mainly Mr. Tram in the daytime. Mr. Tram
24 in the daytime.
25 Q. Okay.

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1 A. And then Mr. -- he would -- the other guy would
2 come in, I think, at like 3:00 in the afternoon or
3 something and continue.
4 Q. So you're really kind of in the same position

5 Mr. Fugger was in. You have an understanding of
6 what you think was supposed to be done, but you
7 don't really know exactly what was done either to
8 the tag axle steering lock mechanism or to the tag
9 axle castering mechanism?

10 MR. HAYNES: Objection. Form.

11 THE WITNESS: Well -- well, I know --
12 I know how they worked when it was done.
13 At least I know the lock. I did view that
14 lock, you know. Somebody worked the
15 switch, and I viewed that lock. I know
16 their effect.

17 What wires were put where, I do not
18 know that.

19 BY MR. DACUS:

20 Q. Okay. And when you say "that lock," you're
21 talking about the tag axle steering lock?

22 A. The steering lock, right.

23 Q. Not the tag axle castering latch?

24 A. Not the castering latch, right.

25 Q. Did you have any kind of recording of the
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1 presentations you made in your visit with NHTSA,
2 N-H-T-S-A?

3 A. We did.

4 Q. Okay.

5 A. We did.

6 Q. Is that something that you brought with you today?

7 A. You know what, I don't have that presentation.

8 Basically -- basically I gave a very small part of
9 it. So I do not have that presentation, but I can
10 tell you that the -- basically the same films for
11 the testing, the drive shaft loop contained and
12 un-contained, those were shown.

13 The un-contained showed in real time, in slow
14 motion, that was showed. That was showed. And
15 there were -- again, there were a couple of clips
16 from the -- again, probably two or three clips
17 from the testing at -- at South Bend, the Bosch
18 track at South Bend.

19 And that was basically my only part in it,
20 was the talking about the -- the testing we did in
21 South Bend and how the -- you know, how the tag
22 axle works.

23 Q. Was there a Power Point presentation made in that
24 presentation to NHTSA?

25 A. I believe there were, sir. I'm all but positive
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1 there was.

2 Q. Did you present any part of the Power Point
3 presentation?

4 A. No, I did not.

5 Q. Did you prepare any part of the Power Point
6 presentation?

7 A. I -- I helped a little bit. I helped a little. I
8 helped, at least commented on it. And we went
9 over it -- we went over it the day before. And
10 I'm trying to think if it was all prepared and --
11 I'm trying to -- I'm trying to -- you know, I
12 can't remember. I'm trying to think whether it
13 was already -- it was prepared and we were going
14 over it and altered it. That's -- I think that's
15 mainly what happened, you know.

16 MR. DACUS: Our videographer tells us
17 we need to change the tape.

18 THE WITNESS: That's good news to me.

19 MR. HAYNES: Can we take a break?

20 THE VIDEOGRAPHER: Off the record at
21 11:21 a.m.

22 (Off the record.)

23 THE VIDEOGRAPHER: We're now back on
24 the record at 11:31. This is Tape No. 2.

25 Please, continue.

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1 BY MR. DACUS:

2 Q. With regard to the visit with NHTSA that you
3 participated in, can you tell us what other people
4 appeared for that visit with NHTSA?

5 A. Alex Cook and Mike Walker from Greyhound.

6 Q. Anyone else for Greyhound?

7 A. Ted Knappen -- Ted Knappen, their counsel from
8 Washington, DC.

9 Q. So did the full extent of the Greyhound contingent
10 consist of you, Alex Cook, Mike Walker, and
11 Attorney Ted Knappen?

12 A. Yes, sir.

13 Q. And who did you meet with at NHTSA?

14 A. Actually, there was a group of people. I'd say
15 Bruce York was the main one. Bruce York.

16 You know, I really -- there was a guy there
17 named Tom Bowman who I dealt with before. He was
18 there. And there was probably at least a half
19 dozen other people that I didn't know.

20 Q. Were you given anything from that meeting, like a
21 sign-in sheet or attendance sheet or a copy of
22 business cards?

23 A. Yeah, you know, I don't know if I got any business
24 cards or not. I may have gotten Bruce York's
25 business cards, but to the best of my knowledge, I

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1 didn't get cards from anybody else.

2 Q. What about a -- copy of a sign-in sheet or --

3 A. I don't think so. You know, I don't think we
4 had -- I'm all but sure there was no sign-in

5 sheet.

6 Q. And tell us what the -- the gist of the
7 presentation was that you and the others
8 representing Greyhound made to NHTSA?

9 A. Okay. The gist of it was that during a drive
10 shaft failure, that the -- the drive shaft could
11 become un-contained, striking portions of the tag
12 axle mechanism to include -- to include the lock
13 and the tie rod, and could affect the -- the
14 handling characteristics of the motor coach.

15 Q. And you showed your videos that you described
16 earlier?

17 A. Yeah, Alex showed them. Yeah.

18 Q. Okay. And what was your part of the presentation?

19 A. My part of the presentation was, you know,
20 basically to show that the -- that a turned tag
21 axle could steer the front of the bus.

22 THE REPORTER: That a what, tag axle?

23 THE WITNESS: That a turned tag could
24 steer the front of the bus, could redirect
25 the front of the bus.

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1 BY MR. DACUS:

2 Q. Any other part of the presentation that you made
3 to NHTSA for Greyhound?

4 A. That was -- that was the substance of it. You
5 know, I believe I explained what a tag axle, you
6 know, was for, what -- that it basically was a
7 weight-bearing axillary axle and that some tag
8 axles would -- were steerable and others were
9 locked in place and basically showed -- we showed,
10 again, a couple of clips from -- from the
11 South Bend -- from the Bosch track, showing how --
12 we showed that same clip showing how the -- the
13 tags -- tag axle could steer the front of the bus.

14 Q. As with the presentation to Texas Department of
15 Public Safety, were any films or testing or data
16 from MCI or MCI experts presented to NHTSA during
17 this presentation?

18 A. You mean like anybody from MCI?

19 Q. No. Any data, films, video of testing performed
20 by or for, or MCI shown to NHTSA?

21 A. To the best of my knowledge, no.

22 Q. Certainly not in your presentation?

23 A. Not in my presentation. I would say not -- I
24 don't think there were any shown, period.

25 Q. Okay. And when was the meeting with NHTSA?

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1 A. Again, I'd have to refer to my --

2 Q. If you would --

3 A. I will, sir.

4 Q. -- refer and let us know.

5 A. I will, sir.

6 The meeting with NHTSA was on December
7 the 14th. December the 14th.

8 Q. Okay. How much time did you spend preparing for
9 the meeting with NHTSA?

10 A. You mean how many hours did I bill for?

11 Q. Yes, sir.

12 A. I didn't bill for any hours on the day of the
13 meeting. I did bill -- I billed for seven hours
14 on the previous day.

15 Q. Okay. Where did you do your preparation for the
16 meeting?

17 A. Again -- again, I believe it was -- it was
18 basically prepared, and we went over it,
19 Mike Walker and I and Alex. I believe we went
20 over it. And this was done in Richmond.

21 Q. And when?

22 A. The day before. The day before.

23 Q. I think you told us about some changes that you
24 wanted to make to the Power Point presentation
25 that was presented to NHTSA. Tell us what those

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1 changes were.

2 A. Sir, you know, I honestly do not recall. I know
3 we reviewed the presentation and, you know, I --
4 whatever changes there were, were, I would say,
5 relatively minor. And I do not honestly recall
6 what those changes were.

7 Q. And is it your testimony that you didn't get a
8 copy of this presentation?

9 A. It is my testimony, sir.

10 Q. But you have seen it?

11 A. I have seen it.

12 Q. Both during the preparation session and during the
13 actual presentation?

14 A. That is correct, sir.

15 Q. Who presented the Power Point presentation to you
16 when you first saw it?

17 A. Alex, Alex Cook. He's -- he's a senior engineer
18 or chief engineer with -- with Greyhound.

19 Q. Now, who did you understand had prepared the
20 Power Point presentation when it was first
21 presented to you?

22 A. Well, I believe that Alex had.

23 Q. Okay.

24 A. Nobody told me. But, I mean, I just believed he
25 had.

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1 Q. And who modified the presentation when you had
2 some corrections or changes to be made?

3 A. I mean, I believe it was him. I believe it was
4 Alex.

5 Q. Did --

6 A. I don't recall having any suggestions. I don't
7 recall having any suggestions, you know, to
8 change, but there -- I know that there was some
9 small modifications.

10 Q. If you had a copy of the original Power Point
11 presentation you were shown and a copy of the
12 Power Point presentation that was actually
13 presented to NHTSA, do you think you could
14 identify for us what portions of it you changed --

15 A. Sir --

16 Q. -- or suggested?

17 A. Sir, I could not. If I saw the two side-by-side,
18 I'm not sure I would know which was which.

19 Q. Did Mr. Cook also prepare the presentation that
20 you used to present to Corporal Olive and the
21 Texas Department of Public Safety?

22 A. No, he did not.

23 Q. Did the presentation that was made to NHTSA
24 consist of at least in part the presentation that
25 you had made to Corporal Olive and the Texas DPS?

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1 A. Well, in that the testing was -- in that the
2 testing -- I mean, we showed the same testing.
3 You know, we showed the same testing. There may
4 have been some of the same photographs. I really
5 do not recall.

6 His -- the present -- let me say this: The
7 presentation at NHTSA was highly technical. It
8 involved, you know, the components, you know,
9 various axle components. It was really a very
10 much different presentation, although we did show
11 the -- you know, some of the same film clips.

12 And we showed the stationary -- we showed the
13 stationary testing at Nappanee, but it was a very
14 much different presentation. Some of it, which I
15 didn't fully comprehend the various components
16 going on, the universal, the end of the drive
17 shaft, and where those components came from.

18 So it was -- although there was some
19 similarities, it was a very different type of
20 presentation.

21 Q. Now, I want to be clear -- switching now from the
22 presentation to NHTSA --

23 A. Uh-huh. Okay.

24 Q. -- to the one that you were more involved in at --
25 for the presentation to DPS.

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1 A. Okay.

2 Q. Do you have a copy of the presentation that was
3 made to DPS?

4 A. I do, sir. And it's the same copy you have on

5 your desk.
6 Q. On what desk?
7 A. The one right here.
8 MR. HAYNES: Why don't you identify
9 it? Exhibit --
10 MR. DACUS: It's Exhibit 17, I
11 believe.
12 THE REPORTER: 18.
13 BY MR. DACUS:
14 Q. 18. I'm sorry. Is that right?
15 A. What are we calling it?
16 THE REPORTER: Here's the sticker.
17 18.
18 THE WITNESS: 18, yeah.
19 BY MR. DACUS:
20 Q. Okay. You also referenced work that you had done
21 since your last deposition as a Webinar conference
22 call. What was the Webinar conference call?
23 A. The Webinar conference call was -- was basically
24 reviewing the evidence that we had and the
25 evidence that we had in this case, reviewing it
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1 all with the -- you know, the primary experts, you
2 know, or the primary people involved.
3 Q. Tell me who all was involved in this Webinar
4 conference call.
5 A. Well, the attorney was.
6 Q. Which attorney?
7 A. Tamara.
8 Q. Ms. Rodriguez?
9 A. Yes, yes.
10 Q. Who else?
11 A. Basically, you know, myself and Tom Fugger and
12 Erin Jones, Steve. Steve was on it. Mr. Haynes,
13 who's here today. I can't remember. Maybe
14 Mr. Cook was on it. He didn't give any
15 presentations or anything, but -- but I think his
16 name did come up on the -- they have a list of --
17 on a Webinar it shows who checks in.
18 MR. HAYNES: There's another attorney
19 in our office named Glen Romero who was
20 involved in it as well.
21 MR. HILL: Is he in your office now?
22 MR. HAYNES: Yeah.
23 MR. HILL: He works for you all, or
24 with you all?
25 MR. HAYNES: Yeah. Right.
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1 BY MR. DACUS:
2 Q. Anyone else that you can recall that was involved
3 in the Webinar conference call?
4 A. That's all that I know of, sir.

5 Q. Tell me what you can remember of the Webinar
6 conference call.
7 A. Well, Erin Cook, he gave a --
8 Q. You mean Erin Jones or Alex Cook?
9 A. Erin Jones, I'm sorry. Erin gave a presentation
10 basically showing a lot of pictures of the --
11 pictures of the casting system, the tag axle
12 mechanism. And -- and -- and then Tom gave a --
13 Tom Fugger gave a presentation, you know, showing
14 a lot of highway -- a lot of highway photographs.
15 There was discussions, you know, it's like,
16 there was discussions back and forth, but I'm
17 going to say -- I would say 90 percent of it was
18 their presentations and 10 percent was maybe
19 discussions.
20 Q. And did you give any presentation?
21 A. I did not, sir.
22 Q. Do you have any copies of the photographs or
23 videos that were included in the presentations by
24 Mr. Jones or Dr. Jones and Mr. Fugger?
25 A. I do not, sir.

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1 Q. In this Webinar were you actually in a position
2 where you could see on your computer the
3 photographs that they were presenting about?
4 A. Yes. Yes.
5 Q. And do you have any record of that on your
6 computer?
7 A. I certainly don't think so. I mean, I don't think
8 it copies, you know.
9 Q. Have you checked?
10 A. I have not checked. And like I said, I certainly
11 don't think -- unless it's somehow automatically
12 copied, I -- I would never say -- I would never
13 say never, but I -- I don't think so. And -- and
14 if it's -- if it's there, I certainly don't know
15 it at this point.
16 Q. What did the attorneys who were present?
17 A. They really didn't present. Just basically those
18 two persons were the two people that presented.
19 Q. Did the attorneys present say anything during the
20 Webinar?
21 A. Tamara would ask different opinions. And I heard
22 Steve speak up one time, Steve Haynes, and I can't
23 remember what he said, but -- but basically --
24 MR. HAYNES: Me either.
25 THE WITNESS: Pardon?
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1 MR. HAYNES: Me either.
2 THE WITNESS: Yeah, but, you know,
3 Tamara basically would ask -- I mean, she
4 asked me a couple of times, "What do you

5 think?" And -- but she's the only one, you
6 know, as far as I can recall. And this
7 other attorney you're talking about, I
8 don't recall him ever speaking up.

9 BY MR. DACUS:

10 Q. What did Mr. Cook, Alex Cook, say in the meeting?

11 A. You know what, personally I don't think he said
12 anything. He just listened. I heard his voice
13 once when he said he came on, that he was on the
14 call. And to the best of my recall, that's the
15 last that I ever heard him.

16 Q. Do you have any notes that you made from the
17 meeting?

18 A. No, I didn't. I didn't make any notes.

19 Q. Either on your computer or handwritten notes?

20 A. No. No, I don't.

21 Q. What opinions were you asked about by
22 Ms. Rodriguez?

23 A. I'm trying to think. You're free to remind me, if
24 you recall. I'm trying to think. I think mainly
25 if I had any disagreements with, you know, what

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1 the experts were saying, what the other experts
2 were saying.

3 Q. Did you have any disagreements?

4 A. No. The -- I think the only question that came up
5 that I didn't have good knowledge on, they talked
6 about the casting mechanism coming forward, and
7 I know Erin said that it happened, like he felt it
8 happened right away. You know, as soon as -- very
9 quickly, that it happened very quickly.

10 You know, that, as far as, you know, what she
11 asked me about, nothing sticks, you know. It
12 wasn't very much. You know, because like I said,
13 I didn't give a presentation, so, you know, it
14 wasn't very much.

15 Q. Do you recall anything from the presentations that
16 were given by Erin Jones and Tom Fugger?

17 A. Well, you know, most of it was things that I'd
18 already seen or known and -- or understood to be
19 the case. And, again, he showed some pictures of
20 the tire marks. And, again, we talked about
21 the -- the casting system. And, you know, I
22 used the example of the grocery cart buggy and
23 then later on, I believe, Mr. Jones picked up on
24 that, Erin Jones, and he used that, too.

25 There was discussion on how to explain the
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1 casting system, you know, how to try to explain
2 it in a simplified manner.

3 Q. Did you develop any new opinions that you had not
4 previously stated in your -- either your first

5 report or your second report regarding --
6 A. Not my report. My deposition, it did. It did.
7 There was one thing.
8 Q. And what was that?
9 A. Just looking at his photographs, I stated in my
10 original deposition that the tag axle pin was
11 unlocked or retracted. And I don't know that that
12 is the case, and I may have been in error there as
13 far as the position of the pin.
14 Q. Anything else that in any way changed the opinions
15 that you had previously stated either in your
16 first report, your second report, or in your first
17 deposition?
18 A. Sir, not that I can recall.
19 Q. Did anyone else express any new or additional
20 opinions that they had reached in this Webinar
21 conference call?
22 A. You know, I certainly wouldn't say no, but I
23 can't -- nothing comes to mind, what they -- you
24 know, what they would have been. I think a lot of
25 it was just confirming what we already -- what we
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1 believed. You know, what our -- the evidence that
2 we had, what it showed.
3 Q. Is there anything else that you can remember from
4 this Webinar conference call that you haven't told
5 me today?
6 A. Sir, at this time, no. If you want to ask me this
7 afternoon, maybe something will come to mind. But
8 at this time, you know, nothing else comes to
9 mind.
10 Q. You also told us that after your first deposition
11 you reviewed documents in preparation, I think you
12 said, for this deposition?
13 A. Yes, sir.
14 Q. Can you tell me what you reviewed?
15 A. Well, I reviewed --
16 MR. HAYNES: It's what's in the stack
17 there.
18 I mean -- anyway. Tell him.
19 THE WITNESS: Okay.
20 BY MR. DACUS:
21 Q. Well, if there's a shorter way to tell me, then
22 I'm perfectly happy for you to do that.
23 A. I'm -- I will tell you, I -- I had never read
24 Part 1 of Ms. Morado's statement. I read that,
25 the driver.

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1 MR. HAYNES: Deposition.
2 THE WITNESS: Deposition, I'm sorry.
3 The deposition. I read her whole
4 deposition in its entirety. I re-read

5 mine, my deposition. I read it in its
6 entirety.
7 There was two sections to
8 Tom Fugger's deposition. I read -- I read
9 the first part. I read the first part.
10 Then I had a computer problem, and then
11 yesterday Mr. Haynes furnished me with the
12 second part, so I read a lot of it last
13 night. I didn't get completely through
14 that.

15 I reviewed the -- the testing, as
16 much as I could get to play, provided by
17 Mr. Fugger, the testing we did at Uvalde.
18 I was able to review -- review a lot of
19 those -- several of those test clips. The
20 test clips from Tape 1, from Disk No. 1.

21 I re-read -- what's his name? --
22 Rucoba? Rucoba? Does that sound like the
23 right name?

24 MR. HAYNES: Yeah.

25 THE WITNESS: Rucoba. I re-read
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1 Rucoba's report, as much as I could get in
2 in about 12 hours.

3 BY MR. DACUS:

4 Q. All right. Let's try to mark some additional
5 exhibits at this point.

6 A. Okay.

7 Q. And let me get some specifics about what you've
8 just told me.

9 A. All right.

10 Q. If I can.

11 A. Okay.

12 MR. DACUS: No. 21.

13 (Defendants' Exhibit Nos. 20 and 21 marked
14 for identification.)

15 BY MR. DACUS:

16 Q. And a question to you: Among the materials you
17 brought here are two sections of -- looks like a
18 real time -- real time draft of Mr. Fugger's
19 deposition that was taken on February 10th. Is
20 this what you were referring to in your earlier
21 testimony as reading two sections of Mr. Fugger's
22 deposition?

23 A. It is.

24 Q. Okay.

25 A. It is. It originally came to me by e-mail. And
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1 after I closed the first part, it, like,
2 disappeared from my computer. And I don't know
3 what went wrong. But anyhow, I read the first
4 part and most of the second part, or a lot of the

5 second part.

6 Q. All right.

7 MR. DACUS: Then let's mark this as

8 22 and 23.

9 (Defendants' Exhibit Nos. 22 and 23 marked

10 for identification.)

11 BY MR. DACUS:

12 Q. All right. Now, you mentioned to me a number of

13 the things that you reviewed in preparation for

14 your deposition today.

15 A. Uh-huh.

16 Q. And we've had the court reporter mark, I believe,

17 now as Exhibits 18 through 23 some of the

18 materials you brought today.

19 A. Uh-huh.

20 Q. And are these the materials you referenced in your

21 testimony regarding materials you reviewed in

22 preparation for today's deposition?

23 A. I believe it is. Let me just take a quick look

24 here.

25 Q. Yes, sir, please do.

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1 A. Again, I said -- you know, I don't see it. I said

2 I reviewed -- I believe I reviewed Rucoba's

3 report.

4 Q. Okay.

5 A. And I can't even remember if he -- I'm trying to

6 remember who he worked for. And I reviewed my

7 own, and it's -- and I reviewed the DDEC. I

8 reviewed the DDEC.

9 Q. Okay. Well, before we get to all the other

10 things --

11 A. All right.

12 Q. You did review at least portions of all of

13 Exhibits 18 through 23?

14 A. Yes, sir.

15 Q. Okay. And you've previously told us you had some

16 difficulties reviewing Exhibit 19, the hard drive?

17 A. That is correct, sir.

18 Q. Did you ever actually get to see any of the

19 materials on the hard drive?

20 A. I saw some still photos, some still photos on

21 there. And I finally got to the place where I

22 started to play -- play one, and I didn't even --

23 this -- this may help just to explain this.

24 In Fugger's tapes -- like basically as soon

25 as the tape starts, it's not long before we're

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1 getting into the testing. This one the camera

2 goes on and on, you know, with a lot of still

3 time, you know. Stop, changing out, resetting

4 cameras. I mean, there's a tremendous amount of

5 still time in there, so it's a -- it's much more
6 difficult to review.
7 Q. Okay.
8 A. Like there was no abbreviated, say, let's just get
9 to the test. That was not done in there.
10 Q. In Exhibit 19?
11 A. Uh-huh.
12 Q. Did you ever actually review any film footage of a
13 test?
14 A. Starting. The starting. Just starting. But, no,
15 going down the highway I did not, sir.
16 Q. Okay. And that -- was that basically because you
17 didn't have enough time?
18 A. It was time.
19 Q. Okay.
20 A. Time. Time. And being technically challenged to
21 get all that stuff to work.
22 Q. And when did you receive Exhibit 19?
23 A. Yesterday. Before lunch. Sometime yesterday
24 before lunch.
25 Q. And to be clear, you had never seen, even during
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1 the testing, any of the video that was Exhibit 19?
2 A. That is not true.
3 Q. Okay. You had seen some?
4 A. I'm trying to remember which test it was. I saw
5 at least parts of the last test we did. The
6 videographer, you know, he brought it up on his
7 computer and showed us. I believe it was the last
8 test that we did. He showed several people and
9 I -- I was there and saw part of it.
10 Q. Okay. What part of it did you see?
11 A. Part of it -- part of it from me in the driver's
12 seat. And I was trying to look at, you know, how
13 much the steering wheel was turned.
14 Q. Okay. And you believe that was from Test No. --
15 A. 13.
16 Q. -- 13?
17 A. 13, I believe, yes. That was the last test.
18 Q. Did you have any notes of your own regarding what
19 was done or what the results of the testing were
20 for any of tests, 1 through 13, in the Uvalde
21 testing that was performed in January of this
22 year?
23 A. I did not take notes. I took notes. I wrote like
24 two lines down. I started to take them on the
25 first two tests, and I just said, you know, that
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1 I'm just going to go by the cameras and the voice.
2 That -- that would all be there.
3 And I could check my tablet to see if I have
4 it, but I don't know if I have it. I just started

5 to scratch something down on the first two tests,
6 and I -- and I just thought, you know, this
7 thing's being recorded, you know, with all these
8 cameras and instruments, and I'll just study
9 them -- study them later. So that's what I did.

10 Q. Okay. But you haven't had an opportunity to study
11 them later. Is that correct?

12 A. Sir -- sir, I have not.

13 Q. Okay.

14 A. I would never say totally. Like I said, there's
15 several tests of Fugger's that I was able to
16 review yesterday, and I'd be happy to go over any
17 of that.

18 Q. Okay. And that would be the materials in
19 Exhibit 20?

20 A. Exhibit 20, Disk No. 1.

21 Q. Okay.

22 A. Right.

23 Q. Have you reviewed any other video of actual
24 testing -- not setup -- other than Disk No. 1 that
25 is in Exhibit 20?

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1 A. Yes. There was a -- I believe it was Disk No. 2
2 that -- and, again, it was a -- there was like a
3 lot -- it showed -- there was a camera in the back
4 and there was, like, a lot of stationary time.
5 And I couldn't get anything out of it. And I
6 just -- you know, I couldn't get any what I felt
7 was useful information out of it. And I just shut
8 it down, just closed it out.

9 Q. Okay. So -- and, again, I'm asking about --

10 A. Okay.

11 Q. -- actual testing, as opposed to setup time?

12 A. Yeah.

13 Q. Have you reviewed any other video from actual
14 testing that was being done at Uvalde in January
15 other than from Disk 1 that's part of Exhibit 20?

16 A. You know, like I said, there was a camera like
17 along the left side of the bus, and it -- and it
18 showed the bus moving. And I couldn't -- I
19 couldn't -- you know, I didn't know what test it
20 was. I couldn't get anything out of it. And so I
21 looked at it very briefly and closed it out.

22 And so the only testing that I felt -- the
23 only videos I got anything out of it at all was
24 like Fugger's Disk 1.

25 Q. And what did you get out of Mr. Fugger's Disk 1?

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1 A. Basically procedures we used in activating whether
2 we unlocked the tag axle, the ram. Some of the
3 testing I was watching -- I'd set up an air gauge
4 up front, and I wanted to make sure, like, when we

5 did brake testing that I was making full brake
6 applications, so I saw the gauge go up to about a
7 hundred.

8 When the tag axle was turning, both with or
9 without ram activation, or with or without caster
10 activation, you know, I just noticed myself on the
11 steering wheel movement, the -- my reactions on
12 the steering wheel.

13 There was voice in there, and we were told
14 there wasn't going to be any voice when we
15 started, but there is voice in there. And so I
16 listened to that voice, you know. It's like, gee,
17 what might have I had said, but it's there.

18 I suppose I spent an hour, maybe, looking
19 at -- close to an hour looking at the -- looking
20 at Fugger's tapes.

21 Q. Were there any conclusions that you reached, any
22 points that you noted in reviewing Mr. Fugger's
23 video, part of Exhibit 20?

24 A. Okay. Do you mean any points, period, or any
25 points that -- where I may have arrived at
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1 conclusions different than what I did previously?
2 I'm not sure.

3 Q. Well, I'll ask you about each. Were there -- were
4 there any points in reviewing Mr. Fugger's videos
5 that are on -- that are part of Exhibit 20 --

6 A. Uh-huh.

7 Q. -- where you reached some different view than you
8 had held before you reviewed those videos?

9 A. Not from -- different. Not from -- not from that
10 video. There -- not -- to answer the question
11 simply, not from that video did I -- did I arrive
12 at any different conclusions.

13 Q. Okay. Were there any points that you noted that
14 you felt were significant from those -- from the
15 review of those videos that Mr. Fugger produced?

16 A. Yeah. Probably the only -- the only point that I
17 felt was significant and, you know, again --
18 again, I'm coming from the vantage point of the --
19 believing that the tag tire turned, that there was
20 an immediate correction required at the steering
21 wheel as soon as that happened.

22 Q. And what test was that where there was an
23 immediate turn of the steering wheel --

24 A. Okay.

25 Q. -- to correct?

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1 A. Okay. Every test where there was tag axle
2 activation, whether that happened through the ram,
3 through the castering mechanism, or a combination
4 of the ram and the castering mechanism. So I'm

5 going to say probably six because we did stopping
6 tests. Early on we did stopping tests, and there
7 was no problem.

8 You know, there wasn't anything -- there was
9 no turning of the tag axle there. We did -- we
10 did a couple of circles early on, just to check
11 out the turning tag axle. We just did very slow
12 circles.

13 So I would say there was probably about six
14 tests; could be eight. I don't know, six or eight
15 tests where the tag axle had turned.

16 Q. Okay. All right. Now, those six to eight tests
17 where you noted something significant, do you know
18 which test numbers those were?

19 A. Well, they would start -- I would have to go
20 through them, but I'd say they start maybe at 5 or
21 6, and then continue to 13.

22 Well, wait a minute. Wait a minute. Here,
23 if I could review this, I could tell you.

24 Q. All right.

25 A. Okay. Actually, it looks like maybe 9. No, I'm
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1 sorry. It looks like 6, 7 -- 6, 7, and then 9,
2 10, 11, 12, and 13.

3 Q. Now, you've told us that you've reviewed at least
4 part of Disk 1 that Mr. Fugger produced to you?

5 A. Yes, sir.

6 Q. And you tried to review Disk 2, but you never
7 could make out what test it was?

8 A. Right, that's correct.

9 Q. And I take it that you didn't gain any or discover
10 any significant points in Disk 2?

11 A. That's correct, sir.

12 Q. Okay. So all of this that you're telling us you
13 gained some significant information or noted some
14 significant points were in Tests 6, 7, 9, 10, 11,
15 12, and 13, and they're all on Disk 1?

16 A. They're all on Disk 1, yes.

17 Q. And what views were you looking at on Disk 1?

18 A. Strictly -- there was an angled view of the front
19 interior of the bus and the roadway. You could
20 see the roadway. The steering wheel was a big
21 part of that.

22 You could see the air gauge. You could see
23 if the -- if the tag was unlocked, the two lights
24 on the dash, tag unlocked and tag steering.

25 I looked at the -- I would look at the air
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1 gauge when I was making brake applications. And
2 like I said, you could see the roadway.

3 Q. Okay. Any other views that you reviewed on
4 Disk 1?

5 A. No, sir.
6 Q. Okay. And did you review those views for all of
7 the 13 tests, or just on Tests 6, 7, 9, 10, 11,
8 12, and 13?

9 A. I don't think I reviewed all the stopping tests.
10 They were straight line -- basically straight line
11 stopping tests. I don't think I reviewed all of
12 those. But I believe I reviewed all the ones
13 where there was a turning tag axle.

14 Q. Okay.

15 A. I don't want to state that with 100 percent
16 certainty, but I reviewed most of the ones, or
17 possibly all that had a turning tag axle.

18 Q. Are you -- you told us you reviewed primarily
19 Disk 1 that Mr. Fugger presented, which is part of
20 Exhibit 20; correct?

21 A. Yes, sir.

22 Q. And Exhibit 20 contains a letter addressed to you
23 dated February 3, 2012. Do you see that?

24 A. Yes.

25 Q. Sometime shortly after that, is that when you got
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1 these disks?

2 A. All right. I'm going to have to think. I believe
3 they were sent to Nappanee to --

4 Q. You're certainly free to look at them, if that
5 helps.

6 A. No. I'm sure that they were over-nighted. Let me
7 think. But I'm all but sure they were
8 over-nighted to me at Nappanee, at Nappanee.

9 MR. HAYNES: Why don't you look at
10 the letter and see where it says it was
11 sent. Yeah, care of ABC Companies. Care
12 of ABC Companies.

13 So I don't know if I would have got
14 it the following day or -- I may have
15 gotten it on February the 4th. And -- oh,
16 the reason that I didn't look at them is
17 because I couldn't play them, and so I
18 talked to the -- actually, it was on Monday
19 I talked to an IT guy, actually, from --
20 from Ms. Rodriguez's office, and he had me
21 download a special program from the
22 computer. And then that's when I -- that's
23 when I saw them.

24 BY MR. DACUS:

25 Q. And when you say "Monday," you're talking about
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1 Monday of this week?

2 A. This week.

3 Q. February 13th?

4 A. February 13th, right. Right.

5 Q. You certainly did not have those videos when you
6 prepared your second report in this test?

7 A. I did not, sir.

8 Q. In this case, I mean.

9 A. I did not. I did not.

10 Q. Is there anything else that you observed in those
11 videos that you would want to include in a
12 presentation to the jury at the trial of this case
13 other than what you've told us about?

14 MR. HAYNES: Objection. Form.

15 THE WITNESS: Say that again.

16 MR. HAYNES: I said, "Objection.
17 Form."

18 THE WITNESS: "Objection. Form."

19 Personally, I believe it -- it basically
20 solidifies/supports, you know, what I
21 have -- I don't see anything that goes
22 contrary. There was one set of tire marks
23 on the last test that caused me to
24 re-evaluate -- re-evaluate a portion of the
25 tire marks when they go side-by-side. And

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1 that's -- and since -- I don't know, I
2 think Mr. Fugger will be given that,
3 talking about the tire marks, so I don't
4 know whether that would be even relevant.

5 BY MR. DACUS:

6 Q. Anything else that you would think would be an
7 important point for the jury to see in any of the
8 videos that you looked at on the Disk 1 part of
9 Exhibit 20?

10 A. Just reaction of the steering wheel.

11 Q. All right. Now, tell me about this re-evaluation
12 of the tire marks. What --

13 A. No, I just -- I noticed in the last test -- the
14 last test, and, of course, it's on the still
15 photographs. It will be there. I noticed that
16 the -- when we did the test, none of the -- we did
17 full braking, and none of the tires would lock up.

18 But when the -- when the bus -- when the tag
19 axle was activated -- when the tag axle was
20 activated and it was trying to steer the bus to
21 the side, you could get some -- you could get some
22 tire marks. And also when the -- you could get
23 some braking tire marks.

24 And then when the castering system was
25 forward, we -- I saw a waviness that -- that --

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1 that I hadn't seen with just the tag axle -- with
2 just the ram by itself.

3 In other words, when the -- like I said, when
4 the castering system was forward, I saw a waviness

5 in the -- some of the tire marks that appeared to
6 replicate what I saw on the accident photos, on
7 some of the scene photos.

8 Q. Anything else that caused you to re-evaluate?

9 A. Sir, I cannot think of anything.

10 Q. You said you visited the accident site last
11 Saturday, and that was the first time you had been
12 to the accident site. Correct?

13 A. It is, sir.

14 Q. Is there anything you learned from visiting the
15 accident site last Saturday that you had not known
16 before or appreciated before?

17 A. Okay. Well, one thing, I asked to take a bus down
18 there, so I did. I took a -- an Americanos DL3.
19 And, you know, just wanted to go around the curve
20 prior to the accident, see what it -- you know,
21 see what it felt like. And the -- the -- the
22 median, the dirt median, I noticed that it had a
23 slope on it that I didn't readily recognize from
24 the -- from the photos.

25 Q. Anything else that you noted or felt was
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1 significant about your inspection of the accident
2 site last Saturday?

3 A. Well, I noticed the vegetation, some trees on the
4 right side of the road because, I mean, I thought
5 in my mind, you know, you try to picture, say what
6 would have happened if she would have went off the
7 right side of the road. And -- you know. And so
8 I -- you know, I noticed that. I noticed, you
9 know, a couple of trees.

10 I noticed that the right lane, you know, had
11 been paved over, which was smoother than the left
12 lane and -- and I saw the two tire marks from the
13 steer axle, which I believe were still from --
14 still there from the -- from the bus. They seemed
15 to line up with what was on the photographs that
16 you could still see lightly, you know. I see
17 two -- two tire marks there where the bus -- from
18 the steer axle when the bus went off the roadway.

19 Q. And you're talking about tire marks that were made
20 as the bus skidded into the median?

21 A. Into the median, uh-huh.

22 Q. Did you see any other tire marks still present at
23 the accident scene when you visited it last
24 Saturday?

25 A. I did not, sir. As, again, the right side had
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1 been paved over. And those were the only two that
2 I picked up on.

3 Q. Did you have any difficulty in maneuvering the
4 curve and the downgrade when you drove

5 102DL3 Coach through that accident scene?
6 A. I did not, sir.
7 Q. And would you think any commercial driver would
8 have any difficulty maneuvering through that
9 accident scene in a properly operating 102DL3?
10 A. I do not think so, sir.
11 Q. Did you -- obviously one can make general
12 observations when one drives through an accident
13 scene?
14 A. Uh-huh.
15 Q. And I assume you did so?
16 A. I did. I did. And those were -- those were the
17 things that came out. I was surprised to see the
18 median sloped.
19 Here's the roadway. The median sloped down
20 to the east, that it just didn't -- it just didn't
21 strike me when I saw the -- just looking at the
22 photographs, it didn't strike me the same.
23 And the right -- the right shoulder off in
24 the field was a little rougher than what I
25 envisioned it -- from what I had envisioned it.

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1 But it was two years later, you know. I don't
2 think that much has changed, but, obviously,
3 there's going to be some change. The -- the -- it
4 looked like there had been some grading, maybe,
5 done in the middle, in the median.
6 Q. Any -- do you have any reason to believe that the
7 slope of the median has been changed significantly
8 since the scene -- since the date of the accident?
9 A. Yeah. I don't see how it could because you --
10 it's just like a natural slope, so I don't -- I
11 really don't think it's -- it looks like maybe
12 it's been graded a little bit, you know, like
13 smoothed out, but I do not believe it has.
14 Q. Did you make any measurements of the slope in the
15 median?
16 A. I did not, sir.
17 Q. Is there anything that you would want to tell a
18 jury about that you observed in your drive-through
19 of the accident scene?
20 A. Well, I drove through at governed speed, which is
21 the speedometer showed around 60- -- 69 miles an
22 hour. I think it was governed at 68. It was a
23 bus that I had test driven in Nappanee, so I know
24 how they were governed. And I didn't have any
25 problems negotiating the curve leading up to it.

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1 I didn't have any problems negotiating the curve
2 at governed speed.
3 I wanted to, you know, see the grade, and
4 it's obviously a noticeable grade, but certainly

5 not a steep grade. I understand it's about 1.7,
6 maybe, percent, or 1.5 or 1.7.
7 The main thing, I looked -- I looked at the
8 right side of the road and, like I said, I looked
9 at the trees. And I'm always thinking about
10 maybe, you know, an escape route, what she could
11 have done, you know, an escape route. And
12 basically I -- like I said, I don't know that I
13 came up with any different conclusions, but I --
14 it gave me a good understanding, some of it, that,
15 you know, I hadn't before, like I said, the slope
16 of the median, a real feel for the curve, you
17 know, for the curve.

18 Q. It's not a severe curve, is it?

19 A. No. It is not a severe curve, although they have
20 put -- since the accident, I understand they have
21 put some arrows up to show there's a curve. But
22 there's no -- it's not a severe curve. There was
23 no -- didn't see any -- a "slow down" or anything,
24 or speed restrictions or anything like that. No.

25 Q. Did you observe anything about the right side of
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1 the southbound lanes or the -- to the right of the
2 southbound lanes that indicate to you that an
3 escape route off the side of the road was a
4 particularly bad option?

5 A. Yes, I felt -- I felt that -- I felt that it
6 certainly was not a clear option. In other words,
7 there was enough vegetation and trees that in my
8 mind it wasn't a clear option.

9 Had it been a flat and level field, I guess,
10 that's a different matter, but it -- it wasn't,
11 and there was vegetation there. There was some
12 open area, too, but there was trees, you know.

13 Q. I'll give you --

14 A. Scrubby trees.

15 Q. I'll give you an opportunity to finish that answer
16 when we -- but we have to take a break to change
17 the tape.

18 A. That sounds good to me.

19 THE VIDEOGRAPHER: Off the record at
20 12:32 p.m.

21 (Off the record.)

22 THE VIDEOGRAPHER: We're now back on
23 the record at 12:43. This is Tape No. 3.

24 Please, continue.

25 ///

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1 BY MR. DACUS:

2 Q. I said I'd give you a chance to finish your
3 answer. If you have more to add, then, please,
4 tell us now.

5 A. I mean, I just felt it was not a viable escape
6 route.

7 Q. The escape route to the right side of the road
8 would have been a more viable escape route than
9 skidding across the roadway and into the median,
10 though, wouldn't it?

11 A. You know, though, I looked at that. And I looked
12 at the trees, and -- and, you know, my conclusion,
13 my opinion, was that it was a six of one, half a
14 dozen of another. So I -- I wouldn't be willing
15 to say that.

16 Again, if it was a flat, open field, I'd say
17 that would be a totally different matter. You
18 know, it was not. There were -- there were some
19 trees there. And had the side of the bus gone
20 into one of those trees, I don't know what the
21 result would have been.

22 Q. Did you form any other conclusions or opinions
23 from your examination of the accident scene last
24 Saturday?

25 A. Only that I felt that the curve could be safely
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1 negotiated at 68, 69 miles an hour.

2 Q. Do you agree that a commercial driver, driver of a
3 coach, should decrease their speed in the rain?

4 A. I would say -- I would say generally -- generally,
5 yes.

6 Q. And do you agree that the driver of a coach,
7 commercial driver should decrease their speed,
8 even if it's not actively raining, if the road
9 surface is wet?

10 A. That is -- that is a question that -- the simple
11 answer to that would be, yes; however -- however,
12 you know, it depends if there's water laying on
13 the road, depends on the degree of curve. I would
14 say decrease it from -- decrease it from 68 or
15 69 miles an hour. If there wasn't water laying on
16 the road, I would say not necessarily. Obviously
17 if it's raining, there's water on the road, then
18 that would be a different matter.

19 If you knew the asphalt was bleeding, if it
20 was bleeding asphalt, you know, that would be a
21 different matter. But just to automatically say
22 that you have to go less than that because the
23 roadway's damp, it would depend on the
24 circumstances, depends on the type of the roadway,
25 the surface.

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1 Q. Did you ever perform any testing that was designed
2 to determine whether a coach that experienced an
3 unlocked tag axle steering and unlocked tag axle
4 castering could be controlled?

5 A. Tag axle steering, if the tag axle steering was
6 unlocked, I would say no problem.
7 Q. Well, right now I'm not asking you what your
8 opinions are.
9 A. Okay. Okay.
10 Q. But I'm asking you if you performed any testing to
11 determine that?
12 A. Yes.
13 Q. What testing did you perform to determine that?
14 A. Well -- well, actually -- actually, was kind of
15 inadvertent. I went around the track the first
16 time. One of the times at full speed. And I
17 looked down and I noticed that I had left the tag
18 unlocked. And there were no control problems.
19 There were no control problems.
20 The caster, other than coming up -- coming up
21 just before we were going to perform a test, I
22 didn't do that with the casting.
23 Q. So none of the numbered tests that Mr. Fugger has
24 described or that you have described today
25 performed at Uvalde were specifically for the
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1 purpose of determining whether you could control a
2 coach that had experienced an unlocked tag axle
3 steering and an unlocked tag axle casting?
4 A. Well, there was one performed, but it was
5 inadvertent. We had -- we were actually preparing
6 to do another test and I believe we got up to --
7 and I can tell you which test it was as soon as I
8 check it. I believe we got up to about 35 miles
9 an hour, and suddenly the coach, the rear of the
10 coach started to go -- go sideways. And so, you
11 know, we attributed that to maybe a little bump or
12 unevenness in the road, but it did it on its own.
13 Q. And is that one of the numbered tests?
14 A. It is. It is, sir.
15 Q. Okay.
16 A. We just happened to have a recording on it, and we
17 made it one of the -- the --
18 Q. Which numbered test is it?
19 A. Okay. Let me try to figure that out. Test No. 9.
20 Q. And were you able to control the coach with the
21 tag axle steering unlocked and the tag axle caster
22 unlocked?
23 A. I was by counter steering. Yes, I controlled it.
24 Q. Did you have any skid across the road?
25 A. Didn't skid across the road. I mean, obviously it
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1 left tire marks, but there was no -- there was no
2 skid across the road, no.
3 Q. Did you control that by applying brakes?
4 A. Primarily steering, I'm sure that -- at the end I

5 put some -- some braking into it to bring the
6 vehicle to a stop.
7 Q. Okay. But during the time when you were still at
8 the speed that you started, or somewhere near that
9 speed --
10 A. Uh-huh.
11 Q. -- you did not control that by applying brakes and
12 steering; you controlled it simply by steering.
13 Isn't that correct?
14 A. Yes, I think that's -- I mean, of course I brought
15 it to a stop with brakes, but -- but basically
16 steering.
17 Q. Have you performed any test at full highway speed
18 to determine whether a condition that involves
19 unlocked tag axle steering and unlocked tag axle
20 castering could be controlled with steering?
21 A. We performed Test No. 13, which is -- was called
22 for at 68 miles an hour. The actual speed, I
23 believe, was -- I'm sorry, 60 miles an hour was
24 the design, the test design. The speedometer was
25 a little off, and the actual speed was 58 miles an
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1 hour. It was 58 miles an hour. And I would say
2 it was controlled with difficulty, but it was
3 controlled, and I brought it to a stop.
4 Q. Did you use any braking to control the condition
5 that involved tag axle steering unlocked and tag
6 axle castering unlocked?
7 A. Well, I applied braking. I don't know -- I
8 applied braking to slow it down, yes. As a matter
9 of fact, just to -- just to -- so there's no
10 misunderstanding, the -- when I unlocked the tag
11 axle, and then I unlocked the castering mechanism,
12 nothing happened. And as soon as I tapped the
13 brakes, then -- then the wheels turned. And then
14 that's when I had to, you know, control the
15 counter steer to control the vehicle.
16 Q. All right. Other than Tests 9 and 13 performed at
17 Uvalde in January, have you performed any other
18 tests where the purpose was -- or the purpose
19 became to control the coach during those
20 conditions?
21 A. I would have -- may I quickly review the test log?
22 Q. Yes, sir.
23 A. Okay. Test No. 12. So it would be -- it would be
24 9, 12, and 13.
25 Q. In Test No. 12 were you able to control the
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1 condition that existed with tag axle steering
2 unlocked and tag axle castering unlocked through
3 the use of steering?
4 A. I brought it to a stop. I can't remember if it

5 went off the road slightly, but I was -- that was
6 a -- design speed was 50 miles an hour. And --
7 and I brought it to a stop, but quite frankly --
8 and, of course, again, this is one where the ram
9 was not activated. But quite frankly, I'd have to
10 review the tape to -- I'm trying to -- I can't
11 remember that test with specificity.

12 Q. And the tape you'd have to review is the tape that
13 you got yesterday?

14 A. The tape I -- no, no, it would be No. 12. I'd
15 have to review it again. It just doesn't come to
16 mind.

17 Q. And is that the one -- you'd have to review the
18 materials that are on --

19 A. It should be on --

20 Q. -- on Disk 1 of Exhibit 20?

21 A. It should be there on Disk 1, yes, sir.

22 Q. Okay. Now, I think you told us that you didn't
23 perform Test 9 with the view of trying to assess
24 whether the bus was controllable even with tag
25 axle steering and tag axle caster unlocked, but

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1 that you made that into the test because of what
2 happens; correct?

3 A. It happened inadvertently, right.

4 Q. Okay. And were Tests 12 and 13 from the Uvalde
5 testing tests designed to determine the
6 controllability of the coach with tag axle
7 steering unlocked and tag axle castering unlocked?

8 A. They were, sir.

9 Q. I take it no accident happened where anyone on the
10 coach or the coach itself was damaged as a result
11 of any of these tests, 9, 12, or 13?

12 A. You are correct, sir.

13 Q. Did you ever perform any tests at Uvalde with tag
14 axle steering unlocked, tag axle castering
15 unlocked where you made a hard left turn as the
16 vehicle yawed to the right?

17 A. The -- on Tests -- on Test No. 13 this was the
18 only test where the -- where the tag axle lock was
19 unlocked and the caster was unlocked. And the tag
20 axles, when I applied the brakes, the tag axle
21 went to the right instead of the left.

22 And I was getting -- you know, coming up,
23 getting close to a guardrail. And as you will see
24 in the film, there's a very slight movement to the
25 left of the steering wheel. Actually, it was

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1 basically straightened out, but it did go a little
2 further than straight, maybe an extra 12 degrees,
3 and the bus went relatively sharply to the left.

4 However, the -- the film would speak to

5 itself regarding where -- the travel of the bus
6 and the movement on the steering wheel.
7 Q. But in that -- in that test did the vehicle yaw
8 left, and then you corrected --
9 A. Yes.
10 Q. -- by turning to the left?
11 A. It yawed to the -- let's see. It yawed to the
12 left. It yawed to the -- wait a minute. Wait a
13 minute.
14 It yawed to the right, and I corrected to the
15 right. And as I was getting closer into an area
16 where there's guardrails, and it was a
17 three-lane -- three lanes, I had more space, so I
18 just straightened the wheel out and went like
19 that, and it went to the left.
20 Q. It sounds like that test was one in which the
21 situation was controllable by moderate steering?
22 A. I controlled it.
23 Q. Okay. Was it controllable?
24 A. Well, there was no accident.
25 Q. Okay.

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1 A. If you're asking me was it difficult to control or
2 was I concerned, but there -- we were able to
3 control it.
4 Q. Okay.
5 A. And bring it to a stop.
6 Q. Do you agree that in this accident Ms. Morado
7 definitely made a turn to the left which initiated
8 the skid across the roadway and the slide in the
9 median and the overturn?
10 A. I do, sir.
11 Q. And from your testing with this, do you agree that
12 she made a greater turn to the left than she was
13 required to make to control the bus?
14 A. The simple answer is -- is she probably did. She
15 probably did.
16 Q. All right.
17 A. I'll just leave that there.
18 Q. Okay. Now, did you ever make in any of your
19 testing with the tag axle steering unlocked or
20 with both tag axle steering unlocked and tag axle
21 castering unlocked a turn as great as that which
22 Ms. Morado did in this accident?
23 A. I don't know that. And I would be willing to tell
24 you why, but I -- I don't know it.
25 Q. Okay. But you have not performed any testing,

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1 either at the Bosch test track or at the Uvalde
2 test track in which you have had any skid across
3 the road and entering into the median and
4 overturning a coach; correct?

5 A. No, I have not. Although we did have one at the
6 Bosch test track that -- where the wheels, at
7 least all the witnesses told me the wheels came
8 off the ground a few inches.

9 Q. And that was when you were operating in gravel?

10 A. No. No.

11 Q. Which Bosch test was that?

12 A. It was the only one where a guy blocked -- he was
13 right in front of the camera, blocking the wheels,
14 blocking the view of the wheels, the drive axle
15 wheels. And I can't remember what number it is.
16 We would have to go through the Bosch log. But
17 it's obvious it was the only one where, like I
18 said, he was right there, blocking the view of the
19 camera.

20 But all the witnesses told me that it went
21 off -- that the wheels actually came off the
22 ground.

23 Q. Were you initiating a right turn at that time or
24 were you initiating a left turn?

25 A. A right turn.

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1 Q. From your experience with the testing that you
2 performed, even with tag axle steering unlocked
3 and tag axle castering unlocked, you have not
4 experienced any condition where you were unable to
5 control the bus and bring it to a safe stop. Is
6 that a fair statement?

7 A. A safe stop? I would say there were concerns
8 about the last test, but I did bring it to a safe
9 stop, yes, in every case.

10 Q. And in each of your tests, either at the Bosch
11 track or at the Uvalde test track, you have not
12 initiated a severe counter steer to control the
13 coach; correct?

14 MR. HAYNES: Objection. Form.

15 THE WITNESS: I would say that there
16 was significant counter steers in several
17 of the tests.

18 BY MR. DACUS:

19 Q. Significant --

20 A. Which are viewed -- which are viewable on the
21 films.

22 Q. Okay. But no severe counter steer?

23 MR. HAYNES. Objection. Form.

24 THE WITNESS: You know, I don't know
25 what to classify as "severe." I would say

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1 significant.

2 BY MR. DACUS:

3 Q. Okay. And when you say "significant," how many
4 degrees of steering on the wheel would you say is

5 significant steering?
6 A. I would say -- I would say none of them, I
7 wouldn't think, were more than probably about
8 75 degrees. I would say no more than that, no
9 more than 75 degrees. But it's possible it could
10 have gotten up that high.
11 Q. Okay. And was that a sustained 75 degrees or was
12 that a momentary 75 degrees?
13 A. I would say sustained, until the coach slowed up.
14 Q. And yet even with as much as 75 degrees of
15 steering on the wheel, you did not have any
16 accidents or situations where you lost control of
17 the coach; correct?
18 A. So that in and of itself is true.
19 Q. Now, you have referred sometimes in the deposition
20 today to I think you called it a test log for the
21 Uvalde testing?
22 A. Yes, sir.
23 MR. DACUS: And I'm going to ask our
24 reporter to mark that as Exhibit 24.
25 ///

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1 (Defendants' Exhibit No. 24 marked
2 for identification.)
3 BY MR. DACUS:
4 Q. Exhibit 24, is that notes made regarding each of
5 the tests performed and the conditions under which
6 those tests were performed for the Uvalde testing
7 that you did in January of 2012?
8 A. Sir, they are. However, the speeds are not always
9 exactly what it shows there.
10 Q. Okay.
11 A. But it's -- but in most cases I think it's close.
12 Q. Okay. In order to determine what the actual speed
13 is, we'd have to go to the data that's part of
14 Exhibit 20 --
15 A. Right.
16 Q. -- correct?
17 A. It's GPS-recorded.
18 Q. Okay.
19 A. A GPS-recorded speed. Generally speaking, I'll
20 tell you the speedometer may have been up to
21 2 miles an hour fast on this bus.
22 Q. Let me see if I can put it this way.
23 A. Okay.
24 Q. You have various columns on this test log,
25 including the columns for run, tag locked, caster

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1 locked, braking, speed, actuator activated, steer
2 position, road, and pre-run notes.
3 A. Okay.
4 Q. Is it fair to say that those columns that I just

5 read out were the design of the test --
6 A. Yes, sir.
7 Q. -- before the test began?
8 A. Yes, sir.
9 Q. Okay.
10 A. Yeah.
11 Q. And is it fair to say, then, that the last column,
12 the post run notes are the notes made regarding
13 the result of the test?
14 A. Yes, that was Tom Fugger's observations.
15 Q. Okay. You did not go back in preparing -- whoever
16 prepared this did not go back and revise the
17 design of the test notes to reflect what actually
18 occurred. Is that a fair statement?
19 A. Well, it's a fair statement, but I think we held
20 to it. Like I said, the only thing I can think of
21 is speed. It may have been off.
22 Q. Okay. And did you prepare this Exhibit 24?
23 A. No. Mr. Fugger did.
24 Q. Okay. Did you prepare any notes on the test log
25 or a test protocol or test results from the
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1 tests in Uvalde?
2 A. I did not. Like I said, I -- there was one
3 test -- one test -- I don't know was -- I started
4 to take some notes. It was literally like two
5 lines, and I -- and I just decided to go with what
6 the cameras -- what the cameras had to --
7 Q. Yes, you mentioned --
8 A. -- say.
9 Q. You mentioned that earlier.
10 A. Yeah.
11 Q. I'm sorry. I didn't mean to trick you with that.
12 A. No, that's all right.
13 Q. The two lines of notes, how did you take them? On
14 pencil and paper, or --
15 A. On pencil and paper. And I don't know if I still
16 have them or not. I could --
17 Q. I'm going to request that if -- for you to look
18 for those, if you would --
19 A. I will, sir.
20 Q. -- and provide them to Mr. Haynes or one of the
21 counsel for Greyhound Americanos.
22 A. I actually forgot about -- I actually forgot about
23 them because I didn't -- you know, I didn't keep
24 the log.
25 Like I said, when I saw what Tom was doing
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1 and all the cameras they had, I just felt like
2 that their facts, the facts that come up in the
3 camera is -- would speak for itself.
4 MR. HAYNES: If he still has that,

5 we'll get it to you.
6 BY MR. DACUS:
7 Q. Okay. When Exhibit 24 was prepared, did you get a
8 copy of it that day, or days, when you were doing
9 the testing?
10 A. I was watching Tom, and we looked at some things,
11 but I didn't actually get a copy of it. Actually,
12 I called his office on Monday, and he didn't come
13 through. And when Mr. Haynes came yesterday, he
14 had it.
15 Q. Okay.
16 A. Because Tom, he showed this on the Webinar.
17 Q. Okay.
18 A. And so I called him -- his secretary Monday and
19 asked for a copy, said, "I need this." And there
20 was no return phone call.
21 Q. Okay. So you actually didn't get this Exhibit 24
22 into your own possession until --
23 A. Yesterday.
24 Q. -- yesterday? Okay.
25 So nothing on Exhibit 24 actually played a
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1 part in the opinions that you prepared in your
2 report in January; correct?
3 A. No, sir.
4 Q. Is that correct?
5 A. That is correct.
6 Q. Okay.
7 A. That is correct.
8 Q. Let me show you also what we're going to ask the
9 reporter to mark as Exhibit 25.
10 (Defendants' Exhibit No. 25 marked
11 for identification.)
12 BY MR. DACUS:
13 Q. And this Exhibit 25, when did you get Exhibit 25?
14 A. Yesterday.
15 Q. Okay. Who prepared Exhibit 25?
16 A. Tom must have done that.
17 Q. Okay. You're certain that you did not?
18 A. I'm positive. It's not my handwriting.
19 Q. Okay. I want you to look at Exhibit 25 and tell
20 us if there are any differences in your
21 understanding of the features that the driver,
22 which was you, was using in the testing at Uvalde?
23 A. I already did look at this. And I read -- I read
24 it all. And I didn't see any problems with it.
25 The switches are set up in that order. There
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1 was three switches on the -- on the right test
2 panel -- or, I'm sorry, on the left test panel.
3 And that's the way they were set up. The
4 casting switch was closest to me, the driver.

5 The tag unlock was in the middle. And the ram
6 cylinder was on the -- was on the -- closest to
7 the driver's window --
8 Q. Okay.
9 A. -- window.
10 Q. During any of your bus driving days, did you ever
11 drive a 102DL3?
12 A. No, sir, I did not. Not -- not professionally.
13 Q. Okay.
14 A. I mean, not -- I mean, I've driven over 200 of
15 them at Nappanee, test driven them. But as far as
16 hauling people --
17 Q. Right.
18 A. -- no.
19 Q. In -- in your actual bus driving experience --
20 A. Okay.
21 Q. -- and I'm not speaking about test driving, but
22 bus driving people for hire, did you ever
23 experience a drive shaft coming loose?
24 A. Well, not in people for hire.
25 Q. Okay. At the time you were driving coaches for
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1 hire, did you make it as your standard of practice
2 to perform a pretrip inspection?
3 A. I did.
4 Q. Was that required at the time that you were a
5 coach driver for -- with passengers?
6 A. Right. Right. Actually, this was -- the first
7 time I did it was many years ago, and they didn't
8 even have those DOT inspection forms. And then
9 while I was driving, they did.
10 And at that time they just said just make it
11 a post trip. Do a walk-around pretrip, just make
12 it a post trip, make sure everything's right for
13 the next driver, you know. Of course, that
14 changed over the years.
15 And the most recent experience I had was
16 about two years ago I drove for a company for
17 about one year, and then it was different. Then
18 we did both the pre- and post trip, and
19 recorded -- recorded everything.
20 Q. In your pretrip inspections that you did, did you
21 drive the coach at all before loading passengers?
22 A. I drove the coach only -- only because you would
23 be driving it from a garage somewhere to -- so,
24 you knew -- you pretty much knew by the time you
25 got to the passengers if there was any problems.
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1 Q. Okay. So the pretrip inspection really will
2 continue after the walk-around as you're driving
3 to pick up passengers?
4 A. I wouldn't say the pretrip inspection. I would

5 say that the pretrip inspection should have been
6 done. But there are certain things -- that
7 certain problem areas that could occur where
8 you -- when the vehicle's moving dynamically that
9 you wouldn't catch on a pretrip.
10 Q. And -- and a bus driver that's properly doing his
11 or her job should be looking for those things at
12 any point that they're driving the coach; correct?
13 A. I believe so, sir. I agree.
14 Q. Have you ever experienced as a driver of a coach a
15 U joint that was failing in your drive train?
16 A. Sir, I did two months ago.
17 Q. Okay. Back during your drive for hire --
18 A. Oh.
19 Q. -- did you ever experience a U joint failing?
20 A. I did not, sir.
21 Q. Or beginning to fail?
22 A. Not to the best of my knowledge.
23 Q. Do you have any experience to base an opinion as
24 to whether a driver who is properly observant of
25 the coach condition can tell whether there is a

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1 U joint that is beginning to fail?
2 A. Well, you have a couple of issues. And I guess
3 the easy answer to that is: I don't know in all
4 cases. But it's -- there's always, like, road
5 noises. There's -- especially in older coaches,
6 there can be various vibrations and times.
7 I'm getting off on a tangent, so would you
8 please keep me in line here?

9 MR. DACUS: Okay. Actually, can you
10 read back the question?

11 (Record read.)

12 THE WITNESS: Well, again, you asked
13 me a question. You said when I was driving
14 with passengers -- with passengers did I
15 ever have a, I believe, U joint or drive
16 shaft failure? And the answer to that was
17 no.

18 However, I did have one, and -- and
19 that's what I -- the only thing I can base
20 it on.

21 BY MR. DACUS:

22 Q. Okay. You do -- you do agree that a driver of a
23 line haul coach, like Americanos coaches, should
24 be observant of the conditions that are going on
25 with the bus while they're driving?

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1 A. With any driver, with any bus driver, certainly.
2 Q. And you do agree that if there are warning signs
3 that a U joint is beginning to fail or is no
4 longer operating properly, which might be the

5 beginning of a failure, the commercial driver
6 should be observant of that, try to detect that?
7 A. If the driver can -- can feel it, hear it -- like
8 I said, this is -- this is a very -- this is not
9 an easy question to answer because you could have,
10 for example, a drive line that's out of balance
11 and you're not sure whether it's a flat spot on a
12 tire or a drive line that's out of balance.

13 And in all cases, if there's a failure, I do
14 not know if there would be noises back there that
15 a driver could hear.

16 Q. Actually, I think you're reading more into my
17 question than there was.

18 A. Okay.

19 Q. I think it really was a pretty simple question,
20 and I'm going to ask the reporter to just read it
21 back.

22 A. Okay.

23 Q. Don't make it harder than it is.

24 A. Okay.

25 (Record read.)

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1 THE WITNESS: I believe that if there
2 are signs -- signs that a driver is aware
3 that there's a pending U joint failure,
4 they should definitely be aware of that,
5 yes.

6 BY MR. DACUS:

7 Q. Now, you told us that a couple months ago you did
8 have a U joint failure while -- was that during
9 test driving of a coach?

10 A. Well, actually, it was -- I brought a bus out of
11 New York for -- it was a transit bus, a 40-foot
12 transit bus. And eventually I was going to get it
13 to Canada, but I was bringing it part way. And
14 that was the bus, and I had a drive shaft failure.

15 Q. Okay. And you say a transit bus. What -- what
16 kind of bus was it?

17 A. It was a 40-foot new flier transit bus that a man
18 had bought from the Port Authority of New York.

19 Q. No tag axle on that coach?

20 A. No tag axle.

21 Q. And tell us what you experienced when you had a
22 drive shaft failure?

23 A. Well, quite frankly in this case I didn't hear
24 anything. And, actually, I did the day before. I
25 felt like -- it sounded like a couple little

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1 pistol shots, and I thought where is that coming
2 from? And I was in New York City, and you don't
3 stop, you know, in heavy traffic unless you have
4 to.

5 Following day I was in Harrisburg,
6 Pennsylvania. It had been raining the night
7 before. Next morning was sunny and dry. I says
8 I'm in good shape now. I got on the Turnpike, got
9 up to about 58 miles an hour, and I heard an
10 awful -- an awful rumbling, an awful rumbling.
11 And I thought for sure I'd lost a recap.

12 And I pulled over and walked the bus, and
13 everything looked normal. But then I got back
14 inside and put it back in gear, and it wouldn't
15 go. And that's when I knew it was a drive shaft
16 failure.

17 Q. Now, you say the "awful rumbling." Is that
18 something that you experienced before the drive
19 shaft separated or after?

20 A. I would say that -- at that point I would say it
21 was coming apart. I would say it was -- it was an
22 event that happened very quickly. And I would say
23 it was coming apart, and the reason I -- the
24 reason I'd say I thought it was a tire because I
25 did experience a tire failure once in a bus where

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1 it made a similar type racket. And it was --
2 obviously it was a very loud noise, but I just
3 pulled the bus over to the side and I walked it.
4 Didn't see anything.

5 Then I got back inside and I --

6 Q. This drive shaft, did it fail at the connection to
7 the transmission or at the connection to the drive
8 axle?

9 A. This one failed at the -- at the drive axle side.
10 But just to make it clear, it smelled like a drive
11 shaft like on an MCI. It's like two heavy -- two
12 big flanges with the male and female splines.

13 So it wasn't like there was a long shaft, you
14 know. It wasn't like there was a -- so, in sense,
15 it was dissimilar, but it was still a drive shaft
16 failure.

17 Q. No U joints in that failure?

18 A. Well, the flanges, I understand, are attached like
19 through a U joint to give it some flexibility, one
20 on the transmission side and one on the -- on the
21 axle side.

22 Q. And that failure was not a U joint failure?

23 A. It was -- it was a failure that we have since
24 discovered due to a misalignment of the drive
25 axle, which is being repaired right now. The

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1 drive axle was actually out of line, which created
2 the failure.

3 Q. And the -- and drive shaft failure that you
4 experienced in this 40-foot new flier transit

5 coach --
6 A. Uh-huh.
7 Q. -- was not a failure that resulted from the
8 breakage or the separation of a U joint?
9 A. No. It's a different type of --
10 Q. -- failure?
11 A. Right. It's a different type of failure.
12 Q. Okay.
13 A. It's a different -- again, the -- you don't have
14 the long shaft. You just have two very heavy
15 flanges with the male and female end of a spline
16 stuck together.
17 Q. Okay.
18 A. It's much shorter.
19 Q. All right. Did you -- have you ever experienced
20 in any kind of driving of a coach a U joint
21 failure?
22 A. I have not, sir.
23 Q. And do you have any experience or way to determine
24 what a U joint failure sounds like or feels like
25 to a driver in a drive line U joint in a 102DL3?

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1 A. You know, I do not, sir. My only experience is
2 one that was out of balance that's -- so I -- I
3 don't have that kind of experience, what you're
4 talking about.
5 Q. What did you experience with one that was out of
6 balance? What do you mean by that?
7 A. You could hear a vibration in the back. Actually,
8 one of the grease caps was missing. And that was
9 enough to throw it out of balance. And like I
10 said, it was interesting because I didn't know if
11 it was -- I thought maybe it was just a tire that
12 was flat spotted that showed up at a certain
13 speed.
14 We were able to determine it was -- the drive
15 shaft was out of balance because a cap had either
16 come out or somebody left it out.
17 Q. And what kind of coach did you experience that on?
18 A. It was 102DL3.
19 Q. And that was one that had just been through a
20 refurbishment program?
21 A. Yes. Yes, I was test driving it.
22 Q. At ABC Bus Company?
23 A. Yes.
24 Q. And how quickly did you discover that the grease
25 cap was missing on that U joint?

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1 A. Well, I mean, we had to bring it back into the
2 garage, and it was discovered. But I discovered
3 it when I got it up to speed. I don't think it
4 showed up till maybe 50 miles an hour.

5 Q. But at 50 miles per hour, that omission or that
6 failure in the U joint began to make itself
7 apparent to you driving the coach?

8 A. There was a vibration, yeah, like a -- like I
9 said, it was similar to a flat spot on a tire, and
10 I didn't know which it was.

11 Q. Okay. Could you experience that -- I take it --
12 let me back up.

13 I take it that you didn't actually get to a
14 point where you had a draft shaft separate from
15 its attachment at either the transmission or the
16 drive axle?

17 A. It never separated.

18 Q. Okay. So you would still call that an impending
19 failure?

20 A. If I'd run it long enough, I feel like that type
21 of a vibration was going to put -- put -- you
22 know, I don't know how many miles we're talking
23 about, but eventually that vibration was going to
24 turn into some -- it's going to loosen things up,
25 and I'd say eventually it would have led to a

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1 failure.

2 Q. And could you experience that -- detect that
3 vibration whether you were accelerating or
4 coasting or braking?

5 A. It was more of a function of speed. More of a
6 function of speed.

7 Q. Okay. So the faster you got, the more --

8 A. The more it was pronounced. The more it was
9 pronounced.

10 Q. And it was later determined by you and others that
11 it -- it wasn't just an impending failure, but
12 actually some parts missing from the U joint?

13 A. Somebody had left the cap out, a grease cap, or it
14 fell out. Maybe it wasn't put in properly. I
15 don't know. But that's -- that's the only one --
16 only one I've had.

17 Q. And the grease cap that you're talking about, is
18 this the grease cap that covers the little roller
19 bearings or needle bearings, I think they call
20 them, in the U joint?

21 A. I believe that's what it was. I believe that's
22 what it was, and that was enough to cause an
23 imbalance.

24 Q. Any other times that you have experienced a drive
25 shaft failure, the beginning of a drive shaft

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1 failure, or the beginning of a U joint failure?

2 A. Sir, to the best of my knowledge and belief, no.

3 Q. Okay. Have you formed an opinion as to whether
4 Ms. Morado had some warning of the impending drive

5 shaft failure/U joint failure of this coach before
6 this accident?

7 A. I have no reason to believe that she had.

8 Q. Okay. I understand you have no reason, but have
9 you formed an opinion as to whether she did or she
10 did not?

11 A. I don't believe that she did.

12 Q. And what do you base that opinion on?

13 A. Well -- well, I guess -- I guess I base a lot of
14 it on her statement.

15 Q. Her statement she gave to the Texas Department of
16 Public Safety?

17 A. Well, statement -- her deposition. I'm sorry.
18 Excuse me. Her deposition. The only -- I saw
19 nothing in there except the beeping she talked
20 about, which makes no sense to me. But I saw
21 nothing in her statement.

22 I know that I personally look at highway
23 speeds. I didn't get any, you know, warning of
24 that -- of that failure, beyond those -- what I
25 thought -- what I looked back and said were

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1 bolts -- maybe bolts breaking off of a different
2 system.

3 And so I had -- you know, you say have I
4 formed an opinion? I see no evidence that she
5 knew.

6 Q. Okay. But I need to know whether you have formed
7 a professional opinion --

8 A. Oh.

9 Q. -- that she had no warning of the impending
10 failure of either the draft shaft or the U joints
11 associated with the drive shaft. Do you --

12 MR. HAYNES: Objection. Form.

13 BY MR. DACUS:

14 Q. Have you reached an opinion on that?

15 MR. HAYNES: Objection. Form.

16 THE WITNESS: Have I reached a
17 definitive opinion? The answer to that is
18 no. Do I have any reason to believe -- I
19 see no evidence. I know of no evidence.

20 BY MR. DACUS:

21 Q. Would you agree that if Ms. Morado had any
22 indications of problems with the drive train at
23 the rear of the coach and she had continued to
24 drive at full speed with passengers on board, that
25 would not have been proper, would it?

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1 A. It's hard to give a yes-and-no answer without
2 qualifying it. But I would say, yes, absolutely,
3 you are correct if she knew that.

4 The -- you know, what those symptoms would

5 have been, you know, I'm not sure what -- you
6 know, what she could have heard. I'm not saying,
7 you know, that there couldn't have been some
8 noise. I don't know of any.

9 Q. And do you agree that from the testing that you've
10 done, that simply driving with an unlocked tag
11 axle steering on a 102DL3 coach is not something
12 that would cause you to lose control of the coach?

13 A. I agree with you, simply unlocked. I've done it.
14 Wouldn't be afraid to do it. There would be --
15 there would be certain caveats. In other words,
16 like if I was on a rough country road, maybe
17 crossing railroad tracks, hitting bumps, I would
18 want to be more careful. But basically I wouldn't
19 be afraid to take a bus across country with the
20 tag axle unlocked.

21 Q. And has it been any part of your charge in this
22 case to determine when or how the tag axle
23 casting became unlatched?

24 A. It hasn't been my charge, my responsibility.

25 Q. Have you made a determination to degree of a
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1 professional opinion as to when the tag axle
2 steering became unlatched on the subject coach, if
3 it did?

4 A. The tag axle steering or the casting?

5 Q. I'm sorry, I meant the tag axle casting.

6 A. Only by -- the only opinion of it I have is based
7 upon the stationary test, watching the films of
8 the stationery test in Nappanee, it looked to me
9 like it was pretty well shook up, the casting,
10 the frame that involves the casting. It looked
11 like some pretty hard hitting going on there.

12 And, you know, based on that, I would say
13 it's very likely that -- that -- that -- that's,
14 you know, how -- it's how it came -- came
15 unlocked.

16 Q. Have you ever tested a coach that had a tag axle
17 casting latched with no air pressure to the tag
18 axle casting cylinder?

19 A. Okay. Okay. Maybe I'm getting -- starting to get
20 brain fade. I don't know.

21 Okay. So if I understand your question, it
22 could be unlocked, but there's no pressure, or
23 there's just simply no -- can I ask --

24 MR. HAYNES: Just ask the court
25 reporter to repeat the question, if you
MIDWEST REPORTING, INC.

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1 don't understand it.

2 BY MR. DACUS:

3 Q. Yeah. And I'm not trying to confuse you.

4 A. Okay. That's all right.

5 Q. Because I understand that you have tested coaches
6 at the Bosch Proving Grounds and you've tested
7 coaches at the Uvalde Continental Tire Test Track.

8 A. Uh-huh.

9 Q. And what I understood you to tell me was that in
10 each of those coaches you had air pressure and
11 ability to operate the tag axle castering
12 cylinder; is that -- am I correct with that
13 understanding?

14 A. Only in Uvalde.

15 Q. You didn't have pressure on the -- on the tag axle
16 castering cylinder at the Bosch Proving Grounds?

17 A. There was no attempt to ever activate that in any
18 way. And, quite frankly, I don't know if that
19 castering system was working or not. I -- it was
20 not -- it was never tested by me.

21 Q. Okay. Well, you certainly had air pressure on the
22 tag axle castering cylinder on the test coach at
23 Uvalde --

24 A. That is correct --

25 Q. -- correct?

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1 A. -- sir.

2 Q. And to your knowledge have you ever tested the
3 performance of a 102DL3 coach that had a tag axle
4 castering cylinder with no air pressure on it?

5 A. To the best of my knowledge, no.

6 Q. Do you understand that the actual coach involved
7 in the accident that we're all here about did not
8 have air pressure to the tag axle castering
9 cylinder at the time of the accident?

10 A. You know, obviously that was not part of my
11 examination, but I understand that that possibly
12 wasn't working, you know.

13 Q. Do you also understand that the coach that was
14 involved in this accident apparently did not have
15 any air pressure to the tag axle lock cylinder at
16 the time of this accident?

17 A. Just really secondhand. I mean, I haven't -- I
18 know there have been reports out. And so, you
19 know, I sort of have an understanding that it
20 wasn't working is what I've heard. I haven't read
21 all those reports.

22 Q. You personally know Virgil Hoogestraat, don't you?

23 A. I certainly do.

24 Q. Do you have any doubt that Virgil Hoogestraat is
25 not able to detect a clogged airline to a -- to an

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1 air cylinder?

2 MR. HAYNES: Objection. Form.

3 THE WITNESS: I would think Virgil
4 would know how to do that. I would think

5 so.
6 BY MR. DACUS:
7 Q. And do you have any reason to believe that if
8 Virgil Hoogestraat reports that he found clogged
9 airlines to the casting cylinder and to the tag
10 axle steering lock cylinder, that he would lie
11 about that?

12 MR. HAYNES: Objection. Form.

13 THE WITNESS: I certainly wouldn't
14 think so.

15 BY MR. DACUS:

16 Q. Okay. And to your knowledge none of the testing
17 that you have performed has attempted to duplicate
18 that condition with regard to no air pressure to
19 the tag axle steering lock cylinder or to the tag
20 axle casting cylinder in any of your testing;
21 correct?

22 A. To the best of my knowledge. Like I said, in the
23 Bosch it wasn't -- we didn't even consider it.
24 And to the best of my knowledge, everything was
25 working correctly with air pressure at Bosch -- or
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1 at, excuse me, the Continental track at Uvalde.

2 Q. In the presentation that you made to -- to the
3 Texas Department of Public Safety, did you tell
4 them that there was a question or there was actual
5 certainty that there was no air pressure to the
6 tag axle lock cylinder and the tag axle casting
7 cylinder on the subject coach at the time of the
8 accident?

9 A. Hadn't thought about it. Didn't tell them. And
10 we can leave it there, unless you have any
11 followup questions.

12 THE VIDEOGRAPHER: I need to change
13 the tape.

14 MR. DACUS: Okay.

15 THE VIDEOGRAPHER: Off the record at
16 1:45 p.m.
17 (Off the record.)

18 THE VIDEOGRAPHER: We're now back on
19 the record at 1:55 p.m. This is the Tape
20 No. 4.

21 Please, continue.

22 BY MR. DACUS:

23 Q. The areas in which you expect to give opinions at
24 the trial of this case, I want to touch on that.

25 Do you plan to give opinions on the handling
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1 and stability of this bus?

2 A. I do, sir.

3 Q. Okay. And what are your opinions with regard to
4 handling and stability of this coach?

5 A. I -- I would say that under normal circumstances
6 there's not a better, more durable bus out on the
7 highway. It's a very stable coach under normal
8 conditions.

9 Should I continue?

10 MR. HAYNES: You need --

11 BY MR. DACUS:

12 Q. Give me a full answer.

13 A. Okay. I believe that if the -- I believe that
14 it's a fairly stable coach, one that I wouldn't be
15 afraid of with the tag axle unlocked. I also
16 believe that if the tag axle is forced to one side
17 or another, for whatever reason, I believe that it
18 could -- it does present control problems. And as
19 the speed increases, the control problems are
20 exacerbated, or get harder to control.

21 Q. Do you have experience or training with regard to
22 determinations of handling and stability with
23 regard to automotive vehicles or buses?

24 A. Well, I mean, I obviously have a lot of experience
25 under various circumstances, as far as a -- again,

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1 I've driven at this time, probably -- probably,
2 well over 200, probably close to 250 DL3's, test
3 driven them in all kinds of weather, made
4 emergency stops on most buses, made heavy braking
5 stops at higher speeds.

6 I've owned five buses of my own; still have
7 one. I've driven, you know, for two different
8 companies. I've driven school buses.

9 As far as being trained for this particular
10 event, all that has come about just through the
11 test track -- on the test track, in the parking
12 lot, just things I've done on my own, plus the --
13 plus what we have done on the test track as far as
14 the turning tag axle.

15 Q. Have you ever qualified, been allowed to testify
16 at a trial as a handling and stability expert with
17 respect to buses or any vehicle?

18 A. I have never testified at a civil trial, period.

19 Q. And so I take it you've never been granted the
20 ability to testify as a handling and stability
21 expert?

22 A. Again, I've never -- this is the first case that
23 I've ever agreed to participate in, so -- the
24 answer to that is no, I have not.

25 Q. If the tag axle steering is locked on this coach,
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1 I think you -- it cannot be -- the tag axle
2 cannot be forced to one side or the other;
3 correct?

4 A. If it's locked?

5 Q. Yes, sir.

6 A. I would say that is incorrect and that is one of
7 the -- one of the factors that other experts are
8 going to try to show in this case.

9 Q. Well, let me rephrase the question.

10 A. Okay.

11 Q. If the tag axle steering is locked, it remains
12 locked through the incident, the tag axle wheels
13 cannot be forced to one side or the other with
14 this coach; correct?

15 A. If the tag axle in this particular accident we're
16 talking about, if the tag axle had remained locked
17 and the wheels, you know, not moved to one side or
18 another, then we wouldn't see the types of tire
19 marks.

20 I don't -- I guess I don't completely
21 understand your question because the premise --
22 the premise is -- the premise is that they did
23 move.

24 Now, somebody else could say that they didn't
25 move, but the basic premise, what I believe is,
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1 you know, based on our evidence is they did move.

2 So I don't understand. I don't fully
3 understand the question.

4 Q. All right. Let me --

5 A. Okay.

6 Q. Let me rephrase it.

7 A. Okay.

8 Q. I'm asking you just a more general question.

9 A. Okay.

10 Q. You say if they're forced to one side -- if the
11 tag axle wheels are forced to one side or the
12 other, then you have some control problems?

13 A. Yes, sir.

14 Q. But if the tag axle steering is locked and remains
15 locked through the incident, the tag axle wheels
16 are not going to be forced to one side or the
17 other in that kind of an incident.

18 Do you agree with that?

19 A. If it stayed locked, right, they shouldn't. It
20 shouldn't go from -- the wheels shouldn't turn one
21 way or the other if it stays locked.

22 Q. If the tag axle steering for one reason or another
23 becomes unlocked and you don't have an actuator
24 cylinder in there to turn the tag axle wheels,
25 like a 102DL3 that actually hadn't been set up for
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1 a particular test, it's just one that is in normal
2 use, doesn't have such an actuator cylinder;
3 right?

4 A. That's correct.

5 Q. Under those conditions where you don't have an
6 actuator cylinder, you've got an unlocked tag axle
7 steering, but you have a latched tag axle
8 casting with an operative tag axle casting air
9 cylinder that has air pressure to it --

10 A. Uh-huh.

11 Q. -- and is latched in the proper position for
12 forward travel, then there really isn't anything
13 to force the tag axle wheels to one side or the
14 other, is there?

15 A. Are we talking about this case or generically?

16 Q. I'm speaking about generically.

17 A. Generically. I would agree with that.

18 Q. So what you're saying is that only if you get a
19 tag axle unlocked and tag axle casting unlatched
20 and in the wrong position for forward travel, then
21 you can have a situation where you could have tag
22 axle wheels forced to one side or the other. Is
23 that right?

24 A. In my opinion it's not.

25 Q. Okay. Tell me what's wrong with that.

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1 A. Even though -- you know, even though in this case
2 the -- the locking mechanism was found, the tag
3 axle locking -- the tag axle casting system was
4 found, you know, unlocked, and quite frankly, I'm
5 not the right person to say how far it was moved.
6 I'm not -- I can't do that, that the axle, the
7 axle -- and, again, I'm going by our stationary
8 tests in Nappanee, and just looking at pictures of
9 the -- of the tie rod mechanism both in this
10 accident and in another accident that happened in
11 Pennsylvania.

12 And it certainly looks to me that the
13 rotating drive shaft, which if you're facing the
14 back of the bus, is turning clockwise. And that
15 is moving the tie rod over, thus turning the
16 wheels. I believe that that can happen with or
17 without the casting -- with or without the
18 casting system unlocked.

19 Q. Have you ever tested whether that can happen with
20 or without the casting system unlocked and in
21 the wrong position?

22 A. With the ram I have. I mean, I've forced it over
23 with the ram with the casting system still
24 locked and the results are the same, basically the
25 same.

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1 Q. But the ram is something that you would admit
2 wasn't on the accident coach; correct?

3 A. The ram was not on the accident coach.

4 Q. And it's never been on any coach you've ever seen

5 other than the ones that were set up for you by
6 Greyhound Americanos; correct?
7 A. Greyhound Americanos. And the first one was
8 actually set up by a guy that -- he doesn't work
9 for them, yeah. But, yes, yes, I've never seen
10 one on a Greyhound bus at Nappanee or anywhere, or
11 Americanos bus, or I've never seen one other than
12 what we used on test buses.
13 Q. So in the real world out there driving 102DL3's,
14 we can all agree that there aren't actuator rams
15 or air cylinders to force the tag axle wheels over
16 to one side or the other; right?
17 A. That is correct, sir.
18 Q. And I believe you said that as speed increases,
19 the control problems get harder to control if the
20 tag axle wheels are forced to one side or the
21 other?
22 A. Yes, sir.
23 Q. Okay. The limits to which you have tested control
24 problems with the tag axle wheels forced to one
25 side or another have been to -- did you say 58 or
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1 59 miles per hour?
2 A. 58, I believe it was.
3 Q. And do you have any other basis other than your
4 testing for giving opinions about what the control
5 problems would be at something around 68, 69 miles
6 per hour if the tag axle wheels are forced to one
7 side or the other?
8 A. My opinion would be based upon testing, mainly
9 at -- mainly at the track that as speeds
10 increased -- as speeds increased, the coach became
11 more difficult to control. There was more -- more
12 input needed quickly. It was -- in my opinion, it
13 was -- became more difficult to control,
14 certainly, at 59 than 35.
15 Q. Okay. But you have never performed testing above
16 58 miles per hour?
17 A. We have not.
18 Q. And you've never experienced in your driving of a
19 coach such a situation where the tag axle wheels
20 are forced to one side or another at full highway
21 speed of 68 or 69 miles per hour; correct?
22 A. I have not.
23 Q. In your testing up to 58 miles per hour, you would
24 agree that the coach remained controllable, even
25 when the tag axle wheels were forced to one side
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1 or the other?
2 A. I would say "controllable." I would definitely
3 not say "easily controllable."
4 Q. Okay. Now, was the tag axle casting mechanism

5 on your test coach that you used at the Uvalde
6 test track, was that castering mechanism changed
7 in any way, other than with regard to the
8 electrical controls?

9 A. I do not believe it was in any way.

10 Q. Okay. To the extent -- at least at -- some
11 purpose of the testing at Uvalde was for testing
12 the effects of the tag axle castering mechanism
13 and the tag axle castering latch mechanism;
14 correct?

15 A. You know, I mean, that was part of it. You know,
16 I knew when we did the testing out at South Bend
17 that it was incomplete, you know. It was
18 incomplete, and -- but that -- I mean, that was
19 certainly part of it, a big part of it.

20 Q. Okay. And it would be important, would it not, to
21 be testing a tag axle castering latch mechanism
22 and tag axle castering mechanism that was the same
23 mechanically as the tag axle castering and
24 castering latch mechanism on the subject coach for
25 your test to have any meaning, would it not?

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1 MR. HAYNES: Objection. Form.

2 THE WITNESS: I don't -- you know, I
3 don't know the answer to that, and I want
4 to review the film in No. 9 where it
5 inadvertently came forward because I can't
6 remember if it was just unlocked or we
7 forced it forward. I don't know what the
8 effects would be on a castering system that
9 is unlocked versus one that is forced
10 forward.

11 However -- however, even when it is
12 forced forward, you know, I still -- like
13 on Test No. 13, there's still no control
14 problems until I hit the brake, until I hit
15 the brake, and then -- and then the wheels
16 turned. So --

17 BY MR. DACUS:

18 Q. Well, I don't think you're answering my question.

19 And let me try --

20 A. Pardon me.

21 Q. Let me try again.

22 MR. DACUS: If you could read that.

23 THE WITNESS: You could strike that,
24 if you want to.

25 MR. DACUS: No, no. We don't have to
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1 strike it. I just --

2 MR. HILL: Do people still do that?

3 (Record read.)

4 BY MR. DACUS:

5 Q. And please note that I asked you mechanically,
6 because I think --

7 A. I read too much into it.

8 Q. I think maybe you did.

9 A. Okay.

10 MR. HAYNES: I'm going to object to
11 form.

12 THE WITNESS: Okay. To answer that
13 question, should it be the same
14 mechanically? I'd say yes.

15 BY MR. DACUS:

16 Q. Okay. And by "mechanically," we mean as to the
17 location of the parts and the shape of the parts
18 and the thickness and the connection, the
19 mechanics of the castering mechanism and the
20 castering latch as opposed to the electrical part?

21 A. Yes, sir. Yes.

22 Q. Okay. Do you know of any difference between the
23 castering mechanism on the test coach that you
24 used in Uvalde --

25 A. Uh-huh.

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1 Q. -- as to the castering latch mechanism or the
2 castering system, how it was different from the
3 subject coach mechanically, other than the fact
4 that you were testing with air pressure on the
5 castering cylinder?

6 A. Okay. I know of no difference, but I did not when
7 I -- I wouldn't even want to say "examine." When
8 I looked at the subject coach in Louisville, at
9 60630, I didn't really examine that part. I
10 really didn't examine that part and then compare
11 it with this one, so I don't know the answer.

12 I could only say that because the coach
13 numbers were similar, they were similar years, I
14 can't -- I don't -- I wouldn't suspect any
15 differences, but I don't know that factually.

16 Q. Okay.

17 A. But I wouldn't suspect any.

18 Q. And when in Exhibit 24 you have the column,
19 "Caster locked, yes or no," you're not able to
20 tell us as you sit here today exactly what,
21 "Caster locked, yes or no," really means. Am I
22 correct about that?

23 A. Well, I can't verify other than the switch
24 position and the fact that the -- that it's not
25 beeping, that the light's not on the dash.

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1 I mean, I could not physically verify that
2 when it says "Y" there -- or even from the
3 driver's seat, you know, I mean, I didn't
4 physically go back, get under the bus, and verify

5 that it was, in fact, locked.

6 Q. Or that it -- or what being unlocked actually
7 means? You can't verify that either?

8 A. Well, I know what it means, but -- yeah, I
9 can't -- I can't verify it, except -- except
10 for -- except for handling once we participate in
11 a test.

12 Q. Okay. But, for example, you couldn't tell us
13 during Tests 1 through 13 that you performed in
14 January at Uvalde, whether it was -- when it says
15 it was to be unlocked, you can't tell us whether
16 it was actually locked in the proper position for
17 reverse travel as one thing?

18 A. (Witness nods head).

19 MR. HAYNES: Objection. Form.

20 BY MR. DACUS:

21 Q. Correct?

22 MR. HAYNES: Objection. Form.

23 What are you referring to? You're
24 just saying "that." You're not saying the
25 casting --

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1 BY MR. DACUS:

2 Q. The casting latch mechanism, whether it was
3 positioned in the proper position for reverse
4 travel. When it says it was unlocked, you can't
5 say that from your own knowledge; correct?

6 A. Well, I can say this: I can say --

7 Q. Wait a minute. Answer my question, if you will,
8 and then I will give you an opportunity to tell --
9 tell me what you want to tell me.

10 But to answer my question, what I'm trying to
11 find out is: Do you have knowledge as to whether
12 the testing you performed in Uvalde when
13 Exhibit 24 says the casting was unlocked, and I
14 think we can find something like that on maybe the
15 second page. Yeah, "Caster locked, no." No.
16 "Caster first unlocked, unlocked second."

17 So these are all things that are indicating
18 that the caster's not locked?

19 A. Right.

20 Q. Am I correct about that?

21 A. That's correct.

22 Q. Okay. When it says the caster was not locked, you
23 can't tell us whether -- and I'm going to give you
24 some -- some examples, whether it was locked in
25 the position for reverse travel, whether it was

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1 locked in a position neither for reverse travel
2 nor for forward travel, somewhere in between,
3 whether it was locked beyond a position for
4 reverse travel, or whether it was just free

5 floating; you can't tell us any of those things --
6 MR. HAYNES: Objection. Form.
7 BY MR. DACUS:
8 Q. -- about what "caster not locked" means?
9 MR. HAYNES: Objection. Form.
10 THE WITNESS: I can't tell you
11 through physical witness.
12 BY MR. DACUS:
13 Q. Okay. And if it's indicated on the hard drive,
14 Exhibit 19, then maybe we can tell?
15 A. Then maybe we can tell. Okay.
16 Q. But as you sit here, you can't tell us?
17 A. Through physical -- as a physical witness to see
18 it locked in what position, I can't say that.
19 Q. Okay. Did you see anyone other than it -- maybe
20 on the video that's in Exhibit 19, did you see
21 anyone that was under there observing the position
22 of the caster latching mechanism during the
23 testing you performed in Uvalde on January -- in
24 mid-January of 2012?
25 A. Obviously during, no, because obviously nobody was
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1 under there looking. After each test, when the
2 caster was unlocked, Denny would go back, and I
3 would ask him to go back and check and see if
4 it's -- see if it's locked. I don't want to say
5 every test, but there was several instances I
6 asked him to go back and say let's make sure it's
7 locked. And so I just had to take his word for
8 it.
9 Q. Okay. So Denny Hasamear is the only person that
10 may have observed --
11 A. May.
12 Q. -- the position?
13 A. He may have, yeah.
14 Q. Now, among the materials you brought today was an
15 affidavit that you prepared, or maybe was prepared
16 for you, dated November 20, 2011. Is that
17 correct?
18 A. I'm familiar with that, sir, yes. Yes.
19 MR. DACUS: And I'll ask our reporter
20 to mark this as Exhibit 26.
21 (Defendants' Exhibit No. 26 marked
22 for identification.)
23 BY MR. DACUS:
24 Q. Take a look at that.
25 A. Okay.
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1 Q. Okay.
2 A. Okay.
3 Q. Was Mr. Cook present at the testing in January?
4 A. He was.

5 Q. And did Mr. Cook provide the bus set up with the
6 electrical controls that are identified on
7 Exhibit 25 to you and Mr. Fugger for your testing?

8 A. I would say that -- you mean as far as helping to
9 prepare the bus, you mean?

10 Q. Did he provide the --

11 THE REPORTER: Did he provide what?

12 MR. DACUS: The bus with those
13 control switches?

14 THE WITNESS: No, sir.

15 BY MR. DACUS:

16 Q. Who did provide the bus with those control
17 switches?

18 A. Again, the communication -- the communication was
19 between the mechanics down there, the mechanics.
20 And from what I understand was Denny Hasamear,
21 Denny, that he was providing them with the -- with
22 the information.

23 I've never saw -- I think -- I don't think he
24 had anything to do with -- I don't have any reason
25 to believe he had anything to do with wiring that.

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1 Q. Okay. You really don't know who directed
2 Denny Hasamear, though, do you?

3 A. Who directed Denny Hasamear? I do not, no.

4 Q. Okay.

5 A. I thought it was Denny Hasamear, but I -- you know
6 what I mean? I don't know --

7 Q. Okay.

8 A. -- any other influences.

9 Q. Was Mr. Cook aware of the control modifications
10 that had been made to the test bus?

11 A. He was. He was.

12 Q. And when you gave this affidavit, Exhibit 26, had
13 you already conducted your meeting with
14 Texas Department of Public Safety at that time?

15 A. I don't believe so. What is -- I'm almost
16 positive --

17 Q. It's dated November 20th, and I think you told me
18 earlier you met with --

19 A. Maybe I have. Let me see. I'm going to have to
20 check my dates again.

21 Q. Check your billing and see if you can answer that
22 question, please.

23 A. You say that's November 20th?

24 Q. That's the date of the notarization.

25 A. Okay. Well, no, I did do that before -- wait a
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1 minute. Just a minute. No, I did that about -- I
2 prepared that about two weeks after I met -- I
3 meet with DPS on November the 7th and had that
4 notarized on November the 20th.

5 Q. And that meeting with DPS with Mr. Cook is not
6 mentioned in this affidavit, is it?

7 A. No.

8 Q. Even though it had occurred about 10, 11 days
9 before this affidavit; correct?

10 A. I didn't think there was any relationship between
11 the two, or supposed to be any relationship. But
12 to answer your question, no, it's not mentioned.

13 Q. Did you write this affidavit?

14 A. I -- I didn't actually write it. I -- I mean, I
15 wrote -- I wrote out a draft. I wrote out a
16 draft, and then somebody from the attorney's
17 office, you know, sent me a copy. And then I made
18 changes. I made changes, and then I sent it back
19 and I said, yeah, that's what I want to -- that's
20 what I want to say.

21 Q. Did you have any discussions with attorneys at the
22 attorney's office for Greyhound Americanos about
23 this affidavit?

24 A. Yes.

25 Q. How many?

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1 A. How many?

2 Q. (Witness nods head).

3 A. One or two, very brief. Asked to furnish an
4 affidavit regarding -- regarding Mr. Cook's
5 involvement with me and what influence he had.

6 Q. Did you write out the, "Before me the undersigned
7 authority personally appeared, Lawrence Yohe, who
8 being duly sworn, deposed, and stated as follows"?

9 Did you write that part of the affidavit?

10 A. No, I don't think so.

11 Q. Did you write the part of the affidavit in
12 Paragraph 1 that said, "I'm over the age of
13 18 years and am fully competent to make this
14 affidavit. I have personal knowledge of the facts
15 stated herein and can verify that they are true
16 and correct"?

17 A. Not that exact language, no.

18 Q. Did you write paragraph 2 of the affidavit?

19 A. I would say most definitely did --

20 Q. Okay.

21 A. -- write that.

22 Q. Each and every word of it?

23 A. Well, I certainly approved every word of it. I
24 mean, I believe that I wrote -- that that's what I
25 wrote.

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1 Q. Okay. And none of this is a question about what
2 you approved. I know you approve of it, okay?

3 A. No, I believe I wrote it, you know.

4 Q. What about --

5 A. That's my writing. That's my language.
6 Q. What about the words in paragraph 3? Are those
7 your words that you wrote?
8 A. I would say most definitely is.
9 Q. Each and every one of them?
10 A. I would say every one of them.
11 Q. Okay. Did you write the Paragraph No. 4?
12 A. Well, that's what I'm looking at, 4. Here's 3.
13 Q. Okay. Did you write paragraph 3?
14 A. Yes, I wrote 3.
15 Q. In its entirety?
16 A. Yes, I did.
17 Q. And paragraph 4 as well?
18 A. I wrote 4. 4.
19 Q. Okay.
20 A. There's one more.
21 Q. And did you write 5?
22 A. I wrote 5. I would say the word "mental
23 impressions" I agreed with 100 percent. I don't
24 know if I actually wrote that word, but I
25 definitely wrote -- wrote 5.

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1 Q. The invoice that you've been referring to to
2 refresh your recollection about dates?
3 A. Okay.
4 Q. Is that --
5 MR. DACUS: This invoice that we're
6 going to ask the reporter to mark as
7 Exhibit 26.
8 THE WITNESS: 27.
9 MR. DACUS: 27, I'm sorry.
10 (Record read.)
11 THE WITNESS: I would say the one
12 with the dates -- the one with dates -- we
13 don't really need the one -- the
14 October 6th, this is my billing, like right
15 after the last deposition, after I had
16 reviewed mine and did the errata sheet.
17 Anything that involves any dates from
18 November the 5th on that we talk about
19 travel to Wash- -- to, you know, to Dallas
20 or to Washington, DC, or Richmond, it's all
21 here.

22 BY MR. DACUS:

23 Q. Okay.
24 A. So, I mean, we could put this whole thing in
25 because it's -- they -- because prior to -- since
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1 my deposition on, I believe -- what did we say,
2 September 19th? -- since my deposition this --
3 obviously this October bill wasn't included. So
4 this is all new since my last deposition.

5 (Defendants' Exhibit No. 27 marked
6 for identification.)
7 BY MR. DACUS:
8 Q. Okay. And Exhibit 27, is this your most current
9 invoice up to today to the extent it's complete?
10 A. It's complete up to today, yes, sir. Well,
11 actually, I didn't put my time in yesterday.
12 Q. How much time did you spend yesterday?
13 A. Yeah, I did yesterday. Well, I, probably --
14 probably about 14 hours. I have 10 hours marked
15 here, but it's probably about 14 hours. But this
16 is -- this is current as of -- as of yesterday.
17 Q. Okay.

18 MR. DACUS: Can you mark these,
19 Madam Reporter? I think it would take us
20 through Exhibit 33.
21 (Defendants' Exhibit Nos. 28 through 33
22 marked for identification.)

23 BY MR. DACUS:
24 Q. Let me show you Exhibit 28. Can you tell us
25 what -- what Exhibit 28 is?

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1 A. Okay. Exhibit 28 is a number of e-mails. I'd
2 have to count them. Mostly e-mails.
3 Do you want me to go over them?

4 Q. Can you generally characterize what they are?

5 A. Yeah. They're basically e-mails from -- let's
6 see. There's one from Stephanie Sells. She's a
7 legal --

8 MR. HAYNES: He's not asking you to
9 tell us about each one of them. Just, I
10 think, they're grouped by categories, or if
11 it's like between you and our office, you
12 could maybe identify it that way.

13 MR. DACUS: Mr. Haynes is smelling
14 the barn now.

15 MR. HAYNES: That's a good one.

16 THE WITNESS: Yeah, basically this is
17 a group of e-mails mostly from
18 Attorney Rodriguez's office to myself
19 concerning information like that they have
20 furnished me.

21 BY MR. DACUS:

22 Q. Okay.

23 A. Like we're furnishing you with a deposition
24 transcript, and I've sent e-mails saying, "Here's
25 an invoice for such a" -- "such a day." There's a

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1 couple involving invoices, errata sheets.

2 MR. HAYNES: I think he gets the
3 idea.

4 MR. DACUS: I do.

5 THE WITNESS: Okay.
6 BY MR. DACUS:
7 Q. Do you have any other correspondence with
8 Ms. Rodriguez's office other than what is in
9 Exhibit 28 since your last deposition?
10 MR. HAYNES: There would be that.
11 BY MR. DACUS:
12 Q. That is not already marked as an exhibit here?
13 A. Sir, I do not believe so.
14 Q. Okay.
15 A. I have given, you know, what -- everything that I
16 know that I have.
17 Q. Okay.
18 A. Okay?
19 Q. And --
20 A. All right. So we're going to -- okay. So put
21 this back here?
22 Q. That will be fine.
23 A. All right.
24 Q. Let me show you Exhibit 29. And please tell us
25 what that is.

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1 A. It's my resume, what I guess in attorney language
2 you call it CV, curriculum vitae. This is my
3 resume.
4 Q. And is that a different resume, or a resume with
5 additional accomplishments or training or
6 experience than what you have previously provided
7 in this case?
8 A. There are three minor differences. I included the
9 amount of buses that I've test driven at Nappanee
10 working for ABC. I included the length of time.
11 I changed out the length of time I worked at
12 Nappanee for ABC. And I included other
13 experience, my experience working at Uvalde Test
14 Track.
15 Q. So, in effect, would it be fair to say this is an
16 updated resume?
17 A. Updated. It's updated.
18 Q. What is Exhibit 30, if you can tell us, generally?
19 A. Exhibit 30 represents the alignment report, the
20 motor coach alignment that was done, that was done
21 by a Greyhound technician the week of -- the week
22 of the testing, the week of the testing. I'm
23 thinking, I don't know, around the 10th, maybe.
24 But this was done the week of the testing.
25 Q. The alignment of the test coach used at the
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1 Uvalde Test Track?
2 A. Uvalde Testing, right. It was done on a Walker
3 alignment machine.
4 Q. Was the alignment of particular importance to you

5 with regard to the testing?

6 A. We just wanted to make sure that it was aligned,
7 just -- quite frankly, I think it would be a -- it
8 would have to be really out of line to present any
9 control problems. But just to cover the base, we
10 had it aligned.

11 Q. Okay. Are you able to make any determination
12 whether the actual bus involved in the accident
13 was properly aligned as to the tag axle?

14 A. Sir, I have not -- I have no -- I had no part in
15 that, and I did not.

16 Q. So you don't know whether that bus was properly
17 aligned or not?

18 A. Sir, I do not.

19 Q. Okay. And you have no opinion about it one way or
20 the other?

21 A. Well, my opinion would be this, just -- just
22 generically because I've driven a lot of buses to
23 alignment. I would think it would have to be
24 really bad before it made a difference.

25 But to answer your question, I have no
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1 knowledge one way or another on the alignment of
2 60630 involved in the accident.

3 Q. Okay. Did you have any role in assessing the
4 alignment of the coach used by Mr. Granite in his
5 testing?

6 A. I had no involvement in that, no.

7 Q. Do you have any knowledge of any kind from any
8 source as to whether that bus was properly aligned
9 as to its tag axle during the testing?

10 A. Have I heard any scuttle or have I heard anything?

11 Q. I mean it to be as broad as possible so I can find
12 out what it is you do know about it.

13 A. It's very little.

14 Q. Okay.

15 A. It is very little. I thought that they -- that
16 Fugger had checked the alignment and found it out
17 a little bit. The tag axle was out.

18 Q. Did you, yourself, check the alignment on that
19 coach?

20 A. I have no knowledge beyond that.

21 Q. Okay.

22 A. I'd almost call it scuttlebutt, because I haven't
23 seen any reports.

24 Q. Okay. And you don't think that unless the
25 alignment was extremely bad -- trying to

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1 understand what you've said -- that it would have
2 any effect on the performance of the coach as to
3 tag axle steering?

4 A. You know, I don't know how far out of alignment it

5 was. I guess I can't have it both ways; right?
6 You know, I really don't know. My guess would be
7 that it may have had an affect on tire wear, I
8 understand.

9 I mean, I did see some of the videos, and I
10 understand -- I can see one of the tires were
11 changed out. So I'm not saying it didn't have
12 something to do with tire wear.

13 Beyond that, I -- you know, I don't know
14 enough to comment on it.

15 Q. Do you have any reason to believe that
16 Mr. Granite's testing was rigged in any way to
17 reach a certain result?

18 A. You know, I wouldn't say that. I wouldn't make
19 that -- I have a comment on it, if you want a
20 comment. But, no, I don't -- I don't have any
21 reason to believe that his test was rigged to
22 achieve a certain result.

23 Q. Okay.

24 A. No comment on that.

25 Q. Let me show you Exhibit 31. And if you could tell
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1 us what that is, generally?

2 A. Okay. 31 is an e-mail. It shows e-mail from
3 Trooper Olive to myself, and then myself back to
4 him. Trooper -- I'm sorry, Corporal Olive from
5 the DPS, he had requested some videos and -- test
6 videos. And it was correspondence concerning
7 getting the videos to him.

8 Q. Okay. Any other correspondence of that type or
9 nature that you're aware of that's not included in
10 Exhibit 31?

11 A. None that I'm aware of.

12 Q. Was Corporal Olive provided with a copy or a
13 printout of the Power Point presentation that you
14 and Mr. Hasamear prepared?

15 A. He was.

16 Q. Was anybody else at that meeting provided with a
17 copy or a printout of that Power Point
18 presentation?

19 A. Not to the best of my knowledge, unless he's
20 passed it around.

21 Q. And I now forget what you said. Do you have a
22 copy of that presentation?

23 A. I do. And I've furnished it to you on the disk.

24 Q. Okay. Yes. Thank you. And thank you for your
25 patience.

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1 And could you tell us what Exhibit 32 is,
2 please, sir?

3 A. Exhibit 32 is a group of photographs that I took
4 while under the motor coach and photos to show --

5 in Dallas when we prepared the motor coach.

6 After we were through preparing it, I took --
7 I didn't have my camera with me, wasn't expecting
8 to take photos, but I thought we should take some,
9 and I took them with my cell phone camera, so
10 they're not the best.

11 Also -- also you -- I would -- you've
12 probably been furnished with the computerized
13 copies, which are colored and better.

14 Q. And how would I have been provided those?

15 MR. HAYNES: It's my understanding
16 they were sent from our Edinburg office.

17 BY MR. DACUS:

18 Q. Okay. And when you say that, "the coach," you're
19 talking about the coach that was used for the
20 testing in Uvalde?

21 A. Right, 60624.

22 Q. And were you involved in any way in setting the
23 travel limits of the tag axle wheels through the
24 steering stops?

25 A. Well, the steering stops weren't changed on
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1 this -- on this coach.

2 Q. Okay.

3 A. And -- so we relied, basically, on the -- on the
4 steering stops to -- to determine length of
5 travel, what we -- what I understand was the
6 normal length of travel, the 2 -- 2 and an
7 eighth -- 2 and a 16th to 2 and an eighth.

8 Q. Did you verify that that was the normal length of
9 travel through MCI or MCI manuals, or any kind of
10 MCI materials?

11 A. You know, I didn't personally verify that, but --
12 but Frank, who gave a deposition last September,
13 he verified it through manuals somehow. And it
14 was determined that it was between 2 and 2 and an
15 eighth. I believe it was 2 and an eighth. And so
16 that's -- that's how that -- I think that's
17 naturally where it would go, you know, because you
18 had -- there's a couple of points it could have
19 hit. And that was -- and that was the travel
20 anyhow, 2 and an eighth. That's what we used.

21 Q. Okay. So to -- to be clear about this, you didn't
22 verify the travel limits for the tag axle wheels
23 in any way; you, yourself?

24 A. Well --

25 MR. HAYNES: Objection. Form.
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1 THE WITNESS: Just other than the
2 measurements. Other than the measurements.
3 In other words, did I verify that this is
4 what it should be?

5 BY MR. DACUS:
6 Q. Yes, sir.
7 A. No.
8 Q. Okay.
9 A. No.
10 Q. You didn't modify or have anyone modify the travel
11 limits that were set on the Americanos coach that
12 you were using in the testing?
13 A. No.
14 MR. HAYNES: Objection. Form.
15 THE WITNESS: No. As far as I know,
16 those are the limits, the normal limits,
17 the 2 inches or 2 and an eighth is the
18 normal -- the normal limits.
19 BY MR. DACUS:
20 Q. And to the extent that anybody did verify what the
21 normal steering limits for the tag axle tires are,
22 that would be Frank Brown --
23 A. Frank did.
24 Q. -- and not you?
25 A. Frank did on the original -- on the original test,
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1 yes.
2 Q. Do any of these photographs show the tag axle --
3 THE REPORTER: I didn't hear you.
4 I'm sorry.
5 BY MR. DACUS:
6 Q. -- tag axle castering mechanism or the tag axle
7 castering latch mechanism on the test coach that
8 was used in Uvalde?
9 A. I would have to say no.
10 Q. Okay. Do you have any other photographs of the
11 test coach that are not included in Exhibit 32?
12 A. I do not personally, no.
13 Q. Okay.
14 A. Obviously there are plenty of photos, but
15 personally I don't.
16 Q. And tell us what Exhibit 33 is, please, sir?
17 A. Exhibit 33 is the -- is a DDEC, D-D-E-C, DDEC
18 report, and it represents the last stop record of
19 Coach 60630 on the day of the accident.
20 Q. Okay. And what did you use that particular
21 document for since your last deposition?
22 A. What did I use it for?
23 Q. Yes, sir.
24 A. I reviewed the times when the -- when the
25 speedometer lost its signal to the time she
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1 put the -- applied the brakes.
2 Q. And --
3 A. The --
4 Q. Do you have any knowledge of what caused the

5 speedometer or the DDEC to lose the speed signal?
6 A. When the -- when the drive shaft separated, when
7 the drive shaft separated, it wasn't picking up
8 wheel speed anymore.

9 Q. And is that your understanding of what the speed
10 record on the last stop record of the DDEC
11 printout shows, the wheel speed?

12 A. Yeah. This is all -- this is all vehicle speed
13 or -- you know, it's based on wheel revolutions,
14 but it comes -- but this is our vehicle speed.
15 And then we see right here a drop from 69, 65, 47,
16 and then zero.

17 And -- and so that to me was -- and I was
18 looking at when the brake application started.

19 Q. And your understanding of the DDEC printout and
20 what it shows leads you to believe that the
21 separation of the drive shaft from the
22 transmission is the point when the speed column on
23 that DDEC printout goes to the zero. Is that
24 right?

25 A. I believe so, sir.

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1 Q. And that's what you've based your opinions on with
2 regard to the time when she applied the brakes
3 with regard to when the actual -- drive shaft
4 failure occurred?

5 A. Right. I don't want to say that exactly, but we
6 do see the speed drop -- dropping very quickly,
7 which indicates something has happened. And then
8 about three -- three to four seconds later we see
9 the brake being activated.

10 Q. But you've based on your analysis that the brake
11 was activated a certain period of time after the
12 drive shaft failure occurred on your understanding
13 of what the DDEC printing shows; correct?

14 A. Yes.

15 Q. And part of that understanding is that the DDEC
16 printout shows the wheel speed of the drive axle
17 wheels?

18 A. That's not actually the -- I mean, the wheel
19 speed, so many revolutions per mile, I mean,
20 certainly it's translated into vehicle speed. So
21 I would have to give that some thought, but
22 obviously the second column represents the -- the
23 vehicle speed through a sensor, through a sensor.

24 And, you know, quite frankly, because this
25 was a 740 transmission, I'm presuming it's some

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1 sort of output shaft sensor, but I'm not -- I
2 still want to look at that to see where that
3 sensor was.

4 But to answer your question, hence your

5 question, yes, I looked at that. I saw where the
6 speed started dropping. And then I saw three to
7 four seconds later there was a brake application.
8 MR. DACUS: We have to change tapes
9 at this point.
10 THE VIDEOGRAPHER: Off the record at
11 2:56 p.m.
12 (Off the record.)
13 THE VIDEOGRAPHER: We're now back on
14 the record at 3:06, Tape No. 5.
15 Please, continue.
16 BY MR. DACUS:
17 Q. Are there any other documents or materials,
18 photographs, anything physical, whether it be on a
19 computer or in notes, that you have generated or
20 received since your last deposition that have not
21 been produced here today and marked as exhibits to
22 your deposition?
23 A. Sir, not to the best of my knowledge and belief.
24 I can think of nothing.
25 Q. Okay. And we did talk about the one set of notes
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1 that you were going to look for and send --
2 A. I will. I mean, it was like --
3 Q. I know.
4 A. I know. I know what you mean, yeah.
5 Q. But with the exception of that, you think what
6 you've produced here today and what we have marked
7 as exhibits is everything?
8 A. Uh-huh. I believe it is, sir.
9 Q. Okay.
10 A. I believe it is.
11 Q. And did you have an opportunity to see the
12 Deposition Notice and Subpoena Duces Tecum for
13 your deposition today?
14 A. I did, sir.
15 (Defendants' Exhibit No. 34 marked
16 for identification.)
17 BY MR. DACUS:
18 Q. And I'll dig that out and we'll attach it as the
19 next exhibit. But as far as you know, did you
20 bring everything that the Subpoena Duces Tecum
21 asked you to bring?
22 A. Sir, I think I brought everything. And I have my
23 rolling office over there with all the stuff from
24 the first -- that was produced by the first
25 deposition, so I didn't know what all I was
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1 supposed to bring, so I brought everything.
2 MR. DACUS: Okay. Then I'm going to
3 pass the witness to Mr. Hill, who I think
4 has some questions.

5 MR. HILL: I've got a few.
6 CROSS-EXAMINATION
7 BY MR. HILL:
8 Q. Good afternoon, Mr. Yohe.
9 A. Good afternoon.
10 Q. We had a chance to meet last time at your
11 deposition, and then this morning, but I've never
12 been able to ask you questions. Is that fair?
13 A. That is true, sir.
14 Q. Last time I had a flight I had to catch, so I went
15 ahead and caught my flight and let Melissa Doorman
16 handle the deposition. I've got a few questions
17 for you because John went first.
18 I'm going to kind of bounce around, but I'll
19 try to stay in little pods of area of testimony
20 that I want to talk to you about; okay?
21 A. Okay.
22 Q. All right. You talked about a seminar that you
23 were part of putting on for DPS officers. Did I
24 hear that correct?
25 A. You did, sir.

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1 Q. Who arranged the seminar in terms of time,
2 location, who all was going to be there? Who made
3 those phone calls?
4 A. I did.
5 Q. You called the --
6 A. DPS.
7 Q. -- DPS officers?
8 A. I called one, Corporal Olive.
9 Q. Okay. Who was in charge of finding the location?
10 A. He was.
11 Q. Okay. And this was done at the direction of
12 Ms. Rodriguez asking you to organize this?
13 A. It was.
14 Q. All right. How long did that meeting last?
15 A. Only -- really, the meeting was probably a little
16 bit over -- maybe an hour and 15 minutes.
17 Q. Why did you call Corporal Olive?
18 A. He was in a position of authority. I'd seen his
19 name. I'd seen his name on a deposition and I've
20 felt he was in charge of the reconstruction team.
21 Q. It's your understanding that he was in charge of
22 the reconstruction team?
23 A. Yes.
24 Q. Was it your understanding that he took the lead on
25 the reconstruction involving this accident?

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1 A. Yes.
2 Q. Okay. Did you call or invite any of the other
3 people that were on the reconstruction team in
4 reconstructing this accident?

5 A. I did not, personally. Again, he had probably
6 six -- five or six other reconstructionists there.

7 Q. Do you know if any of those reconstructionists
8 were on the reconstruction team that reconstructed
9 our March 16th accident?

10 A. I believe one was, and the rest were more or less
11 at the headquarters for other training. They just
12 happened to be at the headquarters for other
13 training.

14 Q. You worked for NTSB at some point in your career,
15 did you not?

16 A. For 25 years.

17 Q. When you were at the NTSB, you did an
18 investigation regarding motor vehicle, motor
19 carrier, airplane accidents. Is that fair to say?

20 A. I really -- it was only peripherally involved in
21 airplane accidents. I was primarily -- primarily
22 vehicles.

23 Q. Okay. In your 25 years as an NTSB investigator,
24 was it common to be contacted by retained
25 experts in litigation following the issuance of
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1 your report?

2 A. It was.

3 Q. Was it common for them to come and put on a
4 seminar only presenting one side of the facts?

5 A. Well, they never did put on a seminar. They would
6 call for information.

7 If it was factual -- if it was factual, I
8 would give it to them.

9 Q. Okay. Let me see if I understand this correctly.
10 In your 25 years as an NTSB investigator, you were
11 contacted by people involved in litigation, but
12 you were never presented a seminar by one of the
13 parties or retained experts involved in that
14 litigation?

15 A. Never a -- a seminar. Never a seminar. I've been
16 sent -- I've been sent depositions by attorneys to
17 review, say, "Would you" -- "Would you use this in
18 your case?" And the answer was -- because I've
19 checked with legal, and the answer was, "If they
20 give it to you, you're not only" -- "you're
21 obligated to consider it."

22 Q. Okay. Were you obligated to make sure you
23 investigated both sides?

24 A. We didn't look at it as both sides.

25 Q. Okay.

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1 A. I mean, you know, I believe that information
2 needs to stand on its own. And I don't think
3 about it. I guess this is a different situation,
4 but I never thought of it as both sides.

5 Q. Okay. Well, let me ask you this: You understand
6 in litigation there is a party suing another
7 party?

8 A. I'm getting to understand it more.

9 Q. Okay.

10 A. Yes.

11 Q. Before you sat here today, you didn't understand
12 that lawyers are advocates for a position in
13 litigation?

14 A. I knew that, certainly.

15 Q. Okay. I think that's pretty well understood by
16 most people.

17 A. Yes.

18 Q. So when you were sent depositions or whatever you
19 were sent as an NTSB investigator, did you
20 understand that was coming from one position; it
21 was coming from one side that was advocating a
22 position?

23 A. I did. I did. But, again, I -- I looked at
24 depositions, and somebody would be questioned from
25 both sides. So, you know, you sort through that
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1 material. You don't just automatically accept it.

2 You sort through it, and --

3 Q. Sure.

4 A. -- and --

5 Q. As an NTSB investigator, if you were provided
6 testing and then you found out there was other
7 testing that maybe showed different things, would
8 you have wanted to see all available information
9 before you made your opinions?

10 A. I would have.

11 Q. Okay. Why as an investigator did you think it
12 would be important to understand or consider all
13 positions, but when you were putting on a
14 presentation to the DPS, you did not find it
15 important to present both sides?

16 A. Well, what we presented -- we presented was the
17 testing, all the testing that was done. I felt
18 that they didn't under- -- I wanted them to
19 understand that a tag axle can steer the rear of
20 the bus. It could steer the front of the bus,
21 make the bus go in one direction or another. I --
22 to be honest with you, I hadn't thought about it.
23 There were other incidents where I was told
24 that MCI had already talked to, that they had
25 talked to troopers before, that MCI experts had
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1 talked to troopers before. And, you know, quite
2 frankly -- quite frankly, you know, I didn't care
3 then and I don't care now whether they do anything
4 at all with their report. And I've made that

5 100 percent clear to them.
6 I wanted to give them the information --
7 Q. Sure.
8 A. -- is all.
9 Q. When you gave that presentation, you were aware
10 that there was other testing out there, though,
11 involving a 102DL3 with an unlocked tag axle? You
12 were aware of that, weren't you?
13 A. I was aware of that.
14 Q. Okay. That testing just a second ago you stated
15 that you did not think was rigged?
16 A. I didn't think it was rigged, no.
17 Q. Do you think it has value?
18 A. No, I don't.
19 Q. Why not?
20 A. Because I don't believe it's relevant to this
21 accident. I've already said I would be willing to
22 drive a bus across country with a tag axle
23 unlocked. That's not the issue.
24 Q. The first time we deposed you, you did not talk
25 about a caster lock ever becoming unlocked.

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1 Do you remember that?
2 A. I didn't talk about a caster?
3 Q. Becoming unlocked or out of position.
4 A. No, no, I didn't.
5 Q. The first time we deposed you, your opinions --
6 A. And I still -- I still wanted to make it clear,
7 that to me the issue isn't whether the caster came
8 locked or unlocked. The issue is turning the
9 tire, regardless of how -- what causes it to turn.
10 Q. What did cause it to turn? Do you know? If it
11 turned -- let's assume that it turned. What
12 caused it to turn in our subject accident?
13 A. Well -- well, let's put it this way: The -- the
14 tie rod and the locking mechanism tie rod in the
15 subject vehicle, 60630, was -- it was bent after
16 the accident. It was bent. There were marks on
17 it. There were heavy indentations at various
18 places in that area of the bus.
19 And in the stationary testing we did at
20 Nappanee, it was -- it looked very, very similar.
21 And in the stationary testing it showed the -- it
22 showed the drive shaft hitting the tie rod and --
23 and pushing it over -- and pushing it over. So
24 that was -- that's certainly one of the mechanisms
25 by which -- that it could move the -- move the --

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1 the wheels.
2 Q. All right. It's your belief that the drive shaft
3 broke, banged the tie rod to the extent that it
4 artificially turned the rear tires. Is that your

5 testimony here?

6 A. I wouldn't say "artificially." I don't know what
7 you mean by "artificially."

8 My testimony is that I don't know which was
9 more re- -- I believe that one of the two, either
10 the -- either the castering system, you know,
11 coming unlocked, which it did bang the castering
12 system, and the drive shaft escaping the tag axle
13 cradle in there, that it could have been either/or
14 both of them, could have been an influence on
15 the -- could have been an influence on turning the
16 tag axle.

17 Q. Why didn't you talk about this caster mechanism in
18 your first deposition, which was about 16 months
19 after the accident?

20 A. Quite frankly, I didn't -- I never suspected it,
21 you know. I never suspected the -- I just -- I
22 knew that the -- I believed at that time with the
23 evidence I saw and the tire marks that the wheels
24 turned.

25 Q. Okay.

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1 A. That the wheels turned. And I never even
2 considered the -- the castering system.

3 Q. Who made you suspect the castering system?

4 A. I would suppose between Erin, Erin and Denny.

5 Q. Erin and Denny are both Greyhound employees?

6 A. No. Denny's a Greyhound employee. Erin as a
7 private --

8 Q. I'm sorry.

9 A. He's a private -- he's a private consultant out of
10 Chicago.

11 Q. Erin Jones, sorry.

12 A. Right.

13 Q. Let me just get back and wrap this up with regard
14 to the DPS. At the time you -- at the time you
15 made a presentation to the DPS, you knew there was
16 other testing out there from MCI that you did not
17 provide them; correct?

18 A. That is correct.

19 Q. At the time you made the presentation to the DPS,
20 you knew there was testimony out there from the
21 driver that you did not present to the DPS;
22 correct?

23 A. I -- I didn't -- they had an opportunity to talk
24 to the driver; I didn't. And so I didn't --
25 didn't even consider that. But they could -- she

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1 would be willing to talk to them all that they
2 wanted.

3 Q. Okay. My question's pretty simple. At the time
4 you gave your presentation to the DPS, you knew

5 there was a deposition of the driver out there,
6 did you not?
7 A. I did.
8 Q. And you did not present that to them, did you?
9 A. No, I did not.
10 Q. Okay. At the time you gave your presentation to
11 the DPS, you knew that there were expert
12 depositions from other sides in this case, and you
13 did not present them to the DPS either, did you?
14 A. I did not.
15 Q. Okay. Who made the determination as to what
16 evidence and what you were going to show the DPS;
17 you?
18 A. Basically Denny and I, basically.
19 Q. Is it fair to say that if you were in the position
20 of that DPS officer when you were an NTSB
21 investigator, you would have wanted to see the
22 whole world of information; correct?
23 A. I would have if I was a NTSB investigator, yes.
24 Q. Do you think that the DPS officers are held to a
25 lower standard than NTSB officers?

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1 A. I do not think that they are.
2 Q. You would agree that NTSB investigator and a DPS
3 investigator are both investigators?
4 A. I would agree with that.
5 Q. Okay. And in the confines of our accident, the
6 DPS was in the role of investigating and making a
7 determination as to what caused the accident. You
8 would agree with that?
9 A. I agree with that.
10 Q. When you were an NTSB investigator, sometimes you
11 were in the role of looking at a motor coach
12 accident and determining what caused that
13 accident; correct?
14 A. That is correct.
15 Q. Okay. If you were in the role of determining what
16 caused this accident, the same way Corporal Olive
17 was, would you not want to -- would you not have
18 wanted to see the full world of information that
19 has come out in this lawsuit whenever a
20 presentation was given to you by one of the
21 parties?
22 A. I would want to see the best evidence.
23 Q. Okay. As an investigator, don't you think they
24 should be the one to make the determination as to
25 what's relevant or not, or do you think a hired

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1 expert should make that determination for them?
2 A. They are not naive people.
3 Q. Okay. That's not my question. My question
4 is -- let me state it this way: When you were

5 investigator, did you want a paid, retained expert
6 to tell you what was important, or did you want
7 the world of information and get to make that
8 determination on your own because that was your
9 job?

10 A. Okay. Please rephrase that question.

11 Q. Okay. When you were an investigator, would you
12 have wanted a paid litigation expert to tell you
13 what was important, or would you have as an
14 investigator trusted yourself and wanted to look
15 at all information to make a determination on your
16 own as to what was important because that was your
17 job?

18 A. I have had -- I've had paid people, you know,
19 give -- give me information, and I look at the
20 evidence and try to determine if they're blowing
21 smoke or if they're -- if they're blowing smoke or
22 they're simply -- or they're giving you good
23 evidence, they're furnishing good evidence.

24 Q. There's the question. Do you think it's the role
25 of the paid expert who has a -- an advocate
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1 position in a case to tell --

2 MR. HAYNES: Objection. Form.

3 BY MR. HILL:

4 Q. -- to tell an investigator what is important, or
5 do you think it's the investigator's role to
6 consider all information and make their own
7 determination?

8 MR. HAYNES: Objection. Form.

9 THE WITNESS: Let's put it this way:

10 I looked at it -- I looked at it as
11 furnishing them with information, testing
12 that they didn't have.

13 I did not -- never tried to advocate
14 that they try to do anything different. As
15 a matter of fact -- as a matter of fact,
16 I've made it repeatedly 100 percent clear
17 that I had no interest at all in whether
18 they changed anything, and I don't know
19 that they are. I don't know that they are.

20 But I looked at it as just furnishing
21 them with information.

22 BY MR. HILL:

23 Q. Okay. Let me rephrase this because that did not
24 answer my question.

25 A. Okay.

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1 Q. When you were sitting in the seat of your desk as
2 an investigator --

3 A. Okay.

4 Q. -- would you want to see all information, consider

5 all information, and make your own professional
6 determination as to what is important or not, or
7 would you rather have a litigation expert show you
8 a limited world of information and tell you that
9 that's what's important? Which -- of those two
10 options as an investigator, which would you
11 prefer?

12 A. I'd have all the information to fill in the
13 missing blocks, yes.

14 Q. In this case you were not an investigator; you are
15 a paid expert by Americanos and Greyhound. Is
16 that fair?

17 A. You know, I guess I am.

18 Q. What did Corporal Olive tell you with regard to
19 how his opinions had changed?

20 A. What's that?

21 Q. What did Corporal Olive tell you with regard to --

22 A. The only thing he's ever told me is he said he
23 didn't consider that the -- that the tag axle
24 could move, that it could redirect the bus,
25 basically.

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1 I don't want to misquote him, but he
2 acknowledged that he didn't -- he didn't
3 understand that, that the tag axle could -- could
4 redirect the bus.

5 Q. And you were talking about you only showed him
6 Test 14 because that was the one that showed
7 without steering you could change the direction of
8 the bus with only tag axle input; correct?

9 A. I don't want to say only showed him Test 14. I
10 showed him all the stationary testing. We showed
11 him the -- again, we showed him the undercarriage
12 of the -- and some scene photos of the accident in
13 Pennsylvania. I mean, it wasn't -- it wasn't just
14 that one -- it has to be considered cumulative.
15 We showed him a whole -- showed him how the tag
16 axle worked, you know, showed him how the tag axle
17 worked. It's basically in what you -- what I've
18 furnished here today.

19 Q. When did you quit working at the NTSB?

20 A. April of -- April of 2009.

21 Q. Okay. Ball park me, how many 102DL3's do you
22 think are on the road with a steerable tag axle?

23 A. How many do I think are on the road with a
24 steerable tag axle?

25 Q. Yeah.

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1 A. I would say it's certainly in the hundreds.

2 Q. I've heard it referred to as the work horse in the
3 bus industry. Do you think that's fair?

4 A. I think it's fair.

5 Q. Okay. In your time working at the NTSB, how many
6 accidents are you aware of involving a broken
7 drive shaft affecting a tag axle that caused a bus
8 to lose control?

9 A. None.

10 Q. Okay. Have you looked into that since you've been
11 hired as a paid expert in this case?

12 A. I have.

13 Q. Okay. And you weren't able to find any?

14 A. No. No. Well, that's part -- that -- no, I don't
15 want to say that's -- I don't want to say that's
16 totally true.

17 Q. Okay.

18 A. We -- obviously there's been another -- another
19 accident.

20 Q. Okay. Let's just limit this to your time as NTSB
21 investigator.

22 A. Did I --

23 Q. Did you ever run into a scenario on a 102DL3 where
24 a broken drive shaft affected a tag axle, damper,
25 caster lock mechanism, any of those things that

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1 are alleged in this case, and cause a driver to
2 lose control?

3 A. No.

4 Q. All right. Since your time in the NTSB and since
5 the institution of this lawsuit, ya'll are now
6 alleging that there was a Pennsylvania accident
7 caused by a similar occurrence; correct?

8 A. I don't know whether that's supposed to be part of
9 this case or not. There was.

10 Q. Okay.

11 A. There was.

12 Q. In that case you think it was caused by a similar
13 accident sequence?

14 A. I saw the undercarriage of the bus. It certainly
15 looked like this one.

16 Q. Okay.

17 A. Very similar.

18 Q. Okay. Have you read that police report in that
19 Pennsylvania accident?

20 A. I have not.

21 Q. All right. All you've seen is some photos of the
22 undercarriage of the bus.

23 You personally seen it?

24 A. I saw it. I saw the undercarriage of the bus.

25 Q. Not read any statements?

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1 A. No.

2 Q. Not spoke to any eyewitness?

3 A. I have not.

4 Q. Not spoke to the driver or read his statement?

5 A. No.
6 Q. Okay. And you have not read the police report?
7 A. I have not read the police report.
8 Q. All right. Let's talk about the NTSB -- the NHTSA
9 meeting that you attended; okay?
10 A. Okay.
11 Q. Who instituted and put together that meeting?
12 A. It wasn't me. I -- I -- I presumed it -- I -- I
13 don't know factually. I presume that --
14 MR. HAYNES: He's not asking you to
15 guess.
16 THE WITNESS: I really don't know.
17 MR. HAYNES: If you know, tell him.
18 THE WITNESS: I don't know.
19 MR. HAYNES: If you don't, say that.
20 THE WITNESS: I don't know.
21 BY MR. HILL:
22 Q. Who called and told you to be there?
23 A. Alex.
24 Q. Alex Cook?
25 A. Yeah.

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1 Q. All right. You said there was a guy named Knappen
2 there?
3 A. Yes. Ted Knappen.
4 Q. What's your understanding of his role?
5 A. My understanding of Ted's role, he's a Washington,
6 DC, attorney. He's a Washington, DC, attorney.
7 He has done work for Greyhound before. I don't
8 know what all he does.
9 Q. Okay.
10 A. But I know he's a Washington, DC, attorney that
11 used to work for Continental Trailways.
12 Q. Did you know he was a registered lobbyist?
13 A. No, I did not.
14 Q. Have you ever heard he does lobby work for
15 Greyhound?
16 A. No, I did not know that.
17 Q. Okay. When you were at NTSB, were you ever -- or
18 did you ever have to deal with lobbyists?
19 A. I didn't personally, no.
20 Q. Okay. What's your understanding of what a
21 lobbyist does?
22 A. A lobbyist, I understand, is an advocate that
23 would go up on the hill, up to Congress or some
24 committee, and try to lobby for a certain
25 position, either to advance a law, propose a law,

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1 or to try to not get a law to pass.
2 Q. Do you have any understanding as to why a lobbyist
3 was brought to this meeting?
4 A. I do not know, but he obviously -- as far as I

5 recall, he didn't have anything to say.
6 Q. Do you know whether he's got --
7 A. I didn't know he was -- I didn't know that -- you
8 know, I just knew he was an attorney that worked
9 for Greyhound. And I had met him before. I had
10 met him before, back in Washington, DC.
11 Q. Do you know whether he's done any lobbying since
12 that meeting to encourage NHTSA to open an
13 investigation?
14 A. I do not believe he has. I don't know one way or
15 another.
16 Q. Okay. Were the attorneys that hired you in this
17 case present at the NHTSA meeting?
18 A. No.
19 Q. Let's talk about this Test 14 that you put so much
20 weight into; okay?
21 A. It's not that I put so much weight into it. It
22 just -- it simply shows -- it simply shows that
23 the tag axle can steer a bus.
24 Q. Okay. On this test, though, this is the tag axle
25 that had the steering stop broke off; right?

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1 A. It had the steering stop broke off, right.
2 Q. Okay. Do we know whether or not in Test 14 that
3 the tag axle was pushed beyond the actual
4 tolerances that were available in the subject bus?
5 A. Well, we had a limiting chain on it.
6 Q. Do you know what -- how many inches that limiting
7 chain was?
8 A. Yes.
9 Q. Was it 3 inches?
10 A. It was 3 inches.
11 Q. Okay. So we've got 7/8ths of a inch further than
12 the tolerances of the subject bus, as you stated
13 earlier?

14 MR. HAYNES: Objection. Form.
15 THE WITNESS: That in and of itself
16 is correct.

17 BY MR. HILL:

18 Q. Okay.
19 A. But there's more to it.
20 Q. Well, I'm trying to say true statements here. Let
21 me ask you this: Do you know whether or not if
22 that limiting chain had been limited to
23 2 1/8ths inch, as you stated was the factory
24 tolerance, whether or not you could get steer from
25 the tag axle only on a 102DL3?

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1 A. Positively could.
2 Q. Okay. Where is your testing to prove that?
3 A. Where's our testing to prove that?
4 Q. Yeah.

5 A. It's limited in the -- in the Uvalde testing to
6 2 1/8th.
7 Q. Let me ask you which tests in Uvalde showed that
8 just tag axle input alone could turn the front end
9 of the bus?
10 A. Tag axle. I don't know if we used one, just
11 the -- just the ram alone. I know that I've
12 certainly done it.
13 Q. Okay.
14 A. I did it on the way down to Uvalde. I've done it
15 in parking lots with just 2 inches. So there
16 isn't -- regardless of what we did at Uvalde,
17 there is zero doubt in my mind that 2 or
18 2 1/8th inch is going to turn a bus.
19 Q. And that's based on independent testing that you
20 have no documentation of; correct?
21 A. If you want to say that.
22 Q. How else would you say it?
23 A. Well, if you want to say I have no documentation,
24 you know, that is true. But the tag -- a turning
25 tag axle, it doesn't matter, again, one more time
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1 whether -- whether it's from the casting system
2 or -- or from a ram turned artificially. That
3 2 1/2 -- if it's turned 2 or 2 1/8th of an inch,
4 it's going to turn. It doesn't matter what caused
5 it to turn. It's going -- the bus is going to
6 turn. It's going to redirect the front of the
7 bus, whether -- whether that was a result, again,
8 of the casting system, a ram, or maybe in rare
9 cases at a slow speed hitting a bump with it
10 unlocked.
11 Q. Correct me if I'm wrong. I think earlier you
12 stated that Test 14 proved that tag axle input
13 alone turning the tag axle by itself could affect
14 the direction of the front of the vehicle. Did I
15 hear that correct?
16 A. Yes.
17 Q. Okay. What I'm asking you now is in a scenario in
18 which the travel of the tag axle is limited to
19 factory tolerances, point me to a test where you
20 can show that tag axle input alone can affect the
21 forward direction of a bus.
22 A. These tests right here.
23 Q. Okay. Show me one that was limited to only
24 turning the tag axle with the ram.
25 A. I don't have one here, but it doesn't matter. If
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1 the tag axle's turned, the end result is still the
2 same.
3 Q. Okay.
4 A. It's still going to redirect the front of the bus.

5 It doesn't matter what turned it.
6 Q. All right. Let's talk about your escape route.
7 Whenever you were an investigator for NTSB, did
8 you normally go to an accident scene and think
9 "Where was the escape route?" or would you
10 actually look at what the driver's reactions and
11 actions were, and determine if she acted
12 correctly?

13 A. We looked at both.

14 Q. Okay. How much time have you spent in south
15 Texas?

16 A. How much time have I spent there?

17 Q. Uh-huh. Have you in your life.

18 A. I've done quite a few accidents down there over
19 the years.

20 Q. Okay. Would you say it's known for big trees?

21 A. Not big trees.

22 Q. What type of trees are down there?

23 A. Smaller trees.

24 Q. Okay. You talked about how to the right of the
25 road there was a whole lot of trees that you think

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1 is six of one, half a dozen of the other whether
2 she goes to the right or yawed it out of control;
3 that was your statement?

4 A. That was my statement.

5 Q. What was the biggest tree you saw off to the
6 right? Just ball park it.

7 A. 15 feet.

8 Q. Tall?

9 A. I'm just guessing. 20 feet, maybe.

10 Q. Biggest trunk you saw?

11 A. It was pretty big around. It had a lot of things
12 attached to it.

13 Q. What do you think? Couple inches? Couple feet?

14 A. Oh, no. Probably a couple -- I'm -- you know, I'm
15 guessing here. I'm guessing. Maybe a foot and a
16 half.

17 Q. Okay. What do you think happens if a 102DL3 going
18 70 miles an hour hits a mesquite thicket with the
19 biggest tree being a half foot? What do you think
20 happens?

21 A. You know, I do not know the answer to that
22 question. It depends if the side of the bus came
23 down on that tree and it went in the window.

24 Q. You think a bus can run one over, though?

25 A. Could run one over?

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1 Q. Uh-huh.

2 A. Not this tree.

3 Q. I've got accident scene pictures, so when we get
4 to trial, I'm going to have you point out these

5 large trees you're talking about that would stop a
6 40,000 pound bus.
7 A. I never said -- I never said -- you know what --
8 you know what? I would never say they wouldn't
9 stop the bus. I mean, I'm not saying that they
10 would stop the bus.

11 Q. You just said that.

12 A. I'm saying --

13 MR. HAYNES: Objection. Form.

14 THE WITNESS: -- it rolled over. It
15 could interfere with the travel.

16 BY MR. HILL:

17 Q. All right. So you looked to the right side of the
18 road --

19 MR. HAYNES: Let him finish his
20 answer, then you can ask another question.

21 THE WITNESS: If it rolled over and,
22 you know, came through the window, yeah, it
23 could be a -- could be a factor in
24 additional -- additional injuries.

25 But, you know, we're missing the
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1 point here. I'm supposed to just answer
2 the questions. But there is -- there is --
3 there's a little bit more to it that I'd
4 like to say, if I could.

5 BY MR. HILL:

6 Q. Go for it.

7 A. Okay. Okay. You know, it is the instinctive
8 natural reaction for a driver to want to keep on
9 the road. And when she did -- did turn to the
10 left, I'm sure it was an attempt to keep from
11 going off the road. It's just simply a natural
12 reaction, so --

13 Q. Okay. Is that what you wanted to say?

14 A. Basically, yeah.

15 Q. All right. So if we look at the right side of the
16 road, did you evaluate it in terms of what would
17 happen if the bus rolled over to the right or
18 rolled over to the left?

19 A. You know what? It depends where it went. Depends
20 where it went. I mean, you know, without actually
21 having the mark still there, I didn't know exactly
22 where it would have -- you know, where it would
23 have went.

24 I certainly know where the marks were on the
25 roadway --

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1 Q. Okay.

2 A. -- where -- exactly where she would have ended up
3 over there.

4 Q. Can we agree that in light of not knowing where

5 she'd went, it's hard for you to make a statement
6 that there wasn't a safe escape route to the
7 right?

8 A. I didn't think there was a viable escape route.

9 Q. Okay. I want you to go look at that scene before
10 this accident and be ready to talk about those
11 trees; okay? I'm just telling you that we're
12 going to talk to you about -- and I've got
13 pictures, so I'm just telling you.

14 MR. HAYNES: Objection. Form.

15 BY MR. HILL:

16 Q. Let me ask you this: You agree that the movement
17 to the right of the bus was driver steering?

18 A. Absolutely not.

19 Q. Okay. You think the initial movement to the right
20 was not driver steering?

21 A. Absolutely not.

22 Q. Okay. Have you read Fugger's most recent depo?

23 A. You know, I've read -- I read -- I read the first
24 part where you questioned him. Then I read parts
25 of the second part.

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1 Q. Okay. What do you think forced her onto the
2 shoulder, then?

3 A. You mean toward the right?

4 Q. Yep.

5 A. Yeah. Yeah, the tag axle did.

6 Q. Okay. That's what you think?

7 A. Yes.

8 Q. Okay. You have read her deposition?

9 A. I have read her deposition.

10 Q. Uh-huh.

11 A. I have.

12 Q. All right. Let me ask you this: What's the
13 Federal Motor Carrier Safety Administration? You
14 worked in Government. What would you call the
15 Federal Motor Carrier Safety Administration?

16 A. Both a rule-making and -- they basically enforce
17 the commercial vehicle rules. They're advocates
18 for commercial vehicle safety. They conduct --
19 they and their subsidiaries, which would be the
20 States that conduct audits or inspections of motor
21 carrier facilities.

22 Q. Okay. You'd agree with their admission statement
23 that their mission is to prevent commercial motor
24 vehicle-related injuries and deaths?

25 A. That's correct.

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1 Q. Okay. When you were at NTSB, was part of your job
2 and one of your responsibilities to be familiar
3 with the Federal Motor Carrier Safety regulations?

4 A. Familiar. I'm not a walking encyclopedia, but,

5 yes, I used them. I was familiar with --
6 certainly, like 393, certainly. Certain sections
7 of it I was more familiar with than others.
8 Q. Okay. Do these regulations govern motor coaches?
9 A. They do.
10 Q. Okay. Do they govern motor coach operation?
11 A. Certain ones, sure, they do.
12 Q. Okay. With regard to driving and safety
13 regulations as they relate to motor coaches
14 specifically in the regulations, we can agree that
15 they -- some of these were drafted specifically to
16 govern motor coaches?
17 A. A few of them.
18 Q. Okay.
19 A. Yes, a few of them.
20 Q. I want to ask you if you agree with a few
21 statements; okay?
22 A. Sure will.
23 Q. Okay. Do you agree with the statement that you
24 should reduce your speed by a third if you're in a
25 commercial motor vehicle and it's raining?

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1 A. By a third?
2 Q. Yes.
3 A. Not all -- not under all circumstances.
4 Q. Okay. Do you agree that you should reduce your
5 speed by a third if you're in a commercial motor
6 vehicle and the roads are wet?
7 A. In and of itself, wet, no. There are so many
8 variables of rain and wetness and types of
9 roadway. But I certainly believe that overall --
10 overall when it's wet or raining, in most cases
11 you should reduce your speed some.
12 Q. Do you agree you should error on the side of
13 caution?
14 A. Error on the side of caution?
15 Q. Yes.
16 A. Generally, yes.
17 Q. Yeah.
18 A. Yes, absolutely.
19 Q. I mean, if it's a close call with regard to how
20 wet the road is, don't you think it would be
21 smarter to be more cautious than less cautious in
22 that situation?
23 A. If the road's wet and if it's raining.
24 Q. "Yes"?
25 A. If the road's wet and it's raining, yes.

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1 Q. So if it's raining but the road's not wet, or it's
2 wet but it's not raining, then you don't think you
3 should slow down?
4 A. Well, if it's raining, I would say the roads are

5 going to be wet.
6 Q. Say it just starts. Don't slow down?
7 A. Just starts? It just depends if it's -- if it's
8 sprinkling and I'm on a long straight away, I may
9 not -- and I'm going 65, I may not slow down.
10 Q. Okay.
11 A. If it starts raining heavier, then I'm going to
12 slow down.
13 Q. Okay. Do you think in a commercial motor vehicle
14 that braking in a curve can cause the wheels to
15 lock up and the vehicles to skid?
16 A. Do I think that? Again, there are so many
17 variables. There are so many variables, to answer
18 your question generically, yes.
19 Q. We are on a curve in the subject accident. Would
20 you agree?
21 A. A mild curve, 2700-foot -- about 2700-foot radius,
22 which would be like a mile circle, if you were
23 driving a mile circumference.
24 Q. So is it a curve or not?
25 A. It's a curve.

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1 Q. And you would agree that Ms. Morado did brake?
2 A. At some point she did, yes.
3 Q. Okay. What point do you think she started to
4 brake?
5 A. Well, if there were no marks, it's hard to say --
6 at a point where you don't see any marks, it's
7 hard to say, you know, whether she was braking or
8 how much she was braking. If you start to see
9 marks -- if you start to see marks, then -- and
10 you can specifically identify those as brake
11 marks, you can say pretty sure -- pretty
12 positively that she's braking.
13 Q. Okay. When ya'll did your testing in Uvalde, you
14 were able to replicate some wavy lines. Is that
15 correct?
16 A. That's correct.
17 Q. Do you know what tire those came from?
18 A. You know, I don't recall. I'm pretty sure that --
19 I'm pretty sure they came from at least -- at
20 minimum, the tag tire. They didn't come from the
21 steer tire.
22 Q. Okay.
23 A. At minimum they came from the back, anyhow.
24 Q. How about the subject accident? Wavy skid marks,
25 do they -- you know if they came from the tag or

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1 the drive axles?
2 A. Looks to me like both. Didn't start out real
3 wavy, but it looked to me like both of them were
4 waving.

5 Q. Why was no testing done to see if a flailing drive
6 shaft at 70 miles an hour with brake application
7 could cause wavy brake marks?
8 A. Because we didn't know how to do it.
9 Q. Okay. You knew how to blow out a drive shaft on
10 static testing; right?
11 A. On static testing.
12 Q. Okay. Why couldn't you do the same thing just
13 driving down the Uvalde Test Track?
14 A. Down the Uvalde Test Track?
15 Q. Uh-huh.
16 A. A couple things, a couple reasons. One, you would
17 have to -- like, for example, when they did the
18 testing in Nappanee, they didn't know when it was
19 going to break. They weakened some components or
20 cut some components, but they didn't know, you
21 know, when it was going to break, so that would be
22 a problem.
23 And if the drive shaft happened to break in a
24 bad area where there was a bridge or there wasn't
25 a totally open field, it's not -- it's not just to

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1 get involved and getting in a roll-over because I
2 was willing to do that, if we needed to do it.
3 But it's the idea of getting in a roll-over at a
4 place possibly -- possibly, getting in a place
5 where you're going to lose control where there's
6 maybe a bridge or someplace where it could really
7 be bad, where you could be hurt.
8 So it was -- it was -- as a matter of fact, I
9 was one that suggested it. I said, "I'll" -- I
10 says, "I'm willing to do it." And -- and we
11 talked about it, and it was just considered too
12 impractical.
13 Q. You could have put outriggers on the bus, couldn't
14 you have?
15 A. You could have put outriggers on, but it probably
16 wouldn't have the same dynamics, the same
17 dynamics. But yes, it's possible, you know.
18 Q. But you're not worried about the dynamics of a bus
19 with a hydraulic ram attached to the tag axle?
20 A. At the speeds we did it, the lower speeds, I
21 wasn't. When we got up to the last tests, I was
22 concerned, yes.
23 Q. All right. Did Ms. Morado know when the drive
24 shaft was going to break in this vehicle?
25 A. I'd say she did not.

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1 Q. Was she able to pick the location which her drive
2 shaft broke?
3 A. She certainly could not.
4 Q. All right. So as you sit here, you don't know one

5 way or the other whether a failing drive shaft can
6 actually cause those wavy skid marks or not?

7 MR. HAYNES: Objection. Form.

8 THE WITNESS: I would say --

9 MR. HILL: What's the objection?

10 MR. HAYNES: Assumes facts not in
11 evidence because he didn't say that the
12 actual flailing drive shaft caused those
13 wavy marks. It was what was caused by the
14 flailing drive shaft.

15 MR. HILL: Okay.

16 THE WITNESS: I believe those marks,
17 the waviness was caused when the castering
18 mechanism was forward.

19 BY MR. HILL:

20 Q. That's not my question. As you sit here, you
21 don't have evidence one way or another if that
22 drive shaft could have caused it when it broke
23 because you don't have any testing showing what
24 happens when a drive shaft breaks on a moving
25 vehicle; right?

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1 A. We don't have any tests to show, right.

2 Q. Do you have any literature talking about that?

3 A. We don't have any -- I mean, I don't even know if
4 there's any literature available.

5 Q. Have you reviewed any scenes or any similar
6 accidents where you can compare whether or not a
7 broken drive shaft with brake application could
8 cause these wavy skid marks?

9 A. Probably the closest I have to that was following
10 the tractor-trailer where he lost his -- where he
11 lost a drive shaft and the trailer brakes locked
12 up, and I didn't notice anything like that.

13 Q. Okay. Drive shafts on an 18-wheeler, the dynamics
14 of an 18-wheeler are significantly different than
15 a bus; right?

16 A. They're different. They're different. There's no
17 question about it.

18 Q. Is it fair to say your only evidence to support
19 your opinion that the caster is what caused wavy
20 marks is the test you did in Uvalde?

21 A. The wavy marks to me are insignificant. It was
22 just interesting that we saw the wavy marks in
23 Uvalde that seemed similar to what we saw -- what
24 I saw in the photo.

25 Q. What were you trying to prove in Uvalde, then?

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1 What was the point of the testing?

2 A. The point of the testing was when we -- when we
3 did the testing at South Bend, it was to expand on
4 the testing we did at South Bend. South Bend we

5 all -- we just kept going around that -- they had
6 a curve set up approximately 500-foot radius, and
7 we kept going around there and braking. And, you
8 know, we learned some information, some
9 information.

10 But to activate the -- to activate the tag
11 axle out on a -- on a track, on a roadway, on a
12 roadway without trying, without turning like that,
13 that was -- that was a -- like I said, that was a
14 500-foot turn. The accident curve was
15 approximately 2700 feet. And we felt this would
16 be -- you know, would be more realistic.

17 Q. Okay. It's just an extension of your South Bend
18 testing?

19 A. It was an extension. It was an extension.

20 Q. Let me ask you this: In your 25 years as an
21 investigator in NTSB, was one of your jobs to
22 evaluate, analyze, and draw opinions with regard
23 to driver reactions in different situations?

24 A. It certainly was.

25 Q. Okay. Let me ask you this: When you were an NTSB
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1 investigator and these were the facts, what would
2 be your opinion; okay? If the facts were that a
3 driver while driving down the road heard noises,
4 vibrations to the extent she asked other
5 passengers to help her out, but she never took it
6 off of cruise control, would your opinion be that
7 she should have slowed down or pulled over, or
8 that she should have just kept trucking along,
9 even though she was noticing obvious problems with
10 the bus?

11 MR. HAYNES: Objection. Form.

12 THE WITNESS: Are we -- are we trying
13 to represent what happened in this
14 accident?

15 BY MR. HILL:

16 Q. I'm asking you a hypothetical.

17 A. Hypothetically?

18 Q. Uh-huh.

19 A. Okay, because you said things that --

20 Q. We'll get there.

21 A. Okay. Okay. I'm going to have to ask you -- and
22 I'm not trying to be, you know, arrogant in any
23 way, but could you repeat that question?

24 Q. Sure. If the facts are this: The driver
25 testifies that prior to an accident occurring, she
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1 heard vibrations in the bus, she heard noises in
2 the bus, she had enough time to call another
3 passenger to walk up to the front and then walk to
4 the back of the bus to look at it, but she never

5 took it off of cruise control and she never pulled
6 over, would your opinion be that she should have
7 done something different when she noticed all
8 those problems?

9 MR. HAYNES: Objection. Form.

10 THE WITNESS: If that was the
11 hypothetical case, you know, I would say,
12 yeah, she probably should have slowed up,
13 you know, if that was the case.

14 BY MR. HILL:

15 Q. Let me ask you this: Are you aware that there
16 were 40 passengers on the bus?

17 A. Something like that.

18 Q. Forty plus. Have you read all of their
19 depositions?

20 A. I have not.

21 Q. Okay. Have you read any of their depositions?

22 A. I've only read statements.

23 Q. Okay. Are you aware some of those statements talk
24 about they heard noises and vibrations from the
25 time they left San Antonio?

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1 A. That I am -- that I am not aware of.

2 Q. All right. You might want to read the driver
3 depos, then. I'm just telling you -- or the
4 passenger depos.

5 A. I read --

6 Q. Passengers.

7 A. I take it that your questioning -- you were trying
8 to represent this accident, and you mentioned the
9 cruise control.

10 Q. I'm going to ask the questions.

11 A. Okay.

12 Q. I understand. Were you aware that the driver
13 stated in her deposition that she heard noises and
14 vibrations prior to the accident?

15 MR. HAYNES: Objection. Form.

16 THE WITNESS: She heard -- I was
17 aware of certain noises.

18 BY MR. HILL:

19 Q. Okay. Are you aware that she stated they were to
20 the extent that she asked another passenger on the
21 bus to get up and help her investigate it?

22 A. No.

23 Q. Okay. Are you aware there was a guy named
24 Efrian Domiguez on the bus who was a terminal
25 manager from Americanos in Brownsville?

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1 A. I'm aware of that.

2 Q. Okay. Did you not read the part of her deposition
3 where she talked about speaking to him about what
4 she was hearing on the bus?

5 A. Speaking. The only part that I saw was speaking
6 to him about this beeping she heard -- she thought
7 that she heard.
8 Q. All right. Let's take this in turn. If you're
9 driving a bus and you start hearing loud noises
10 that you don't know what they are or don't
11 understand, should you keep going? Or should you
12 pull over and figure out what's causing these
13 noises?
14 A. Depends what that noise is.
15 Q. We talked about earlier you should error on the
16 side of caution; right?
17 A. Yeah, but, again, one more time, it depends what
18 that noise is.
19 Q. Okay. Should a driver be trained in determining
20 what noise is a safety consideration and which
21 ones are not?
22 A. Well, I've been figuring that out for the last
23 year and a half, and it's not a simple -- it
24 wouldn't be a simple thing to train for, "If you
25 hear this noise, it's this. If you hear this

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1 noise, it's that."
2 Q. Are you aware that the process at Americanos was
3 that if there were problems with the bus, they
4 were supposed to call over, they were supposed to
5 pull over, call dispatch, and get directions from
6 there? Are you aware that was the internal
7 process?
8 A. I was not aware of that, but that would be a
9 sensible thing to do. That would be a normal -- a
10 normal type policy --
11 Q. Okay.
12 A. -- for any -- I would think any bus company.
13 Q. All right. How loud does a noise have to be
14 before you think a driver should pull over and
15 figure out what it is?
16 A. It's not how loud. It's do you feel anything?
17 Does it feel like a light -- there's certain
18 vibrations that feel light. There's others that
19 feel heavy that are affecting the whole bus.
20 There's vibrations that could be just from some
21 loose, little -- a loose screw outside, or the
22 flap for the outside door opener. The spring's
23 broken and it's flap, flap, flap.
24 I mean, there's -- there's all types of
25 noises, so, you know, if you could try to give me

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1 a little bit more information, I'll try to -- I'll
2 try to answer. But you say how loud does it have
3 to be? You know, again, it depends what it is.
4 Q. Let's just say the driver has no idea what it is.

5 You don't think they should error on the side of
6 caution and figure it out; they should keep
7 plugging along?

8 A. Again, it depends on the type. I would say if
9 they felt that the whole coach was shaking or
10 something, yes.

11 Q. Okay. Do you think the better policy is, then,
12 just let the driver determine what's important and
13 what's not?

14 A. That's the ultimate reality of any commercial
15 vehicle driver today. They have to make those
16 decisions every day that they hear something, feel
17 something, okay? Is it a tire? Is it a rough
18 spot on the tire? You know, is it something, you
19 know, loose in the engine compartment? Is it a
20 vibration in the back racks, in the racks?

21 So you know --

22 Q. Let's just --

23 A. Without having a better idea of what she knew --
24 or what she heard, the main thing that I read was
25 her -- the beeping, the beeper.

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1 Q. Let's talk in hypotheticals for a second since you
2 haven't read some depositions in this case.

3 MR. HAYNES: Objection. Form.

4 BY MR. HILL:

5 Q. If the testimony is and the jury believes that the
6 rear end of the bus was vibrating significantly
7 from the time it left San Antonio, do you think in
8 that situation the driver should pull over and
9 investigate it, or keep plugging along at maximum
10 speed limit?

11 A. If the rear of the bus -- she obviously had
12 somebody with her. If the rear of the bus was
13 vibrating -- was vibrating, I would never say --
14 it doesn't make sense. It would -- it would make
15 sense to, you know, pull off. If that were the
16 case, it would make sense to pull off.

17 Q. What if the testimony is that in the back of the
18 end of the bus passengers are all going to testify
19 that they heard banging noises and vibrations from
20 at least a couple miles up from the loss of this
21 drive shaft? If that's the testimony, and the
22 jury believes that, do you think the driver should
23 have pulled over, or keep going 68 miles an hour?

24 MR. HAYNES: Objection. Form.

25 THE WITNESS: You know, the only
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1 reason I hesitate to answer that is
2 because, you know, I don't know what they
3 heard. And I will make it my business
4 to -- to read those depositions.

5 BY MR. HILL:

6 Q. You haven't answered my question.

7 A. Your question is, if the passengers heard

8 vibrations --

9 Q. Felt vibrations and heard noises from miles up

10 from the loss of this drive shaft, and some all

11 the way to San Antonio, do you think the driver

12 should have pulled over or kept going maximum

13 speed limit?

14 A. The point is -- one more time, the point is --

15 MR. HAYNES: Objection. Form.

16 THE WITNESS: -- where are those

17 noises coming from? You know, if it's from

18 the time they left San Antonio, again, it

19 could have been a pre-existing condition

20 with a flat spot on the tire.

21 BY MR. HILL:

22 Q. Could have been a pre-existing condition with a

23 poorly maintained bus?

24 MR. HAYNES: Objection. Form.

25 THE WITNESS: I -- you know, I do

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1 not -- I do not know that. I will -- the

2 only thing that I will say is that I will

3 make it my business to read --

4 BY MR. HILL:

5 Q. You just threw out a flat spot on a tire. That

6 would be poor maintenance.

7 A. Well -- well, that -- these buses didn't have ABS

8 brakes on them. This particular model didn't have

9 ABS brakes on, and, you know, it's not that hard

10 to get a little flat spot on the tire. And it's

11 not a -- not necessarily -- it's a vibration that

12 you can feel. It's vibration that you can feel.

13 It's not -- I'm not saying it's -- and

14 it's -- it's not a serious problem. It's just an

15 irritation.

16 So, again, one more time. One more time, you

17 know, if some way -- and she had that guy on the

18 bus. What's his name, Domina --

19 MR. HAYNES: Dominguez.

20 THE WITNESS: Dominguez. She had him

21 on the bus. I don't know why he wouldn't

22 have come back and said -- he's apparently

23 a guy that's been around a long time.

24 BY MR. HILL:

25 Q. He's 26 and he's not a CDL. Do you understand

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1 that? He's not a driver.

2 A. Okay.

3 Q. He's a manager.

4 A. Okay. All right.

5 Q. I mean, you going to trust a manager to make
6 decisions over a driver?
7 A. Again, it depends what his background is.
8 Q. Ticket guy.
9 A. A ticket guy? No, I wouldn't trust him.
10 Q. You going to trust a guy without a CDL over
11 somebody that as their professional job drives a
12 bus?

13 MR. HAYNES: Objection. Form.

14 THE WITNESS: Depends. There's
15 nothing magic about a CDL.

16 BY MR. HILL:

17 Q. All right. So let me just ask you this: Are you
18 aware of any Federal Motor Carrier Safety
19 regulations that state in an instant when a driver
20 feels vibration, noises, et cetera, they should
21 pull over their bus until they can determine
22 whether or not it's a safety condition? Are you
23 aware of any regulations that say that?

24 A. Not specifically.

25 Q. Okay. If one of those exists, do you think
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1 Ms. Morado acted inappropriately in driving this
2 bus?

3 MR. HAYNES: Objection. Form.

4 THE WITNESS: If one of those
5 regulations -- if that regulation exists in
6 the wording you just gave me, right --

7 BY MR. HILL:

8 Q. Yes.

9 A. -- in the wording you gave me?

10 You know, one more time, I will say -- I will
11 say it depends what type of vibration she felt,
12 when she felt it.

13 But it's there. That regulation's there for
14 a purpose. And if it is -- if it's in that
15 wording that you say it only makes sense that if a
16 driver feels that there's something mechanically
17 wrong -- you know, wrong with the bus, that they
18 should pull up or slow up till they get to the
19 next point where it can be checked out; one or the
20 other.

21 Q. Let me ask you this.

22 A. One or the other.

23 Q. I want you to do something for me. I want you to
24 explain to the jury as you would if you were
25 training a driver to drive buses full of people

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1 what vibrations and what noises, and to the extent
2 should they be so concerned that they actually
3 pull a bus over? I want to understand what the
4 standard is, Mr. Yohe, is saying should be

5 considered by these drivers, and whether they
6 acted appropriately or not; okay?
7 A. First of all, I don't set standards.
8 Q. You are in this case.
9 A. If there is a vibration, quit frankly, if it
10 sounds like a heavy metal thing, a heavy metal
11 thing -- and, again, it's a judgment call -- if
12 it's a heavy metal thing, I would say by all means
13 get off the highway.
14 If it's something, a tapping or rattle with
15 wind noise, I'd say no problem. You know, no
16 problem, keep going.
17 If it's an -- if it's a flat spot in the
18 tire, you know, you keep going. So it isn't
19 individual -- the drive -- it is up to the driver
20 to pick something like that out and say this
21 thing -- you know, this thing sounds serious or
22 this one doesn't.
23 In, you know, this particular case, you know,
24 I would never say that she didn't hear noises that
25 she shouldn't have. I'm not prepared to say that
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1 one way or another --
2 Q. Okay.
3 A. -- that she didn't hear noises that maybe she
4 should have, you know, interpreted differently and
5 taken -- and taken a different course of action.
6 Q. And we're back to the real quick, which is if you
7 were training these drivers -- you've investigated
8 accidents for 25 years. If you were training
9 motor coach bus drivers, what would you tell them
10 in regard to when do you need to pull over, when
11 is it a safety concern that making your schedule,
12 even though you have left the terminal late is
13 more important?

14 MR. HAYNES: Objection. Form.
15 THE WITNESS: Okay. First of all --
16 first of all, most companies have a policy
17 that if you start out late, you leave
18 late -- that you would leave late.
19 Secondly, you know, I have driven a
20 lot of buses. And it's very rare that I
21 hear a noise that says, "You know what, I
22 better stop." And, you know, even in
23 the -- even in the over 200 DL3's I've
24 driven at Nappanee, I've stopped like twice
25 because I've heard a noise. And neither
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1 time is significant.
2 It's not that often that you would
3 hear a noise that you feel like "I have to
4 stop." It's just not a common occurrence,

5 and I doubt it gets a lot of attention
6 in -- you know, in training. I doubt that
7 that gets a lot of attention.
8 Tires, you know, obviously if a bus
9 is pulling, maybe, you think there's a tire
10 problem, that's one thing. But as far as
11 hearing noises, hearing noises that would
12 make a driver stop, it's just -- it's not
13 a -- I'm not saying it doesn't happen. It
14 does happen. But I'm going to say that
15 would be a small part of anybody's training
16 of all the things you have to train for.
17 BY MR. HILL:
18 Q. Let me ask you this, then I'll wrap it up: You've
19 read her deposition and you've read some
20 statements of the drivers.
21 A. I read the driver's. I haven't read the
22 passengers, right.
23 Q. Let me ask you this: If she had just pulled over
24 the bus as soon as she started hearing any noise,
25 beeping, any noise that she heard, if she had just
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1 pulled it over at that point, do you think she
2 could have safely come to a stop?
3 A. At that point when she heard the noise?
4 Q. Yes.
5 A. Yes.
6 Q. All right. That's all I've got.
7 THE VIDEOGRAPHER: Off the record at
8 4:05 p.m.
9 (Off the record.)
10 THE VIDEOGRAPHER: We're now back on
11 the record at 4:06 p.m. Tape No. 6.
12 Please, continue.
13 (Defendants' Exhibit No. 35 marked
14 for identification.)
15 MR. HAYNES: I'm just going to mark
16 our objections to the Subpoena Duces Tecum
17 as Defence Exhibit 35. I'm not going to
18 have any questions for Mr. Yohe today.
19 Do you have some more, John?
20 MR. DACUS: I have a few more.
21 THE WITNESS: Okay.
22 REDIRECT EXAMINATION
23 BY MR. DACUS:
24 Q. Mr. Yohe, since the objections to the Subpoena
25 Duces Tecum have been marked, did you withhold any
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1 documents from what you brought today based on the
2 objections that the attorneys for
3 Greyhound Americanos lodged to the Subpoena Duces
4 Tecum?

5 A. You know, I'm not sure -- have I withheld any
6 documents?
7 Q. Yes, sir. Did you say, well, they've objected to
8 that, so I'm not going to bring it today?
9 A. Not to the best of my knowledge, sir.
10 Q. Best of your knowledge you brought everything the
11 Subpoena Duces Tecum called for; correct?
12 A. To the best of my knowledge.
13 Q. Okay.
14 A. I have.
15 Q. Now, with regard to the Mount Gretna,
16 Pennsylvania, bus that you inspected at Richmond.
17 A. I didn't really inspect it. I briefly saw it.
18 Q. Okay.
19 A. I was underneath in a pit and saw it.
20 Q. Did you make any determination during this brief
21 inspection that you conducted of that bus that the
22 exact same thing happened with that bus as
23 happened in the bus in this case?
24 A. I never made that kind of determination. I made
25 the determination that the undercarriage looks
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1 similar to the one -- to the one -- to 60630 and
2 to the stationary testing we did with the drive
3 shaft --
4 Q. Okay.
5 A. -- with the drive shaft escaping.
6 Q. And you paid no attention at all to the accident
7 that occurred involving the Mount Gretna,
8 Pennsylvania, bus; correct?
9 A. I don't want to say I paid no attention. I mean,
10 I've never seen any reports on it.
11 Q. Okay. Didn't go to the accident scene?
12 A. Didn't go to the accident scene. I just -- you
13 know, I understood that the driver had a
14 control -- control problem after the bus started
15 going out of control after the drive shaft
16 failure.
17 Q. Who told you that?
18 A. What's that?
19 Q. Who told you that?
20 A. I don't know whether it was Tamara. It's possible
21 it could have been Tamara. It could have been
22 Alex. Could have been Rodney back in Richmond. I
23 was with all those people back there, so I'm
24 not -- I'm not sure who told me for sure.
25 Q. Okay. By "Tamara," you mean Attorney Tamara
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1 Rodriguez?
2 A. Yeah.
3 Q. And by "Alex," you mean?
4 A. Alex Cook.

5 Q. And who is Rodney?
6 A. Rodney is the -- he's the maintenance guy we were
7 with back in Richmond.
8 Q. Okay. And you say "we," what -- who were -- who
9 is "we"?
10 A. What do you mean?
11 Q. The people that were with you when you looked at
12 this coach in Richmond.
13 A. Well -- well, those -- the people that were with
14 me back there was -- I believe it was just Alex
15 and Rodney. But Tamara and I had talked about
16 this other accident.
17 Q. Okay. In fact, you were directed to go look at
18 that coach. Is that correct?
19 A. I was not directed to look at that coach, no.
20 Q. Was it suggested to you?
21 A. It was incidental. It was incidental to a meeting
22 in Richmond.
23 In Richmond is where we met before going up
24 to DOT. It was not -- as a matter of fact, it was
25 actually incidental that I looked at it.

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1 Q. Okay.
2 A. It was not a -- it was not part of any objective
3 that I know of.
4 Q. Did you look at whether there was any damage to
5 the left side of the coach in the rear of that
6 coach?
7 A. Sir, I honestly don't remember where the damage
8 was.
9 Q. Did you look at whether the tag axle in that coach
10 had been shifted to the curb side by the impact?
11 A. I did not. The main thing I looked at was I saw
12 the indentations. I saw the -- the bent tie rod.
13 Q. Did you make any photographs of any of the damage
14 that you saw?
15 A. No, I did not.
16 Q. Did you obtain any photographs that anyone else
17 had taken to the damage to that coach?
18 A. I did not.
19 Q. Did you see -- go to the scene of that accident to
20 try to understand what happened in that accident
21 at all?
22 A. I didn't because I was not asked to. You know, I
23 was not asked to do that. Nobody got killed. I
24 don't know what the injuries were like, but nobody
25 was killed. And I was not -- not asked to do

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1 that.
2 Q. And did you have enough time to inspect that coach
3 to suggest that the incident that occurred with
4 that coach was similar in any way to the accident

5 in question in this case?

6 A. The damage to the tag axle mechanism? Yes, it
7 looks -- there were some similarities. It was
8 obvious the drive shaft had escaped, became
9 un-contained, was un-contained.

10 Q. Okay. The damage to the tag axle mechanism, I
11 need to know exactly what it is you're talking
12 about when you say "the tag axle mechanism."

13 A. Okay. That's a very broad -- my recall on that
14 bus was the tie rod had some bow in it. Two
15 things that I noticed specific is the tie rod had
16 some bow in it and there were -- there were heavy
17 indentations around the truss, the casting
18 truss, and that the -- looked like the tag axle
19 had escaped.

20 Q. And did you attribute whatever occurred in that
21 accident to a driver losing control as a result of
22 a drive shaft escaping? Is that what you assumed?

23 A. You know what -- you know what, I didn't give it a
24 whole lot of thought. I just looked at the
25 damage. And if there was no other incidents, I

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1 feel like -- well, the bottom line is -- the
2 bottom line is, sir, I didn't -- I just looked
3 and -- I looked at it, saw the indentation, saw
4 the broke bowed tie rod --

5 THE REPORTER: Saw the broke tie rod?

6 THE WITNESS: The bent tie rod.

7 MR. HAYNES: Bowed.

8 THE WITNESS: And it just -- it
9 looked similar.

10 BY MR. DACUS:

11 Q. Okay.

12 A. And I probably didn't spend more than a minute
13 under it.

14 Q. Okay. And did you spend any time at all looking
15 at the damage to the attachment of the tag axle to
16 the body of the coach?

17 A. The damage to the tag axle, what, relative to the
18 body of the coach?

19 Q. Yeah. The attachment of the tag axle to the body
20 of the coach. Did you spend any time looking at
21 that?

22 A. No. No.

23 Q. So you went under the bus and looked at the tie
24 rod?

25 A. Right there, just looked at the -- looked at the
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0411

1 tie rod and -- and saw the -- saw the bowed tie
2 rod. I remember seeing the indentations that
3 looked similar to -- that looked similar to --

4 Q. But you didn't conclude that that accident was at

5 all similar to the accident in this case. Is that
6 correct?
7 A. You know what, I did not. I did not. The --
8 Q. And --
9 A. The damage looked similar, but -- the underneath
10 looked similar, but I -- I have no way of
11 comparing it. I have no way at all of comparing
12 it, nor do I plan to --
13 Q. Okay.
14 A. -- compare it, or even mention it, unless I'm
15 specifically asked.
16 Q. Did you -- you're not able as an accident
17 investigator to say that you've investigated that
18 accident and know anything about the accident that
19 occurred in Mount Gretna. Is that correct?
20 A. That is correct, sir. That is correct.
21 Q. And you're not -- did you use that, what you saw
22 in the coach involved in the Mount Gretna,
23 Pennsylvania, incident in any of your presentation
24 to NHTSA the next day?
25 A. I didn't. Ale- -- I mean, it was on that
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1 presentation.
2 Q. Okay. And Alex Cook presented that part to the
3 NHTSA?
4 A. I believe it was on that presentation.
5 Q. Did you add any of the weight of your opinions and
6 background to suggesting that Mount Gretna,
7 Pennsylvania, accident was an accident based on
8 the drive shaft separation in your presentation to
9 NHTSA?
10 A. I did not.
11 (Mr. Hill leaves deposition proceeding.)
12 BY MR. DACUS:
13 Q. Did Alex?
14 A. I'm pretty -- you know, I think there was a slide
15 there. You know, I think there was a slide there.
16 Q. You don't --
17 A. Again, I'm just going strictly by memory. I don't
18 have that presentation. And so I, again -- I'm
19 just going strictly by memory.
20 Q. From your experience with motor coaches, you know
21 that motor coaches can -- if they're properly
22 maintained, can last for 10, 15, 20 years; right?
23 A. I've got one more than 30 years.
24 Q. But it does take maintenance?
25 A. Absolutely.
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1 Q. And every year they get older, it takes more and
2 more maintenance, doesn't it?
3 A. I agree.
4 Q. And -- but if you're going to operate a coach like

5 that, particularly in line haul service, you've
6 got to keep maintaining the coach in keeping it up
7 to shape where it is operable, with its systems
8 working, the way that they did when the coach was
9 new; right?

10 A. That's the objective is to keep it running just
11 like it would -- you know, it's never going to be
12 exactly like when it's new, but you want it to be
13 dependable. You want it to be safe. And you want
14 it to be comfortable.

15 Q. And you want all the systems to be operating?

16 A. You want everything operating.

17 Q. You don't want air systems to be inoperative to
18 any of the air operated parts or components, do
19 you?

20 A. That one I'm going to take issue with. Let me
21 just say generally, yes, I agree with you. In
22 nearly all the coaches, there could be certain
23 components that -- that after a period of years
24 you may see that it's not a big deal of whether it
25 operates or not, you know.

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0414

1 Q. Well, certainly air operated controls of tag axle
2 steering or air operated controls of tag axle
3 casting should be maintained. You would agree
4 with that?

5 A. You know, I would not because I know that there
6 can be -- there can be maintenance issues there,
7 and that many operators do lock them permanently.
8 (Mr. Hill reenters deposition room.)

9 BY MR. DACUS:

10 Q. Had the subject coach been locked permanently?

11 A. Not to the best of my knowledge.

12 Q. Okay. Well, if they're not locked permanently --

13 A. Then they need to be operating.

14 Q. Then they need to be operating. And they need to
15 still have air pressure to the air operating
16 systems; correct?

17 THE REPORTER: Can you repeat that
18 one more time?

19 BY MR. DACUS:

20 Q. They need to have air pressure to the air operated
21 systems; correct?

22 A. That would certainly be the sign of a properly
23 maintained bus.

24 Q. Okay. And you would agree that if the subject
25 coach did not have air pressure to the tag axle

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1 casting cylinder and to the tag axle steering
2 lock cylinder, then it was not a properly
3 maintained bus; correct?

4 A. That certainly -- that portion of the system was

5 not properly maintained.

6 Q. And it should have been if they're going to
7 operate this coach as a line haul coach carrying
8 passengers for hire; correct?

9 A. As long as the tag axle itself is locked and --
10 and as long as even the castering is locked, you
11 know, whether it -- if it -- even if it doesn't
12 work, it's still not dangerous.

13 Q. But, in fact, you know that the tag axle steering
14 was not locked in this coach at the time of the --
15 at the time it left San Antonio on this trip;
16 correct?

17 A. That it was not locked?

18 MR. HAYNES: Objection. Form.

19 BY MR. DACUS:

20 Q. Not permanently locked.

21 A. Oh, yes. Yes, I -- yeah, I don't -- I've never
22 heard -- you know, I do not believe it was
23 permanently locked.

24 Q. Okay.

25 A. I've never heard that. I didn't -- no, I have no
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1 reason to believe it was permanently locked.

2 Q. And yet this coach, as best you can determine, did
3 not have any air pressure to the tag axle
4 castering cylinder or to the tag axle lock --
5 steering lock cylinder at the time of this
6 accident. Is that correct?

7 A. Well, one more time. I'm not the one that made
8 that -- made those -- made that mechanical
9 examination to make that determination.

10 Q. But you don't have any real reason to dispute that
11 mechanical determination, do you?

12 A. No. You told me, and I have no reason to dispute
13 it. It's just first hand -- first hand it's like
14 that wasn't part of my assignment. And, quite
15 frankly, except from an operational standpoint, I
16 probably wouldn't be able to diagnose all that.

17 Q. Okay. Were you -- are you familiar enough with
18 the Fair -- Federal Motor Carrier Safety
19 Regulations to know that those regulations
20 actually require the operator of a coach to
21 maintain the systems of the coach in good
22 operating condition?

23 A. That sounds very familiar. Sounds very familiar.

24 Q. You don't doubt that, do you?

25 A. I don't doubt it. I don't doubt it.

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1 Q. Do you have any knowledge as to what, if anything,
2 your employer, ABC Bus Company, is doing in the
3 refurbishment of the 102DL3 coaches that Greyhound
4 is sending to it?

5 A. Do I have knowledge of the coaches -- you mean
6 what ABC is doing, the scope of the work?
7 Q. Yeah. Do you actually know what ABC is doing as
8 to each component or --
9 A. In a limited way I do.
10 Q. Tell me what the limited extent of your knowledge
11 is --
12 A. Yeah.
13 Q. -- about that.
14 A. Of course. Exteriorly, they're being painted.
15 Exteriorly, they're being painted. Seat covers.
16 They're putting remanufactured Detroit engines in
17 them, new brakes. If it's an Allison
18 transmission, they'll put a rebuilt one in, if
19 it's an Allison.
20 I don't know what the criteria is like on a
21 drive shaft. I really don't. I see a lot of new
22 drive shafts around there refurbished --
23 remanufactured, whenever they are. I don't know.
24 Many of the things are done on an as-needed
25 basis that just isn't automatically, you know,
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1 done.
2 Q. Do you know whether new U joints or remanufactured
3 U joints are put in the driveline of the
4 refurbished coaches by ABC bus?
5 A. You know, I don't know if they're go --
6 THE REPORTER: You don't know if
7 they're going what?
8 THE WITNESS: -- they're going in
9 every bus. I don't know that.
10 BY MR. DACUS:
11 Q. Do you know what lubrication, if any, is given to
12 refurbished buses?
13 A. I can guarantee you that they're all lubricated.
14 All the -- that's one thing we check. That's one
15 thing that we check.
16 Q. Do you know any other details about what happens
17 to drive axles, drive shafts, tag axles, or any
18 components of those at the ABC Bus Company
19 refurbishment?
20 A. I know that they're -- let me just say this, okay?
21 I'm willing to give you a certain amount of
22 information. A lot of it I don't have. And a lot
23 of it I feel like -- you know, because of what
24 goes on between ABC and Greyhound that -- I mean,
25 I can't think of any secrets, but I just want to
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1 say --
2 MR. HAYNES: It may be some
3 proprietary information for ABC?
4 THE WITNESS: That there may be. I

5 don't know. I really don't know that.
6 But regarding the tag axle, they're
7 all -- they're all being locked. If they
8 haven't been locked before they come in,
9 they're all being permanently locked.
10 Drive shafts, again, I do not know
11 if -- I've seen a lot of drive shafts there
12 and, you know, I don't know how many of
13 them are getting like new, rebuilt, or
14 nothing at all. I -- any -- a lot of -- a
15 lot of it has to do with individual buses.
16 Some of the components are replaced
17 by mileage. For example, engines are
18 300,000 miles. That has less than 300-,
19 they're going to -- they'll keep -- if it
20 has less than 300,000 miles, they won't
21 change it out. So they have a lot of it is
22 going on mileage, like I said. Mileage,
23 condition of the parts. Buses pretty well
24 gone through from front to rear.
25 ///

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1 BY MR. DACUS:
2 Q. Would it be fair to say that you have an
3 understanding of what is done, but in terms of
4 actually physically being present when the
5 refurbishment is done, you aren't?
6 A. Let me say this: Early on when we were getting
7 started, I had time to walk the floor, you know.
8 Now -- now, it's like have enough time, basically,
9 to get out of one bus and into another.
10 Q. Okay.
11 A. You know, I walk the floor. My role has changed.
12 I was -- I did not -- I did all the inspections
13 early on, especially the DOT-type brake
14 inspections. And we got -- once production
15 increased, I didn't have the opportunity, didn't
16 have the time to do all that.
17 And so -- and so basically my role has turned
18 into being a test driver, which was what I was
19 hired for originally.
20 Q. And do you know whether any changes have taken
21 place in the refurbishment program, or in what is
22 refurbishment or replaced or repaired since you
23 became a test driver rather than an inspector?
24 A. Not a lot. You know, I took two months off. I've
25 been there about a year and a half. I took two
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1 months off, and so I just came back like two weeks
2 ago. And so I'm not -- I know one of the changes
3 I've seen is there were certain things that were
4 100 percent -- 100 percent replacement.

5 And now if it's in good condition, like, for
6 example, if the brake lining is at 75 percent, why
7 change it out? You know what I mean? Things like
8 that.

9 The specific components, I really don't --
10 you know, I don't know.

11 Q. You are aware that the refurbishment program has
12 changed over time?

13 A. Some, yes.

14 Q. Okay.

15 A. Yeah, it has changed some.

16 MR. HAYNES: Am I going to make my
17 flight?

18 MR. DACUS: We may still have to do
19 some further work with both this witness
20 and the last one with regard to these
21 materials that they haven't seen, we
22 haven't seen.

23 MR. HAYNES: What I was going to ask
24 is whether he can take --

25 THE VIDEOGRAPHER: Do you still want
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1 this on the record?

2 MR. HAYNES: Yes.

3 We don't need the video record.

4 THE VIDEOGRAPHER: Okay. Off the
5 video record at 4:29.

6 MR. HAYNES: Is this 20? Is that
7 what this is?

8 THE REPORTER: I think it's 19.

9 MR. DACUS: Yes. All of this is 20.
10 This is part of 19.

11 MR. HAYNES: I was going to ask if he
12 could take 19 and 20 since you guys still
13 need to finish reviewing those. And I
14 don't know if they will have to be a
15 supplemental report, if there's anything
16 additional that changes any of the opinions
17 or --

18 MR. DACUS: Well, can you tell me,
19 Mr. Haynes, if -- whether the hard drive
20 that is part of Exhibit 19 --

21 MR. HAYNES: Is that what everybody
22 received yesterday?

23 MR. DACUS: -- is exactly the same as
24 the one that was sent to my office by
25 FedEx --

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1 MR. HAYNES: Yes.

2 MR. DACUS: -- yesterday?

3 MR. HAYNES: Yes.

4 MR. DACUS: Then, yes, if that -- if

5 that is true and you're convinced of it, he
6 can take this back. I would still like to
7 get our reporter to make a copy of these
8 disks that are part of Exhibit 20 and
9 the --
10 MR. HAYNES: I think you're also
11 getting that with Fugger's deposition
12 already.
13 MR. DACUS: Okay.
14 MR. HAYNES: Because, remember, he
15 had the same thing, and then you marked it?
16 And that was taken last Friday, I guess, at
17 his deposition.
18 MR. DACUS: Yeah, but in terms of
19 making copies, I think our reporter can
20 tell us, but I don't think it takes very
21 long.
22 MR. HAYNES: Shouldn't take very long
23 for the disk.
24 MR. DACUS: For a disk to be copied.
25 THE REPORTER: Do they do it in the
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0424

1 office? I don't know.
2 THE VIDEOGRAPHER: Yeah, Merrill's
3 does the production. But, yeah, it only
4 takes two seconds.
5 MR. HAYNES: Why don't you keep that,
6 then, and then that can be returned to
7 Mr. Yohe.
8 MR. DACUS: Yes.
9 MR. HAYNES: Then he can take the
10 500 gigabyte Exhibit 20.
11 Is that what --
12 MR. DACUS: Yeah, part of Exhibit 19.
13 MR. HAYNES: 19.
14 MR. DACUS: Yes.
15 THE WITNESS: I guess I can get
16 another copy from Tamara.
17 MR. HAYNES: Of Fugger's?
18 THE WITNESS: Yeah.
19 MR. HAYNES: They're going to return
20 that to you.
21 THE WITNESS: They will?
22 MR. HAYNES: Yes.
23 MR. DACUS: They're just going to
24 copy the disks, you know, what you
25 basically --
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1 THE WITNESS: Return it? The court
2 reporting --
3 You know, I have to stop up there to
4 get that other -- because I gave them a

5 flash drive from the last time, and so I
6 have to stop up there. So I can just --

7 THE VIDEOGRAPHER: That's what we can
8 do. We can make a copy so he can get that
9 back. Then we'll send that down to
10 Merrill, and then they can produce it to
11 you each.

12 MR. HAYNES: And I'm going to reserve
13 all questions to time of trial, so we're
14 off the record.

15 MR. DACUS: That would be fine.

16 THE REPORTER: Signature?

17 MR. HAYNES: Yes.

18 (Deposition concluded and witness excused
19 at 4:35 p.m.)

20 * * *

21
22
23
24
25
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0426
1 CERTIFICATE

2 I, Charolette A. Martinez, a Notary
3 Public, in and for the County of St. Joseph and
4 State of Indiana, do hereby certify there appeared
5 before me on, LAWRENCE YOHE, on Wednesday,
6 February 15, 2012, who was duly sworn to testify
7 the truth, the whole truth, and nothing but the
8 truth to questions propounded at the taking of the
9 foregoing deposition in a cause now pending and
10 undetermined in said court;

11 I further certify that I then and there
12 reported stenographically the proceedings at the
13 said time and place; that the proceedings were
14 then transcribed from my original shorthand notes;
15 and that the foregoing transcript is a true and
16 correct record thereof;

17 IN WITNESS WHEREOF, I have hereunto set my
18 hand and affixed my notarial seal this 23rd day of
19 February, 2012.

20
21
22
23
24 Charolette A. Martinez, CSR
25 Notary Public, State of Indiana
Residence: St. Joseph County
Commission Expires: 12-18-2014
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0427
1 IN THE DISTRICT COURT
197TH JUDICIAL DISTRICT

2 CAMERON COUNTY, TEXAS
3 DANIEL CAMPOS, INDIVIDUALLY AND AS)
4 REPRESENTATIVE OF THE ESTATE OF)
5 CHRISTINA LOZANO CAMPOS, DECEASED;)
6 MARIA L. LOZANO; ANNA B.)
7 SCHERMERHORN; ADRIANA L. PRUITT;) Cause No.
8 AMALIA F. HEATHER; AND DANIEL N.) 2010-03-001717-C
9 CAMPOS, et al,) Volume II
10 Plaintiffs,)
11 - vs -)
12 AMERICANOS, U.S.A., L.L.C.,)
13 FIRSTGROUP AMERICA, INC., GREYHOUND)
14 LINES, INC., IRMA MENDOZA MORADO,)
15 MOTOR COACH INDUSTRIES, INC., MCI)
16 SERVICE PARTS, INC. AND)
17 ARVINMERITOR, INC.,)
18 Defendants.)
19)
20)

11
12 LAWRENCE YOHE
13 I hereby acknowledge that I have read the foregoing
14 deposition transcript regarding the case of Campos vs.
15 Alvarado taken on February 15, 2012, and that the same is a
16 true and correct transcription of the answers given by me to
17 the questions propounded, except for the additions or changes,
18 if any, as noted on the attached errata sheet.
19
20

21 _____
22 LAWRENCE YOHE

23
24 Subscribed and sworn to me
25 this _____ day of _____,
2012, A.D.

26
27 Notary Public or Witness _____
28 State of _____
29 County of _____

30 My commission expires: _____
31 MIDWEST REPORTING, INC.

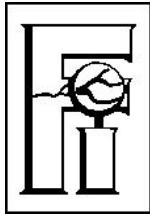
PE12-007

MCI

4-27-2012

Response 9

COATES, DAVID A



FOWLER INC.

*METALLURGICAL ANALYSIS
FAILURE ANALYSIS &
EXPERIMENTAL TESTING*

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February 15, 2012

John Dacus, Esq.
Hartline, Dacus, Barger, Dreyer & Kern,
6688 North Central Expressway, Suite 1000
Dallas, TX 75206

**Re: [REDACTED] v. Americanos, et. al.
Supplemental Report**

Fowler Inc. has been retained by the Law firm of Hartline, Dacus et al., representing Motor Coach Industries, MCI to provide Metallurgical Engineering services and consultation regarding the above referenced matter. The case concerns a single vehicle rollover accident that occurred on March 16, 2010 on Interstate Highway 37, near Pleasanton, Texas. A 1995 model 102-DL3 MCI passenger bus (VIN 1M8PDMPA2SP[REDACTED]) was traveling southbound when it left the roadway and came to rest on its side in the median. Following the accident, the driveshaft was found separated from the vehicle.

This report was prepared as a supplement to the Fowler, Inc. report dated August 11, 2011. One of the opinions expressed in that report is that "(s)eparation of the driveshaft initially occurred at the transmission U-joint". All parts of the transmission U-joint were not recovered after the accident, so the root cause of their separation could not be established, however, there does not appear to be any dispute amongst the parties that this indeed occurred. However, there is a difference in opinion as to when the differential end of the driveshaft separated from the differential yoke and when (and how) impact related damage to the tag axle locking mechanism occurred. To this end, Greyhound has produced some exemplar coaches which had either undergone testing or had allegedly suffered drive shaft separations during use, as described below.

An examination of a coach used by Greyhound (Americanos coach Unit # 60628) was conducted by the undersigned at Nappanee, Illinois on January 24th, 2012. Four additional coaches (unit #'s 60624, 6468, 6934 and 6352) were examined at the Greyhound facility in Richmond, Virginia on January 25th, 2012. The driveshaft, transmission yoke and

differential yoke from coach [REDACTED] was not present at Richmond, Virginia, but were later shipped to Fowler Inc. and visually examined there.

Background information

[REDACTED]

[REDACTED] was reportedly used during litigation related testing by Greyhound. A video was produced that shows the drive shaft of this coach, which was being driven by coupling the rear wheels to an adjacent coach, during and following a deliberately induced transmission U-joint separation.

[REDACTED]

Coach # 60624 was another [REDACTED] that had also been used for test purposes by [REDACTED], but had not suffered a driveshaft separation.

Coach # 6468 was a [REDACTED]. The only information provided regarding the driveshaft (on a work order) was that the "driveshaft is broken".

Coach # 6934 was a [REDACTED]. The only information provided regarding the driveshaft (on a work order) was that the "driveshaft came out. Driveshaft missing".

Coach # 6352 was a [REDACTED]. This bus has reportedly been involved in an accident in Lancaster County, Pennsylvania on 08/13/2011. According to the accident report, the bus struck the Jersey Barrier on its left side and subsequently rolled on its left side. There was no vehicle failure noted in the accident report.

Summary of observations

The coaches were examined visually and photographed. The following features were observed:

Coach # 60628

- Extensive impact damage was observed on the front of the chassis cross member below the latch arm assembly (Figure 1).
- Extensive impact damage was observed on the inside of the upper part of the latch arm assembly and the cross member to the rear of the latch arm assembly (Figure 2).
- Extensive impact damage was observed on the top of the tie rod below the latch arm assembly (Figure 3).

- The fixed tag locking plates showed evidence of upward impact damage on their right side. The center tag locking plate showed no evidence of similar impact damage (Figure 4).
- The driveshaft showed both ears of the yoke at the transmission end had been broken off by impact (Figure 5 and Figure 6).
- Review of the video of the driveshaft test did not reveal at what point the ears of the yoke at the transmission end broke off – however it appears that this occurred before the driven driveshaft exited the latch arm assembly toward the end of the test.

Coach # 60624

This coach had been used for test purposes, but had not suffered a driveshaft failure, so there were no observations pertinent to the issues addressed by this report.

Coach # 6468

- Extensive impact damage was observed on the inside of the lower part of the latch arm assembly (Figure 7).
- There was no evidence of impact damage on the front of the chassis cross member below the latch arm assembly (Figure 7).
- Extensive impact damage was observed on the inside of the upper part of the latch arm assembly and the cross member to the rear of the latch arm assembly (Figure 8).
- There was no evidence of impact damage observed on the top of the tie rod below the latch arm assembly.
- The tag locking plates showed evidence of only minor impact damage on their right side (Figure 9).
- The driveshaft showed both ears of the yoke at the transmission end had been broken off by impact (Figure 10 and Figure 11).

Coach # 6934

- Only minor impact damage was observed on the inside of the lower part of the latch arm assembly (Figure 12).
- There was no evidence of impact damage on the front of the chassis cross member below the latch arm assembly (Figure 13).
- Relatively minor impact damage was observed on the inside of the upper part of the latch arm assembly and the cross member to the rear of the latch arm assembly (Figure 14).
- There was evidence of impact damage observed on the top of the tie rod in the region of the tag locking plates (Figure 15). Note – the tie rod had been previously removed from the vehicle – the tag axle center locking plate was not produced for inspection.

- The fixed tag locking plates (previously removed from the vehicle) showed evidence of downward impact damage on the upper plate (Figure 16).
- The driveshaft from this vehicle was not produced for inspection.

Coach # 6352

- Impact damage was observed on the lower left of the latch arm assembly (Figure 17).
- There was no evidence of impact damage on the front of the chassis cross member below the latch arm assembly (Figure 17).
- Relatively minor impact damage was observed on the inside of the upper part of the latch arm assembly and the cross member to the rear of the latch arm assembly (Figure 18).
- There was no evidence of impact damage observed on the top of the tie rod below the latch arm assembly, the tie rod was bent downward (Figure 19).
- The left rear wheel on the tag axle had undergone side impact loading during the accident (Figure 20).
- The upper fixed tag locking plates showed evidence of upward impact damage on the right side (Figure 21).
- The driveshaft showed both ears of the yoke at the transmission end had been broken off by impact (Figure 22 and Figure 23).

Subject Coach

- Relatively minor impact damage was observed on the front of the chassis cross member below the latch arm assembly (Figure 24).
- Relatively minor impact damage was observed on the inside of the upper part of the latch arm assembly and the cross member to the rear of the latch arm assembly (Figure 25).
- No evidence of impact damage was observed on the top of the tie rod below the latch arm assembly.
- The fixed tag locking plates showed evidence of upward impact damage on their right side. The center tag locking plate showed no evidence of similar impact damage (Figure 26 and Figure 27).
- The driveshaft showed only one of the ears of the yoke at the transmission end had been broken off by impact (Figure 28).

Opinions

The numerous findings and opinions expressed in the report dated August 11, 2011 remain valid. Following is a list of further opinions, based on the examination of additional data, including the exemplar coaches produced by [REDACTED]:

- The extensive impact damage to the chassis components surrounding the driveshaft in the test coach (coach # 60628) is much more severe than that observed in the subject coach.
- Both ears of the transmission end yoke on the test coach (coach # 60628) were broken off – only one of the subject coach's was.
- The continued rotational input to the driveshaft following the transmission yoke separation does not reproduce the conditions that the subject driveshaft would have been subject to following its separation during the accident.
- There are significant differences in the witness marks and deformations observed between the subject bus and the other exemplar coaches produced.
- The bending of the tie rod in the exemplar accident coach (coach # 6352) probably occurred as a result of the side impact of the left rear wheel and not by impact by the driveshaft.
- The impact damage to the lower latch arm assembly and to the fixed tag axle locking plates probably occurred as a result of the side impact to the left side of the coach following the bending of the tie rod and separation of the tag axle locking plates and were caused by the impact induced separation of the driveshaft from the yokes.

I reserve the right to add to, or amend, these opinions based on additional discovery or information that may become available. The opinions expressed in this report are based upon the investigation and review of the of the data provided, the examination of the subject vehicle and components and of exemplar components and vehicles and the training and experience in metallurgical engineering and failure analysis of the undersigned.



David J. Coates, Ph.D., P.E.

/4429



Figure 1. Coach 60628.



Figure 2. Coach 60628.



Figure 3. Coach 60628.



Figure 4. Coach 60628.



Figure 5. Coach 60628.



Figure 6. Coach 60628.



Figure 7. Coach 6468.



Figure 8. Coach 6468.



Figure 9. Coach 6468.



Figure 10. Coach 6468.



Figure 11. Coach 6468.



Figure 12. Coach 6934.



Figure 13. Coach 6934.



Figure 14. Coach 6934.



Figure 15. Coach 6934.



Figure 16. Coach 6934.



Figure 17. Coach 6352.



Figure 18. Coach 6352.



Figure 19. Coach 6352.



Figure 20. Coach 6352.



Figure 21. Coach 6352.



Figure 22. Coach 6352.



Figure 23. Coach 6352.



Figure 24. Subject coach.



Figure 25. Subject coach.



Figure 26. Subject coach.



Figure 27. Subject coach.



Figure 28. Subject coach.

DOCUMENTS REVIEWED – DR. DAVID COATES

1. Accident Report by TX DPS Trooper Kellert ([REDACTED])
2. MCI000001-001211
3. MCI000469-000470
4. AUSA002861-AUSA002880
5. P000367-P000372
6. Scheduling Order
7. Plaintiff's Designation of Expert Witnesses
8. MCI Standard 25-24-0001 (Raw Material Standard – Raw Material Selection – Steel Products)
9. Steel Stainless – AISI 304, UNS S30400
10. Bosch Test Track
11. Brian Lawson Notes
12. Reduced Scale Drawing
13. MSi Reports
14. Photographs - 316 photographs of scene and coach produced by Americanos in response to Plaintiff's Request for Production dated June 17, 2010 (photos taken January 14, 2007, January 15, 2007, March 16-17, 2010, and April 26, 2010 ARAAC)
15. Photographs - 83 photographs of scene produced by [REDACTED] in response to Plaintiff Request for Production dated June 17, 2010
16. Photographs – 48 photographs of coach taken 06/22/10 produced by [REDACTED] on 07/23/10
17. Photographs – Campbellton Photos from DPS Evidence Inspection
18. Photographs – Campbellton DPS Evidence Inspection
19. Photographs - Bob Rucoba's Inspection Photos taken 07/27/10
20. Photographs - Campbellton Inspection –Photo No. L1010152 (from Photos of Items Collected by GLI Investigator at Scene)

21. October 26, 2010 letter from [REDACTED] counsel regarding additional protocols for destructive testing and advising that they are no longer going to be doing the alignment testing, paragraphs 1-5 of the protocol entitled "Protocol for Examination of the Subject Coach."
22. Ameircanos' July 2007 Transmission Change – Driveline Removal
23. 102DL3 Maintenance Manual Regarding Removal of Driveshaft
24. November 1, 2010 letter from [REDACTED] counsel regarding this week's inspection and testing
25. Drawing – 141-1-71_k_1 of 1 – yoke half round end
26. Deposition transcript and exhibits for: Trooper Wesley Cooper
27. Defendant [REDACTED]'s Responses to Motor Coach Industries, Inc.'s First Request for Production
28. Defendant [REDACTED] Responses to Motor Coach Industries, Inc.'s First Set of Interrogatories
29. Defendant [REDACTED] [REDACTED] Responses to Motor Coach Industries, Inc.'s First Request for Production
30. Defendant [REDACTED]'s Responses to Motor Coach Industries, Inc.'s First Set of Interrogatories
31. Bob Rucoba's 08-02-11 Exemplar Vehicle Inspection Photos
32. Photos of the June 30, 2011 Bus Inspection which we received from counsel for Stewart & Stevenson Truck Holding, LLC d/b/a On the Border Freightliner of El Paso; and
33. Photos of the Bus Parts Inspection taken on June 30, 2011 which we received from counsel for Stewart & Stevenson Truck Holding, LLC d/b/a On the Border Freightliner of El Paso
34. Protective Order signed by all counsel on 07-16-10
35. DPS Inspection File for [REDACTED]
36. [REDACTED] 2nd Supplemental Responses to MCI's 1st Request for Production
37. [REDACTED] 1st Supplemental Response to MCI's Request for Production
38. Morado's 1st Supplemental Response to Perez Request for Production
39. [REDACTED] 1st Supplemental Responses to Perez Request for Production

40. [REDACTED] 1st Supplemental Responses to Perez Request for Production
41. [REDACTED] 1st Supplemental Objections/Responses to Medina, Medina & Bandala's Request for Production
42. Morado's 1st Supplemental Objections/Responses to Medina, Medina, Bandala's Request for Production
43. [REDACTED] 1st Supplemental Objections/Responses to Medina, Medina, Bandala's Request for Production
44. [REDACTED] 1st Supplemental Objections/Responses to Garcia & Dominguez Requests for Production
45. [REDACTED] 10th Supplemental Objections/Responses to Campos Request for Production
46. Morado's 1st Supplemental Objections/Responses to Campos Request for Production
47. [REDACTED] 2nd Supplemental Objections/Responses to Campos Request for Production
48. Morado's 1st Supplemental Responses to Herrejon's Request for Production
49. [REDACTED] 1st Supplemental Responses to Herrejon's Request for Production
50. [REDACTED] 1st Supplemental Responses to Herrejon's Request for Production
51. [REDACTED] 2nd Supplemental Responses/Objections to ArvinMeritor Request for Production
52. [REDACTED] 1st Supplemental Responses to Garcia Request for Production
53. [REDACTED] 1st Supplemental Responses to Garcia Request for Production
54. [REDACTED] 1st Supplemental Responses to Garcia Request for Production
55. [REDACTED] 1st Supplemental Responses to Aguilar Request for Production
56. [REDACTED] 1st Supplemental Responses to Aguilar Request for Production
57. [REDACTED] 1st Supplemental Responses to Aguilar Request for Production
58. Photographs of Coach at Jeff's Auto Rebuilders
59. October 14, 2011 Deposition Transcript and Exhibits of Kevan Granat
60. Defendant [REDACTED] 2nd Amended Notice of Intention to Take Oral Deposition of David Coates and Subpoena Duces Tecum

61. AUSA010717 - Video Driveshaft Test & Jones Photos 09-20-11
62. AUSA011583 - Video Driveshaft Failure w-o Loop
63. Video 12.wmv
64. Video 15.wmv
65. 100ND70S - unit 6352
66. 1016468_ - unit 6468
67. 1026934_ - unit 6934
68. 1036132_ - unit 6132 turning angle measurement
69. Aaron Jones' September 20, 2011 Photos
70. Aaron Jones' Deposition Exhibit 7
71. Aaron Jones' Deposition Exhibit 8
72. Aaron Jones' Deposition Exhibit 9
73. Aaron Jones' Deposition Exhibit 13
74. Larry Yohe's January 15, 2012 Supplemental Expert Report
75. Thomas Fugger's January 16, 2012 Supplemental Expert Report
76. Aaron Jones' January 16, 2012 Supplemental Expert Report
77. Attachments produced with [REDACTED] [REDACTED] [REDACTED] [REDACTED] Sixteenth Supplemental Response to Plaintiffs' and Intervenors' Request for Disclosure and Second Supplemental Expert Designation (*Not Bates Labeled*)
78. AUSA011639 – AUSA011755
79. AUSA011600 – AUSA011613
80. Kevan Granat's January 24-25, 2012 Nappanee and Richmond Virginia GLI Bus Inspection Photos
81. MCI-001329 – MCI-001338 – 3-62A – locked (Tag Axle Lockout Procedure)
82. Bob Rucoba's January 24-25, 2012 Nappanee and Richmond Virginia GLI Bus Inspection Photos

0001

1 NO. 2010-03-1717-C
2 DANIEL CAMPOS, ET AL,) IN THE DISTRICT COURT
3)
4 Plaintiffs)
5)
6 VS.) 197TH JUDICIAL DISTRICT
7)
8 AMERICANOS, U.S.A.,)
9 L.L.C., ET AL,)
10)
11 Defendants) CAMERON COUNTY, TEXAS
12
13
14

15 ORAL DEPOSITION OF

16 DAVID COATES

17 MARCH 21, 2012

18 Volume 1

19

20

21 ORAL DEPOSITION OF DAVID COATES, produced as a
22 witness at the instance of the DEFENDANT, AMERICANOS
23 USA, L.L.C., and duly sworn, was taken in the
24 above-styled and numbered cause on MARCH 21, 2012, from
25 9:56 a.m. to 5:31 p.m., before STEFANIE COX, CSR in and
for the State of Texas, reported by machine shorthand,
at the law offices of Hartline, Dacus, Barger, Dreyer &
Kern, L.L.C., 6688 North Central Expressway, Suite 1000,
Dallas, Texas 75206, pursuant to the Texas Rules of
Civil Procedure and the provisions stated on the record
or attached hereto.

0002

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0007

PROCEEDINGS

(Reporter's time: 9:56 a.m.)

DAVID COATES,

having been first duly sworn, testified as follows:

5 EXAMINATION

6 BY MS. RODRIGUEZ:

7 Q. Please state your name for the record.

8 A. David John Coates, C-O-A-T-E-S.

9 Q. And, Dr. Coates, we've met before, correct?

10 A. Yes, we have.

11 Q. In connection with your work on this case,
12 correct?

13 A. Correct.

14 Q. You understand that a deposition is where you
15 are sworn to tell the truth, no matter whether it hurts
16 or helps the side that hired you. You understand that,
17 correct?

18 A. I do.

19 Q. And do -- if you do not understand any of my
20 questions, will you let me know?

21 A. I will.

22 Q. So by answering the question, you're
23 acknowledging to me and to the jury that you've
24 understood it, correct?

25 A. Yes.

0008

1 Q. About how many depositions have you given in
2 the past?

3 A. Something of 150.

4 Q. And how many times have you testified in trial
5 in the past?

6 A. Something over 30.

7 Q. All right. So you understand that the
8 deposition is going to be typed up into a booklet and
9 that testimony -- you may be asked about the testimony
10 you give today at the time of trial?

11 A. Yes.

12 Q. And you also understand that the testimony may
13 be read to the jury at the time of trial?

14 A. Correct, yes.

15 Q. And that other experts may rely on your
16 testimony?

17 A. Yes.

18 Q. All right. You're doing a great job so far,
19 but if you will continue to answer verbally and not
20 interrupt me, I will try to do the same. I know
21 sometimes when I look down I don't realize you're still
22 answering, and I apologize if I interrupt you. Just let
23 me know you haven't finished your answer. Okay?

24 A. I will.

25 Q. Thank you. You've brought your file here

0009

1 today, correct?

2 A. Yes.

3 Q. And Ms. Dorman advised me that part of the
4 file also represents Dr. Fowler's file, correct?

5 A. Well, it's really a combined file. It's not
6 part his and part mine. It's our file --

7 Q. Okay.
8 A. -- Fowler, Inc.'s, file on the case.
9 (Exhibit No. 1 marked.)
10 Q. All right. Now, I've asked you to bring some
11 materials with you. And I'll hand you what I've marked
12 as Exhibit 1 to your deposition. Have you seen this
13 document before?
14 A. Yes, I believe so.
15 Q. Have you brought all of the documents
16 responsive to the request?
17 MS. DORMAN: Object to form.
18 Q. (BY MS. RODRIGUEZ) And let me broaden the
19 question. Have you brought all the tangible items
20 responsive to the request?
21 A. I believe so, yes.
22 (Exhibit No. 2 marked.)
23 Q. Okay. Thank you. Let's start talking about
24 your file and get that housekeeping matter out of the
25 way. We've marked as Exhibit 2 this gray folder. Can
0010
1 you generally describe for me what this notebook
2 represents?
3 A. Yes. I -- it's probably easier to talk about
4 the other three ring binders I brought first. Those --
5 those three-ring binders are the -- basically the
6 organized work file that was put together in preparation
7 for Dr. Fowler's deposition which was scheduled for, I
8 think, December and did not go forward.
9 Q. Okay. So you're referencing, for the
10 record -- I don't mean to interrupt. I just want to
11 make sure we got a clear record. You're referencing
12 Exhibits 3, 4, and 5, correct?
13 A. Yes.
14 (Exhibit Nos. 3, 4 and 5 marked.)
15 Q. All right. Thank you.
16 A. Yes. And I think those were essentially put
17 together in that time frame. There may have been
18 something added, but I don't think so.
19 But in answer to your original question,
20 the binder, which is Exhibit 2, is basically the -- the
21 work that's been done since that time, which has been
22 the inspection of the exemplar coaches. And I've also
23 included copies of reports that Fowler, Inc., has
24 generated in this case.
25 Q. Who created Exhibits 3, 4, and 5?
0011
1 A. Well, when you mean created, who put them
2 together physically?
3 Q. No. Who decided what was going to be put into
4 notebooks 3, 4, and 5, and the order that they were
5 going to be put into these notebooks?
6 A. Well, I think Dr. Fowler and I had a -- a
7 discussion on the -- on the file and the case and
8 what -- what the various components were. But I think

9 it was essentially he -- he was the one who did the main
10 organizing.

11 Q. Okay. And who created Exhibit 2?

12 A. I did.

13 Q. And so you selected the materials that are
14 contained within Exhibit 2?

15 A. Yes.

16 Q. All right.

17 A. Like I said, it was just -- but, yes, I did.

18 Q. Well, when you say it's not really selected,
19 is it just stuff that you got from -- since December
20 that you decided to put in there or did you cull things
21 out of things that you got since December and decided to
22 put them in there?

23 A. No. It's -- it's everything. I believe it's
24 everything since December, with the addition of copies
25 of the reports, as I mentioned.

0012

1 Q. Okay. Could I have Exhibit 2 back?

2 A. Sure.

3 Q. Thank you. I notice in the back that there
4 were some loose file folders. Why are these in here and
5 why are they loose?

6 MS. DORMAN: Objection, form.

7 A. Well, why are they in there? Because they are
8 material that I've added to the file since -- since I
9 set it up. Why are they loose? Because I haven't -- I
10 just haven't put holes in them and put them in the
11 binder.

12 Q. (BY MS. RODRIGUEZ) Okay. So these loose
13 folders that are inside Exhibit 2, are they materials
14 that you got since December 2012?

15 A. In that form, yes.

16 Q. Okay. So when you say "in that form," did you
17 have them in a digital form before?

18 A. Some of the photographs I did, I believe, and,
19 yes, some of the video.

20 Q. And why are some of -- why are these, in
21 particular, selected from the thousands of photographs
22 you've been provided previously?

23 A. Well, they -- in the course of the discussion
24 of the case, those -- those particular photographs are
25 selected to illustrate certain points.

0013

1 Q. Okay. Let's just start with the first file
2 folder and we'll go ahead and mark this 2A. What point
3 were you trying to illustrate with 2A?

4 (Exhibit No. 2A marked.)

5 A. Well, 2A is a collection of photographs that
6 basically show the subject bus, the clevis latch
7 mechanism and components, and they were just photographs
8 to show, to illustrate those components.

9 Q. Okay. So you were just showing the existence
10 of those components, not the state or the condition of

11 those components?

12 A. Well, it does show -- I mean, it's a
13 photograph, so it does show the state and condition of
14 those components.

15 Q. Is there anything significant to you in terms
16 of this case about the state or condition of those
17 components in Exhibit 2A?

18 A. Well, yes. They illustrate a number of things
19 that -- do you want me to go through each one and --

20 Q. Yes, sir. What -- what is significant to you
21 about the state or condition of the components that
22 you --

23 A. Well, there were some -- I'm sorry. Did I
24 interrupt you?

25 Q. -- that you have in front of you on

0014

1 Exhibit 2A?

2 A. There were some discussion by Mr. Jones about
3 these various components and the condition in his
4 deposition, and I wanted to go back and look at the
5 photographs in particular, all of these -- these
6 particular areas, and look at them and -- in detail
7 myself.

8 Q. And did you have a disagreement with
9 Mr. Jones's description or discussion of those component
10 parts from his deposition after you pulled those photos
11 and looked at them yourself?

12 MS. DORMAN: Object to form.

13 A. I'd have to review exactly what -- the
14 statements he made. Generally, I mean, the photos are
15 what they are. They illustrate certain conditions and
16 may -- the location of the various components at the
17 time these photographs were taken. So whether I have a
18 disagreement or not, I don't disagree with the
19 photographs.

20 Q. (BY MS. RODRIGUEZ) And that wasn't really my
21 question. My question was: Did you disagree with
22 Mr. Jones's description of the subject bus, those
23 component parts from the subject bus which you read in
24 his deposition once you pulled these photos?

25 A. Again, I think I -- in answer to that I'd have

0015

1 to say I'd have to review Mr. Jones's deposition in
2 detail, the specific statements he made, but I can't
3 think of anything -- any major point that I disagree
4 with.

5 Q. Okay. And you under -- and so my
6 understanding is that you are a metallurgist; is that
7 true?

8 A. That is true.

9 Q. And you've been hired by both MCI and
10 ArvinMeritor in this case to provide them metallurgy
11 expert opinions, correct?

12 A. Fowler, Inc., has been.

13 Q. Okay. But you understand that they've
14 designated you, not Fowler, Inc., they've designated you
15 as an expert on their behalf?

16 MS. DORMAN: Object to form.

17 A. Well, it's my understanding that MCI have and
18 I think ArvinMeritor designated Dr. Fowler.

19 Q. (BY MS. RODRIGUEZ) Okay. Thank you for that
20 clarification. And so do you understand that I'm here
21 today, part of the purpose of a deposition is to find
22 out your opinions?

23 A. Yes.

24 Q. And then I'm not a metallurgist. So if I look
25 at those photos in 2A, I may not know what it means or

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1 any significance of what it means. So I'm here to find
2 out what you think.

3 A. Yes.

4 Q. Okay. And this might be the last time I have
5 an opportunity to talk with you unless we recess the
6 deposition today for any reason. So I -- I want to know
7 what you're going to tell the jury, in essence, about
8 what you've formulated in terms of opinions over the
9 past couple of years on this case. Do you understand
10 that?

11 A. I do understand that.

12 Q. Okay. Thank you. All right. May I have 2A
13 back?

14 A. You may.

15 (Exhibit No. 2B marked.)

16 Q. Okay. Okay. So I will hand you what I've
17 marked as Exhibit 2B. And the same type of questions:
18 Why did you select those photos out?

19 A. Well, these photos are stills taken from a
20 video, Americanos Test 13. And the photographs, it's
21 just easier to talk about certain aspects from a still
22 photograph rather than the video.

23 Q. Okay. What -- what was of significance to
24 your opinions in this case from Exhibit 2B?

25 A. Well, this was a test apparently to -- a test

0017

1 that was run by Americanos, so I did see the video. And
2 as far as my opinions, just looking at the -- the
3 components, I notice that there was some -- some aspects
4 of this test or the test components, components that
5 were tested, that were not what I would consider the --
6 representative of the subject bus.

7 Q. And did those photographs illustrate that?

8 A. They do to some extent.

9 Q. All right. And describe for me on the
10 photographs how that is illustrated?

11 A. Well, the -- I'm not sure how best to describe
12 this particular photograph.

13 Q. You want to mark it? We can mark it 2 -- what
14 is that 2B1?

15 A. Yes.
16 Q. Okay.
17 (Exhibit No. 2B1 marked.)
18 MS. RODRIGUEZ: Mark that one, too.
19 (Exhibit No. 2B2, 2B3 marked.)
20 Q. (BY MS. RODRIGUEZ) Okay.
21 A. Okay. What's been marked 2B1, 2B2, and 2B3,
22 we have these photographs, and what they show is it's
23 part of the upwards -- I think it's referred to as the
24 upper latch mechanism. And in particular what they show
25 is the -- the -- it's described as the Americanos Test
0018

1 13, brakes applied after caster unlatched, video
2 12/13/11. So that's a -- that's what time that that
3 photograph or this still was made -- taken from that
4 video.

5 And the main point or the main thing that
6 I -- that I see from my point of view is that the
7 rear -- what's called the pawl or the rear horn does not
8 have the -- the wear pad attached to the front, which it
9 is normally, from my understanding from view of the
10 engineering documents, attached to the front. And it
11 appears to be somewhat of a rounded shape or rather this
12 shape that is shown, again, in engineering diagrams.

13 The other point is in the subject bus
14 there was a strap or guard around that area, which is
15 not present in this test. That's the two main points
16 from my point of view.

17 Q. Okay. Before we move on to 2B2 --

18 A. Yes.

19 Q. -- let's talk about 2B1.

20 A. Okay.

21 Q. Who made the photo from the video?

22 A. Who made it?

23 Q. Yes, sir.

24 A. I don't know who made it.

25 Q. Where did you get 2B1 from?
0019

1 A. I got it from counsel.

2 Q. From Ms. Dorman?

3 A. Ms. Dorman's office.

4 Q. From MCI counsel, you mean?

5 A. Yes.

6 Q. Okay. And then who made the annotation on the
7 back, if you know, of 2B1?

8 A. I don't know.

9 Q. Okay. And so you're assuming that that is an
10 accurate representation of exactly what it says on the
11 back, correct?

12 A. I'm making that assumption. I haven't gone
13 back and verified that but, yes, I am making that
14 assumption.

15 Q. Okay. Now, you say there's nowhere -- and I
16 may get this wrong and I want you to correct me where I

17 get it wrong.
18 A. Yes.
19 Q. Okay. You say there was no wear pad --
20 A. Yes.
21 Q. -- attached to the front?
22 A. There doesn't appear to be from this -- this
23 video, yes.
24 Q. Okay. And then you said something is of a
25 rounded shape as opposed to a shape in the engineering

0020

1 diagrams. What is of a rounded shape?
2 A. It's the -- what I'm talking about, the hole
3 or the pawl. It's really the front area of that --
4 Q. Okay. What --
5 A. -- of the secondary pawl.
6 Q. What I would like you to do is -- I think I've
7 got an extra pen.
8 Okay. I would like -- Dr. Coates, I would
9 like for you to circle with blue where the wear pad
10 should be attached on 2B --
11 A. 2B1?
12 Q. Yes, sir.
13 A. (Witness complies.)
14 Q. Now, if you would hand that to me, I just want
15 to make sure I can --
16 A. Yeah.
17 Q. -- discern it.
18 A. Yeah.
19 Q. Okay. And if you just write up at the top so
20 there's no question, wear pad?
21 A. (Witness complies.)
22 Q. And then if you would take the red pen and
23 mark the rounded shape as opposed to the shape in the
24 engineering diagrams that you discussed?
25 A. (Witness complies.)

0021

1 Q. And what is the shape in the engineering
2 diagrams?
3 A. I have a blowup of -- taken from their -- an
4 engineering diagram that shows you -- you want to mark
5 that?
6 Q. What number are we on?
7 A. 2B --
8 Q. 4?
9 A. -- 4.
10 (Exhibit No. 2B4 marked.)
11 Q. Okay. Where did you get Exhibit 2B4 from?
12 A. Well, it's -- I have a copy of the engineering
13 diagram but -- that I just blow up again, was provided
14 to me by Hartline Dacus.
15 Q. Did you ask for 2B1 through 4 or did they just
16 send it to you?
17 A. They didn't send it to me; they gave them to
18 me.

19 Q. Okay. But did you say I'd like for you to
20 take stills from the drive shaft testing videos or did
21 they take that on their own initiative and give you the
22 still photos from the videos?

23 MS. DORMAN: Object to form.

24 A. I don't know whether it was their own
25 initiative, but I did not -- I didn't request it

0022

1 specifically.

2 Q. (BY MS. RODRIGUEZ) Okay. And how about 2B4,
3 did you ask the MCI lawyers to give you that blowup or
4 did they take it on their own initiative to send it to
5 you?

6 A. Again, not send it to me; give it to me, along
7 with the rest of the photographs.

8 Q. Were they given to you today or something?

9 A. No.

10 Q. Or yesterday?

11 A. Yesterday.

12 Q. Yesterday. Okay. How much time did you spend
13 with the MCI lawyers yesterday?

14 A. Well, I was here most of the -- I got here
15 about 10:30, I think, left about 5:00. We had a lunch
16 break.

17 Q. Who did you visit with?

18 A. With Ms. Dorman and John Dacus.

19 Q. Did you talk to anyone else on the phone or
20 any person during any of your meeting yesterday?

21 A. Very briefly.

22 Q. With whom?

23 A. Tom Bullion.

24 Q. All right. And what did you and Mr. Bullion
25 and Ms. Dacus -- excuse me -- Ms. Dorman and Mr. Dacus

0023

1 discuss?

2 A. Well, the conversation involving Mr. Bullion
3 involved essentially what areas that I was going to
4 cover and what areas was Dr. Fowler going to cover.

5 Q. Okay.

6 A. And that was a fairly brief conversation and
7 that was it.

8 Q. And so it was made clear, at least to
9 Mr. Bullion at that time, that Dr. Fowler was going to
10 talk about the ArvinMeritor parts and that you were only
11 going to address the MCI issues?

12 A. That's essentially how we divided up the --
13 the testimony, yes.

14 Q. Is that how you understood the testimony was
15 going to be divided up from the beginning?

16 MS. DORMAN: Object to form.

17 A. From the beginning of my involvement?

18 Q. (BY MS. RODRIGUEZ) Yes, sir.

19 A. No. No, not from the very beginning.

20 Q. Okay. What was the discussion that you and

21 Ms. Dorman and Mr. Dacus had about the Exhibits 2B?
22 Exhibit 2B I should say.

23 A. It was a general discussion about what we've
24 just talked about.

25 Q. Okay. And so would it be fair to say that you
0024

1 were provided Exhibit 2B --

2 A. That's --

3 Q. -- by -- by Ms. Dorman?

4 A. Or by Mr. Dacus.

5 (Exhibit No. 2C marked.)

6 Q. Okay. And same is true, you were provided
7 Exhibit 2C by Mr. -- by the MCI -- let's say the MCI
8 lawyers?

9 A. Yes.

10 Q. And you were provided Exhibit 2 -- 2A by the
11 MCI lawyers yesterday?

12 A. Can I just double-check?

13 Q. Sure.

14 A. Yes.

15 Q. Okay. All right. What is the significance of
16 2B4?

17 A. 2B4?

18 Q. Yes, sir.

19 A. As I said, that was a blowup of the portion of
20 the engineering diagram that shows the -- the horns and
21 the -- that we discussed.

22 Q. Okay. But what was the purpose of blowing it
23 up? To show the difference in the -- in the shape or
24 for any other reason?

25 A. Yeah. Mainly the shape, yes. The -- the
0025

1 original -- the shape as illustrated in the diagram
2 versus the shape shown in the video.

3 Q. And is there any functional difference with
4 the component part based on the different shape?

5 MS. DORMAN: Object to form.

6 Q. (BY MS. RODRIGUEZ) In your opinion or have
7 you not studied that?

8 MS. DORMAN: Object to form.

9 A. I have not -- I have not studied that and
10 don't have an opinion.

11 Q. (BY MS. RODRIGUEZ) Okay. And anytime you
12 don't have an opinion -- we'll kind of go over some
13 areas just to rule out, you know, no, I'm not going to
14 talk about that to the jury or, yes, I am, and then that
15 will kind of narrow things, some of my questions, down
16 today.

17 Let's go back to -- may I have 2A
18 through -- okay. And then the same question is: What's
19 the significance, if any, of the missing wear pad --

20 MS. DORMAN: Object --

21 Q. (BY MS. RODRIGUEZ) -- in terms of the function
22 of the component part?

23 MS. DORMAN: Object to form.

24 A. Well, again, I -- I haven't studied in terms
25 of the -- the function of it, but it's -- it's clearly

0026

1 different from what it is designed to be, according to
2 the engineering drawings, and that's the purpose of the
3 illustration.

4 Q. (BY MS. RODRIGUEZ) Okay. But you wouldn't be
5 able to say that it alters the function or the workings
6 of this particular component part? You don't have an
7 opinion on that, right?

8 A. I don't have an opinion on how it -- how --
9 how much it does or could affect it. I mean, I have
10 some opinions about how it might.

11 Q. Okay. I'm really interested in your opinions
12 based upon reasonable scientific probability. So do you
13 have any opinions, based upon reasonable scientific
14 probability, that the lack of a wear pad affects the
15 functioning of this component part as reflected in
16 Exhibit 2B1?

17 A. Well, again I --

18 MS. DORMAN: Object to form.

19 A. I would say that's not something I've studied
20 in any detail, so I don't have an opinion as I sit here
21 today.

22 Q. (BY MS. RODRIGUEZ) Okay.

23 MS. RODRIGUEZ: Hello. How are you?

24 MR. GREEN: Hi. How are you doing?

25 Sorry to interrupt. I had a hearing before this.

0027

1 MS. RODRIGUEZ: And who --

2 MR. GREEN: I'm with Van Shaw's office.

3 MS. RODRIGUEZ: Okay. And your name,
4 please?

5 MR. GREEN: Eric Green.

6 MS. RODRIGUEZ: Thank you.

7 Q. (BY MS. RODRIGUEZ) Okay. Let's run
8 through -- I'm going to stick these in here because I
9 think we're done talking about these.

10 A. Okay.

11 Q. But we haven't started on 2B2. What is
12 significant about 2B2?

13 A. It's -- well, it's the same as 2B1, I'd say.
14 It's just another -- another photograph that illustrates
15 the same points.

16 Q. Okay. And then how about 2B3?

17 A. Again, the same thing, only a bit more -- it's
18 a closer up view of that particular pawl or horn.

19 Q. All right. Was there anything else useful
20 that shows the aspects of the test and test components
21 that you feel are not represented by the accident bus in
22 the remainder of Exhibit 2B?

23 A. Well, they all show photographs of that area
24 that was the same area. They don't -- these additional

25 photographs don't all show the -- the rear horn, but
0028

1 they do -- they do all show the -- or don't show the
2 presence of the -- the strap, the strap that's not --
3 that should be there.

4 Q. Okay.

5 A. The guard strap.

6 Q. Do you know what the function of the wear pad
7 is?

8 A. Well, it's described as a wear pad.

9 Knowing -- knowing something about the functionality of
10 the -- of the various components, I -- I can make an
11 educated assumption on what that is.

12 Q. Okay. Well, I don't want you to guess because
13 the jury's going to --

14 A. No. It's not a guess. It's an assumption.

15 Q. All right.

16 A. Educated assumption.

17 Q. What's your educated assumption then?

18 A. That it's a pad added to -- or actually two
19 pads added to the front of the pawls or horns to address
20 any wear issues between mating parts.

21 Q. Which mating parts are those?

22 A. Well, it would be the front of the horn and
23 the latch plate --

24 Q. Okay.

25 A. -- in which they engage.

0029

1 Q. And how does it address wear? Does it prevent
2 it or stop it?

3 A. Well, wear pad would be designed to certainly
4 reduce it. It may not stop it.

5 Q. And did you see any wear in the mating parts
6 on the test bus?

7 A. I never saw the --

8 MS. DORMAN: Object to form.

9 A. I never studied or I don't believe I've seen
10 the test bus itself.

11 Q. (BY MS. RODRIGUEZ) The drive shaft test bus?

12 MS. DORMAN: Object to form.

13 A. Not this area. It's not an area that I've
14 studied.

15 Q. (BY MS. RODRIGUEZ) Okay. And the photographs
16 that were supplied to you by MCI counsel, did you see
17 any wear of the mating parts that would be surrounded by
18 the -- or adjacent to the wear pad if it had been there?

19 A. Possibly, yes. I -- I mentioned the rounding
20 shape of the front of the -- the horn. That -- that
21 would be an area where I would expect the wear -- or
22 where the wear pad should have been placed or engaged.
23 And it -- as I mentioned, I don't know whether that's
24 wear or what that is, but it could be wear.

25 Q. Okay. And it could not be wear, correct?

0030

1 A. That's possible it's deliberate.

2 Q. Let's go back to that engineering drawing.

3 You said it's different from the shape in the
4 engineering drawing. What is the -- so if you'll circle
5 the shape that is different.

6 A. Well, the area where the -- oh. I see the
7 difference. I'll circle it in red, a portion of the
8 horn.

9 Q. And that's on Exhibit 2B4, correct?

10 A. It is.

11 Q. Thank you. You also mentioned that in the
12 subject bus there was a strap and you didn't see that
13 strap on the test bus photos that MCI counsel supplied
14 to you, correct?

15 A. Yes.

16 Q. All right. And what's the -- what's your
17 understanding of the function of the strap -- purpose of
18 that strap?

19 A. I think it's been described as a guard strap.
20 I'm not certain exactly what it was designed for, but I
21 believe it was for one of two things. One is to protect
22 that area from any foreign object impact and also, too,
23 as a -- basically a cap -- capturing mechanism for the
24 forward pawl or horn if it moved too far forward, in my
25 understanding.

0031

1 Q. If it moved too far forward and did what? Do
2 you have an opinion on that?

3 A. No.

4 Q. Okay. Now, the area that we're describing or
5 that we're talking about now, I refer, and I think you
6 have too, as the latch assembly?

7 A. Upper latch assembly.

8 Q. Upper latch assembly. Thank you. Okay. The
9 first -- is this the first time you've ever analyzed an
10 upper latch assembly on a 102-DL3?

11 A. Yes.

12 Q. How about on any other type of motor coach
13 with a similar latch assembly, have you analyzed that
14 before this case?

15 A. No.

16 Q. And you mentioned that you hadn't studied the
17 latch -- upper latch assembly on the test bus that was
18 used to do the drive shaft testing, correct?

19 A. That wasn't the focus of my attention at the
20 time of my inspection, no.

21 Q. And that's what I'm trying to get at. I can't
22 remember who's been where and at what inspection and I
23 couldn't remember if you were up in Nappanee and you
24 looked -- looked at the test bus or if it was in
25 Richmond. So let's back up.

0032

1 A. Okay.

2 Q. Have you looked at the bus that was used by

3 Aaron Jones to test the drive shaft?
4 A. I believe so, yes.
5 Q. Okay. And what was your purpose in looking at
6 that bus? Why did you go and look at it?
7 A. Well, I was told that there were some exemplar
8 buses made available by -- by Greyhound for -- for
9 inspection by MCI or people working for MCI, and it was
10 that I go and look at these buses during the trip back
11 in -- I think it was January.
12 Q. Okay. So the MCI attorney called you and said
13 we'd like for you to look at these buses, correct?
14 A. In summary, yeah.
15 Q. And then were you given any direction on what
16 they wanted you to do as part of your inspection?
17 A. No. I'd say no. It was mainly for -- for
18 comparison with the subject bus.
19 Q. And you took photographs at those inspections?
20 A. I did.
21 Q. A lot of them, right?
22 A. Quite a few.
23 Q. Over a thousand, I think?
24 A. Really? No, not -- I don't think I took over
25 a thousand. No.

0033

1 Q. Okay. Maybe that's all of your photos.
2 You've probably taken over a thousand in the whole case,
3 right?
4 A. I -- I'm not certain it would be a thousand,
5 no.
6 Q. All right. Well, I'm not going to quibble
7 with you on the numbers. The jury is going to take the
8 stack. I think everybody has taken a ton of pictures.
9 A. A lot of photographs, yes.
10 Q. Yes. But other than photographing these
11 exemplar buses, did you do anything else as part of your
12 inspection?
13 MS. DORMAN: Object to form.
14 A. Well, it wasn't just photographing. It was
15 looking at the buses and analyzing from a visual point
16 of view.
17 Q. (BY MS. RODRIGUEZ) Anything else?
18 A. No. I don't think so. I mean, there was some
19 movement of some components, but other than that, no.
20 Q. What components were moved?
21 A. Well, for example, in one of the buses the tie
22 rod was inside the bus when we first saw it, so it was
23 taken out for the photography, that sort of thing.
24 Q. Did you take any measurements?
25 A. I don't recall taking any measurements, no.

0034

1 Q. Did you do any testing on the bus or on any of
2 the component parts at the inspection?
3 A. Nothing that I would describe as testing, no.
4 Q. So your visual analysis and your

5 photographing, did you feel like that was sufficient for
6 your purposes in commenting on those buses?

7 A. Yes.

8 Q. Is there anything else you claim to do in
9 terms of those buses, the exemplar coaches?

10 A. As I sit here today, no.

11 Q. Okay. All right. Help me a little bit
12 understand metallurgy. As a metallurgist, you study
13 what?

14 A. Metals.

15 Q. Okay. And you -- the purpose of studying
16 metals is to find out, for example, in this context,
17 what?

18 A. I'm not sure what you mean by "in this
19 context."

20 Q. In this case, the bus case.

21 A. Well, again, metallurgy is the study of metals
22 from all aspects, starting off with the extraction of
23 metals from alloys and processing of metals, development
24 of alloys, mechanical properties, corrosion, so a lot of
25 different aspects. Many of these aspects are brought to

0035

1 bear in what's called failure analysis.

2 And failure analysis is to analyze
3 components that have failed in one way or another, it
4 could be mechanical, it could be corrosion, it could for
5 other reasons, to determine the -- the cause of failure.
6 And that's basically what I bring to -- to many of the
7 cases, including this case, when I first start --
8 started the case.

9 Q. Okay. And when I'm -- in reading your
10 reports -- and we'll go through them in detail and we'll
11 catch them. But in reading your reports, I understood
12 that the failure analysis that you performed on this
13 case was related to the failure of the U-joint,
14 transmission end connection specifically. Is that a
15 fair statement?

16 A. No.

17 Q. Okay. What failure analysis did you perform
18 in this case?

19 A. Well, failure analysis is a pretty broad term,
20 but it's -- I would say failure analysis of the coach.

21 Q. So you looked at the tires?

22 A. No.

23 Q. You looked at the brakes?

24 A. No. I said what I -- what I did was failure
25 analysis of the coach, but there was specific areas of

0036

1 that that I did look at, and that was the drive shaft
2 and the tag -- tag axle locking mechanism and now the
3 upper latch plate area, the U-joints. Those components
4 were the main -- was the main focus of my -- my
5 involvement.

6 Q. All right. I want to make sure that I

7 understand this correctly. In this case you performed a
8 failure analysis of the coach, specifically to the drive
9 shaft, the tag axle lock mechanism, the U-joints, and
10 the latching mechanism, correct?

11 A. Well, I applied my failure analysis background
12 to those areas.

13 Q. All right. Well, let's talk specifically
14 about performing a failure analysis. Did you perform a
15 failure analysis on the drive shaft on the Americanos
16 accident bus?

17 A. Well, I would say the drive shaft and its
18 components, component parts. Yes.

19 Q. Okay. When I talk about a drive shaft, I'm
20 talking about the spline and the slip yoke and not the
21 U-joint. Okay. So do you understand when -- when you
22 talk about a drive shaft, let's make sure we're using
23 the right terminology, what are -- what are you talking
24 about?

25 A. I can adopt your -- your terminology.

0037

1 Q. And then the yokes I put -- I put separate.

2 A. Okay.

3 Q. Okay. So let me back up. Did you perform a
4 failure analysis on the drive shaft on the Americanos
5 accident bus?

6 MS. DORMAN: Object to form.

7 A. Well, again, it wasn't specific to the drive
8 shaft. It was an overall failure analysis. And part of
9 failure analysis is looking at the various components
10 and areas from those components, such as witness marks,
11 breakage and so on. The drive shaft was part of my
12 overall failure analysis.

13 Q. (BY MS. RODRIGUEZ) All right. You -- if we
14 use my definition of a drive shaft, did you determine
15 that the drive shaft in the Americanos bus failed?

16 A. Well, it -- it separated from the coach, so
17 from that point of view, I'd describe it as a failure.

18 Q. Okay. So the failure was in the drive shaft
19 and not the U-joints; is that your opinion?

20 A. No.

21 MS. DORMAN: Object to form.

22 A. I'm saying that -- again you're trying to get
23 this into a specific area. I'm saying I looked at it
24 from the overall failure analysis of the components
25 involved in this bus and the drive shaft was one of

0038

1 those components and it had witness marks on it that
2 I -- I utilized in my overall analysis.

3 Q. (BY MS. RODRIGUEZ) Okay. And that's what
4 experts do in your field. You look at the overall
5 system as opposed to a component specifically, correct?

6 A. Well, it depends. It -- if you look at the --
7 basically you would look at the overall system, but they
8 may -- you may focus on one particular component,

9 depending on what -- what the particular situation is.

10 Q. Well, did you do that in this investigation?

11 A. Well, I attempted to. The main -- from the --
12 from the early part of the investigation the -- I would
13 say the direction was why did this drive shaft separate
14 in the first place. And then I was just looking at the
15 components that were -- were available.

16 The problem in this particular case was
17 the -- the cross from the U-joint was never recovered is
18 my understanding, which, in my opinion, I think it may
19 have -- every expert that I've seen deposed has been --
20 that's probably where the initial failure occurred.

21 Q. Okay. So you've told the MCI lawyers that you
22 think the drive shaft separated from the transmission
23 end of the bus because the crossmember probably failed?

24 A. Probably.

25 Q. Probably. And what's the basis for that

0039

1 opinion?

2 A. Well, analysis of the various components --

3 Q. Okay.

4 A. -- that were available.

5 Q. What about your analysis leads you to the
6 conclusion that the missing crossmember of the U-joint
7 at the transmission end probably failed?

8 A. The -- well, the analysis of the components
9 that were present leads me to that conclusion.

10 Q. Okay. What -- what specifically about that
11 analysis?

12 A. Well, we'd probably have to go through my
13 report and the -- and the results in order to really
14 concise the answer to that question.

15 Q. All right. Then we'll go through -- we'll go
16 back to your report in --

17 A. And again --

18 Q. -- another question.

19 A. -- I might add, again, we're getting into an
20 area that really Dr. Fowler is going to address in more
21 detail.

22 Q. Okay. And you tell me that. Say, you know
23 what, Tamara, I'm not going to give opinions to the jury
24 on that, and I'll move on. If you are going to give
25 opinions then, obviously, as you know, I have a right to

0040

1 explore them with you.

2 A. That's why I just made that statement.

3 Q. Thank you. All right. Let's go back to this
4 concept of failure analysis that metallurgists do. You
5 said that you have performed a failure analysis of the
6 accident bus and the specific areas that you looked at
7 were the drive shaft tag axle lock mechanism, U-joints,
8 and latching mechanism, correct?

9 A. Yes. I think that's what I said.

10 Q. Did you perform a failure analysis of any of

11 those component parts independent of the other?

12 MS. DORMAN: Object to form.

13 A. I'm not sure I understand that question.

14 Q. (BY MS. RODRIGUEZ) Thank you for letting me
15 know. Did you perform a specific failure analysis of
16 the tag axle lock to determine what caused the tag axle
17 lock to fail?

18 MS. DORMAN: Object to form.

19 A. Independent of anything else?

20 Q. (BY MS. RODRIGUEZ) Yes.

21 A. No.

22 Q. Okay. In connection with the drive shaft
23 failure and the U-joint failure and the latching
24 mechanism failure, did you look at what caused the tag
25 axle lock mechanism to fail on the accident bus?

0041

1 MS. DORMAN: Object to form.

2 A. Yes.

3 Q. (BY MS. RODRIGUEZ) What was your -- what is
4 your opinion on that?

5 A. The -- my opinions are that the -- the tag
6 axle locking mechanism was -- was locked before the --
7 before the accident sequence and was mechanically pulled
8 apart during the accident sequence.

9 Q. At what point?

10 A. At some point during the accident sequence.

11 Q. Can you specify when?

12 A. Based on the evidence I've seen, I think it's
13 most likely when the tie rod became bent, and I think
14 that's most likely during the se -- sequence when the
15 coach was on its side, sliding, based on the evidence
16 I've seen and the testing that's been done.

17 Q. All right. And is that described in more
18 detail in your report?

19 A. I don't know. I'd have to look at the report.

20 Q. Okay. Well, you say based upon the evidence
21 that I've seen. I'd like to know what evidence that you
22 could refer me to that supports your opinion that the
23 tie rod became bent when the coach was on its side and
24 sliding?

25 A. Well, the evidence is the tie rod itself, the

0042

1 deformation of the various components of the coach, and,
2 as I mentioned, seeing the testing that's been done.

3 Q. Okay. What about the tie rod itself leads you
4 to believe that it became bent when the coach was on its
5 side and sliding?

6 A. I didn't see any evidence of any significant
7 impact on the tie rod.

8 Q. By "impact" you're referring to from the drive
9 shaft?

10 A. By anything.

11 Q. Okay.

12 A. And, again, I saw evidence of deformation of

13 some of the -- the coach components which lead me to
14 believe that that tie rod was put into a compression
15 loading, would logically cause bending of it.

16 Q. What component parts led you to believe that
17 the tie rod was put into compression loading?

18 A. The -- the rear -- the left rear wheels,
19 mainly.

20 Q. What about the left wheel -- wheel -- wheel
21 led you to that conclusion?

22 A. The -- the location -- the orientation of them
23 after the accident, post accident.

24 Q. So nothing about on the wheel itself, but just
25 its location and the fact that it was burrowed in the

0043

1 sandy ground after the accident is what you're basing
2 that opinion on; is that true?

3 MS. DORMAN: Object to form.

4 A. Well, the -- again, the fact that the wheels
5 were out of alignment or bent during the accident
6 sequence and the orientation of them.

7 Q. (BY MS. RODRIGUEZ) All right. Where was the
8 wheel bent and how far -- I'm going to just ask you one
9 question at a time. Where was the wheel bent?

10 A. No, not the wheel. The orientation of the
11 wheel.

12 Q. Okay. What do you mean the orientation of the
13 wheel was bent?

14 A. Well, probably best to look at the photographs
15 to illustrate that, but it's basically the wheels with
16 respect to the -- the direction they should be in.

17 Q. Would those be contained in Exhibit 2C that
18 Ms. Dorman and Mr. Dacus pulled for you?

19 A. Actually, yes. I mean, I've got -- I've seen
20 these photographs, but there is one photograph that
21 shows it. Yes.

22 Q. All right. And let's go ahead and mark that
23 as -- what exhibit number is that -- 2C1. Okay?

24 A. Yes.

25 (Exhibit No. 2C1 marked.)

0044

1 Q. All right. What about 2C1 illustrates your
2 point that the orientation of the wheel suggested tie
3 rod compression loading?

4 A. Well, you can see the -- the left wheel is
5 bent inward towards the rear.

6 Q. Okay. You want to just circle what you're
7 talking about?

8 A. How about if I put an arrow?

9 Q. Whatever you feel comfortable with.

10 A. That would have been bent in an inward
11 direction with respect to the coach body.

12 Q. Is it -- is the left wheel toed in?

13 A. That's a good description, yes. And that's --
14 and then you see the tie rod below that with the bowing

15 of the pump tie rod. That's what suggests to me that
16 toeing in put that tie rod into compression and caused a
17 bending.

18 Q. Do you know if the caster latch being unlocked
19 affects whether those tires are going to be toed in?

20 A. I -- I do not know in detail. That's --
21 that's outside my area of expertise.

22 Q. Okay. And then how about the -- the
23 alignment? You mentioned that the alignment that the --
24 you did say tag -- tag tire alignment, but I'm assuming
25 you were referring to that. Are the tag tires out of

0045

1 alignment?

2 MS. DORMAN: Object to form.

3 Q. (BY MS. RODRIGUEZ) I guess let me go back to
4 what I wrote from my notes. When I asked you about the
5 basis for your opinion that you believe the tie rod was
6 put into compression loading, you told me that it was
7 based on the orientation of the wheel and alignment of
8 the wheel. Is that what you're talking about --

9 A. That's what --

10 Q. -- the toeing in?

11 A. Yes. That is what I'm talking about, yes.

12 Q. All right. And so you didn't take the
13 alignment measurements of that -- the tag tires, did
14 you?

15 A. No, I did not do that.

16 Q. Okay.

17 A. No.

18 Q. All right. What else could cause that toeing
19 in that you see on Exhibit 2B1 -- 2C1?

20 A. Again, you're getting into areas that are
21 outside my area of expertise.

22 Q. Okay. So -- but if you're giving an opinion
23 on the tie rod being put into compression loading, did
24 you rule out other causes of the compression loading?

25 A. No. I'm not certain I ruled out other

0046

1 possible causes. I'm just saying what I see here is
2 consistent with what I think occurred.

3 Q. All right. Let's talk about what are the
4 other possible causes that could have caused the
5 compression loading that you're seeing or the -- the
6 bent tie rod I should say?

7 A. Well, the other -- other obvious one was
8 impact by other objects and, in particular, drive rod --
9 I mean, I'm sorry, the drive shaft.

10 Q. Did the drive shaft hit the tie rod on the
11 accident bus?

12 A. I saw no evidence to confirm that it did, no.

13 Q. So in your opinion, you don't think the drive
14 shaft ever hit the tie rod, correct?

15 A. I didn't see any evidence that it did.

16 Q. All right. Did the drive shaft escape the tag

17 axle harness or tag axle suspension support?
18 A. The -- some -- some evidence that it did, yes.
19 Q. Well, sure it did, because it came outside the
20 bus, right?
21 A. Right.
22 MS. DORMAN: Object to form.
23 Q. (BY MS. RODRIGUEZ) Okay. Are you expressing
24 an opinion in this case at what point the drive shaft
25 escaped the tag axle suspension system?

0047

1 A. At what point in the accident sequence?
2 Q. Yes, sir.
3 A. Not specifically.
4 Q. Okay. Well, I need to know. Are you going to
5 give an opinion to the jury that, look, I think that the
6 drive shaft came out of the tag axle harness at X point
7 in the accident sequence? Is that you or is that
8 another expert?
9 A. It's -- it's partly me. It may be another
10 expert as well.
11 Q. Okay. What is your opinion on when the drive
12 shaft came out of the tag axle harness?
13 A. Most likely towards the end of the sequence,
14 the general accident sequence.
15 Q. Okay. And where at the end of the general
16 accident sequence?
17 A. I don't know exactly where.
18 Q. Was the coach upright?
19 A. Again, I don't know exactly where.
20 Q. Was the coach on the road?
21 A. I -- I don't have an opinion. I don't know.
22 Q. So it's your testimony that the drive shaft
23 came out of the tag axle harness and it didn't hit the
24 tie rod at all when it exited?
25 A. No. What I said is I didn't see evidence that

0048

1 it hit the tie rod.
2 Q. Well, do you have an opinion, based on your
3 understanding of the -- the component parts involved,
4 whether it would have hit the -- the tie rod when it
5 left the tag axle harness?
6 MS. DORMAN: Object to form.
7 A. Not necessarily.
8 Q. (BY MS. RODRIGUEZ) And is that because of the
9 diameter, the width of the tag axle harness is so large?
10 MS. DORMAN: Object to form.
11 A. I'm sorry. I don't understand that.
12 Q. (BY MS. RODRIGUEZ) Sure. Is it -- you say
13 not necessarily. The -- the drive shaft escaped the tag
14 axle harness and did not necessarily hit the tie rod,
15 correct?
16 A. I -- what I'm saying is I didn't see any
17 evidence on the tie rod that it did hit the tie rod.
18 Q. Right. And I'm asking you, do you have an

19 opinion whether -- just your understanding of how those
20 component works whether, more likely than not, it would
21 have hit the tie rod?

22 A. I don't think there's a more likely than not
23 aspect to it. It might have; it might not have.

24 Q. Okay. Let's go back to the original question.
25 You told me that you believed the tag axle lock was

0049

1 mechanically pulled apart at some point during the
2 accident sequence, most likely when the tie rod became
3 bent, when the coach was on its side and sliding, based
4 on the tie rod itself. And have we now discussed all of
5 the basis for your opinions regarding the evidence you
6 see from the tie rod itself to support that opinion?

7 A. Of the tie rod itself?

8 Q. Yes, sir.

9 A. Of the tie rod, I think so, yes.

10 Q. Okay. And then you said also based on the
11 deformation of the various components?

12 A. Okay.

13 Q. Have we now gone over the various components
14 that -- that were deformed that you believe support your
15 opinion that the tag axle was mechanically pulled apart
16 when the tie rod became bent?

17 A. Not in detail I don't think so.

18 Q. Then let's work through those. What various
19 component parts are you alleging were deformed that
20 support that opinion?

21 A. The locking pin and basically the shaft of the
22 locking pin and the slot that the locking pin engaged
23 with, and the latch plate, the locking plate.

24 Q. All right. Why don't we get your photographs
25 out of the accident bus so that you can refer me to each

0050

1 one of those component parts. And are they in any of
2 the notebooks that we have in front of you or do we need
3 to fish them out of this stack that Ms. Dorman gave me
4 yesterday?

5 A. I think they're in the notebooks.

6 Q. Okay.

7 A. Let me check. Yeah. I believe all my
8 photographs are in the notebooks.

9 Q. Okay. I'd like to ask you about the locking
10 pin. Could you pull --

11 A. Locking pin?

12 Q. Yes, sir. Could you pull a photograph that
13 you believe demonstrates the deformation of the locking
14 pin that supports your opinion that the tag axle lock
15 became unlocked when the coach was on its side and
16 sliding?

17 A. Like I say, the first photographs of the
18 locking pin itself of my photographs were taken during
19 the July 20th, 2011 inspection. How do you want me to
20 describe these?

21 Q. Well, I don't want just photos of the locking
22 pin. What I want you to pull out from your photos of
23 the locking pin are the photo or photos that you think
24 best represents the basis for your opinion that the
25 deformation to the locking pin is evidence that the tag
0051

1 axle was mechanically unlocked as a result of the coach
2 on its side and sliding?

3 A. Well, I'm not sure there's one photograph I
4 can point to. The photographs show the deformation of
5 the pin, in my opinion. And my -- my analysis of the --
6 what I think is the dynamics that occurred when the tie
7 rod was bent and the -- these parts were engaged, it
8 would lead me to believe that I -- that most likely the
9 bending of this pin occurred as the locking plates were
10 mechanically forced apart.

11 Q. Well, I don't think that there's a dispute
12 that the bending occurred when the plates were
13 mechanically forced apart. I think where the dispute
14 comes into play is why were the plates forced apart?
15 Was it the --

16 A. Right.

17 Q. -- the compression side loading that you've
18 described or was it the drive shaft impact that
19 Mr. Jones has described? Do you understand that's
20 really the dispute here?

21 A. The -- the general dispute, yeah. I mean,
22 that is a dispute --

23 Q. Yes.

24 A. -- an area of dispute, I do understand that.

25 Q. Okay. So --

0052

1 A. So your question is, what is it about this
2 deformation that can tell you one version or the other?

3 Q. Yes. Is there anything in your photos that
4 you think that is representative of supporting your
5 opinion that it was compression loading as opposed to
6 the drive shaft impact?

7 A. Not on the pin itself, no.

8 Q. Okay.

9 A. Not on these components by themselves.

10 Q. All right. So the locking pin, the
11 deformation that you talked about is just in support of
12 your opinion that the tag axle lock was mechanically
13 pulled apart at some point, correct?

14 A. Yes.

15 Q. All right. And not in connection -- and not
16 in support of the opinion of how it was pulled apart,
17 true?

18 MS. DORMAN: Object to form.

19 A. Again, it doesn't -- the deformation I see
20 could be explained by one -- one of the two scenarios
21 that you described earlier.

22 Q. (BY MS. RODRIGUEZ) All right. Now, let's go

23 back to the -- I wrote shaft of locking pin from your
24 notes, but I think that that's the same as the locking
25 pin, right?

0053

1 A. Yeah. It was the shaft that was bent and not
2 the pin itself, in my opinion.

3 Q. Okay. All right. Now, you also said in terms
4 of the deformation in support of your opinion that you
5 looked at the slot for the pin?

6 A. Yes.

7 Q. Is that testimony -- is your opinion true that
8 the slot -- the deformation at the slot of the pin could
9 have been as a result of the compression loading or the
10 drive shaft impact, the deformation is not going to tell
11 you which of the two, just that it was mechanically
12 opened?

13 A. Well, again --

14 MS. DORMAN: Object to form.

15 A. -- it tells you the directionality of the --
16 the forces when this was pulled apart. It may -- it may
17 support the impact loading on the -- on the tie rod by
18 the drive shaft.

19 I personally don't -- I'm not sure that
20 that's the real explanation of this. But, again, I
21 mean, I'm not sure that it is definitive in its -- in
22 the evidence that it shows.

23 Q. Okay. So what -- what I hear you saying is
24 that the deformation to this -- of the slot for the
25 locking pin shows that it was -- the tag axle lock was

0054

1 mechanically pulled apart at some point, correct?

2 A. Correct.

3 Q. But you cannot discern if it was from the --
4 you cannot rule out that it was from the drive shaft
5 impact or the compression loading from the coach being
6 on its side?

7 A. Correct.

8 Q. All right. Now, you did mention that what
9 interests you was the directionality of the forces when
10 pulled apart. What did you mean by that?

11 A. Well, that the -- the directionality
12 suggests -- of the way these things are bent suggests a
13 forward and rearward pulling of these -- of the locking
14 plates.

15 Q. Okay. Help me understand -- when I think
16 forward, I'm thinking that it's getting pulled towards
17 the front of the bus?

18 A. Right.

19 Q. Right? And rearward, what do you mean by
20 that?

21 A. Towards the back of the bus.

22 Q. So it's getting pulled in both directions?

23 A. Well, the relative motion of the parts being
24 pulled apart, one is -- one is being pulled forward and

25 the other is either stationary or being pulled backward.

0055

1 Q. Okay. I understand. I thought you were
2 saying the directionality of the forces on the slot of
3 the pin, but you're saying the -- the pin is being
4 pulled in one direction and the slot is being pulled in
5 another --

6 A. Yeah.

7 Q. -- the locking plate?

8 A. Action and reaction, yes.

9 Q. Okay. Thank you for clearing that up. Do you
10 have an opinion in which direction the pin was being
11 pulled versus the slot for the pin?

12 A. Let's see. Yes.

13 Q. And what is that opinion?

14 A. Well, the pin was bent in a forward direction
15 and the -- the pin is being bent in a forward direction
16 so it suggests that the -- the plate -- the center plate
17 was being pulled in a forward direction, and the
18 reaction on the slot would be at the back end of that --
19 that slot which is where -- is what we saw.

20 Q. All right. Now, the last component part that
21 you told me that you saw some deformation was on the
22 latch plate. Have we already talked about the
23 deformation that you saw or is there additional
24 deformation on the latch plates -- no. We didn't talk
25 about the latch plates, so let me back up.

0056

1 What about the deformation that you saw on
2 the latch plate supports your opinion that the tie rod
3 became bent when the coach was on its side and sliding,
4 if anything?

5 A. I think that's what we were just -- I'm really
6 referring to what we were just talking about, that --
7 that part of the latch plate or the --

8 Q. The bottom latch then?

9 A. No.

10 Q. Or are you talking about the upper latch at
11 this point?

12 A. No. I'm sorry. I'm talking about the center,
13 which is the -- the locking plate.

14 Q. The tag lock. Okay. Let's -- let's try to --

15 A. Okay.

16 Q. -- work on some terminology --

17 A. Right.

18 Q. -- so I don't get confused. When I think of a
19 latching mechanism, I think about that upper structure
20 that we talked about in Exhibit -- let's see. 2B, this
21 is what I think of as the latching plate and mechanism.
22 Okay?

23 A. Oh. I see. Yeah. I'm with you.

24 Q. And then what we were just now talking about,
25 the deformation with the pin and the slots and the

0057

1 locking plate, I think of that as the tag axle lock?
2 A. Correct.
3 Q. Okay. So have we now talked about all of the
4 deformation to the component parts that you believe
5 support your opinion that the tie rod became bent when
6 the coach was on its side and sliding?
7 A. No. There are -- there is also some evidence
8 on the -- the latch plate. I think latch plate is
9 consistent with what I was just talking about where the
10 pin engaged and caused some deformation.
11 Q. Okay. So the upper latch or the tag lock are
12 you talking about?
13 A. Both.
14 Q. Okay. Show me in your photographs the
15 deformation to the latch plate.
16 A. The latch plate?
17 Q. Yes, sir. That you just said is in support of
18 your opinion. Not the log -- not the tag axle lock
19 plate but the caster latch plate.
20 A. Oh. The caster latch plate, you're talking
21 about --
22 Q. Upper, right.
23 A. No. I'm sorry. Then we have caused some
24 confusion. I'm not talking about the caster latch
25 plates.

0058

1 Q. All right. The deformation to the lock plate
2 that you say supports your opinion that the tie rod bent
3 as a result of compression loading, is that the
4 deformation that you saw at the slot or is it somewhere
5 else?
6 A. No. In the slot.
7 Q. Okay. Anywhere else on the lock plates --
8 plate?
9 A. Well, there could be similar deformation on
10 the upper and lower latching plates, meaning the tag
11 axle latching plate.
12 Q. Okay. When I deposed Mr. Hoogestraat -- you
13 know who he is, right?
14 A. Uh-huh. Yes.
15 Q. We talked about the tag axle lock as having
16 three plates; two clamping plates, one on the top and
17 bottom, and a lock plate in the middle?
18 A. Okay.
19 Q. All right. So assume that we used that
20 terminology.
21 A. Okay.
22 Q. What you're telling me is -- I see the
23 corresponding deformation to the clamping plates that I
24 saw on the locking plate at the slot position?
25 A. That's it.

0059

1 Q. Okay.
2 A. Do you -- do you mind if we take a quick

3 break?

4 Q. Absolutely.

5 A. Okay. Thanks.

6 (Recess taken from 11:05 to 11:12 a.m.)

7 Q. (BY MS. RODRIGUEZ) Okay. Dr. Coates, we were
8 just talking about Exhibit 2B in general. And I think
9 you've already walked me through all of the -- the
10 photos for 2B and the significance they have to you in
11 terms of your opinions in the case, correct?

12 A. Yeah. We talked about this already, yes.

13 Q. But did we look at 2B3 or 4? Let's just make
14 sure. Okay. So --

15 A. That's --

16 Q. -- 2C1. Okay. We were on 2C.

17 A. Yeah.

18 Q. That's right.

19 A. Yeah.

20 Q. Okay. So what is the significance of the
21 photos to the extent you haven't already described on
22 the photos in 2C?

23 A. In 2C?

24 Q. Yes, sir.

25 A. Okay. 2C are -- I think these are all scene

0060

1 photographs. There's four of them with the coach on its
2 side. And we're looking at the photographs showing the
3 underside in the area that we've been discussing, the
4 tie rod and the upper latch plate area. We've talked
5 about the -- the bending or turning in of the -- the
6 wheel and the bending of the tie rod that I see.

7 The other thing that was of interest to me
8 was, going back to the upper latch plate and the strap
9 or guard that -- that I mentioned earlier, which was not
10 present in the test -- driving test video that I saw,
11 there is what I can see in -- in these photographs when
12 the -- the bus was or coach was on its side post
13 accident, the -- the strap was actually -- was touch --
14 being touched by the -- was engaged with the forward
15 portion of the upper latch, what is the upper portion of
16 the horseshoe. And there was some discussion about --
17 that I saw in Mr. Jones' deposition about some marks on
18 that strap about what caused those. And I think this
19 provides a good explanation what did cause those.

20 Q. And what is that?

21 A. That they became in contact -- where the strap
22 came in contact with that portion of the upper -- upper
23 portion of the locking -- of the latch plate mechanism
24 during the accident sequence.

25 Q. Okay. So the upper caster latch became

0061

1 unlocked during -- at some point during the accident
2 sequence, correct?

3 A. At some point presumably, yes.

4 Q. Do you have an opinion at what point?

5 A. No.
6 Q. And can you circle the area that you were just
7 talking about that you -- it doesn't matter which pen.
8 Just pick a photograph that you think represents the --
9 the strap and caster latch plate that you were just
10 describing?

11 A. The -- yes. Well, I can do it on all three.
12 They all show it at higher magnification, so do you want
13 me to do all three?

14 Q. Sure.

15 A. The blue one, I think, is better.

16 Q. All right. And so you've now circled with a
17 blue pen the areas where the -- shows that the caster
18 latch was unlocked and impacting the strap around it?

19 A. Well, I wouldn't say impacting. In contact
20 with.

21 Q. Okay. Anything else significant about the
22 photos in Exhibit 2C3 -- 2C, I believe?

23 A. 2C. Well, again, they -- I mean, they show
24 the condition of the -- the coach post accident. When
25 you say "anything else significant," the reason these
0062

1 pictures were chosen is to illustrate that point. But
2 they do show the fact that the drive -- drive shaft is
3 no longer there and various aspects about that, but
4 that's not the purpose of including those photographs.

5 Q. Let me ask you this: Is the fact that the
6 caster latch became unlocked at some point in this
7 accident sequence, does that have any bearing on your
8 opinions in this case?

9 MS. DORMAN: Object to form.

10 A. Well, I've been asked to opine regarding
11 certain aspects of that, basically the witness marks
12 regarding the upper -- upper latch plate mechanism, but
13 as far as how that impact impacted the accident sequence
14 or where, that's not -- not in my area of expertise.

15 Q. (BY MS. RODRIGUEZ) Okay. So within your area
16 of expertise, what about the witness marks on the caster
17 latch affects your opinions?

18 A. Well, I'd have to look --

19 Q. This one?

20 A. Well, I'm not certain. Maybe this one. I'd
21 probably want to use 2A --

22 Q. All right.

23 A. -- the photographs here. There's -- there's a
24 series of photographs of the subject bus in the upper
25 latch area taken by various people, I think. This a
0063

1 summary of them. And it shows, for example, the mark I
2 was -- marks I was talking about on the strap
3 illustrate -- the underside of the strap in which I --
4 which I've already talked about.

5 Q. And as I understand it, what -- the only thing
6 that you're noting is that it shows that there's contact

7 between the latching mechanism and the strap, correct?

8 A. Yes.

9 Q. Any other significance of seeing those marks?

10 A. No. I mean, it was what caused those marks
11 and I think we have a good explanation of what caused
12 those marks.

13 Q. Okay.

14 A. Yes. Then we have a number of photographs
15 that show the -- the clevis and the rollers and the ramp
16 mechanism, which is part of the upper latch plate
17 operating mechanism, as I understand it.

18 And the main -- there's a num -- there's a
19 number of witness marks and deformations of these
20 component parts, which, from my point of view, indicates
21 that the -- the latch plate -- the upper latch plate has
22 been deflected to the side and basically toward the left
23 if you're looking at it from the front with respect to
24 the -- I think we call it the horse harness portion of
25 the -- of the containment of the -- the drive shaft

0064

1 area.

2 And I -- again, there's a number of
3 specifics about that. I don't know -- if you want me to
4 go through that in detail.

5 Q. I do, please.

6 A. Okay. Do we want to mark these separately?

7 Q. Sure. Here. I'll just give you the stickers.

8 Whatever letter number we're on.

9 A. Okay. We are on 2C. No. I'm sorry. 2A.

10 Q. Okay.

11 A. Just get a pen. Thank you. I think this is
12 2A1 and -- thank you -- 2A2. So what I've marked as 2A1
13 and 2A2, photographs taken from below, looking up toward
14 the -- the upper latch plate in the roughly center of
15 the photograph, you see the strap and you can see the
16 upper portion of the -- I think it's been referred to as
17 the horse harness area.

18 One thing that -- these photographs
19 illustrate some mechanical damage to the -- it would be
20 the upper right portion basically of the horse harness
21 area, some --

22 Q. Can you circle it?

23 A. Well, there's a number of them.

24 Q. Highlight it, whatever you think -- if I can
25 find a blue --

0065

1 MS. DORMAN: There's a blue pen.

2 Q. (BY MS. RODRIGUEZ) And that's on what
3 exhibit, sir?

4 A. 2A1.

5 Q. Thank you. What do the circles represent?

6 A. Those are areas -- I've circled areas which
7 are clearly mechanical impact marks, what I call witness
8 marks, most likely from the flailing drive shaft

9 impacting the -- the upper portion of that -- inside
10 portion of the horse harness area.
11 Q. Why do you think that's from the drive shaft?
12 A. It's consistent with what I expect when the --
13 when the drive shaft let loose at the transmission end,
14 it would just -- it would have been below that area and
15 there were a number of impact marks around and inside --
16 basically within the horse harness area which were
17 consistent with rotation impact.
18 Q. And what is the significance of seeing that
19 the drive shaft impacted the area near the caster latch?
20 A. Okay. I'm getting to that.
21 Q. Okay.
22 A. So you see that's towards the upper right as
23 we're looking rearward.
24 Q. Okay.
25 A. So the displacement of basically the top

0066

1 portion of the horse harness area, with respect to the
2 plate itself, is to the right or the plate has been
3 shifted to left, whichever way you want to look at it.
4 Those impact marks, in my opinion, provide an
5 explanation of why -- where -- what caused that -- that
6 shifting or that sideways loading.

7 Q. Okay. So the drive shaft would have knocked
8 the tag axle suspension support to the right?

9 A. To the right as we look at it in this -- in
10 this orientation, yes.

11 Q. Okay.

12 A. And so when we look at the -- the latch plate
13 itself and the clevis components, that shows a similar
14 directionality in terms of the deflection of the
15 components, there are witness marks, and deformation on
16 the inside of plate -- for example, in 2A3. I'll circle
17 the area I'm talking about.

18 Q. And what do you think caused the deformation
19 that you circled in 2A3?

20 A. That the latch plate came in contact with a
21 portion of the upper portion of the -- the horseshoe or
22 the clevis area. The horn area, I would say.

23 Q. What do you think caused the latch plate to
24 come into contact with the upper tag axle suspension
25 support?

0067

1 A. Well, as I said, most likely that the impact
2 of the tag axle support by the drive shaft.

3 Q. Did the impact from the drive shaft cause the
4 upper latch to come unlocked?

5 A. I don't know.

6 Q. Have you ruled that out?

7 A. I haven't ruled -- ruled it out.

8 Q. What -- did you form an opinion on what caused
9 the upper latch to come unlocked?

10 A. No. But I'm saying there is deformation and

11 there's also one of the ramps was missing.
12 Q. The what?
13 A. Ramp.
14 Q. Ramp?
15 A. Yeah.
16 Q. What's -- can you show me a picture of a ramp
17 that is present?
18 A. Not likely. Yes. That is present, I -- I
19 believe so. Let me see. Okay. All right. Should I
20 mark -- oh, this one. These two.
21 MS. DORMAN: 2A4?
22 A. 2A4 and 2A5 I'll mark.
23 (Exhibit Nos. 2A4, 2A5 marked.)
24 Q. (BY MS. RODRIGUEZ) Let me come around to you
25 real quickly then.

0068

1 A. Sure.
2 Q. It's a big conference room table.
3 A. That's fine.
4 Q. It has its pros and cons.
5 A. Okay. So let's go back to 2A3. So 2A4 is --
6 we're looking at the same areas as 2A3 basically,
7 although at a slightly different orientation so you can
8 see more of the left side of the underside of the latch
9 plate. And shall I circle the ramp that I was referring
10 to?
11 Q. Sure. Let's do the circle of the ramp in --
12 A. Red?
13 Q. -- red, please.
14 A. (Witness complies.)
15 Q. And that's on 2A4, correct?
16 A. Yeah. Yes.
17 Q. What is the purpose of a ramp on the latch
18 plate?
19 A. Well, my understanding, the purpose is that --
20 that mechanism allows the latch plate to -- it will
21 actually -- to raise and lower during the operation of
22 the -- of the mechanism, of the latching mechanism.
23 Q. Do you --
24 A. So it's to allow the horns to move from one
25 location to the other.

0069

1 Q. Do you have an opinion on when one of -- the
2 missing ramp was taken off the latch assembly or removed
3 or hit or --
4 A. Taken off?
5 MS. DORMAN: Object to form.
6 Q. (BY MS. RODRIGUEZ) -- why it's gone?
7 MS. DORMAN: Object to form.
8 Q. (BY MS. RODRIGUEZ) Let me re-ask the
9 question. Do you have an opinion why the missing ramp
10 is not there?
11 A. Well, the missing ramp is on the -- on the
12 right side as we look at it. And that -- in my opinion,

13 mostly likely it was broken off during this deflection
14 to the right relatively -- relative motion to the right
15 of the upper portion of the -- the harness assembly and
16 the horn with respect to the -- to the plate.

17 Q. Caused by the drive shaft hitting that area?

18 A. Most likely, in my opinion.

19 Q. Okay. All right. What else is significant in
20 those photos in 2A?

21 A. Well, that's the main thing. I mean, we also
22 see that, for example, the -- let's see. 2A -- well,
23 2A4 also shows that the -- the roller on the clevis
24 which should be engaged with the ramp has been shifted
25 to the right.

0070

1 Q. Again, do you believe that most likely was
2 caused by the drive shaft hitting the caster latch
3 assembly and tag axle harness?

4 A. That that's -- in my opinion, that's most
5 likely when that occurred, yes.

6 Q. Did the -- what Mr. Hoogestraat is describing
7 as the guarding structure, which I think you've called
8 the horseshoe harness, does that adequately protect the
9 caster latch from impact by the drive shaft, in your
10 opinion?

11 MS. DORMAN: Object to form.

12 A. Yes. I don't -- I didn't see any evidence
13 that the drive shaft hit the -- directly hit the caster
14 latch mechanism.

15 Q. (BY MS. RODRIGUEZ) By the drive shaft hitting
16 the horseshoe collar, did that adequately protect the
17 caster latch?

18 MS. DORMAN: Object to form.

19 A. I think that's outside of my area of
20 expertise.

21 Q. (BY MS. RODRIGUEZ) Okay. But as I understand
22 it, in your opinion, more likely than not, the drive
23 shaft hit the horseshoe harness and that caused a
24 shifting which then unlocked the caster latch, correct?

25 A. No.

0071

1 Q. All right.

2 A. I never said anything about unlocking of the
3 caster latch.

4 Q. What -- you acknowledge that the caster latch
5 is unlocked, correct?

6 A. At the end.

7 MS. DORMAN: Object to form.

8 Q. (BY MS. RODRIGUEZ) I'm asking as it sits
9 there today, it's unlocked, right?

10 A. It became unlocked at some point.

11 Q. Okay. And I asked you how it came unlocked
12 and you said you don't have an opinion, and you also
13 don't have an opinion on when; is that true?

14 A. That is true.

15 Q. Okay. What is the significance -- and you may
16 not have an opinion on this, but if you do, let me know.
17 What is the significance of the caster latch becoming
18 unlocked to this accident?

19 A. I don't have an opinion on that.

20 Q. Okay. I think we've gone through all the
21 photos in 2A, correct?

22 A. Well, we've gone through the ones that I've
23 marked, which I think illustrated points -- points that
24 I wanted to make.

25 Q. Was there anything in 2A that we haven't
0072

1 marked or discussed that bears any relevance to your
2 opinions in this case?

3 A. Well, these photographs, there are other
4 photographs that show, I would say, basically the same
5 thing --

6 Q. Okay.

7 A. -- from different views and different levels
8 of detail. Let me just double-check all of that. Yeah.
9 I would say that was the two --

10 Q. There's two I wanted to ask you in particular.

11 A. Okay.

12 Q. Sir, can you tell me for this set what number
13 we're on? 2A --

14 A. I've just marked 5, so 6 would be the next
15 one.

16 (Exhibit No. 2A6 marked.)

17 Q. Thank you. All right. So for 2A6 --

18 A. Yes.

19 Q. -- what does this photograph represent?

20 A. Well, again, we're looking up at the -- toward
21 the upper latch plate. It's -- it's somewhat similar to
22 2A1 and the closer view.

23 Q. All right. So what -- what's the focus of 2A6
24 is the upper latch plate on the caster latch?

25 A. That's in focus and the other parts aren't in
0073

1 focus, yes.

2 (Exhibit No. 2A7 marked.)

3 Q. All right. And then what is 2A7
4 representative of?

5 A. That's the -- well, you can see the strap that
6 we talked about earlier and the forward horn, and you
7 can see part of the roller and the clevis itself.

8 Q. Okay. I think we've got one more manila
9 folder.

10 A. No. I think we've talked about all three.

11 Q. Could you hand me your notebook back?

12 A. Sure.

13 Q. No. I'm sorry. I want to look at this first.
14 I see that you've got some handwritten notes in
15 Exhibit 2, correct?

16 A. I do.

17 Q. The -- you looked at a total of how many drive
18 shafts in connection with this case?

19 A. Well, there was a subject one and I think I'd
20 have to have my file back to --

21 Q. Okay.

22 A. -- to be certain. But I think one, two -- at
23 least two others. I -- again, I'd prefer to refer to my
24 file.

25 Q. We've got the accident one --

0074

1 A. Yes.

2 Q. -- and then four additional ones that you saw
3 up in Nappanee and Richmond?

4 A. No. No. They didn't all have drive shafts.
5 I saw four additional coaches.

6 Q. Okay. And then you got a drive shaft -- did
7 you get the drive shaft sent to you?

8 A. To Fowler's there was a drive shaft sent, yes.

9 Q. But you looked at it?

10 A. Yes.

11 Q. Okay. So of the four coaches that you looked
12 at, did you have all the drive shafts?

13 A. No. I think there was -- okay. 6 -- 60624,
14 apparently a replacement drive shaft. 60624, which is a
15 test vehicle, there was a drive shaft installed. So it
16 looks like I did see them -- a drive shaft associated
17 with all four at some point.

18 Q. But one of them was a replacement drive shaft?

19 A. It appears to have been.

20 Q. Okay. So you've got the accident bus and then
21 three damaged drive shafts, correct?

22 A. Well, I'm not sure there's three damaged drive
23 shafts.

24 Q. Well, that's what I wanted to talk to you
25 about next. Let's pull out the one that got replaced in

0075

1 one of the coaches you looked at, 60624.

2 A. When you say "pull it out," what do you mean?

3 Q. Let's set that aside. We're not going to talk
4 about that right now because you understand that that
5 was not the drive shaft in the bus at the time of the
6 drive shaft failure, correct?

7 A. Yes.

8 Q. All right.

9 A. Well, that was my understanding.

10 Q. Let's talk about the drive shafts that you
11 looked at that appeared to have sustained a failure.
12 How many numbers are -- how many drive shafts did you
13 look at with that description?

14 A. Okay. Well, there was one drive shaft that
15 was part from a test coach and became damaged doing some
16 testing, which is 60628. 6468 is the one which the
17 drive shaft was subsequently sent, provided to me at
18 Fowler's. 60624 was another -- apparently a test

19 vehicle. I don't know what was described at the test
20 vehicle and I don't think that drive shaft was damaged.
21 It was present, but not damaged.

22 Q. And that was what unit number?

23 A. 60624. Then we have 6352 which I did see the
24 damaged drive shaft.

25 Q. All right. So did you see the drive shaft for
0076

1 6352 and it was damaged?

2 A. 352?

3 Q. Yes, sir.

4 A. Yes, I did.

5 Q. All right. So you've looked at a total of
6 four drive shafts that were damaged in connection with
7 this case, correct?

8 A. Yes. I believe that's correct.

9 Q. And then you saw one that looked like a
10 replacement drive shaft on coach 60624, correct?

11 A. Yes.

12 Q. Have you looked at any other drive shafts in
13 connection with this case?

14 A. No.

15 Q. Okay. Let's talk about the make and length of
16 the drive shaft on the accident bus. What was it?

17 A. I'm sorry? I missed your question. I'm
18 sorry.

19 Q. What was the make and length of the drive
20 shaft on the accident bus?

21 A. The make and length?

22 Q. Yes, sir.

23 A. Well, I did -- I made some measurements at my
24 first inspection. It looks like the approximate length
25 between the -- what I estimated to be the center lines
0077

1 of the -- the U-joint -- the U-joints, wherever the
2 U-joints would have been, was about -- I measured 26 1/8
3 inch.

4 Q. Is that fully compressed or extended?

5 A. That's the measurement I made when -- as I saw
6 it.

7 Q. Well, was it compressed or extended?

8 A. It was the condition that -- as I saw it.

9 Q. Do you remember if it was compressed or
10 extended when you saw it?

11 A. I don't know whether it was fully compressed
12 or -- I don't think it was fully extended.

13 Q. And when you say "center U-joint," are you
14 talking about center yoke to center yoke or --

15 A. Approximately, yes. That's estimate --
16 estimation, yes.

17 Q. And do you have drawings or photographs that
18 illustrate that measurement?

19 A. Yes.

20 Q. Where are those?

21 A. In my notes on that section, July the 29th,
22 2010.

23 Q. And that's contained in which notebook,
24 exhibit number?

25 A. Three.

0078

1 Q. Thank you. All right. And then what was the
2 make of that drive shaft?

3 A. I -- I didn't see any -- any markings that
4 I -- that I identified or identified to me who the
5 manufacturer was.

6 Q. When you took the measurement of the drive
7 shaft on the accident bus, and at this point you're not
8 sure if it was fully compressed, did you use a tape
9 measure --

10 A. Yes.

11 Q. -- to take measure --

12 Did you take a photograph of your
13 measurement so we could look to see if it was fully
14 compressed or not?

15 A. Well, you can -- you can take a look at the
16 drive shaft. I mean, not with a -- I don't think with a
17 trans -- with a tape measure, but there's -- nothing has
18 changed during that inspection in terms of the lengths
19 of the drive shaft. So there are photographs of the --
20 of the drive shaft to that point.

21 Q. Okay. And then let's go ahead and mark on one
22 of the photographs of the actual drive shaft --

23 A. Okay.

24 Q. -- the -- from point to point that you
25 measured so there's no misunderstanding.

0079

1 A. Well, I'm not sure I could easily mark it on
2 the -- maybe I could. I'm thinking my diagram shows it.
3 Actually, I must correct myself. Center line to center
4 line 28 1/4 inch --

5 Q. And so --

6 A. -- approximately.

7 Q. -- I'm trying to figure out where the -- where
8 you marked the center line. So if you can go to the
9 actual photograph.

10 A. Well, the center line would be the center line
11 of the -- the U-joint bearing cap.

12 Q. Okay. So can we mark this as Exhibit 3A, and
13 you can use either this photograph or that photograph,
14 and put an X on where the center line would have been
15 when you took that measurement?

16 A. (Witness complies.)

17 (Exhibit No. 3A marked.)

18 Q. Okay. And so Exhibit 3A represents the
19 measurement point from one end of the subject drive
20 shaft that -- where you took your measurement on the
21 length of the drive shaft, correct?

22 A. Yes.

23 Q. Okay. And you said it was 26 1/4?
24 A. No. I --
25 MS. DORMAN: Object to form.
0080
1 A. I'm sorry. I corrected myself to 28 1/4
2 inches.
3 Q. (BY MS. RODRIGUEZ) 28 1/4. Where did the 26
4 1/8 come from?
5 A. That came from the center line of the -- it
6 would be the differential end to the -- the -- the lower
7 surface or the inside surface of the yoke itself.
8 Q. How are drive shafts usually measured?
9 MS. DORMAN: Object to form.
10 Q. (BY MS. RODRIGUEZ) From what point to what
11 point?
12 MS. DORMAN: Object to form.
13 A. Usually by whom?
14 Q. (BY MS. RODRIGUEZ) Well, by experts in the
15 field. If I want to know -- I need a 28-inch drive
16 shaft in that bus. I'm going to measure it from what
17 point to what point?
18 MS. DORMAN: Object to form.
19 A. I don't -- I don't know what the convention is
20 for -- for automotive engineers.
21 MS. DORMAN: We lost the phone people.
22 See if I can find them.
23 THE WITNESS: Would this be a good time
24 for just another quick break?
25 MS. RODRIGUEZ: Sure.
0081
1 (Recess taken from 11:49 to 11:57 a.m.)
2 Q. (BY MS. RODRIGUEZ) Okay. Dr. Coates, we were
3 talking about the lengths of the drive shaft in the
4 accident bus. And as I understand it, you determined
5 that it was 28 1/4 inch from center line U-joints --
6 from center line U-joint to U-joint and --
7 A. That's what I measured approximately.
8 Q. And it may or may not be fully compressed?
9 A. Yes.
10 Q. Okay. And you were unable to determine the
11 make of the drive shaft?
12 A. I -- I made no notations of anything as
13 indicated to me who the manufacturer was.
14 Q. Did you discern the model or the series of the
15 drive shaft?
16 A. Not from any markings on the drive shaft, no.
17 Q. All right. Let's talk about the drive shaft
18 in 60628. And that I've marked from your testimony
19 today as being the test bus?
20 A. 60628?
21 Q. Yes, sir. Did you measure the drive shaft
22 that was used in -- for the test bus 60628?
23 A. No.
24 Q. Did you make a note of what make it is?

25 A. No.

0082

1 Q. How about the one that was sent to you at
2 Fowler's, the drive shaft from unit 6468? Did you take
3 the measurements of that drive shaft?

4 A. No, I didn't.

5 Q. And then how about the drive shaft from unit
6 6352? Did you -- do you know what the measurement is of
7 that drive shaft?

8 A. I did not measure that.

9 Q. And do you know what the make is from the
10 drive shaft on 6352 that you looked at?

11 A. I made no notes that indicated who the
12 manufacturer was, no.

13 Q. Let's go back to the caster latch strap. Is
14 it your understanding that the caster latch strap is
15 intended to retain the drive shaft?

16 MS. DORMAN: Object to form.

17 A. The caster latch, no.

18 Q. (BY MS. RODRIGUEZ) Strap, right. The purpose
19 of the caster latch strap is not to hold the drive shaft
20 in the tag axle harness, correct?

21 A. Well, it's --

22 MS. DORMAN: Object to form.

23 A. It's really getting beyond my area, but I
24 don't see how it could be.

25 Q. (BY MS. RODRIGUEZ) Okay. So if a caster

0083

1 latch strap was missing on a drive shaft test, that
2 would have no impact on whether the drive shaft can
3 escape the tag axle harness or not, correct?

4 MS. DORMAN: Object to form.

5 A. Well, I'm not certain that was the purpose of
6 the test, but I saw the video and what those photographs
7 we talked about earlier was -- was designed to show.

8 MS. RODRIGUEZ: Objection, nonresponsive.

9 Q. (BY MS. RODRIGUEZ) My question is just
10 generally a caster latch strap is not going to affect a
11 drive shaft test if the purpose of the drive shaft test
12 is to show whether a drive shaft can escape a tag axle
13 harness, correct?

14 MS. DORMAN: Object to form.

15 A. I don't know. Again, that's outside my area
16 of expertise.

17 Q. (BY MS. RODRIGUEZ) All right. So when I --
18 we started this line of questioning you said, well,
19 there were some aspects of the test, the drive shaft
20 test and the test components that were not represented
21 by the accident bus. And one of the things you said was
22 the caster latch strap was not present on the test bus
23 but was present on the accident bus.

24 You're not telling us that that affects
25 the validity of the drive shaft testing, are you?

0084

1 MS. DORMAN: Object to form.
2 A. Well, I probably described it incorrectly.
3 I'm not sure that was a drive shaft test I was referring
4 to. It was -- I'm not sure exactly what it was
5 designed -- designed -- or how it was described, but
6 it's more of a caster latching mechanism test as I
7 describe it as.

8 Q. (BY MS. RODRIGUEZ) Are you referring to the
9 one that Aaron Jones conducted in September of 2011?

10 A. It's whatever -- I'm sure -- I'm sure that's
11 the date, but it's -- it's described as video 13,
12 whatever date that video 13 and video 12. So I don't
13 have the date, I mean. I can probably find out.

14 Q. And is video 13, as you understand, Mr. Jones'
15 testing or what testing was that? Do you know?

16 A. Well, it's one described as video 13 and video
17 12. And I think those came from Mr. Jones, his -- his
18 depo and what was on his flash drive.

19 Q. All right. Let's talk about the videos that
20 are out there. Are you aware of any containment loop
21 testing performed on a 102 -- 102-DL3?

22 MS. DORMAN: Object to form.

23 A. I'm not sure.

24 Q. (BY MS. RODRIGUEZ) All right. Are you aware
25 that there has been a second drive shaft loop placed on
0085

1 Americanos 102-DL3?

2 A. I have heard that, yes.

3 Q. Have you seen any testing in connection with
4 that second loop?

5 A. There may be. I just don't recall. That's
6 not an area that I focused on.

7 Q. All right. So you're not going to talk about
8 the validity of that second loop and whether it's a
9 safer alternative design; is that correct?

10 A. That is correct. That's outside of my area.

11 Q. All right. But you did see some testing of
12 a -- that involved a drive shaft being separated at the
13 transmission end, correct?

14 A. Yes.

15 Q. And do you think that the photos that you just
16 referred me to in Exhibit 2B --

17 A. Yes.

18 Q. -- are from that drive shaft testing --

19 A. No.

20 Q. -- or something else? Okay.

21 A. No. Something else.

22 Q. All right. What do you think that the photos
23 from 2B are from then?

24 A. My understanding, it was some -- some other --
25 it was drive -- drive testing that would describe it as
0086

1 meaning coach drive testing, where it's my understanding
2 some -- some attempt was to -- to determine what

3 happened when the -- if and when the upper latch plate
4 became disengaged.

5 Q. Okay. So track testing?

6 A. I believe it was track testing.

7 Q. And track testing is beyond your area of
8 expertise, correct?

9 A. Yes. I'm not going to talk about the testing,
10 per se.

11 Q. All right. And so the only thing that you can
12 comment on is the difference that you see from the --
13 the photos in 2B versus what you saw on the accident
14 bus, correct?

15 A. From the photos and the video, yes.

16 Q. But you can't tell the jury the significance
17 of those differences, if anything, other than see that
18 they're different?

19 A. Yeah.

20 Q. Is that true?

21 A. That's true.

22 Q. Okay. Sir, do you have your first original
23 report available to reference?

24 A. I have a copy of it, yes.

25 Q. Get that out for us. And what is the date of
0087

1 your first report in this case?

2 A. Well, it was actually two reports that I did
3 August 11th, 2011.

4 Q. And when you say there's two reports, you
5 wrote one to Mr. Dacus, correct?

6 A. Yes.

7 Q. And one to Mr. -- you signed a report that was
8 addressed to Mr. Bullion, correct?

9 A. Yes.

10 Q. And then the opinions that are different
11 between the two is the letter to Mr. Bullion addresses
12 the U-joint, the -- whether ArvinMeritor -- well, let me
13 just ask you generally: What is the difference between
14 the two reports?

15 A. I'd say the main difference is Mr. Bullion
16 addresses the U-joint and the -- U-joint components and
17 drive shaft separation, but doesn't address anything
18 beyond that. The report to Mr. Dacus also covers those,
19 but, in addition, addresses the tag axle locking
20 mechanism, the tie rod.

21 Q. Okay. So because you signed the letter report
22 dated August 11th to Mr. Bullion along with Mr. Fowler,
23 I want to make sure that I learn whether you're going to
24 give this jury opinions on the ArvinMeritor parts or any
25 ArvinMeritor aspect?

0088

1 A. Again, I -- as I explained, Doctor -- I
2 understand Dr. Fowler is going to be addressing those
3 and I don't expect to be asked questions in that regard
4 because he will be addressing those.

5 (Exhibit No. 8 marked.)

6 Q. Okay. Now, let's go back to the August 11
7 report to Mr. Dacus. I'm going to hand you what I've
8 marked as Exhibit 8 to your deposition. Is this a copy
9 of the report?

10 A. It appears to be a copy of the report plus
11 CVs.

12 Q. All right. And take the CVs out if you -- if
13 you need to. I just want to ask you about the report at
14 this time.

15 A. Do you want me to separate them or --

16 Q. Sure. I'm going to ask you about that later
17 on, the CV later on.

18 A. (Witness complies.)

19 Q. All right. Now, let's -- I want to refer you
20 to the materials that you reviewed.

21 A. Okay.

22 Q. And the MCI standard 25-24-0001, what is that?

23 A. It indicates raw material standards, raw
24 material selections, field products.

25 Q. Is that a document that you received from the

0089

1 attorneys for MCI?

2 A. I believe so.

3 Q. Where could I find that in the -- in all of
4 these documents?

5 A. I'd have to look. I'm not certain where it is
6 at the moment.

7 Q. Is --

8 A. It should be here somewhere.

9 Q. Is it a drawing or a specification sheet or do
10 you remember what it looked like?

11 A. No. I don't recall as I sit here. I think it
12 was a document, but I -- I cannot recall specifically.

13 Q. All right. Then I guess my next question is
14 did you rely on MCI standard 25-24-0001 in forming your
15 opinions in this case?

16 A. I don't think so. Not any detail, no.

17 Q. Then the next item is stainless steel - AISI
18 304, UNS S30400, what is that?

19 A. Well, 304 is a designation for a stainless
20 steel -- common stainless steel. AISI is American --
21 American Institute of Standards. No -- I forget the --
22 what the acronym AISI -- UNS is unified numbering
23 system. They both refer to a specific alloy, specific
24 stainless steel alloy.

25 Q. Did you notice anything or is there any

0090

1 importance about the stainless steel alloy on any of the
2 component parts that you analyzed in this case?

3 MS. DORMAN: Object to form.

4 A. Say that question again.

5 Q. (BY MS. RODRIGUEZ) Sure. You've got a --
6 what appears to be a steel product standard from MCI and

7 then a stainless steel references. Did you determine
8 that there was anything about the stainless steel used
9 in any of the component parts that affects your opinions
10 in this case?

11 A. I don't think that became an issue or is an
12 issue as to what the steel -- what the alloy used for
13 component parts, so at this point I don't think it's an
14 issue.

15 Q. Okay. So at this point you did not rely on
16 stainless steel AISI 304 or UNS S30400, correct, in
17 forming your opinions?

18 A. I don't --

19 MS. DORMAN: Object to form.

20 A. -- in terms of forming an opinion, I don't
21 think so. I mean, I understand that part of these
22 components were made from steel or stainless steel.
23 That's the information provided to me. But whether it
24 was appropriate or whether that played any role in -- in
25 what I'm talking about here today, I don't believe so.

0091

1 Q. Okay. And do you know what parts were made of
2 stainless steel 304?

3 A. I believe it was the tag axle locking plates.

4 Q. Okay. And then on page 2 --

5 A. Yes.

6 Q. -- you refer to Bob Rucoba's inspection
7 photos. And you understand he's with Carr Engineering,
8 correct?

9 A. I do understand that, yes.

10 Q. Okay. So in your multiple disks that I found,
11 I came across three. And I'm assuming that this disk
12 marked as 4429 is the inspection photos that you're
13 referring to on that bullet point, correct?

14 A. I'd have to look at it, but I -- I think
15 that's probably correct.

16 Q. All right. Then if you go back to or down
17 further, it says, vehicle inspection photos taken by
18 Carr Engineering, 7/27/10. I'm just wondering what's
19 the difference between that and the photographs, Bob
20 Rucoba's inspection photos taken 7/27/10. Is there any
21 difference?

22 A. I'm sorry, Tamara. Where are we?

23 Q. Sure.

24 A. The second one you were talking about?

25 Q. Sure. We've got this bullet point that says:

0092

1 Photographs, Bob Rucoba's inspection photos 7/27/10?

2 A. Yes.

3 Q. And then we go down here, vehicle inspection
4 photos taken by -- is it the same disk or are we talking
5 about different inspections by different people at Carr
6 Engineering or --

7 A. I think it's the same. I think we've provided
8 these in two different formats; one was the -- on a disk

9 and one is a printout. And I -- I think they are the
10 same.

11 Q. Okay. And then I've got two disks that are
12 called, Exemplar vehicle inspection from Carr
13 Engineering, 8/2/11, and I've got that twice. Are
14 these -- to the best of your knowledge, are those the
15 same?

16 A. I believe they are. I'd have to double-check,
17 but I believe they are.

18 Q. Did you rely on Mr. Rucoba's photographs in
19 forming any of your opinions?

20 A. I would say --

21 MS. DORMAN: Object to form.

22 A. -- I'd looked at them but not -- not
23 specifically I don't believe so.

24 Q. (BY MS. RODRIGUEZ) Now, I was produced a ton
25 of photographs, as you can see here. And I understand

0093

1 that these are your photographs. What I'm -- what I
2 want to know is, on the disk that got produced, if you
3 know, yesterday, if they included everybody else's
4 photographs or if these are just your photographs?

5 A. I -- I don't know --

6 Q. All right.

7 A. -- Tamara. I'd have to have a look.

8 Q. Why don't you kind of go through them. And I
9 might have gotten them out of order, but you can tell me
10 if those are your photographs.

11 A. To be -- to begin with I -- I should state I
12 believe all of my photographs are included in the total
13 folders that I produced today.

14 Q. When you say "folders," are you referring to
15 notebooks that we've marked as exhibits?

16 A. Yes.

17 Q. Thank you. You can have that coupon.

18 A. Thank you.

19 MS. DORMAN: Is that my invoice?

20 THE WITNESS: Yeah.

21 A. Okay. I've just briefly gone through this
22 pile of photographs and I've not looked at every single
23 photograph, but it does appear to be that these are all
24 my photographs.

25 Q. (BY MS. RODRIGUEZ) Okay. Thank you.

0094

1 MS. RODRIGUEZ: And for the record,
2 Ms. Dorman, these are part of the photographs that were
3 provided by -- on disk to me yesterday.

4 MS. DORMAN: Uh-huh.

5 MS. RODRIGUEZ: I'm not going to attach
6 these.

7 MS. DORMAN: Yes.

8 Q. (BY MS. RODRIGUEZ) Okay. Going through your
9 report again --

10 A. Yes.

11 Q. -- at the end of page 3 you identify
12 ArvinMeritor Manual TP-0445, parts failure analysis.
13 What is that and where is it?
14 A. I think that's in one of these three-ring
15 binders, I -- I believe.
16 Q. Can you locate it for me?
17 MR. BULLION: Are we on a break or are we
18 still going?
19 MS. DORMAN: We're going.
20 MR. BULLION: Okay. Are we taking a
21 lunch break at some point?
22 MS. DORMAN: Yes, but I'm not sure when.
23 MR. BULLION: Okay. I just couldn't hear
24 you so I --
25 MS. RODRIGUEZ: I leave that up to you
0095
1 and Dr. Coates.
2 MS. DORMAN: It's -- he's looking through
3 a binder.
4 THE REPORTER: Who is that?
5 MS. DORMAN: Tom Bullion.
6 A. I -- I've looked in the area that I -- that I
7 expected to find it, but I don't see that particular
8 document here. I don't think it's here so I -- wait.
9 What was the DB? That's something else.
10 Q. (BY MS. RODRIGUEZ) Maybe you can find it
11 during our lunch break. Do you remember if it played
12 any role in your opinion?
13 A. Well, it's more of -- I would -- I would say
14 it's more of Dr. Fowler's area in terms of this case, as
15 part of the ArvinMeritor considerations.
16 Q. Okay. Let me ask you about that. You and
17 Dr. Fowler are both Ph.D. metallurgists?
18 A. Yes.
19 Q. And so to the extent that you have opinions
20 about MCI, those opinions would be -- would overlap,
21 correct?
22 A. Overlap what?
23 Q. They would be in addition to each other,
24 unless you contradict each other?
25 A. Well, I -- I hate to speak for Dr. Fowler, but
0096
1 I don't -- I don't think he's really focused or
2 addressed the -- the MCI issues that we've been talking
3 about here today.
4 Q. Okay.
5 A. So I'm not certain he has his own opinions in
6 that regard.
7 Q. All right. So tell me if I've oversimplified
8 this, but the way it's kind of broken out in all of this
9 is the two of you initially started looking at the case
10 as a whole together, and then at some point you focused
11 on the MCI piece, and then at some point he focused on
12 the ArvinMeritor piece, correct?

13 A. I think that's a way of putting it, yes.
14 Q. Okay. And that Dr. Fowler will speak for
15 himself but, to your knowledge, you're not overlapping
16 on each other's opinions?
17 A. That's correct.
18 Q. I don't have a situation here where I'm
19 Dr. Coates and I corroborate everything Dr. Fowler said
20 about ArvinMeritor and vice versa?
21 A. He did more work on the ArvinMeritor, over and
22 above what I did. I did look at the components,
23 contributed to the -- the initial report, but he did the
24 additional work.
25 Q. Okay. Did --

0097

1 A. I was not involved in that part of it.
2 Q. You don't plan to corroborate his work and he
3 doesn't plan to corroborate your work, to your
4 knowledge, correct?
5 A. Corroborate, I attended some of the early
6 inspections of components which included the U-joint
7 inspection, so he's relying on my -- on my notes and
8 observations from those early inspections, but -- to
9 that extent, you know, corroborating. But I don't
10 expect to be asked specific questions about
11 ArvinMeritor's components overall in this case.
12 Q. Okay. And whether or not you agree with
13 Dr. Fowler's opinions, correct?
14 A. Correct.
15 Q. I'm finishing up here and I leave it to you.
16 If you want to keep rolling through this or we can take
17 a lunch break. I leave it up to the witness.
18 A. It sounds like a good point to take a break.
19 Q. Okay. Let me finish up on a couple more
20 points on your report --
21 A. Okay. That's fine.
22 Q. -- just housekeeping sort of stuff.
23 A. Sure.
24 Q. So the exemplar tie rod and tag axle component
25 tested by Dynamic Analysis, where would I find those?

0098

1 A. You wouldn't.
2 Q. Okay.
3 A. Not here. It's not in our file.
4 Q. Did you actually go out and look at
5 Mr. Granat's mockup?
6 A. Yes.
7 Q. Is that what you're talking about --
8 A. Yes.
9 Q. -- in this bullet point?
10 A. Yes.
11 Q. Did you take your own photographs of that
12 mockup?
13 A. No.
14 Q. Were you there when he did the actual testing?

15 A. No.
16 Q. Were you there before or after he did his
17 testing?
18 A. I think it was after -- after the testing.
19 Q. Okay. Would your invoices reflect about what
20 time you went to Houston to look at it?
21 A. I haven't looked at the invoice today, but
22 they should, but I haven't looked at them.
23 Q. All right. And then we've got another CD of
24 Carr Engineering exemplar vehicle inspection. Do you
25 know if that's any different than what we've already
0099
1 marked exemplar vehicle inspection dated 8/2/11?
2 A. Tamara, I know -- what I do know is on -- I
3 think it's the same.
4 Q. Okay.
5 A. But I think we've got -- I was provided that
6 again at a later date.
7 Q. And that's no problem. I just want to know,
8 are we talking about more than one exemplar vehicle or
9 the same exemplar vehicle, just lots of photographs
10 about the same one?
11 A. Same photographs, same thing, as far as I
12 know. I mean, I'd have to go back and double-check, but
13 I think it's all the same.
14 Q. Just one vehicle, right?
15 A. That's my understanding.
16 MS. RODRIGUEZ: Okay. Thank you. We'll
17 take a lunch break.
18 (Lunch taken from 12:26 to 1:22 p.m.)
19 (Mr. Green no longer present.)
20 Q. (BY MS. RODRIGUEZ) Okay. Dr. Coates, I'm
21 referring to page 4 of your August 11 report.
22 A. Yes.
23 Q. If you would, tell me what exhibit number we
24 marked that again?
25 A. 8.
0100
1 Q. Thank you. Okay. In the second full
2 paragraph of the section under drive shaft and U-joint
3 inspection --
4 A. Yes.
5 Q. -- you state that the dimensions and
6 mechanical properties were consistent with it being a
7 generic strap. Do you see that?
8 A. Yes.
9 Q. You're referring to a U-joint strap?
10 A. Yes.
11 Q. What made you think it was a generic strap?
12 A. No. I said it was consistent with it being a
13 generic strap.
14 Q. Right. What about the dimensions made you
15 think it was consistent with a generic strap?
16 A. Well, again, I don't recall I said

17 specifically -- I've not really reviewed this, Tamara,
18 because this is the area that Dr. Fowler is going to
19 address --

20 Q. Okay.

21 A. -- so I know I -- I was involved at the time,
22 but it's not something I've reviewed recently.

23 Q. All right. So you're not going to express any
24 opinions about the U-joint strap, correct?

25 A. Again, I -- as I stated earlier, I expect

0101

1 Dr. Fowler is going to be addressing the issues
2 regarding the straps and ArvinMeritor aspects of this
3 case, so I -- I anticipate he'll be addressing that.

4 Q. All right. And not you, correct?

5 A. And not me.

6 Q. And the same may be true for both, but further
7 down in this section in the report it says, laboratory
8 examination of the bolts (at MSI) indicated that they
9 have fractured by shear. Is that an opinion you're
10 going to be giving or is that a Dr. Fowler opinion?

11 A. Well, again, Tamara, I think I would say --
12 again, I was present at that inspection. I -- I did the
13 work. I saw the SEM and got the data. Dr. Fowler would
14 have reviewed that. And -- and, again, he's really
15 addressing those issues. So I'm not sure I'm going to
16 be asked, I mean, unless I am asked specifically about
17 what I -- what I saw and led me to that opinion. I
18 think that that opinion -- I think that was the general
19 consensus opinion of everybody present.

20 Q. Well, Dr. Cox says it was caused by fatigue.
21 So do -- are you planning to give this jury opinions
22 about the cause of the bolt fracture or are you going to
23 defer to Dr. Fowler on that?

24 MS. DORMAN: Object to form.

25 A. Again, I was present at the inspection, I saw

0102

1 what I saw, and I did make my own conclusions. I
2 anticipate Dr. Fowler will be the one being -- who will
3 be opining based on that data and based on my input.

4 Q. (BY MS. RODRIGUEZ) All right. So you're
5 almost serving as a consulting expert to Dr. Fowler in
6 support of his testifying opinions on this point,
7 correct?

8 A. As far as the ArvinMeritor aspect, yes --

9 Q. All right.

10 A. -- that's a good way of putting it, I think.

11 Q. Then let's go ahead and get into that piece
12 about which you anticipate Dr. Fowler is going to rely
13 on your opinions. So what you saw at the MSI lab in
14 terms of your laboratory examination of the bolts was,
15 in your opinion, a fracture caused by a shear overload,
16 correct?

17 A. Well, again, can I just back up? I'm not sure
18 he's going to be relying on my opinions, but relying on

19 my observations, my notes, and the data generated during
20 my inspection. I -- I just don't recall that we had a
21 specific conversation to say -- where I said, this is
22 what I think, do you agree. I mean, he would have
23 reviewed the data that I provided.

24 Q. Okay. So you think that he came up with a
25 determination of a fracture caused by shear overload

0103

1 from your data?

2 A. I -- I would say you would have to address
3 that -- that question specifically to Dr. Fowler. I
4 just don't recall the conver -- having that conversation
5 with him.

6 Q. Okay. Well --

7 A. And I -- again, I anticipate that he will be
8 answering all the questions in this area.

9 Q. Well, you know, we have a -- a situation here
10 where you developed or you compiled data and then a
11 testifying expert is relying on your data. You've said
12 that multiple times today, correct?

13 A. And that's not unusual. It happens a lot.

14 Q. All right. And so part of your data was this
15 determination that there was a shear overload of the
16 bolts that were examined at the laboratory, correct?

17 A. Yes.

18 Q. And are you going to -- going to give an
19 opinion in this case on what caused the shear overload
20 or are you deferring to Dr. Fowler on that?

21 A. I think I would at -- at this point I would
22 say any issues regarding the failure of the -- the
23 U-joint components I'm going to defer to Dr. Fowler on.

24 Q. Okay. Let's talk then about the drive shaft.

25 In you -- this report, it is stated that the

0104

1 transmission yoke of the drive shaft was severely impact
2 damaged and fractured, correct?

3 A. Yes.

4 Q. Do you have an opinion how the transmission
5 yoke end of the drive shaft on the accident bus was
6 impact -- severely impact damaged and fractured?

7 A. Yes.

8 Q. How did that occur?

9 A. In my opinion, because of the -- there was a
10 separation of the -- the joint at the differential end
11 and the drive shaft subsequently impacted various
12 components around -- around that area.

13 Q. So when the transmission yoke end of the drive
14 shaft hit -- impacted the tag axle harness, that's when
15 the severe impact damage and fracture occurred, in your
16 opinion?

17 A. Based on what I see and the witness marks on
18 there, yes, it is my opinion. The majority of it, yes.

19 Q. And then you say, multiple impact related
20 witness marks were evident on the yoke of the drive

21 shaft. What do you mean as a metallurgist by witness
22 marks?

23 A. Generally a witness mark is some mark that is
24 left. And it may be an indentation, it may be an
25 abrasion, it may be a -- an actual indent or it may be a
0105

1 crack of some -- but it's some mark, some physical mark
2 that allows you to assess and evaluate what -- what
3 occurred and what caused that mark.

4 Q. All right. From your photos in your
5 notebooks --

6 A. Yes.

7 Q. And I've gotten stuff that Ms. Dorman has
8 provided to me yesterday.

9 A. Okay.

10 Q. Can you pull out a photograph that you think
11 demonstrates the witness marks evident on the yoke of
12 the drive shaft? And, again, all these questions are
13 related to the accident bus.

14 A. I understand. Well, I would -- I'm referring
15 to the photographs I took during my initial inspection
16 on July 29th, 2010. I have a number of photographs of
17 the drive shaft.

18 Q. Sure.

19 A. One of which we've marked earlier as 3A.

20 Q. Do you see any witness marks on 3A that --

21 A. Yes.

22 Q. Okay. Can you circle what you would
23 describe -- do we have any circles on that already?

24 A. We have an X.

25 Q. Okay. Let's -- if you'll put a star next to a
0106

1 witness mark that you think demonstrates the witness
2 mark evidenced on the yoke of the drive shaft?

3 A. Well, there's a number of witness marks. Let
4 me see.

5 Q. I think it's right there.

6 A. Is this a red one?

7 Q. There's a red one, there's a blue one right
8 there.

9 A. I'll do blue. I have -- I've circled a couple
10 of areas. There are more than that, but I've circled a
11 couple.

12 Q. Okay. And that's on exhibit?

13 A. 3A.

14 Q. Thank you, sir. Now, in the next line of
15 the -- your report you state that -- actually it's the
16 last line of that paragraph: Additional impact witness
17 marks were observed on the surrounding chassis
18 components on the transmission end of the drive shaft.
19 Do you see that sentence?

20 A. I do.

21 Q. Can you specify what surrounding chassis
22 components you were referring to?

23 A. I'm looking for a photograph that may --
24 Q. Okay.
25 A. -- help. I have a number of photographs taken
0107
1 on the same date of that area and the ones in particular
2 I refer to them by file numbers. There's no really
3 official photograph numbers. 085, 086, 087.
4 Q. And can you circle the witness marks that
5 you're referring to?
6 A. Well, there's a number of them. Yeah. Some
7 of them are already marked. I've got arrows that show
8 you some of them and I've gone to the following page to
9 additional witness marks.
10 Q. And what image numbers are those that you're
11 referring to?
12 A. 089 through 091.
13 Q. And then that's in -- for the record, that's
14 in Exhibit 3, correct?
15 A. Yes.
16 Q. Thank you. Do you have -- did you take a
17 photograph of the tie rod as though you were looking
18 from the transmission towards the front of the bus?
19 A. I don't think I did. I don't think I have
20 that view in my photographs.
21 Q. All right. And then quite a bit of your -- of
22 the August 11 report talks about the U-joint. And as I
23 understand it, you collected some data which you're not
24 planning on providing any expert opinions on the
25 U-joint, on either U-joint, correct?
0108
1 A. Correct.
2 Q. Including the bolts and straps that went with
3 the U-joints, correct?
4 A. Yes. I'm going to defer.
5 Q. Okay. So I think that brings us down to page
6 5 of your report, the last paragraph.
7 A. Okay.
8 Q. And then you again talk about impact-related
9 witness marks on the undercarriage of the vehicle.
10 Would that be the same reference to the chassis
11 component parts?
12 A. Yes.
13 Q. Okay. And those impact marks were caused --
14 on the chassis components or the undercarriage of the
15 vehicle were caused by what, in your opinion?
16 A. Well, that's -- the sentence says, would have
17 been -- or indicate the drive shaft separated from the
18 transmission U-joint first. So I'm -- I attribute it to
19 the drive shaft.
20 Q. Okay. And then you say that the drive shaft
21 remained attached to the differential U-joint for some
22 time?
23 A. Yes.
24 Q. Do you see that?

25 A. Yes.

0109

1 Q. Do you have an opinion for how long in terms
2 of seconds or rotations, distance?

3 A. No.

4 Q. And then you say, additional impact damage was
5 produced on the vehicle chassis as the drive shaft
6 separated from the vehicle. What damage are you
7 referring to?

8 A. Where is this?

9 Q. It's after the reference Figure 10?

10 A. Okay.

11 Q. It says, additional impact damage was produced
12 on the vehicle chassis as the drive shaft separated from
13 the vehicle. Can you show me in pictures what
14 additional damage you're referring to?

15 A. No. I -- well, I will say, no, I don't think
16 I have any photos of damage I could specifically say
17 occurred during that event that I could show you, but
18 that -- I can't say that all of the damage that I have
19 pointed to did not occur before the final separation
20 event.

21 Q. You just don't know one way or the other?

22 A. There's no way I can tell.

23 Q. Have you made any calculations at what speed
24 the drive shaft was rotating while it was still
25 connected at the differential end but disconnected at

0110

1 the transmission end?

2 A. No.

3 Q. In the last sentence of the -- that paragraph,
4 you state, further testing of exemplar components is
5 contemplated to investigate this further. What did you
6 mean by that?

7 A. What I mean, I think at that time there was
8 some thought given to running some additional tests
9 involving a drive shaft and a tie rod that I would be
10 involved in.

11 Q. What additional test was contemplated?

12 A. Well, I recall, as I sit here, there was some
13 discussion about running tests to see what sort of
14 impact marks a -- or damage a drive shaft -- separated
15 drive shaft would make on a tie rod.

16 Q. Was that ever done?

17 A. Not to my knowledge.

18 Q. Did you make that recommendation?

19 A. I was part of the discussion -- well, I'm
20 sorry. Which recommendation?

21 Q. The additional testing to see what sort of
22 damage impact marks a drive shaft would leave on a tie
23 rod?

24 A. Okay. I was part of the discussions about
25 the -- contemplating doing this testing. I'm not sure I

0111

1 made the recommendation on it.

2 Q. Okay. And that -- that discussion occurred
3 sometime before August 11, 2011, correct?

4 A. It must have because that's when I -- I wrote
5 this report.

6 Q. Sure. Do you remember who all was involved in
7 that discussion?

8 A. Yeah. I think Mr. Dacus was involved in it.

9 Q. Anybody else you can think of?

10 A. I don't recall whether Kevan Granat was
11 involved. He may have been.

12 Q. And when that idea was contemplated and
13 bandied about, did you put in your opinion whether it
14 should be done or not?

15 MS. DORMAN: Object to form.

16 A. I'm not sure I was asked my opinion whether it
17 should be done or not.

18 Q. (BY MS. RODRIGUEZ) Well, let's talk about
19 that. You said it was contemplated and you've given us
20 a couple of names or at least Mr. Dacus. And so if it
21 was you and Mr. Dacus, that's who you remember the
22 discussion being with?

23 A. Yes.

24 Q. Tell me what was discussed. Just that, hey,
25 do you think we should do this?

0112

1 A. Yes.

2 Q. And did you say, yeah, I -- did you think it
3 was a good idea or not a good idea?

4 A. I think it was --

5 MS. DORMAN: Object to form.

6 A. I thought it might be useful.

7 Q. (BY MS. RODRIGUEZ) Okay. Why did you think
8 it was a good idea to do that type of testing?

9 A. To see what sort of -- specific what sort of
10 witness marks might be made under the scenario of a
11 separated drive shaft impacting the tie rod?

12 Q. And how would you set up that type of test?

13 A. Well, I personally wouldn't. I would have
14 somebody else do it. And it was -- there was
15 discussions about somebody else doing it.

16 Q. Such as who?

17 A. I think it was Carr Engineering.

18 Q. Is that Mr. Rucoba's group?

19 A. Yes.

20 Q. All right. Do you know if he ever did that?

21 A. I don't know whether he ever did that.

22 Q. Okay. So it's possible they ran that test and
23 didn't provide that information to you, correct?

24 MS. DORMAN: Object to form.

25 A. It's possible but unlikely I would think.

0113

1 Q. (BY MS. RODRIGUEZ) Okay. Well, what strikes
2 me about this sentence is you say, further testing. I'd

3 like to know what testing had been done up to August 11,
4 2011 to look at the impact marks that are left by a
5 drive shaft on the tie rod?

6 A. Well, I'm not sure any testing to that --
7 addressing that particular issue. There had been
8 testing, inspections.

9 Q. Okay.

10 A. But obviously at the time -- time I wrote this
11 we -- there must have been -- when we were having those
12 conversations and thoughts.

13 Q. All right. So you and Mr. Dacus at some point
14 eight or nine months ago thought that it might be a good
15 idea to create a situation where a drive shaft is
16 separated from the transmission end and let it flail to
17 see where it -- it leaves impact marks?

18 A. Something along those lines.

19 Q. Okay. And to your knowledge, that's never
20 been done by MCI; isn't that true?

21 MS. DORMAN: Object to form.

22 A. I -- to my knowledge, I don't know whether
23 it's been done or not.

24 Q. (BY MS. RODRIGUEZ) Did you ever follow back
25 up with Mr. Dacus, especially when you spent most of the

0114

1 day with him yesterday, say, Mr. Dacus, you know, we
2 talked about doing this testing, why has it never been
3 done?

4 MS. DORMAN: Object to form.

5 A. Certainly not yesterday because I -- the
6 thought didn't occur to me yesterday.

7 Q. (BY MS. RODRIGUEZ) Did you ever follow up
8 with Mr. Dacus after you wrote this report saying, hey,
9 I think we need to run this testing?

10 A. Not that I think we need to do it. I -- there
11 was -- I did get involved in -- in some possible setup
12 testing, but -- when I was involved, but that testing
13 did not occur. And as far as I'm aware, it did not --
14 has not occurred since then.

15 Q. What setup were you involved in?

16 A. The setup wasn't actually done -- it wasn't
17 actually set up, but I did pay a visit to Carr
18 Engineering to discuss possibly doing this test.

19 Q. Okay. And what -- when was that?

20 A. I don't recall specific date. It may be
21 reflected on my -- on the invoice, file invoices
22 which --

23 Q. Okay. See if this --

24 A. It should be.

25 Q. I thought it was somewhere. And I've marked

0115

1 this -- let me come around, if you don't mind.

2 A. Sure.

3 Q. I've marked 7A as your invoices to Ms. Dorman.

4 Do you recognize those as the invoices from Fowler,

5 Inc., to the MCI attorney?

6 A. That's my understanding, yes.

7 Q. Okay. And then in fairness to you, I want to
8 call this out to your attention. I think we've got a
9 duplicate in here, the December 6th. I think we've got
10 it in twice.

11 A. Well, yes, apparently we have.

12 Q. Okay. So can we just take this one out
13 because I'm going to get you to kind of give me a
14 ballpark on totals?

15 A. I assume -- I have not been involved in
16 this -- any of this invoicing so but --

17 MS. RODRIGUEZ: Counsel, do you have any
18 problem with me taking it out? Looks like it's --

19 MS. DORMAN: No. That's fine with me.

20 Q. (BY MS. RODRIGUEZ) Okay. All right. Let's
21 go back to your invoices. And now I want to refer you
22 to what I've marked as 7B. And those appear to be
23 invoices to Mr. Bullion or to his client, Arvin Meritor?

24 A. Okay.

25 Q. Okay. Now, you've got the invoices in

0116

1 front -- front of you. Let us know if that helps you
2 refresh your memory when you went out to Carr
3 Engineering for -- to set up that testing --

4 MS. DORMAN: Object to form.

5 Q. (BY MS. RODRIGUEZ) -- or discuss setting it
6 up?

7 MS. DORMAN: Object to form.

8 A. Yes.

9 Q. (BY MS. RODRIGUEZ) When is it?

10 A. I think it's during the trip to Houston,
11 August 8th.

12 Q. So just before you wrote your report on August
13 11th, 2011?

14 A. Apparently.

15 Q. Now, that August 8th trip that -- the testing
16 that you were looking at with Mr. Carr, was that
17 Mr. Granat's testing or was this something different?

18 MS. DORMAN: Object to form.

19 A. Mr. Carr wasn't involved. I didn't meet
20 Mr. Carr. I went to Carr Engineering.

21 Q. (BY MS. RODRIGUEZ) Okay. Maybe I said that
22 wrong. The -- thank you for telling me.

23 When you were at Carr Engineering with
24 Mr. Rucoba -- was it with Mr. Rucoba?

25 A. No. I don't think Mr. Rucoba was there

0117

1 either.

2 Q. Who was it with?

3 A. It was a technician. I don't recall his name.

4 Q. Okay. Tell me what you did.

5 A. I went to Carr Engineering and met with the --
6 the technician, I believe it was the technician,

7 discussed what would it take to run this test between
8 that date and when this report was due, which is August
9 the 11th.

10 Q. Okay.

11 A. And the ultimate conclusion is it couldn't be
12 done.

13 Q. In that amount of time?

14 A. In that amount of time.

15 Q. But it could be done physically, correct?

16 A. Well, I'm not really certain whether it could
17 or could not. It got -- again, the discussions became
18 somewhat moot when it was evident that for whatever
19 reason -- I think part of it was not being able to get
20 the parts in time. I don't recall specifically, but it
21 became evident that the testing would not be done in
22 time -- time frame available so.

23 Q. And in Exhibit 2 --

24 A. Uh-huh. Yes.

25 Q. -- that Ms. Dorman or Mr. Dacus provided to

0118

1 you, do you see what's -- an amended scheduling order,
2 correct?

3 A. I do see that.

4 Q. And that there is a new -- there was a new
5 deadline for MCI to designate experts or do additional
6 work to February 14th. Do you see that?

7 A. I see a date.

8 Q. Okay. Were you ever made aware of that date?

9 A. Well, this is in the file, so apparently I
10 was.

11 Q. Okay. So at some point after your August 11
12 report you're advised by counsel for MCI that you have
13 additional time to supplement your opinions and to run
14 the drive shaft testing, correct?

15 MS. DORMAN: Object to form.

16 A. Not really, not stated specifically in those
17 terms.

18 Q. (BY MS. RODRIGUEZ) But you knew you had
19 additional time to do any additional work that you
20 thought needed done, correct?

21 A. I'm not certain when I became aware of that.
22 The -- the next time that I really became aware that we
23 were available to do anything further was when the
24 discussion of the inspection of the exemplar coaches
25 came up.

0119

1 Q. And when was that discussion?

2 A. I think that was December or January.

3 Q. Okay. So you weren't made aware of the
4 exemplar coaches in September?

5 MS. DORMAN: Object to form.

6 A. That they were available --

7 Q. (BY MS. RODRIGUEZ) Yes, sir.

8 A. -- for my inspection?

9 Q. Yes, sir.
10 A. September, I don't recall specifically being
11 told. I think it may have been mentioned that it -- the
12 coaches might be available at some point, but I don't
13 recall exactly when that discussion was --

14 Q. Do you remember the coaches being made
15 available in September and October of 2011?

16 MS. DORMAN: Object to form.

17 A. Made available to me?

18 Q. (BY MS. RODRIGUEZ) Yes, sir.

19 A. No.

20 Q. Would that surprise you to learn that they had
21 been made available for 30 days in that time frame for
22 you to come out --

23 MS. DORMAN: Object to form.

24 Q. (BY MS. RODRIGUEZ) -- to look at them?

25 A. It wouldn't surprise me or not surprise me. I

0120

1 just -- I wasn't aware of it.

2 Q. Okay. How long were you out at Bob, I
3 believe, Carr's office with the technician?

4 A. Best I recall it was two, three hours.

5 Q. Okay.

6 A. Half a day.

7 Q. So you flew out from Los Angeles to Houston to
8 discuss setting up a drive shaft test like the one
9 Mr. Jones performed with the technician from Lee Carr's
10 office in August 2011, correct?

11 A. Well, it was my understanding with -- I flew
12 out to witness the test.

13 Q. Okay. So you get there and then you realize
14 they hadn't even set it up?

15 A. Exactly.

16 Q. All right. Who told you that you were going
17 to be witnessing the test?

18 A. I believe Mr. Dacus.

19 Q. Uh-huh. And so he says, hey, I want you to
20 come out to Houston, witness this test, we're going to
21 separate a drive shaft at the transmission end and see
22 what happens. And you show up and Mr. Dacus is nowhere
23 to be seen. He's not there, right?

24 MS. DORMAN: Object to form.

25 A. I didn't see him.

0121

1 Q. (BY MS. RODRIGUEZ) Okay. So did you get on
2 the phone and say, John, what's going on?

3 A. Exactly, I did.

4 Q. What happened?

5 A. I did.

6 Q. Tell me about that conversation.

7 A. Well, I said -- I told him what I had been
8 told, which was that the -- the technician was aware
9 that something was going on and they had received, I
10 think, a drive shaft, but I don't recall. But part of

11 the discussion was he was just swamped with other work.
12 He wasn't even aware of the deadline and that -- and
13 that the parts weren't available.

14 Q. Okay. When you say he was swamped with work
15 and not aware of the deadline, who is the "he" you're
16 referring to?

17 A. The person I was talking to, the technician.

18 Q. The technician. Okay. And so what did
19 Mr. Dacus say when you advised him of this information?

20 A. I think he was somewhat dismayed, but I don't
21 recall specifically what he said.

22 Q. Okay. Was there an effort to regroup and say,
23 all right, this trip was a bust, but let's -- let's plan
24 for another trip and get this done?

25 MS. RODRIGUEZ: Object to form.

0122

1 A. I don't recall a specific conver -- again, at
2 the time I think we were under specific deadline of
3 August 11th. So at that point, to the best of my
4 recollection, it was -- the decision was, well, it's not
5 going to get done so go home basically.

6 Q. (BY MS. RODRIGUEZ) Do you know who set up
7 that testing that was supposed to take place? Do you
8 know if it was Mr. Dacus who set it up?

9 A. I don't.

10 Q. But it wasn't you, correct?

11 A. It wasn't me.

12 Q. And you didn't see any other experts there?

13 A. That's right.

14 Q. And you've not talked to any other experts in
15 the case about this testing, correct?

16 MS. DORMAN: Object to form.

17 A. Well, there was no testing, no need to talk
18 about it.

19 Q. (BY MS. RODRIGUEZ) The contemplated testing,
20 true?

21 A. Again, I don't recall whether Kevan Granat was
22 involved in any discussion. I just don't recall.

23 Q. All right. When you and the technician were
24 talking about whether it could be set up, did you
25 talk -- did you make any suggestions about how to set up

0123

1 such a test?

2 A. We didn't even get to that point.

3 Q. Okay. I'm on page 6 of your report.

4 A. Okay.

5 Q. Towards the middle of the second paragraph you
6 state, the two tongue plates on the tag axle show
7 deformation and witness marks. And you refer to Figure
8 12. Do you see that?

9 A. I do.

10 Q. Okay. Do you have a fairly clean copy of
11 Exhibit 12 -- Figure 12? Is it attached to your report?

12 A. Well, I have another copy of that report in my

13 file which has a better version of it, I believe. Yes.

14 Q. May I see it?

15 A. Sure.

16 (Exhibit No. 14 marked.)

17 Q. I'm going to hand you what I've marked as
18 Exhibit 14 to your deposition. Does this appear to be a
19 similar photograph of the accident bus?

20 A. It's similar. It's not exactly the same, but
21 it's similar.

22 Q. Okay. And does it show the witness impact
23 marks to the -- what you were referring to as the tongue
24 plates on the tag axle?

25 A. I refer to it as that, yes. Yes, it does.

0124

1 Q. Okay. And those are also known as clamp
2 plates, correct?

3 A. I think.

4 (Exhibit No. 14A marked.)

5 Q. All right. Now I'm going to hand you what
6 I've marked as 14A. And that appears to be what, sir?

7 A. That appears to be -- it is marked -- it's
8 photograph marked 6352, and it appears to be a
9 photograph of the plates from what's been described as
10 another exemplar bus, bus 6352, that I did look at in
11 Richmond, Virginia.

12 (Exhibit No. 14B marked.)

13 Q. Okay. And if you don't mind, I'll come around
14 so we can get through this quicker. And 14B, does that
15 appear to be witness marks on tongue plates or clamp
16 plates on the tag lock?

17 A. It's a picture of tongue plates, timing
18 plates, and there are some deformation marks, yes.

19 (Exhibit No. 14C marked.)

20 Q. Okay. And then 14C, does that appear to have
21 witness marks on the -- the tongue plate of the tag
22 lock?

23 A. Yes --

24 MS. DORMAN: Object to form.

25 A. -- it does appear to have some deformation

0125

1 marks.

2 (Exhibit No. 14D marked.)

3 Q. (BY MS. RODRIGUEZ) Okay. And then 14D, does
4 that also have deformation or witness marks on the
5 clamping or tongue plates of the tag lock?

6 A. It has --

7 MS. DORMAN: Object to form.

8 A. -- what appears to be some deformation marks.

9 (Exhibit No. 14E marked.)

10 Q. (BY MS. RODRIGUEZ) Okay. And then 14E,
11 assume with me that the evidence will show that this
12 area, the clamp area that you see here, is where the tag
13 lock would normally go if there was one. Do you see
14 deformation or witness marks on 14E?

15 MS. DORMAN: Object to form.

16 A. I don't know whether those are deformation or
17 witness marks. I don't know what those are.

18 (Exhibit No. 14F marked.)

19 Q. (BY MS. RODRIGUEZ) Okay. And then on
20 Exhibit 14F, do you see deformation or witness marks
21 again on the tongue or clamp plates of the tag lock?

22 A. I see what appear to be some deformation
23 marks.

24 Q. Okay. And are those -- the deformation marks
25 that we've gone through with the exception of 14, and
0126

1 we'll take that out, but 14A through F similar to the
2 deformation marks in Exhibit 14?

3 A. No.

4 Q. Okay. How are they different?

5 A. Well, they are different to an extent in
6 specific location and likely different in their cause --

7 Q. Okay.

8 A. -- the cause of them.

9 Q. I can -- we can look at the -- the jury can
10 look at the extent and location from the photos and make
11 their own decision if they're similar or not. But as
12 far as the cause, how are they different?

13 A. Well, I have seen photographs of the subject
14 bus which is what we were talking about in the first
15 place of that -- that area of the locking plates post
16 accident where these marks apparently are not present.
17 And as I recall, it says there is evidence that there
18 was chains put around to -- to -- to that vehicle during
19 the subsequent towing of the vehicle and the chains did
20 apparently engage this area. And subsequent to that
21 towing, at least at some point, when I saw it these
22 marks were present. There's not -- I'm not aware of any
23 chains being put on any of the components of these other
24 vehicles that you mentioned.

25 Q. Okay. So in your opinion, the witness marks
0127

1 that you see on Exhibit 14 are due to chains from
2 towing?

3 A. I'm saying that's another explanation. And
4 I'm also saying that the evidence I see suggests it
5 wasn't purely an accident.

6 Q. Okay. You said you saw photos of the accident
7 bus where those witness marks were not present. Where
8 are those photos?

9 A. Here in my -- in my Exhibit 2.

10 Q. Okay. Let's go ahead and -- how many of these
11 stickers do you need, sir?

12 A. For those photos?

13 Q. Yes, sir.

14 A. Two.

15 Q. Okay. Why don't you mark those as 2 --

16 THE REPORTER: D would be the next.

17 Q. (BY MS. RODRIGUEZ) D.
18 A. 2D and E.
19 (Exhibit Nos. 2D and 2E marked.)
20 Q. All right. Do you have Exhibits 2D and E in
21 digital format or have you only received them in paper
22 copy like you have in front of you?
23 A. I believe I have them in digital format.
24 Q. Okay. And I'm looking at both 2D and E. I
25 see an underside view of the tag lock plates, correct?

0128

1 A. Yes.
2 Q. And where is the side view of the tag lock
3 plates that would have been taken at the same time?
4 A. I'm not sure there was one.
5 Q. Okay. So you don't have anything from the
6 accident scene that would show the jury the side view
7 that they see here on Exhibit 14; is that true?
8 A. No. But I've got something from the underside
9 view similar to what we've -- we're discussing that
10 shows those marks.

11 Q. Okay. And this is the underside view from
12 what?

13 A. This is actually Kevan Granat's photographs,
14 but taken off the subject vehicle in November 2010
15 apparently.

16 Q. Okay. But we don't have any side view photos
17 similar to 14 at -- of the coach when it's on its side
18 at the accident scene, correct?

19 A. A side view but we have a view from the
20 bottom. You can still see those -- in the subject
21 vehicle, both accidents, you can see those areas we were
22 discussing --

23 Q. Okay.

24 A. -- or those witness marks.

25 Q. And that -- the Exhibits 2D and E --

0129

1 A. Yes.

2 Q. -- clearly show the tag axle unlocked, right?

3 A. Yes, agreed.

4 Q. Prior to the chaining and -- from the tow
5 truck drivers, correct?

6 A. I believe that's correct, yes.

7 Q. Okay. And do you have any photos from the
8 scene prior to the chaining that are not the underneath
9 of the -- of this assembly but either from the side or
10 from the top?

11 A. I'm sorry. I don't understand.

12 Q. Sure. Thank you for letting me know. Do you
13 have -- the photos Exhibit 2D and E we're looking at
14 from the bottom, from the underneath of the --

15 A. Of the vehicle?

16 Q. -- of the component?

17 A. Of the components, yes.

18 Q. Right?

19 A. Okay. Yes. Yes.

20 Q. Remember how I said, I asked you, do you have
21 any photos of the tie rod looking at the tie rod as
22 though you were standing in front of the transmission
23 shooting your camera towards the front of the bus and
24 you said, no, you didn't haven't any from that angle?

25 A. I do recall that.

0130

1 Q. Are you aware of any photographs taken at the
2 scene from that angle or of that angle of the accident
3 bus?

4 A. I don't recall. I'd have to review these
5 photographs, the rest of the photographs, but I don't --
6 I don't specifically recall one.

7 Q. All right. And then the same question but not
8 that angle, but from the top looking down on these
9 component parts, the bird's eye view of the same parts
10 that we see on Exhibit 2D and E, while -- before the bus
11 got chained up. Do you have any photos from that view?

12 A. You mean from the top -- underside of the
13 vehicle but on top of the tag axle?

14 Q. No, sir. As though you were sitting at the
15 top of the bus looking down on the parts instead of
16 shooting the camera from the bottom of the bus?

17 A. This angle? Is that what you're saying? I'm
18 sorry. I'm not quite understanding.

19 Q. No. I appreciate it. So assume with me
20 that -- that this is considered a -- 2E is considered a
21 worm's eye view, meaning looking from the bottom up.

22 A. Looking up.

23 Q. Looking at it this way?

24 A. Okay.

25 Q. Okay. And then the bird's eye view would be

0131

1 looking from the top of the bus down, same parts but
2 looking at them in the opposite direction. Do you have
3 any photographs representing that -- those same parts
4 shown in 2D and E in that view?

5 MS. DORMAN: Object to form.

6 Q. (BY MS. RODRIGUEZ) Before they got chained
7 up?

8 A. Again, I'd have to review the photographs, but
9 I don't recall seeing anything.

10 Q. Okay.

11 A. But I --

12 Q. All right. And then can you pull for me the
13 damage that you see to the upper tag axle harness on the
14 accident bus? What photograph do you think best
15 represents that?

16 A. Of what? I'm sorry.

17 Q. The upper part of the tag axle harness on the
18 accident bus?

19 MS. DORMAN: The latch arm assembly?

20 A. The upper part? I'm not sure -- again, I'm

21 not sure exactly what you're asking me, Tamara.
22 Q. (BY MR. RODRIGUEZ) Well, thank you for
23 letting me know.
24 MS. RODRIGUEZ: What exhibit number am I
25 on?

0132

1 THE REPORTER: 15.
2 Q. (BY MR. RODRIGUEZ) I'll hand you what I've
3 marked as Exhibit 15. And I took this -- took this from
4 your stack of photos --
5 A. Okay.
6 Q. -- from the accident bus. Okay?
7 A. Yes.
8 Q. And this being the upper part of the tag axle
9 suspension assembly of which you've been calling the
10 horseshoe and collar, correct?
11 A. Yes.
12 Q. Okay. And you've told us that that damage was
13 from the drive shaft hitting it, in your opinion,
14 correct?
15 A. Most likely.
16 (Exhibit Nos. 15A through F marked.)
17 Q. All right. Okay. I'll hand you what I've
18 marked as 15A through F. Do these appear to be
19 photographs of similar damage to a tag axle horseshoe
20 collar?

21 MS. DORMAN: Object to form.
22 A. No. I wouldn't describe it as similar damage.
23 Q. (BY MS. RODRIGUEZ) All right.
24 A. It is damage in those areas.
25 Q. Okay. So you do see witness marks on Exhibits

0133

1 15A through 15F to the upper part of the tag axle
2 horseshoe collar, correct?
3 A. Yes. I see evidence of impact mark.
4 Q. Uh-huh. Do you have any opinion on what
5 caused those impact marks?
6 A. Well, not just looking at the photograph, but
7 looking at the vehicles themselves, which I did do, yes,
8 I think it's -- these marks were probably made by the
9 separated drive shaft.
10 Q. All right. And -- and you can see that the --
11 the severity of the witness marks varies?
12 A. I agree.
13 Q. Okay. And that doesn't surprise you because
14 of the randomness of a separated drive shaft, correct?
15 MS. DORMAN: Object to form.
16 A. I would say it doesn't surprise me. I don't
17 know anything about the randomness of a separated drive
18 shaft.
19 Q. (BY MS. RODRIGUEZ) Well, as an expert in
20 failure analysis, you realize that if a drive shaft
21 separates at a transmission end it's not going to go the
22 exact same place every time, it's not going to hit the

23 exact same place every time, right?

24 A. I wouldn't -- wouldn't necessarily expect it.

25 It may or may not.

0134

1 Q. Okay. How about the underside of that same
2 support? And this is -- again, we'll just take it from
3 your photos. Exhibit 16, do you see damage to the
4 bottom of the tag axle structure on the accident bus?

5 A. Some witness marks and I -- yeah, I think at
6 least discussed those or mentioned those earlier in the
7 deposition.

8 (Exhibit Nos. 16, 16A through 16E marked.)

9 Q. Okay. And I'll hand you what I've marked as
10 Exhibits 16A through E. Do you see damage -- witness
11 mark damages to the bottom of the tag axle arm assembly
12 on these photographs?

13 A. These photographs do show what appear to be
14 impact witness marks at the -- on the bottom structure,
15 yes.

16 Q. And are they similar to what you see in
17 Exhibit 16?

18 MS. DORMAN: Object to form.

19 A. Again, I'm not sure I would characterize them
20 as similar. Some of them are in similar locations, but
21 they vary in extent and location.

22 Q. (BY MS. RODRIGUEZ) And, again, that doesn't
23 surprise you, based on the variability that you would
24 get from a drive shaft separation?

25 MS. DORMAN: Object to form.

0135

1 A. As I said earlier, I'm neither surprised or
2 not surprised.

3 Q. (BY MS. RODRIGUEZ) Okay. And you've already
4 told us that you do not have any photographs of the tie
5 rod from the accident bus looking from the transmission
6 forward, correct --

7 MS. DORMAN: Object to form.

8 Q. (BY MS. RODRIGUEZ) -- to the front of the
9 bus?

10 A. No. You asked whether I had any -- I've taken
11 any.

12 Q. Yes.

13 A. No. I didn't take any.

14 Q. Okay. Do you have any of that view that maybe
15 you got from someone else that you could refer me to
16 from your file?

17 A. I think Mr. Jones took something, pictures in
18 that direction. I think Mr. Granat did. I don't
19 recall.

20 Q. Did you include any of them in your work
21 product notebooks that you have in front of you?

22 A. No, not separately. They're in the -- they
23 should be in the -- in the work product as a whole.

24 Q. Okay. But the work product that you -- that

25 you set out for me today, you've set out four notebooks,
0136

1 right?

2 A. Yes.

3 Q. And I understand that, you know, what we've
4 got on the table is your file, but I want to know the
5 things that you're going to go to and refer to when you
6 talk to this jury. Do you have any photos of that view
7 that you can put your hands on today?

8 A. Well, I could probably go through the whole
9 file and look and find the particular CD. I mean, I
10 don't -- I haven't pulled it out for the jury and put it
11 in this binder today.

12 Q. Okay. All right. Then let's look at --

13 MS. RODRIGUEZ: We're on Exhibit 18?

14 THE REPORTER: Yes.

15 (Exhibit Nos. 18, 18A - 18k marked.)

16 Q. (BY MS. RODRIGUEZ) I hand you what I've
17 marked as Exhibits 18A through K. Can you review those
18 photographs for me, please. And just let me know when
19 you're --

20 MS. DORMAN: I'm sorry?

21 Q. (BY MS. RODRIGUEZ) Just let me know when
22 you're finished.

23 A. Okay. I've looked through them.

24 Q. All right. And do you -- do those photos
25 appear to represent tie rods?

0137

1 MS. DORMAN: Object to form.

2 A. Some of them appear to be, some of them are
3 close-up. I can't tell for sure but they appear to be.

4 Q. (BY MS. RODRIGUEZ) Okay. But definitely
5 though you could say that Exhibit 18B is a tie rod?

6 A. Yes, it is.

7 Q. How about 18C, is that too close up to tell?

8 A. Too close up to tell for sure but --

9 Q. How about 18E, does that appear to be a tie
10 rod?

11 A. Don't know as well.

12 Q. How about 18F?

13 A. That appears to be a tie rod.

14 Q. Okay. And then 18H?

15 A. Appears to be a tie rod.

16 Q. 18I?

17 A. I'm not certain. It does appear to be, but
18 it's a little different than what I normally expect to
19 see.

20 Q. How about 18K?

21 A. That appears to be.

22 Q. Assume with me that the evidence will show the
23 jury that 18A through K are tie rods. Okay. Just make
24 that assumption?

25 A. Sure. Sure. That's fine.

0138

1 Q. All right. Do you see what appears to be
2 witness marks and deformation on each one of these tie
3 rods?

4 MS. DORMAN: Object to form.

5 A. What I see in these photographs are -- on the
6 surface somewhat appear to be abrasion marks, some of
7 which appear to be indentation marks and abrasion marks
8 and deformation marks. That's my general definition of
9 witness marks.

10 Q. (BY MS. RODRIGUEZ) Okay. And assume with me
11 that none of those tie rods in Exhibits 18A through K
12 were chained up. Would you have an opinion on what
13 caused those abrasion marks?

14 MS. DORMAN: Object to form.

15 A. Not by looking at these photos, no.

16 Q. (BY MS. RODRIGUEZ) Does it look consistent
17 with impact from the drive shaft?

18 MS. DORMAN: Object to form.

19 A. I don't -- don't know.

20 Q. (BY MS. RODRIGUEZ) All right. You certainly
21 can't rule it out, right?

22 A. I can't rule it out, no.

23 MS. DORMAN: Form.

24 Q. (BY MS. RODRIGUEZ) Okay. And then back to
25 your report. This is after Figure 12, you state that

0139

1 review of the accident scene photographs indicated that
2 the deformation on the underside of the tie plates was
3 most likely not present at that time and was most likely
4 produced during post accident manipulation of the bus
5 during recovery and/or transportation. Do you see that
6 sentence?

7 A. Yes.

8 Q. Have we already gone over those photographs
9 that you're referring to in that sentence?

10 A. Some of them.

11 Q. All right. Well, we've looked at Exhibits 2D
12 and E, correct?

13 A. Yes.

14 Q. What other photographs are you relying on for
15 that statement?

16 A. Well, there's one photograph in particular
17 that comes to mind and I'm trying to locate where that
18 is. I believe it's in here. Yes. I found it in --
19 it's contained within Exhibit 5, the binder.

20 MS. RODRIGUEZ: Do we have any 5As?

21 THE REPORTER: No.

22 Q. (BY MS. RODRIGUEZ) Okay. I want to go ahead
23 and mark that picture as 5A then.

24 A. Okay.

25 (Exhibit No. 5A marked.)

0140

1 Q. What about 5A were you referring to when you
2 made the statement, review of the accident scene photos

3 indicated that the witness marks -- I'm sorry, the --
4 indicated that the deformation of the underside of the
5 tongue plates you told us is the tag lock clamp
6 plates --

7 A. Right.

8 Q. -- was most likely not present at the time and
9 was most likely produced during post accident
10 manipulation?

11 A. Well, what this photograph shows is the -- the
12 coach on its side post accident before the towing and it
13 shows the chains in place around the -- the tie rod.
14 And it's my understanding the tie rod has already been
15 straightened partially by the -- by the tow truck
16 operators. And this photograph shows the chain in the
17 area that -- that was close to and included the -- what
18 I call the two tongue plates.

19 Q. All right. And so it's your understanding
20 that they had to chain up the tie rod to get the bus
21 down the road, to get it off the freeway, right?

22 MS. DORMAN: Object to form.

23 A. I'm not sure that they had to, but that's what
24 they did -- according to their testimony.

25 Q. (BY MS. RODRIGUEZ) All right. Do you know if
0141

1 they put the bus on -- they had any of the wheels on the
2 road when they transported it?

3 A. I don't recall whether they said they did or
4 didn't, but I'm --

5 Q. Did you read any of the tow truck personnel's
6 depositions?

7 A. Yes, I did.

8 Q. Okay. And you don't remember that?

9 A. Not specifically, but that's -- my focus
10 wasn't on what they did in terms of whether there was --
11 whether there was any contact with the tie rod was my
12 interest.

13 Q. All right. And then you state, hardness
14 testing of the tag axle locking plate tongue showed no
15 evidence that there was any deviation in terms of base
16 metal hardness from the required engineering
17 specifications for these items. Do you see that?

18 A. I do.

19 Q. Okay. What required engineering
20 specifications are you referring to?

21 A. I think that's what we referred to earlier,
22 Tamara, the 304 stainless steel. I believe that's what
23 that was.

24 Q. All right. So I do need to get a copy of the
25 MCI standards and the stainless steel AISI 304, correct?

0142

1 MS. DORMAN: Object to form.

2 A. Well, I'm talking there about the locking
3 plate tongue is what I described and I think that was
4 the 304.

5 Q. (BY MS. RODRIGUEZ) All right. So it's not
6 the MCI standard 25-24-0001? You think that's something
7 different?

8 A. I think that's something different.

9 Q. Okay.

10 A. I don't think it's the plates.

11 Q. All right. Have you looked at MCI's drawing
12 to determine if the tag axle locking plates met the
13 manufacturing requirements for -- that MCI specified?

14 A. Well, I think that -- no. I -- in answer to
15 your question, yes, I believe I did and that's -- that's
16 what I meant by saying what I did.

17 Q. Okay. So when you talk about engineering
18 specifications, I guess what I'm asking you is are you
19 referring to these general stainless steel AISI 304
20 specifications or are you talking about specifications
21 specific from MCI on these specific parts?

22 A. The best of my recollection, I'd have to
23 review the engineering drawings, but I think the
24 engineering drawings referred -- make reference to those
25 specifications --

0143

1 Q. Okay.

2 A. -- to the best of my recollection of that.

3 Q. And then what hardness testing would you refer
4 me to to evidence that?

5 A. I'm sorry. You mean --

6 Q. Anything from your file --

7 A. -- which result?

8 Q. Yes. The MSI reports. I'm assuming it's the
9 MSI reports?

10 A. It's the MSI data. Yes, in the MSI report.

11 Q. Okay. And then can you give me a date or page
12 number or we can mark it. Why don't we just mark it --
13 what exhibit notebook is that?

14 A. This is in Exhibit 4.

15 Q. All right. Let's mark that as 4A. And when
16 did you provide that to Ms. Dorman?

17 (Exhibit No. 4A marked.)

18 MS. DORMAN: Object to form.

19 A. I'm not sure I ever provided it to --

20 Q. (BY MS. RODRIGUEZ) When did you provide it to
21 Hartline Dacus Barger & Dryer?

22 A. I'm not sure.

23 MS. DORMAN: Object to form.

24 A. That is MSI -- this is an MSI data sheet and
25 they wrote down their client. I mean, this is not from

0144

1 me to them. It's from MSI to them.

2 Q. (BY MS. RODRIGUEZ) This is the testing you
3 requested from MSI, correct?

4 A. Well, I was present during the inspection and
5 the testing, yes.

6 Q. Well, who requested the testing? Do you

7 remember?

8 A. It was probably the joint inspection. I think
9 it was -- I don't know whether I specifically did or
10 not.

11 Q. Whose handwriting is that? Do you know?

12 A. It looks like it's signed by a Cindy Clark.

13 Q. Okay.

14 A. I think it's a technician at MSI.

15 Q. Now, if you were to correspond these numbers
16 with the MCI drawings to determine that they do meet the
17 specifications, what drawings did you look at? Do you
18 have that in your notebook?

19 A. I'd have to go through the data to find it.

20 Okay. I do have one drawing here for the lower lock
21 plate, which is in Exhibit No. 5, an MCI drawing.

22 Q. Okay. We'll mark that as 5A.

23 A. All right. That -- that drawing refers to
24 material .250 thick. It says T-H-K, but I think that's
25 thick. SST AISI 304 HL --

0145

1 Q. And so --

2 A. -- as per MCI standard 7.2021.

3 Q. Okay. And do you have any other drawings for
4 the other pieces that you did the testing on?

5 A. Oh. On these -- the -- the locking pin?

6 Q. Yes. Well, no, not on the locking pin.

7 A. No. That wasn't done.

8 Q. The cylinder locking plate and the tie rod
9 plate, what --

10 A. Oh. That's -- yeah.

11 Q. What's the difference between the tie rod
12 plate and the cylinder locking plate?

13 A. We've been referring to them, I think, as the
14 clamp plates, the two clamp plates --

15 Q. Okay.

16 A. -- and the locking plate.

17 Q. All right.

18 A. This, again, I think is the technician's
19 designation of -- they did write down locking plate, for
20 some reason crossed out locking plate and put in tie
21 rod.

22 Q. All right. So this says, plate lock lower.

23 Do you think this is the middle plate or the bottom of
24 the clamp plate?

25 A. I think it's the bottom because we also have a

0146

1 plate lock abut.

2 Q. Okay.

3 A. And he refers that to a cylinder locking
4 plate.

5 Q. Okay. So those are --

6 A. It's one of those two.

7 Q. Those are our two clamp plates. Where is the
8 drawing for the lock plate, the one in the middle?

9 A. The one in the middle, the bologna.
10 Q. The bologna as Mr. Hoogestraat calls it?
11 A. Here it is. It's -- no. Sorry. Do you want
12 me to mark it or --
13 Q. Yes, sir.
14 A. Yeah, it's here.
15 Q. Mark that as 5B?
16 A. 5B. Okay.
17 (Exhibit No. 5B marked.)
18 Q. So in your visual inspections of the tag lock
19 plates, clamping and lock plate in your metallurgical
20 inspection, was there anything about those plates that
21 made you think they were not MCI components?
22 A. Nothing that I --
23 MS. DORMAN: Object to form.
24 A. Nothing I identified, no.
25 Q. (BY MS. RODRIGUEZ) Okay. And when you look
0147

1 at the cylinder and the pin on the tag lock assembly,
2 was there anything about the cylinder or pin that made
3 you think that they were not MCI tag lock cylinder or
4 pin?
5 MS. DORMAN: Object to form.
6 A. Well, I'm not sure that MCI themselves make
7 these or, you know, what -- how -- but as far as
8 components on -- on the MCI, I saw nothing that, to me,
9 give any indication one way or the other.
10 Q. (BY MS. RODRIGUEZ) Well, sure. I mean, you
11 understand that MCI designed the tag lock cylinder and
12 then outsourced it to a company like Bimba to actually
13 manufacture it? You understand that, correct?
14 MS. DORMAN: Object to form.
15 A. I'm not sure it was Bimba.
16 Q. (BY MS. RODRIGUEZ) Did you ever read
17 Mr. Hoogestraat's deposition?
18 A. Probably at some point, but I don't remember
19 that name.
20 Q. All right. But did you ever look at the MCI
21 drawings for the tag lock assembly other than just the
22 plates which you've shown us?
23 MS. DORMAN: Object to form.
24 A. I don't recall. I'm not -- I mean, I was
25 really looking for metallurgical information, which is
0148

1 why I looked at the drawings I did.
2 Q. (BY MS. RODRIGUEZ) Was the pin tested for
3 hardness?
4 A. No, it was not.
5 Q. Okay.
6 A. It was -- there was attempt made but it was
7 unsuccessful.
8 Q. Okay.
9 A. Would this be a good time for a break?
10 Q. I'd like for you to finish the -- answer the

11 question and then I'll be happy to give you a break.

12 A. I thought I just did.

13 Q. Oh. I didn't hear it. I said, how come? Why
14 wasn't it --

15 A. Oh. I didn't hear the question.

16 Q. Yes. You said there was an attempt made but
17 it wasn't possible, and I said, how come?

18 A. Oh, I'm sorry. I didn't hear that question.

19 Q. Okay.

20 A. How come? From what I recall, it's because
21 the pin was still attached to the shaft in the cylinder.
22 In order to conduct the hardness you have to be able to
23 support the -- the part when it hardens on -- support it
24 completely so it doesn't tip and change -- change the --
25 the test result in any way. And because it was --

0149

1 because of the weight basically of the cylinder on the
2 side of the pin, it turns out it just wasn't possible to
3 get a hardness test without -- without disassembling or
4 doing some sort of destructive testing.

5 Q. Okay. Thank you. We'll take our break.

6 (Recess taken from 2:37 to 2:48 p.m.)

7 Q. (BY MS. RODRIGUEZ) Dr. Coates, we were
8 talking about the pin from the tag lock before we took
9 our break. Do you remember that?

10 A. Yes. And actually I did -- I did want to add
11 one other point on that --

12 Q. Okay.

13 A. -- to my answer on that. You asked how come
14 about the hardness testing.

15 Q. Right. Why didn't you do the hardness
16 testing?

17 A. And I explained basically because of the
18 configuration of the pin still being attached to the --
19 the cylinder assembly. And I do recall there was a
20 request made at the time to do some destructive testing,
21 separate it, and that, of course, was denied. So that's
22 basically how come.

23 Q. Was that in your written protocol to do that
24 additional destructive testing when you went up to
25 Chicago for that inspection of the pin?

0150

1 A. I think the protocol said hardness testing,
2 and they didn't -- didn't envision at that time going
3 further than that.

4 Q. Okay. And so then when you got up there you
5 wanted to do additional testing and it was denied,
6 that -- the destructive testing was denied?

7 A. Well, it wasn't additional testing. It was to
8 allow testing that we wanted to do to proceed, and there
9 was no other way to be able to do it without
10 disassembling or cutting.

11 Q. So the destructive testing was denied. Did
12 you ever write another protocol outlining the

13 destructive testing that you wanted to do?
14 A. No.
15 Q. Why not? Did you feel like you had enough in
16 terms of your opinions that you didn't need to do that
17 additional testing?
18 A. Correct.
19 MS. DORMAN: Object to form.
20 Q. (BY MS. RODRIGUEZ) Let's talk about the pin
21 some more. You said that -- in your report that the pin
22 from the accident bus was similar to the pin from
23 Mr. Granat's mockup testing. And I'm on page 6, last
24 paragraph. Is that true?
25 A. Let me see what -- no, I didn't say the pin
0151
1 was similar. I said that the mechanical deformation
2 markings on the locking pin and locking plates are
3 consistent with markings produced on exemplar
4 components.
5 Q. Okay. So the pin on the accident bus was bent
6 forward, correct?
7 A. In the forward direction, yes, with respect to
8 the orientation of the bus.
9 Q. Was the pin on Mr. Granat's test bent forward?
10 A. It was bent. And I think it was in the -- it
11 was off -- it was disassembled from the tag axle when
12 I -- when I saw it.
13 MS. RODRIGUEZ: Objection, nonresponsive.
14 Q. (BY MS. RODRIGUEZ) Was the pin on
15 Mr. Granat's test, if you know, bent forward like the
16 pin on the accident bus?
17 A. As I said, it was bent -- it was certainly
18 bent. I didn't see it, but I believe so.
19 Q. Okay. Let's see the photograph that you would
20 have taken that would show that.
21 A. The photograph I would have taken?
22 Q. Yes. Did you take any photographs when you
23 went out to Mr. Granat's --
24 A. No.
25 Q. -- facility?
0152
1 A. No.
2 Q. And did -- he provided you photographs?
3 A. No.
4 Q. Okay. So you don't have any photographs --
5 A. Well, not at that time anyway.
6 Q. Do you have any photographs that you could
7 refer me to as a comparison, side by side, showing the
8 Granat pin bent forward and the accident bus pin bent
9 forward?
10 A. I don't know. I may have.
11 Q. And you said that the deformations were
12 similar on the pin on the accident bus and the
13 deformation on the pin on the -- from Granat's testing?
14 A. I'm sorry. What was the question again?

15 Q. It says, the mechanical deformation markings
16 on the locking pin --

17 A. Yes.

18 Q. -- are consistent with markings produced on
19 exemplar components tested by Dynamic Analysis?

20 A. Yes.

21 Q. Are you talking about the mechanical
22 deformation on the locking pin on the accident bus --

23 A. Yes.

24 Q. -- being consistent with the markings on the
25 locking pin on Mr. Granat's mockup?

0153

1 A. Yes.

2 Q. What photographs can you show me or refer me
3 to to show that consistency?

4 A. Again, I don't -- I didn't take any
5 photographs myself of this pin. I'm not sure whether I
6 have any in the pile or not.

7 Q. Okay. And then is the same testimony true for
8 the locking plates?

9 A. Yes.

10 Q. All right. You say that it is evident that
11 the locking pin was engaged and the tag axle was locked
12 to the tie rod at the time of the accident. And, again,
13 I'm assuming you're referring to the accident bus,
14 correct?

15 A. Yes.

16 Q. And at the time of the accident, are you
17 referring to at the time that the drive shaft separated
18 at the transmission end?

19 A. Well, I'm saying at the time of the accident
20 meaning -- I'm not saying a specific point during the
21 sequence.

22 Q. Sure.

23 A. The accident went over a number of seconds or
24 minutes, so I'm not say --- but during that sequence it
25 was certainly engaged --

0154

1 Q. All right.

2 A. -- in my opinion.

3 Q. In your opinion, as she's traveling down the
4 road from San Antonio up until she -- the drive shaft
5 separates at the transmission end, do you have an
6 opinion whether the tag axles locked in that time frame?

7 A. I'm sorry. Between when she was driving down
8 the road and what?

9 Q. She leaves San Antonio, you understand that,
10 right?

11 A. Yeah. I know that.

12 Q. Okay. And she travels for about 45 minutes on
13 the road?

14 A. Yes.

15 Q. And in that time frame from when she left San
16 Antonio until the drive shaft separated at the

17 transmission end, which you think is the -- the
18 precipitating event, correct?

19 A. Yes.

20 Q. Is the -- is the tag axle locked in that time
21 frame, in your opinion?

22 A. Well, that's really, again, beyond my area of
23 expertise.

24 Q. Okay.

25 A. I know of no information to say otherwise, but

0155

1 that is beyond my area of expertise.

2 Q. Okay. Why is it that that is beyond your area
3 of expertise but yet you can give an opinion that it is
4 evident that the locking pin was engaged and the tag
5 axle was locked at the tie rod at the time of the
6 accident?

7 A. Because of the evidence I saw, physical
8 evidence, metallurgical evidence. I'm talking from a
9 metallurgical point of view.

10 Q. What about your -- what metallurgical evidence
11 do you have that the locking pin was engaged and the tag
12 axle was locked to the tie rod at the time of the
13 accident?

14 A. The bending of the pin, the deformation of the
15 slots --

16 Q. Okay.

17 A. -- that's the information -- the evidence that
18 I'm referring to.

19 Q. All right. We are at your summary of opinions
20 now, the last page of your report. And to the extent
21 that you believe we've already covered some of these
22 things, I want you to just tell me that. I'm not
23 intending to be repetitive --

24 A. Okay.

25 Q. -- but I want to be thorough.

0156

1 A. Yes.

2 Q. As I understand it in this second bullet
3 point, following separation of the transmission U-joint,
4 the drive shaft continued to rotate while still attached
5 to the vehicle at the differential end of the shaft,
6 you're not able to tell us for how long it continued to
7 rotate or at what speed, correct?

8 A. That is correct.

9 Q. Have we already talked about the third
10 opinion; the rotating drive shaft caused multiple
11 impacts and damage to various parts of the vehicle
12 underside and U-joint attachment hardware?

13 A. Yes.

14 Q. You've already described that for us, correct?

15 A. I believe so.

16 Q. And in your opinion, the rotating drive shaft
17 did not impact the tie rod on the accident bus, correct?

18 MS. DORMAN: Object to form.

19 A. Are you reading one of these? I'm sorry.
20 Q. (BY MS. RODRIGUEZ) No. I'm asking you.
21 A. Oh.
22 Q. Because you talk about the various parts of
23 the vehicle underside and what we -- we can pull out is
24 the tie rod because you don't think the drive shaft hit
25 the tie rod, correct?

0157

1 A. I didn't see any evidence to --- to indicate
2 it did hit the tie rod.

3 Q. All right. But you can't rule it out, you
4 just don't know one way or the other, true?

5 A. True.

6 Q. And the same is true for the tag lock
7 assembly, whether it be the cylinder, the clamp being
8 placed, did you see impact marks that the drive shaft
9 hit those component parts on the accident bus?

10 MS. DORMAN: Object to form.

11 A. Again, not conclusive. Maybe, maybe not.

12 Q. (BY MS. RODRIGUEZ) Okay. I'm going to skip
13 through the U-joint opinions. Okay?

14 A. Yes.

15 Q. All right. So that would then bring us to the
16 third bullet point from the bottom, correct?

17 A. Okay.

18 Q. Well, I'm asking you. If I -- if I go from
19 the third bullet point from the top and all the bullet
20 points in between are areas that you understand
21 Dr. Fowler is going to address, correct?

22 A. That's my understanding.

23 Q. And you're not going to give the jury any
24 opinions on -- expert opinions on these areas, those
25 bullet points, correct?

0158

1 A. I don't expect to.

2 Q. Okay. So then let's go down to the third one
3 from the bottom. That is an area where you're going to
4 give opinions and you have given opinions, correct?

5 A. Well, you've skipped one actually.

6 Q. Okay.

7 A. The all damage observed was caused by
8 impact-induced overload forces.

9 Q. Thank you. I didn't see that one. All right.
10 So all damage observed was caused by impact-induced
11 overload forces, are you referring to -- when you say
12 all damage observed, are you including the damage to the
13 tag axle harness?

14 MS. DORMAN: Object to form.

15 A. Tag axle harness, the -- are you talking about
16 the clamping plate at the top?

17 Q. (BY MS. RODRIGUEZ) No. The -- let's just get
18 a picture out.

19 A. Oh. The -- okay. The -- the horse collar.

20 Q. Okay. I'll refer you to -- we've got one here

21 handy.
22 A. Yeah.
23 Q. Your photo from the inspection, July 29, 2010,
24 do you see --
25 A. Yes.

0159
1 Q. -- the tag axle -- the horseshoe collar?
2 A. Yes.
3 Q. Okay. When you say all damage caused by --
4 A. Impact-induced overload force.
5 Q. -- impact-induced overload forces, are you
6 referring to the damage -- does that also include the
7 damage to this tag axle harness?
8 A. Yes. It says all damage, and I'm including
9 it, yes.

10 MS. DORMAN: Object to form.
11 Q. (BY MS. RODRIGUEZ) And when you say overload
12 forces, what are you referring to?
13 A. Well, impact overload. Impact to an extent it
14 causes deformation is essentially what I'm meaning.
15 Q. Okay. And when you're referring to impact,
16 what are you referring to?
17 A. Something hitting something.
18 Q. All right.

19 THE REPORTER: I'm sorry?
20 A. Something hitting something.
21 Q. (BY MS. RODRIGUEZ) Specifically what impact
22 in this accident?
23 A. Well, there were a lot of impacts during the
24 whole accident sequence.
25 Q. Okay. We know there's the impact from the

0160
1 drive shaft, right?
2 A. There are impacts from the drive shaft.
3 Q. True? Are you --
4 A. Yes.
5 Q. -- agreeing with me?
6 A. Yes.
7 Q. Do you have any idea how much that drive shaft
8 weighs?
9 A. I -- I recall there was some testing. Aaron
10 Jones weighed it, but I can't remember the specific.
11 Q. Okay. What other impacts are you referring to
12 when you say impact-induced overload forces other than
13 the drive shaft impacts?
14 A. Well, it's -- again, it's -- the coach has
15 been through an accident sequence where there are
16 impacts, impact with the ground, impacts with various
17 components. So I'm not -- I didn't try to identify
18 every single component that impacted everything else
19 that caused -- caused a specific witness mark. However,
20 what I'm saying is I see witness marks all consistent
21 with impact loading. You know, for example, I talked
22 about the upper latch plate and the breaking of the --

23 off of the ramp and that sort of thing.

24 Q. Okay.

25 A. That's what I'm talking about.

0161

1 Q. All right. So what you're stating here in
2 this opinion is that you saw damage from impact loading
3 but you're not discerning where the impact loading is
4 coming from?

5 A. Not necessarily. Basically what I'm saying, I
6 don't see evidence of pre -- any other mode of failure,
7 meaning fatigue or corrosion or anything like that.

8 Q. All right. And did you make a determination
9 if the caster latch was locked and in place from the
10 time the coach -- the bus left San Antonio until the
11 transmission end drive shaft U-joint failed?

12 A. Well --

13 MS. DORMAN: Object to form.

14 A. -- again, I was asked questions about the
15 caster lock mechanism and when it came apart. I have no
16 opinion. That is not an area that I have an opinion on.

17 Q. (BY MS. RODRIGUEZ) Okay. The next bullet
18 point states that there was not any evidence found to
19 indicate that the separation at the tag axle locking
20 mechanism was caused by an impact from the drive shaft.

21 And as I understand it, you're basing that
22 opinion on the -- the photos taken of the coach at the
23 scene, and we've marked those as Exhibits 2D and E, and
24 then the one with the bend -- the tag axle chained up,
25 correct?

0162

1 A. Well, in my opinion, that provides an
2 alternate explanation. So what I'm basically saying,
3 there's no definitive evidence I've seen to indicate
4 that the drive shaft impacted the tie rod --

5 Q. All right.

6 A. -- tie rod axle mechanism.

7 Q. But you're not telling the jury that the drive
8 shaft didn't unlock the tag axle lock, you're just
9 saying you didn't see any evidence of it, true?

10 MS. DORMAN: Object to form.

11 A. No, not that it didn't unlock it. It didn't
12 strike it while it was flailing, still attached at the
13 drive shaft -- at the differential end is what I'm
14 saying.

15 Q. (BY MS. RODRIGUEZ) All right. I'm not sure I
16 understood your answer, so let me ask my question a
17 different way. Are you telling this jury -- I
18 understand that you're telling this jury that you don't
19 see any evidence that the tag axle came unlocked by
20 impact from the drive shaft, true?

21 A. True.

22 Q. Okay. But you're not telling the jury that
23 the tag axle didn't come unlocked by impact from the
24 drive shaft; you're just saying you didn't find any

25 evidence that it did?

0163

1 A. Correct.

2 Q. And then the next bullet point says, the
3 physical evidence indicates the tag axle locking pin was
4 fully engaged in the locking tongues at the time of the
5 accident. I think we've already gone over that one?

6 A. I think we covered that one, yes.

7 Q. Okay. This might be a harder question. Who
8 wrote this report? Was it you? Dr. Fowler?

9 A. Well --

10 Q. How did that come about?

11 A. The -- essentially I wrote -- I wrote
12 certainly the main portion of it. Dr. Fowler reviewed
13 it and made some comments.

14 Q. Okay.

15 A. But basically I wrote the majority of it.

16 (Exhibit No. 6 marked.)

17 Q. All right. I think we're done with that
18 report. Before we move on to your next report, I want
19 to do some housekeeping type questions. Let me come
20 around to you. I'm going to hand you what I've marked
21 as Exhibit 6.

22 A. Okay.

23 Q. And this appears to me to be a correspondence
24 folder for any correspondence that anyone at Fowler,
25 Inc., received on the file. Is that a fair

0164

1 representation of that file?

2 A. Up until -- I think that's up until December,
3 again, when -- when this was put together. Actually, I
4 see a couple of more recent letters that -- that have
5 got included.

6 Q. Okay.

7 A. I tried to keep everything post December in
8 my -- in that folder and I guess I missed a couple.

9 Q. And the post December correspondence would be
10 found in Exhibit 2?

11 A. Yes.

12 Q. Okay. Now, do you remember when you were
13 hired by MCI's lawyers in this case?

14 MS. DORMAN: Object to form.

15 A. I don't have a specific date. Let me just
16 check. Okay. I see -- various correspondence I see in
17 the file indicates July the 28th.

18 Q. (BY MS. RODRIGUEZ) 2010?

19 A. 2010. My first notes are in July 29th, 2010.
20 So best I can say is around that time, July of 2010, to
21 the best of my recollection.

22 Q. And who hired you on this case?

23 MS. DORMAN: Object to form.

24 A. Well, I think the initial discussions was with
25 Hartline Dacus.

0165

1 Q. (BY MS. RODRIGUEZ) Okay. And that's -- you
2 understand that to be the lawyers for MCI?

3 A. Yes.

4 Q. Have you ever spoken with lawyers for any of
5 the plaintiffs?

6 A. Plaintiffs?

7 Q. Mr. Hill, Mr. Nevarez, Mr. Maloney?

8 A. I don't believe so, unless one of them was at
9 one of the inspections and may have said, hello, but
10 that's about it.

11 Q. Okay. Have you done any work for Hartline
12 Dacus law firm before?

13 A. I have not, no.

14 Q. Do you know if they had hired Fowler, Inc.,
15 before?

16 A. I don't know specifically. I -- I don't know
17 specifically.

18 Q. How many metallurgists are at Fowler, Inc.?

19 MS. DORMAN: Object to form.

20 A. I'm not sure what you mean by at Fowler, Inc.

21 Q. (BY MS. RODRIGUEZ) Well, is Fowler, Inc., a
22 company?

23 A. It's a company, incorporated, yes.

24 Q. And you are a metallurgist that works for
25 Fowler, Inc.?

0166

1 A. Well, I don't work full-time for Fowler, Inc.
2 I'm an independent. I have my own independent
3 consulting practice as well, so I'm not a full-time
4 employee.

5 Q. Okay. There's obviously Dr. Gary Fowler,
6 correct?

7 A. There is obviously Dr. Gary Fowler, yes.

8 Q. Okay. And are you aware of any other
9 metallurgists who subcontract with Dr. Fowler?

10 A. Yes.

11 Q. And who are they?

12 A. Dr. Russell Lund, who did do some work on this
13 file and one inspection; Michael Neff does in-house;
14 Mike Boldrick, Dr. Boldrick has in the past. He's not
15 available at the moment. Those are the main ones that
16 come to mind.

17 Q. And Dr. Lund, what work did he do on this
18 file?

19 A. He attended one of the inspections at MSI that
20 I was -- neither I or Dr. Fowler was available for.

21 Q. Do you know what he did? Was he just there
22 supervising to see the work that was done or did he do
23 an analysis of work being done?

24 MS. DORMAN: Object to form.

25 A. I don't think he was supervising. I think he

0167

1 was observing some analysis that was ongoing at that
2 time.

3 Q. (BY MS. RODRIGUEZ) Forming opinions that he
4 brought back to you?

5 A. Making notes and bringing back the data.

6 Q. Okay. What -- can you refer me to which
7 inspection that would have been?

8 A. Sure. The inspection at MSI on June 30th,
9 2011.

10 Q. Okay. So the handwritten notes that are
11 behind that tab are Dr. Lund's notes?

12 A. That's my understanding, yes.

13 Q. Okay. All of those handwritten notes are his
14 or are some of those yours?

15 A. In that section I think all of those
16 handwritten notes are his --

17 Q. All right.

18 A. -- to the best of my knowledge.

19 Q. Have you ever done any work for MCI before?

20 A. MCI, no, not that I'm aware of.

21 Q. Have you ever done any work for Greyhound?

22 A. No, I don't believe so.

23 Q. You've been an expert consultant doing this
24 type of work now since 1988; is that true?

25 A. Well, I'd say before that. I -- I was first

0168

1 deposited in 1985, I think.

2 Q. Is that in connection with your employment or
3 was that as a paid consulting expert like you are --
4 paid expert like you are today? And I don't mean that
5 derogatory.

6 A. No. I understand. I'm trying to remember
7 back a long time ago. It was when I worked as -- at
8 a -- at Med-Tech Labs, I believe, where -- which was
9 another company run by two consultants and I did the
10 day-to-day operations. I was deposed, my first
11 deposition -- yeah. I would say it was as an expert. I
12 think so.

13 (Exhibit No. 12 marked.)

14 Q. Okay. I'm going to hand what you I've marked
15 as Exhibit 12. Do you understand those to be the rates
16 that Fowler, Inc., charges for metallurgists that work
17 on Fowler, Inc., projects?

18 A. Well, it says, effective November 2006. I
19 think that's the current rate schedule.

20 Q. All right. And if we look at the invoices we
21 see you're billed out as a senior consultant at 325 an
22 hour --

23 A. Okay.

24 Q. -- and Dr. Fowler is billed out as a principal
25 at 450 an hour?

0169

1 A. Oh. So it is consistent.

2 Q. All right. How did you learn -- if Fowler,
3 Inc., was hired for this project by the Hartline Dacus
4 law firm or MCI, then how did you learn about the case?

5 A. You know, I don't have a specific
6 recollection, as I sit here. I -- I do a fair amount of
7 work for Fowler, Inc., and I have done -- and I have
8 done more in the past. And sometimes it's just a matter
9 of who's available for a specific inspection if -- but I
10 don't specifically remember on this particular case.

11 (Exhibit No. 9 marked.)

12 Q. Okay. And then Exhibit 9, what is that?

13 A. That is a list of my depositions over the last
14 four years, absent one that I -- more recent one.

15 Q. Which one was that?

16 A. I was deposed on Friday in a case in Las
17 Vegas.

18 Q. Have you been involved in any cases that
19 involve similar issues specifically related to a tag
20 axle lock assembly or a drive shaft or a U-joint?

21 MS. DORMAN: Object to form.

22 A. I've looked at a U-joint in the past.
23 Generally speaking, I think drive shafts I would say,
24 yes, but I can't think of a specific one. Tag axle
25 locking mechanism, no, I haven't looked at those before.

0170

1 Q. Okay. Let's go back to the U-joint. Do you
2 remember what brand U-joints you've looked at in the
3 past?

4 A. I know I'm familiar with the name Spicer.
5 Probably Spicer.

6 Q. All right. But you're not sure?

7 A. I don't have a specific recollection, as I sit
8 here.

9 Q. And then drive shafts, you said you've looked
10 at drive shafts in the past. Is this in connection with
11 drive shaft failures or U-joint failures?

12 A. Again, I don't recall specifically. I know
13 I've looked at drive shafts and I think I've seen
14 fatigue failures in the drive shaft in the past, but
15 which drive shaft specifically I don't recall.

16 Q. And in this case you've not reached the
17 conclusion that there was a fatigue failure on the drive
18 shaft in question, correct?

19 A. That is correct.

20 Q. Is there anything about the age of the drive
21 shaft that affects your opinions in this case?

22 A. No.

23 Q. Do you know how old of a drive shaft it was?

24 A. I -- I don't think I have any specific
25 information as to -- in that regard.

0171

1 (Exhibit No. 10 marked.)

2 Q. And then I'll hand you what I've marked as
3 Exhibit 10 to your deposition. What is that document?

4 A. That's a list of my trial testimony the last
5 four years.

6 (Exhibit No. 11 marked.)

7 Q. And I will hand you what I've marked as
8 Exhibit 11 to your deposition. Can you identify that
9 document?

10 A. That's a protocol put together for -- it's
11 called Testing of Transmission Half-Round End Yoke,
12 something that I -- I authored around the axle
13 half-round end yoke.

14 Q. Was that testing completed?

15 A. Yes, it was. That was the testing that was
16 done at MSI.

17 (Exhibit No. 13 marked.)

18 Q. All right. Let's go to your most recent
19 report and that is dated -- I'll hand you what I've
20 marked as Exhibit 13. Is that your most recent report,
21 sir?

22 A. It is.

23 Q. All right. And then looking at page 5 on your
24 opinions --

25 A. Yes.

0172

1 Q. -- you state that the impact damage to the
2 chassis component surrounding the drive shaft in the
3 test coach is more -- much more severe than that
4 observed in the subject coach. Do you see that?

5 MS. DORMAN: I think this is --

6 A. I was referring to one particular coach, yes.

7 Q. (BY MS. RODRIGUEZ) Right. The drive shaft in
8 the test coach and then you've given --

9 A. 60628.

10 Q. All right.

11 A. Yes.

12 Q. If you would, show me in photos which damage
13 do you consider to be more severe than the accident bus?

14 A. Well, that's what I tried to do in the -- in
15 the figures attached to the report.

16 Q. Okay. So what figure in particular should we
17 look at for that bullet point?

18 A. I would say Figures 1 through 4 and Figures 24
19 and 25.

20 Q. Okay. So if you could circle on that exhibit
21 the damage that you consider to be much more severe on
22 those photos than on the accident bus, what damage
23 you're talking about.

24 A. I think I'd probably have to circle the whole
25 photograph, most of the photograph. All of the damage

0173

1 is more severe, in my opinion. There's more of it.

2 Q. All right. Well, let's look at Exhibit 1.
3 What damage are you talking about there?

4 A. You mean Figure 1?

5 Q. Figure 1, yes. I'm sorry.

6 A. Well, the damage that you see, the witness
7 marks, the impact marks around the bottom of the -- that
8 area.

9 Q. Okay. Do you have the actual color photos
10 that we could work off? It might be easier --

11 A. Sure.

12 Q. -- for me to see.

13 A. Yes. Let's see. Here. Okay. How do you
14 want to do this?

15 Q. I'll come around.

16 A. Okay.

17 Q. You were talking about Figure 1, correct?

18 A. Yes.

19 Q. And is -- this left side of the tag axle
20 suspension, does it have any witness marks?

21 A. Yes. It appears to.

22 Q. Okay. Where? I don't see what --

23 A. This area here appears to be some -- some
24 witness marks.

25 Q. Okay. Can you circle that?

0174

1 A. (Witness complies.)

2 Q. And then I do see some witness marks down here
3 at the -- they almost look like scalloping at the bottom
4 end of the tag axle harness. Do you see that?

5 A. I do.

6 Q. Would you describe it as a scalloping effect
7 of the witness marks?

8 A. The gouges are scallop gouges, that's a pretty
9 good description, yes.

10 Q. All right. And then on the right-hand side of
11 the tag axle harness, do you see it looks like there's a
12 crack?

13 A. I think there was a crack. I would probably
14 look at my other photos to confirm it, but I think there
15 was a crack there, yes.

16 Q. Okay. So would you consider that a
17 deformation?

18 A. Yes.

19 Q. Okay. Can you circle that?

20 A. The cracked area?

21 Q. Yes, sir.

22 A. (Witness complies.)

23 Q. And did you see any of the deformation of any
24 type on the accident bus on the left side of the tag
25 axle harness?

0175

1 MS. DORMAN: Object to form.

2 A. Okay. I probably need to go to some of my
3 other photographs --

4 Q. (BY MS. RODRIGUEZ) Okay.

5 A. -- which I will. Okay. I'm looking at some
6 photographs from my initial inspection, July 29th, 2010.

7 Q. And is there a particular photograph? Can you
8 give me your digital photograph number?

9 A. Probably the best one, what I'd say is 087.

10 Q. All right. And what is that photograph

11 descriptive of for you?

12 A. Well, it's an overall view of the tag axle
13 harness area.

14 Q. Does the -- does one side of the tag axle
15 harness appear to have a crack or --

16 A. Yes. But that's not -- that's not -- it does,
17 yes.

18 Q. All right. And then let's look at Figure --
19 well, let's go back. On Figure 1 we talked about the
20 scalloping?

21 A. Yes.

22 Q. Okay. Do you see that same scalloping effect
23 on the accident bus here in Exhibit 16?

24 A. Similar to my Figure 24, I would say it's -- I
25 see scalloping but to a less extent.

0176

1 Q. Okay.

2 A. And that's --

3 Q. Why would --

4 A. -- not as severe.

5 Q. Why would you see impact damage that's more
6 severe or less severe? Does it have anything to do with
7 the number of rotations of the drive shaft?

8 A. Well, there's a --

9 MS. DORMAN: Object to form.

10 A. There could be a number of reasons for that.
11 It could be number of rotations, how long it was
12 maintained under power after separation, assuming it was
13 from the drive shaft. It could be the -- the weight of
14 the drive shaft is the variation. There are a number of
15 factors that could affect the -- the amount and extent
16 of mechanical damage.

17 Q. (BY MS. RODRIGUEZ) All right. Have you given
18 me the most likely causes that would have affected the
19 amount and the extent of the impact damage? You said
20 the weight of the drive shaft, the rotational speed of
21 the drive shaft. Anything else?

22 MS. DORMAN: Object to form.

23 A. I would say time might be a factor; how long
24 there was such an impact in that area.

25 Q. (BY MS. RODRIGUEZ) Okay.

0177

1 A. There may be factors that -- I mean, there
2 are -- hypothetically there's other factors.

3 Q. But have you given me the top three likely
4 factors?

5 MS. DORMAN: Object to form.

6 A. I'm not sure I'd put it as top three likely,
7 but those are three that come to mind --

8 Q. (BY MS. RODRIGUEZ) Okay.

9 A. -- the main ones. Again, of course, I could
10 give you other ones.

11 Q. Okay. What other ones are there then?

12 A. Well, it could be -- I mean, if it's different

13 material, different metal in these two structures, two
14 coaches for some reason, different hardness level.

15 Q. Did you make any determination if they're --
16 the material is substantially similar on the coaches?

17 A. I've done no investigation in that regard.

18 Q. Is there anything from your visual or gross
19 examination that would indicate to you that they're made
20 of different materials?

21 A. I -- I can't tell. I mean, I've got nothing
22 to indicate they are, but I've -- I can't say for
23 certain they are or are not.

24 Q. All right. Let's look at Figure 2.

25 A. Yes.

0178

1 Q. What about the damage that you see there that
2 you feel is more severe than in the subject coach?

3 A. Well, again, I would contrast that -- that
4 figure with my Figure 25 --

5 Q. Okay.

6 A. -- test report. And, again, it's the -- the
7 extent, the amount and extent of the damage I'm
8 referring to.

9 Q. All right. So we still see witness marks in
10 the same location; you just see more deformation in the
11 Figure 2 than you see in Figure 25. Is that your
12 testimony?

13 A. More and more severe, yes.

14 Q. Okay. How about Figure 3? Can you show us in
15 that photograph the damage that you believe is more
16 severe in the test bus as opposed to the accident bus?

17 A. Yes. On Figure 3 and Figure 4 -- it's really
18 Figure 3, I see some fairly substantial impact marks,
19 scalloped I think you described it as earlier.

20 Q. Can you circle those on Figure 3?

21 A. Sure. There's at least two I can circle,
22 possibly three.

23 Q. All right. And then where is the
24 corresponding photo that you have for the accident bus
25 on that?

0179

1 A. Well, again, I -- I didn't see similar --
2 similar markings if -- that you referred to earlier. So
3 I don't have any photographs of the markings that I
4 could show you because I didn't see any.

5 Q. All right. And then Exhibit 4, we see that
6 there's a bend in the tie rod. Do you see that?

7 A. I do.

8 Q. Does that bend look like it's in the same area
9 of the bend in the tie rod on the accident bus?

10 A. It's hard to say.

11 Q. Did you ever measure it?

12 A. Measure what?

13 Q. The -- the location of the bend?

14 A. No. But I -- one thing I do know is the

15 bend -- the tie rod -- rod was bent post accident from
16 what it was at the time of the accident.

17 Q. Okay. Did you -- have you made any
18 determination of where the original bend was to the tie
19 rod before it was bent by the tow truck personnel?

20 A. I haven't attempted to do that, no.

21 Q. Let's go to Figure 7 and 8. We'll come back
22 to the drive shaft photos in a minute.

23 A. Okay.

24 Q. But along the same line is the damage to
25 Figure 7, the scalloping at the bottom of the tag axle
0180

1 on coach 6468, are you saying that that damage is more
2 severe than what you see in Figure 24?

3 MS. DORMAN: Object to form.

4 A. Yes.

5 Q. (BY MS. RODRIGUEZ) And what about it makes it
6 more severe? Is it the extent of it? The number of it?

7 A. On both of these are the extent, the depth,
8 the severity.

9 Q. All right. And then let's look at the figures
10 that you have pertaining to coach 6934. Can you show me
11 in those photographs, which I think are Figures 12
12 through 16, what damage you describe as being more
13 severe than what you saw on the accident bus?

14 A. I'm not sure I said that.

15 Q. Okay. So does the damage on coach 6934 appear
16 to be similar to the damage on the accident bus?

17 MS. DORMAN: Object to form.

18 A. I'm just looking at my -- my -- my report. I
19 said on -- I describe 6934 as only minor impact damage
20 in the area shown in Figure 12, and so it says even less
21 than what we see in the subject coach.

22 Q. (BY MS. RODRIGUEZ) Okay. And then Figure 13,
23 what does that show us?

24 A. It's really the same area, a wider angle view
25 of the same area. If you look on the photo below where
0181

1 the drive shaft is there is -- I have no witness marks
2 on that area, that front plate, front surface where I
3 did see some on the subject coach. So, again, that
4 would just be less -- less damage.

5 Q. But did you see some impact damage on the top
6 part of the tag axle assembly on Figure 14 on coach 6934
7 similar to the accident bus?

8 A. I saw some but, again, it's got relatively
9 minor impact damage.

10 Q. Less than the accident bus?

11 MS. DORMAN: Object to form.

12 A. It's -- I used basically similar wording for
13 the description. And I -- looking at the photo, I'd say
14 they're somewhat similar. I can't quite advise exactly
15 the same, but it's somewhat the same.

16 Q. (BY MS. RODRIGUEZ) Well, I was wondering how,

17 as a metallurgist, are you quantifying the extent of the
18 impact marks? I mean, I guess you can look at the
19 number of impact marks and use that as a quantifier.
20 But in terms of depth, have you done anything to
21 evaluate the extent of the depths of the impact marks
22 among all the different exemplar coaches versus the
23 subject coach?

24 A. It's really more the extent. The depth, no, I
25 haven't specifically done -- done that, but it's more

0182

1 the extent which would then indicate the number of hits
2 and the amount of damage --

3 Q. Did you --

4 A. -- and the location of damage in some
5 instances.

6 Q. All right. And then the tag bar on coach 6934
7 your Figure 15 --

8 A. Yes.

9 Q. -- that was actually outside of the bus; it
10 was not attached at the time you inspected it, correct?

11 A. Yeah. I think we mentioned this earlier in
12 the deposition. That was the one that was actually on
13 the coach that was taken off the coach during our
14 inspection.

15 Q. All right. When you say "on the coach," you
16 mean on the interior, not attached like it normally
17 would be if it was operating?

18 A. That's correct.

19 Q. Okay. And was the bend in the tie rod similar
20 to the same location of the bend in the tie rod of the
21 accident bus?

22 MS. DORMAN: Object to form.

23 A. No. The -- I mean, there were impact marks
24 and they appear to be more -- certainly impact marks are
25 more in the area of the -- that the tag axle clamps,

0183

1 clamping mechanism, and the bend appear to be in that
2 similar area.

3 Q. (BY MS. RODRIGUEZ) Near the tag axle clamp?

4 A. No. At the tag axle clamp.

5 Q. Was it exactly in front of the tag axle clamp,
6 to the left of it or to the right of it if you were
7 looking at it as though the tie bar was installed in the
8 coach?

9 A. Again, I would describe it at the tag axle
10 clamp.

11 Q. Okay.

12 A. I think that's what this photograph shows.

13 Q. All right. Was it -- did you see any markings
14 where the clamp was for you to make that determination?

15 A. Yes.

16 Q. All right. And so if you could circle those
17 on the photograph that you're looking at?

18 A. Okay. Well, let me refer to my other

19 photographs.
20 Q. Okay.
21 A. This area I think there's some marks.
22 Q. All right. And you've circled on Figure 15
23 that's where you believe one of the clamps was attached
24 from the tag axle lock?
25 A. I think so, yes.

0184

1 Q. Okay. All right. Let's look at Figures --
2 Figure 17. And do you see impact marks to the bottom of
3 the tag axle assembly similar to that which you see on
4 the accident bus?

5 A. No. What I see on this -- this bus, this
6 coach 35 -- 6352 is the damages appear to be to the
7 lower right as we look at it rather than around the
8 bottom circumference.

9 Q. Okay. So you see that the damage is to the
10 bottom right-hand corner of the -- of the tag axle
11 harness?

12 A. Yes.

13 Q. Okay. And then on the accident bus did you
14 see any impact marks from the drive shaft in that area?

15 MS. DORMAN: Object to form.

16 A. Well, on the subject coach I show on Figure 24
17 there are -- there is some scalloping, but it's --
18 again, it's across the -- there's a number of impact or
19 witness marks all across that lower edge which is not
20 the same as those in Figures 17.

21 Q. Clearly you see impact marks to the right hand
22 of the tag axle harness on the Figure 24, correct?

23 A. On 24?

24 Q. Yes, sir.

25 A. Clearly on the left-hand, right, and the

0185

1 bottom.

2 Q. Right.

3 A. Yes.

4 Q. So the drive shaft would have impacted just
5 the right-hand side on coach 6352 according to these
6 impact marks, but on the subject coach it impacted the
7 right left and center on the bottom of the tag axle --

8 A. I think so.

9 Q. -- correct?

10 Okay. What's the significance of
11 photograph or Figure 20?

12 A. 20. Oh. That's the -- that shows the -- the
13 wheel. It would be the left rear wheel, which was --
14 and I'm not sure how well this photograph actually shows
15 it, but that showed evidence of impact, side impact.
16 And that axle was -- and wheel and -- was shifted to
17 the -- to the right.

18 Q. Okay. Can you show me where the -- where you
19 see the shift?

20 A. Well, actually I'm not sure that photograph

21 itself shows it that well but --
22 Q. What on that -- what on that photograph shows
23 you anything of significance in this case? Because to
24 me it just looks like a photograph of a wheel, but maybe
25 there's something on there that --

0186

1 A. Yeah. I didn't in --

2 Q. -- that catches your eye?

3 A. I did not include all my photographs of that
4 wheel in this report but --

5 Q. Well, maybe it's referenced in your report.
6 I'm just wondering what the significance of Figure 20
7 is.

8 A. Well, I -- it's one more view of the wheel
9 that could show evidence of impact damage and
10 displacement.

11 Q. Okay. Show -- can you circle the impact
12 damage that you see on Figure 20?

13 A. Again, I'm not sure if Figure 20 shows it, but
14 what I -- concisely. But one thing I can circle is the
15 center portion, which is clearly impact damaged, center
16 of the hub.

17 Q. Okay.

18 A. And again, with my additional photographs that
19 I did take at the time, I've got more detailed
20 photographs of that in my -- in my file.

21 Q. All right. If you would show me -- give me
22 the digital number, photo number --

23 A. Okay.

24 Q. -- that you think shows you evidence of the --

25 A. The impact?

0187

1 Q. -- impact damage to the left tire, rear tire?

2 A. Okay. Okay. Looking at my photographs in
3 Exhibit 2, I've got a series of photographs of that
4 wheel area --

5 Q. Under --

6 A. -- starting at --

7 Q. Under what tab?

8 A. Oh. This is under -- I put it under -- what's
9 this called? Notes.

10 Q. Okay.

11 A. That's my inspection, that is my inspection
12 photographs from January of this year.

13 Q. And what digital photo numbers are you looking
14 at, sir?

15 A. Yeah. They start at 188, and I've got a
16 series of photographs of that -- that wheel, to 195.

17 Q. And which wheel in particular are you talking
18 about?

19 A. The left rear.

20 Q. There's two in the back, right?

21 A. Two --

22 MS. DORMAN: Object to form.

23 Q. (BY MS. RODRIGUEZ) There's three wheels in
24 the back, right --

25 A. Three --

0188

1 Q. -- on each side?

2 A. Three on each side.

3 Q. Okay.

4 A. The rear one -- I'm talking about the rear one
5 on the left side.

6 Q. The furthest back?

7 A. Rear meaning furthest back, yes.

8 Q. And tag tire?

9 A. Yes.

10 Q. And what damage -- can you describe in the
11 photographs what damage you see that is evidencing the
12 side impact?

13 A. Yes. The -- the center hub region is -- is
14 clearly impacted and broken. There's also impact
15 damage, impact markings and scraping on the lug nuts
16 shown, for example, in 193 and 194.

17 Q. Okay. Anything else?

18 A. That's the main things. I think probably 188
19 also shows that -- that rear wheel is displaced inward
20 with respect to the two forward wheels.

21 Q. So that tag tire is toed in?

22 A. No.

23 MS. DORMAN: Object to form.

24 A. No. I wouldn't say toed in. The whole thing
25 has been basically displaced.

0189

1 Q. (BY MS. RODRIGUEZ) Is the whole axle bent?

2 A. I -- no. I think the whole thing was
3 displaced, I think. I mean, that's not something that I
4 investigated too thoroughly at the time. But basically
5 what it was was the left wheel had been displaced in.

6 Q. All right. And I just want your opinions
7 based on scientific probability. Do you have an opinion
8 on what caused the left wheel to be displaced inward?

9 A. Well, I have some --

10 MS. DORMAN: Object to form.

11 A. Based on a scientific probability, obviously
12 it's been impacted by something or -- or it did impact
13 something. I did see some information regarding this
14 coach which suggested it did impact the median, I
15 believe, on the freeway, and that -- that makes sense.
16 I mean, that -- that seems likely that's what had
17 occurred.

18 Q. (BY MS. RODRIGUEZ) Does the impact that you
19 see look more consistent with an impact made with, like,
20 a concrete median like you said on the roadway or the
21 ground, an earthen embankment?

22 A. I've not really evaluated that in those terms
23 except to say that I mentioned the -- the gouging, or
24 the grinding more probably a better term, of the lug

25 nuts which suggested there was something pretty solid
0190

1 like a concrete median.

2 Q. Okay. And what is the significance of the
3 fact that the left rear wheel on the tag axle had
4 undergone side impact loading?

5 A. Well, I think it explains what we were talking
6 about earlier or what you were talking about, I guess we
7 were talking about it, why the damage that I saw in that
8 coach on the bottom end of the tag axle support
9 mechanism was more toward the -- the right as we look
10 backwards.

11 And it's consistent with the coach seeing
12 a severe load from the side, side loading, and then the
13 drive axle separating and being displaced to the -- to
14 the right.

15 Q. And with regards to the coach 60628, do you
16 have an opinion as to how that tag axle came unlocked?

17 MS. DORMAN: Object to form.

18 A. Well --

19 Q. (BY MS. RODRIGUEZ) Tag axle lock came
20 unlocked?

21 A. You said 60628?

22 Q. Yes.

23 A. I think you may have misspoken. Are you going
24 back to the test one?

25 Q. Yes, sir. Let me --

0191

1 A. Oh.

2 Q. Do you have an opinion -- let me back up.

3 A. I'm sorry.

4 Q. Is the tag axle lock on the test coach 60628
5 unlocked?

6 A. Yes.

7 Q. Do you have an opinion as to how it came
8 unlocked?

9 A. Yeah. My opinion, it became unlocked during
10 the testing.

11 Q. Okay. How, mechanically, did it come unlocked
12 during the testing?

13 MS. DORMAN: Object to form.

14 A. It appeared from the video that this -- and
15 there is evidence that the tie rod did get impacted by a
16 flailing drive shaft.

17 Q. (BY MS. RODRIGUEZ) And then did the drive
18 shaft bend that tie rod forward and pull the lock plate
19 out of the tag axle lock?

20 A. That's what appears to have occurred, yes.

21 Q. So do you have an opinion whether a drive
22 shaft can escape the tag axle harness on a 102-DL3 --

23 MS. DORMAN: Object to form.

24 Q. (BY MS. RODRIGUEZ) -- get outside of the
25 harness?

0192

1 MS. DORMAN: Object to form.

2 A. At what point?

3 Q. (BY MS. RODRIGUEZ) At any point. Is it
4 physically possible -- if a drive shaft is connected on
5 a differential end but disconnected on the transmission
6 end, is it physically possible for that drive shaft --
7 for a drive shaft to escape the tag axle harness?

8 MS. DORMAN: Object to form.

9 A. Well, clearly, based on the test which
10 involved continuous operation of the drive shaft after
11 the separation, it's possible.

12 Q. (BY MS. RODRIGUEZ) Okay. So in terms of
13 geometry that you've looked at, it is capable, the drive
14 shaft is capable of escaping the tag axle harness,
15 correct?

16 MS. DORMAN: Object to form.

17 A. Well, again, based on review of the video, in
18 that instance in that testing it wouldn't be able to,
19 but that's not -- that's not to say it would be able to
20 come out on an actual coach in -- in service. I -- I
21 don't know whether that's possible or not.

22 Q. Because you've never tested it, right?

23 A. I've never tested it.

24 Q. All right. And so you can't tell this jury
25 that it's impossible for a drive shaft to escape the tag

0193

1 axle harness on a bus riding down the road if there's a
2 separation at the transmission end?

3 MS. DORMAN: Object to form.

4 A. No. I would never say it's impossible.

5 Q. (BY MS. RODRIGUEZ) And you do have some
6 evidence now from the drive shaft testing that was
7 conducted by Mr. Jones that shows that it can happen,
8 correct?

9 A. Under test --

10 MS. DORMAN: Object to form.

11 A. Under specific test conditions, yes.

12 Q. (BY MS. RODRIGUEZ) Do you have any criticisms
13 of the conditions that -- of the test conducted by
14 Mr. Jones in September of 2011?

15 A. Well, again, beyond the area of metallurgical
16 engineering I would say but --

17 Q. Okay. Are you planning to give this jury any
18 opinions about the limitations or criticisms of the test
19 conducted by Mr. Jones in September 2011?

20 MS. DORMAN: Object to form.

21 A. I may. I don't know.

22 Q. (BY MS. RODRIGUEZ) Okay.

23 A. It depends whether I'm asked the questions or
24 not.

25 Q. Then let's explore those opinions. Do you

0194

1 have an opinion whether the test conducted by Mr. Jones
2 in 2011 -- you know which test I'm talking about, right?

3 A. Yeah. Sure.

4 Q. All right. Whether that was a valid,
5 scientifically valid test or not?

6 A. Well, I saw some -- some indications based on
7 my -- my review of the video of what I know of it
8 that -- that I don't -- don't believe it was completely
9 valid, no.

10 Q. Okay. And what are all the reasons why you
11 believe Mr. Jones' test was not scientifically valid?

12 A. The main reason is because following the
13 separation of the transmission end U-joint, the drive
14 shaft was continue -- continued to be powered by an
15 external power source, specifically the coach that it
16 was attached to, so that the -- the amount of damage,
17 the flailing, the rotation of the drive shaft following
18 separation is probably not similar to what would occur
19 in a real -- real world scenario.

20 Q. Is it your opinion or understanding that the
21 drive shaft on the subject bus, the accident bus,
22 stopped flailing once it started -- or stopped rotating
23 once it separated on the transmission end?

24 A. Well, again, you're getting beyond, really,
25 the metallurgic issues. But my understanding from
0195

1 reading the testimony is the -- the driver applied the
2 brakes, said she applied the brakes. That would slow
3 down the wheels, so that would tend to slow down any
4 rotation of the separated drive shaft that's no longer
5 attached to the engine, so it's no longer being driven.
6 It's being braked so.

7 Q. So you think that the power to rotate the
8 drive shaft on the test bus and on the accident bus came
9 from the engine?

10 A. Not on the test bus.

11 Q. Okay.

12 A. On the accident bus.

13 Q. On the accident bus --

14 A. Sure.

15 Q. -- it came from the engine. So if the drive
16 shaft was rotating from the differential end, it was
17 because of the engine?

18 A. Well, while it was still attached to the
19 engine. That's -- that's how you get the power from the
20 engine to the wheel.

21 Q. Okay. Would the drive shaft on the accident
22 bus continue to turn after it separated from the
23 transmission end?

24 MS. DORMAN: Object to form.

25 A. Again, beyond my -- my area of expertise, and
0196

1 I said, all I can comment on is what I read of the
2 testimony which is that the driver recorded she braked
3 afterward -- after the separation event. And my
4 understanding, limited though as it may be of vehicle

5 dynamics and so on, I would expect it to at least slow
6 down and not speed up.

7 Q. (BY MS. RODRIGUEZ) All right. So --

8 A. As it appears to in the test.

9 Q. So your opinion that Mr. Jones's test is not
10 scientifically valid, I'm trying to understand, is that
11 within your area of expertise or not?

12 A. Well, if -- if I'm asked the -- you asked me
13 the question did I think it was scientifically valid and
14 I said, in my opinion, no, for the reasons I've stated.

15 Q. You understand that I'm here asking your
16 opinions as an expert metallurgist and not your personal
17 opinions, David Coates. You understand I'm not here
18 trying to find out your personal opinions or how you
19 voted and that sort of thing. I want to know your
20 professional expert opinions that you're going to give
21 this jury.

22 A. Absolutely.

23 MS. DORMAN: Object to form.

24 Q. (BY MS. RODRIGUEZ) Okay. So let's go back to
25 that line of questioning. As an expert in this case, an

0197

1 expert metallurgist, do you have an opinion, an expert
2 opinion, on whether Mr. Jones' testing conducted in
3 September 2011 was scientifically valid?

4 A. Yes, I do have an opinion.

5 MS. DORMAN: Object to form.

6 Q. (BY MS. RODRIGUEZ) All right. And how are
7 you qualified to give that opinion as a metallurgist?

8 A. By reviewing of the damage to the subject
9 coach and the components and comparing it to the damage
10 to the test vehicle that Mr. Jones were cooperating in
11 the testing of. It's from the metallurgical evidence
12 that I see.

13 Q. Okay. And so from the metallurgical evidence
14 you see that the damage is different in your terms than
15 on the test coach than the subject coach, correct?

16 A. Much more severe in the test coach.

17 Q. All right. But my question was not -- was
18 more directed toward not the end result that he got, but
19 the way that the test was set up was it was
20 scientifically valid in terms of how he set it up?

21 A. No. When I looked at the results, if you --
22 if you want to run a test to create a similar scenario,
23 you expect similar results. I don't see similar
24 results.

25 Q. Now, how would -- since you're testifying to

0198

1 this jury that his test setup was not scientifically
2 valid, based on the result, how would you, Dr. Coates,
3 set up a scientifically valid test?

4 MS. DORMAN: Object to form.

5 A. Well, I probably wouldn't be the one doing
6 this test, but if I was --

7 Q. (BY MS. RODRIGUEZ) Why not?
8 A. Why not?
9 Q. Right. Why wouldn't you be the one to set up
10 that kind of test if you can give an expert opinion on
11 whether the test setup is scientifically valid?
12 MS. DORMAN: Object to form.
13 A. The -- that's more in the area of vehicle
14 dynamics and testing. I -- I will get involved in that
15 type of testing, but I personally wouldn't do it.
16 Q. (BY MS. RODRIGUEZ) You're not a mechanical
17 engineer, correct?
18 A. Well, I don't have the -- the facilities to do
19 such a test. I don't have a test --- test track. I
20 don't have another coach. I don't have any of it, the
21 ways and means of doing such a test.
22 Q. All right.
23 A. That's not what I do.
24 Q. Well, clearly the entity that hired you, MCI,
25 would have access to all of those things, correct?
0199
1 MS. DORMAN: Object to form.
2 A. I have no idea what they have.
3 Q. (BY MS. RODRIGUEZ) You don't know if they
4 have any more 102-DL3s with a drive shaft?
5 MS. DORMAN: Object to form.
6 A. You said all of those things?
7 Q. (BY MS. RODRIGUEZ) (Moving head up and down.)
8 A. I don't know if they have a test track or not.
9 Q. All right. Do you know if they have access to
10 a test track?
11 MS. DORMAN: Object to form.
12 A. I don't specifically, no. Specifically I
13 don't know if they do or don't.
14 Q. (BY MS. RODRIGUEZ) Well, Mr. Granat had
15 access to a test track and he did testing on a test
16 track for MCI, didn't he?
17 A. He did testing, but he's not MCI.
18 Q. He did it for MCI. You realize that, right?
19 A. Oh, yeah.
20 MS. DORMAN: Object to form.
21 Q. (BY MS. RODRIGUEZ) I mean, you're not
22 suggesting that he just did it on his own because he was
23 curious, are you?
24 A. The line of questioning is whether I could do
25 it or not and why I -- why I didn't do it --
0200
1 Q. Right.
2 A. -- couldn't do it.
3 Q. And when you contemplated doing it, clearly it
4 was going to be with the assistance of MCI in terms of
5 equipment or their expert -- other experts, right?
6 A. As I said earlier, this type testing I might
7 be involved in discussions of setting up such a test,
8 but I personally would not do it.

9 Q. Okay. I understand that you would need
10 assistance in getting the test done in terms of getting
11 a test track, like you said, or a bus or a drive shaft.
12 But how would you set it up?
13 If -- assume that you got all the
14 assistance from Ms. Dorman or Mr. Dacus that you needed
15 in terms of materials and equipment. How would you set
16 up that scientifically valid test?

17 MS. DORMAN: Object to form.

18 A. And I haven't thought that through in detail.
19 But the one thing I would give serious consideration to
20 is how to stop the driving of the power to the drive
21 shaft following the separation so to more closely
22 simulate what I would expect in the real world.

23 Q. (BY MS. RODRIGUEZ) Do you know how long it
24 would take to slow down the drive shaft --

25 A. No.

0201

1 Q. -- from rotating?

2 A. No.

3 Q. All right. So you can say that Mr. Jones's
4 test, in your opinion, is not scientifically valid
5 because the drive shaft continued to be powered and
6 rotated after the separation from the transmission end;
7 did I state that correctly?

8 A. And caused a lot more impact damage than I saw
9 on the subject bus.

10 Q. Uh-huh. But if you're wrong and the drive
11 shaft on the subject bus was continued to be powered and
12 rotated after the separation from the transmission end,
13 then would you -- then would you acknowledge that
14 Mr. Jones' testing is scientifically reliable?

15 MS. DORMAN: Object to form.

16 A. I would acknowledge that my -- my -- my
17 reservation in that regard is it would not be valid but
18 there may be other reasons that I -- that I'm not aware
19 of.

20 Q. (BY MS. RODRIGUEZ) Okay.

21 A. Can we -- you mind if we take a break?

22 MS. RODRIGUEZ: Absolutely. Go ahead.

23 (Recess taken from 3:58 to 4:08 p.m.)

24 Q. (BY MS. RODRIGUEZ) Dr. Coates, have you now
25 given me all of your opinions as to why you -- in your

0202

1 expert opinion, Mr. Jones's September 2011 drive shaft
2 testing was not scientifically valid?

3 MS. DORMAN: Object to form.

4 A. Well, as I said, there may be other reasons
5 I'm not aware of, but I've given you everything that I
6 can think of at the moment.

7 Q. (BY MS. RODRIGUEZ) All right. And when we go
8 back to the I'm here to find out what your opinions
9 are --

10 A. Right.

11 Q. -- you've disclosed everything that -- as you
12 sit here today that you think can of?
13 A. Yes. Yes.
14 Q. And you'll agree to supplement your deposition
15 testimony. If you think of something else, you'll let
16 Ms. Dorman know or Mr. Dacus know?

17 A. Yes.

18 Q. Thank you. Okay. In your opinion, is a drive
19 shaft capable of escaping the tag axle harness if only
20 one of the yoke gears on the drive shaft is missing --
21 missing or broken?

22 MS. DORMAN: Object to form.

23 A. I don't have an opinion.

24 Q. (BY MS. RODRIGUEZ) Okay.

25 A. Actually, wait. Could I just have that

0203

1 question back? I don't want to misstate my --

2 MS. RODRIGUEZ: Can you read it back?

3 (Question read back.)

4 A. In my opinion it can if both U-joint --
5 U-joint or yokes at both ends fail, it could.

6 Q. (BY MS. RODRIGUEZ) Sure. The U-joint is
7 totally gone on the tran -- on the transmission end?

8 A. I'm talking about both, the transmission end
9 and differential.

10 Q. All right. How -- do you have an opinion
11 whether the drive shaft is capable of escaping the tag
12 axle harness if the drive shaft is still connected to
13 the differential end and the one gear yoke of the drive
14 shaft transmission end is missing, the other one's
15 intact?

16 MS. DORMAN: Object to form.

17 A. That's really the question I gave the answer
18 to earlier or should have given the answer to which is,
19 no, I don't have an opinion.

20 Q. (BY MS. RODRIGUEZ) Okay. All right. Number
21 3, the third bullet point of your opinion of your --

22 A. The last one?

23 Q. What's the date of this report? February 2012
24 report?

25 A. Yes.

0204

1 Q. Have we talk -- already talked about why you
2 believe the continued rotational input to the drive
3 shaft following the transmission yoke separation does
4 not reproduce the conditions of the subject drive shaft?

5 A. Yeah. I think that's what we were just
6 discussing earlier.

7 Q. We've already gone over the -- what you
8 believe are the differences in witness marks and
9 deformations observed between the accident bus and the
10 exemplar coaches?

11 A. Yes.

12 Q. Correct?

13 A. Yes, that's correct.

14 Q. But you do acknowledge that there are some
15 similarities in the witness marks between the accident
16 bus and the exemplar coaches, correct?

17 A. There are some, yes.

18 Q. And we've gone over those where you thought
19 there were similarities, true?

20 A. I think we have.

21 Q. Okay. You say that the bending of the tie rod
22 in coach 6352 probably occurred as a result of the side
23 impact of the left rear wheel and not by impact of the
24 drive shaft, correct?

25 A. Yes.

0205

1 Q. If that were true, wouldn't you expect to see
2 the bending between the tag lock and the left tag tire
3 on that part of the tie bar?

4 MS. DORMAN: Object to form.

5 A. I wouldn't have an expectation one way or the
6 other.

7 Q. (BY MS. RODRIGUEZ) Okay. Why not?

8 A. I don't know why -- why you would have to if
9 it -- if it pulled apart, pulled the tag axle lock --
10 locking mechanism apart. It doesn't seem to me it has
11 any affect on the way it bends.

12 Q. So you believe that the bending occurred after
13 the tag axle was pulled apart?

14 MS. DORMAN: Object to form.

15 Q. (BY MS. RODRIGUEZ) I'm sorry. The tag axle
16 lock was pulled apart?

17 MS. DORMAN: Object to form.

18 A. It was probably -- again, you're probably
19 getting beyond -- beyond my area of expertise for
20 vehicle dynamics, but my -- my expectation is they're
21 probably all part of the same event.

22 Q. (BY MS. RODRIGUEZ) All right.

23 A. If there was -- if the tag axle locking
24 mechanism was pulled apart because of the bending of the
25 tie rod.

0206

1 Q. And what side impact of the left rear wheel do
2 you believe caused that bending of the tie rod?

3 A. That's what we were discussing earlier, the --
4 the impact to the left wheel, which is likely from
5 the -- the median --

6 Q. All right.

7 A. -- from what I know, but I haven't done a
8 thorough investigation of that.

9 Q. All right. Are you able to rule out the drive
10 shaft impact causing the bending of the tie rod in coach
11 6352?

12 MS. DORMAN: Object to form.

13 A. Again, I saw no evidence of impact with the
14 drive shaft with the tie rod. So I saw no evidence to

15 say that did occur.
16 Q. (BY MS. RODRIGUEZ) You saw no evidence on --
17 on the tie rod of impact marks from the drive shaft?

18 A. Correct.

19 Q. Okay. If you would, look at Exhibit 18A and
20 18B. Can you explain what caused the witness marks that
21 you see on the tie rod underneath the tag axle harness
22 on coach -- assuming this is from coach 6352?

23 A. Well, that's -- and what was the question
24 again?

25 Q. Sure. Can you explain to the jury what caused
0207

1 these witness marks on 18A and B on that tie rod,
2 assuming it came from coach 6352?

3 A. Well, I am not --

4 MS. DORMAN: Object to form.

5 A. I am not certain those are witness marks in
6 these photographs.

7 Q. (BY MS. RODRIGUEZ) They don't look like the
8 same witness marks that you've seen on Exhibit 18C, D,
9 E, G, J and K?

10 A. Well, they -- it's hard to say from these
11 photographs.

12 Q. Then let's look at your photographs from coach
13 6352 of the tie rod?

14 A. Okay.

15 Q. And let's see if you photographed any witness
16 marks on the tie rod underneath the area of the tag axle
17 harness?

18 MS. DORMAN: Object to form.

19 A. Okay. I have a couple of photographs of the
20 tag axle -- I'm sorry, of the tie rod 241 and 242.

21 Q. (BY MS. RODRIGUEZ) Okay.

22 A. And I also have a note in my notes that
23 addresses that issue.

24 Q. All right. What does the note say?

25 A. Referring to the tie rod, it says, bent, no
0208

1 impact marks noted.

2 Q. Okay. And let me come around to you and look
3 at your photos. The photos of --

4 A. Oh, photos. I'm sorry.

5 Q. Okay. And these marks, you don't see witness
6 marks here -- let me go ahead and circle it. We'll mark
7 this as -- what's the -- Exhibit 2 -- Exhibit 2 --

8 A. This?

9 Q. Uh-huh. 2F. Again, I don't want to get ink
10 on you.

11 A. Thank you.

12 (Exhibit No. 2F marked.)

13 Q. Okay. So we've marked Exhibit 2F and we're
14 looking at images 241 and 242, and we're going to circle
15 two areas. Do you see any impact marks in the two areas
16 that I've circled?

17 A. No.

18 Q. What do you see there in the two areas that
19 I've circled?

20 A. I see some areas where it looks like the
21 surface has flaked off and some rust underneath it, but
22 that's all I can tell from the photos.

23 Q. Okay.

24 A. But my notes, which were taken
25 contemporaneously with my inspection, I indicate no
0209 impact marks noted.

2 Q. I understand. And then again this area on
3 Figure 242 that I've just circled, what do you describe
4 that --

5 A. Well, again, I see an area where I see some
6 rusting. It's hard to tell what that is other than
7 it's -- it appears that some of the paint or the coating
8 has -- is no longer there.

9 Q. Do you have an opinion on what caused those
10 marks?

11 A. No.

12 Q. And do you have any photographs to show the
13 jury, looking at the view from the transmission end
14 towards the front of the coach, that side of the tie rod
15 on 6352?

16 A. I don't believe I have any that I took. I
17 don't know if anybody else did.

18 Q. Okay.

19 A. I'd have to look through them.

20 Q. Have you made a determination of the drive
21 shaft failures in the exemplar coaches that you looked
22 at other than the test coach 60628?

23 MS. DORMAN: Object to form.

24 A. I'm sorry. I don't understand the question.

25 Q. (BY MS. RODRIGUEZ) Sure. We'll go through
0210 the unit numbers of the exemplar. Have you made a
2 determination -- and you may not have even investigated
3 it -- of the cause of the drive shaft failure foreseen
4 at 6468?

5 MS. DORMAN: Object to form.

6 A. Well, the answer is, no, I have not
7 investigated --

8 Q. (BY MS. RODRIGUEZ) Okay.

9 A. -- the cause of failure.

10 Q. And 60624?

11 MS. DORMAN: Object to form.

12 A. I have not investigated it.

13 Q. (BY MS. RODRIGUEZ) And 6352?

14 MS. DORMAN: Object to form.

15 A. I have not investigated it, I don't believe
16 so.

17 Q. (BY MS. RODRIGUEZ) And did you determine that
18 such investigation was not necessary for purposes of

19 your testimony in this case?

20 MS. DORMAN: Object to form.

21 A. Yes.

22 Q. (BY MS. RODRIGUEZ) So does -- it's your
23 opinion that on unit 6352 the drive shaft did not impact
24 the tie bar?

25 A. My opinion, based on my -- my visual

0211

1 inspection, I saw -- that I saw no evidence that it did.

2 Q. Did you see any evidence that the drive shaft
3 impacted the tag lock assembly?

4 MS. DORMAN: Object to form.

5 A. I saw evidence that it probably impacted the
6 clamping plates.

7 Q. (BY MS. RODRIGUEZ) Okay. And does
8 Exhibit 14A, assuming that's from coach 6352, is that
9 the evidence that you saw that the drive shaft impacted
10 the tag lock clamping plate?

11 MS. DORMAN: Object to form.

12 A. Well, there is deformation in an area on the
13 plates. That's part of it, yeah.

14 Q. (BY MS. RODRIGUEZ) All right. Do you have an
15 opinion on when the drive shaft impacted the clamping
16 plates on unit 6352?

17 A. Most likely when --

18 MS. DORMAN: Object to form.

19 A. Based on my inspection of it and the witness
20 marks, most likely when the drive shaft separated at --
21 from the transmission end to the side loading, the
22 impact.

23 Q. (BY MS. RODRIGUEZ) So you think the drive
24 shaft separated from the transmission end because of
25 side loading?

0212

1 A. That's what the -- again, without doing a
2 thorough investigation but based on my visual
3 examination of that coach, that seems most likely at
4 this point, in my opinion.

5 Q. What about the separation at the transmission
6 end that you can point me to that supports your opinion
7 that the separation at the transmission end was due to
8 side loading?

9 A. The witness marks, what we talked about
10 earlier, and then the location of the witness marks,
11 which clearly have been made by the -- the drive shaft
12 impacting the lower right of the tag ax -- tag axle
13 housing.

14 Q. And maybe we're not communicating. What I
15 hear you tell me is that the drive shaft came separated
16 at the transmission end because of the left side of the
17 rear of the coach -- more likely than not, the left side
18 of the rear of the coach hitting the median in the
19 freeway?

20 A. Well, I think that's probably going a bit

21 beyond what I can say because I haven't done a thorough
22 investigation. But --

23 Q. All right.

24 A. -- the area of the impact damage that we were
25 talking about when we started this discussion, that's

0213

1 really what I'm talking about.

2 Q. Right. And I originally understood you to
3 say, look, Tamara, I think that the side loading on the
4 left side caused the tie rod to bend and unlock the tag
5 axle on that bus, correct?

6 A. Yes.

7 MS. DORMAN: Object to form.

8 Q. (BY MS. RODRIGUEZ) But now I hear you saying,
9 in addition to that, I think it's what caused the drive
10 shaft to separate from the transmission end. Is that --
11 am I misunderstanding that or is that correct?

12 A. Well, yeah. It's probably -- as I said, it's
13 probably going a bit beyond --

14 Q. Okay.

15 A. -- what I can say.

16 Q. Okay.

17 A. But I'm not saying that -- conclude that that
18 side loading caused the separation in the U-joint
19 because I haven't investigated that.

20 Q. All right.

21 A. But it did cause -- in my opinion, it likely
22 caused the -- the separated drive shaft to -- to come
23 across and hit the lower right side of the tag axle
24 harness area and the -- what I believe is already
25 separated tag lock axle clamp.

0214

1 Q. In the next bullet point, the last one in your
2 report --

3 A. Okay.

4 Q. -- you talk about lower latch arm assembly and
5 the fixed tag axle locking plates. What is the lower
6 latch arm assembly you're referring to?

7 A. What I was just talking about, the tag axle.

8 Q. Can you show me a picture of what you're --
9 what you're calling the lower latch arm assembly?

10 A. I think what I'm referring to there -- I don't
11 think; I know. What I was referring to is -- is the --
12 the tag axle locking plates and the clamp plates.

13 Q. Okay.

14 A. Clamp plates and locking plate.

15 Q. Can you show me a picture of what you're
16 calling the lower latch arm assembly in that bullet
17 point?

18 A. Yeah. I think that's what we were just
19 talking about, for example, on 2F, 243 and 244.

20 Q. Okay. And are you -- that bullet point
21 doesn't reference a coach number specifically. Are you
22 talking about coach number 6352 still on the last bullet

23 point?

24 A. No. I think I am -- I am referring to the
25 subject coach in that. So those photographs actually

0215

1 don't show -- I should have been referring you to the
2 subject coach.

3 Q. Okay. So the last bullet point is talking
4 about the accident bus, correct?

5 A. Let me re-read it. Well, I say side impact,
6 so I -- as I sit here now I think -- no. I am referring
7 to 6352 because this -- this is really based on the
8 examination of these additional coaches, so I think -- I
9 think that's what I'm referring to.

10 Q. All right. All right. Let's go back to page
11 2 of your report, the first bullet point. What are you
12 referring to as the -- can you circle in Figure 1 what
13 you're calling the crossmember?

14 A. I'm sorry. Where are we looking at now?

15 Q. On page 2 --

16 A. Yes.

17 Q. -- first bullet point.

18 A. First bullet point. Oh.

19 Q. You say -- you see Figure 1?

20 A. Right.

21 Q. What are you -- circle on Figure 1 what you're
22 calling the crossmember?

23 A. Oh, I see. Circle it?

24 Q. Yes, sir.

25 A. We already have one circle.

0216

1 Q. Put a big X on it then.

2 MS. DORMAN: Red. I don't see red on
3 this yet.

4 A. Well, you're talking about this area. And
5 I'll put an X. It's in red.

6 Q. (BY MS. RODRIGUEZ) Okay. And that's what
7 you're calling the crossmember?

8 A. Crossmember is this whole thing, and that's
9 the damage I'm referring to.

10 Q. Okay. For coach 60628 you told us that you
11 saw the drive shaft escape the tag axle harness,
12 correct? That was the test bus?

13 A. Yes.

14 Q. Now, coach --

15 A. No. I didn't see it. I saw a video of it.

16 Q. Okay. But -- and you saw that it did happen
17 on video, right?

18 A. According to the video.

19 Q. 60624, that's not -- doesn't have any bearing
20 on any of your opinions in this case, correct?

21 A. Not on my end.

22 Q. Okay. And then coach unit 6468, did you make
23 a determination whether the drive shaft escaped the tag
24 axle harness based on the evidence that you saw?

25 MS. DORMAN: Object to form.

0217

1 Q. (BY MS. RODRIGUEZ) And when I say the drive
2 shaft escaped the tag axle harness, I mean while it's
3 still connected to the differential end but disconnected
4 at the transmission end.

5 A. Okay.

6 Q. Okay.

7 A. I would say I saw no evidence that it did.

8 Q. So what do you attribute the impact damage
9 that you saw to 6468?

10 A. What impact damage?

11 Q. Well, you saw tag lock locking plates showed
12 evidence of only minor impact damage on the right side?

13 A. I don't know what -- what impacted that.

14 Q. You don't know what caused that impact damage?

15 A. No.

16 Q. No? Okay. And then -- but you can't rule out
17 the drive shaft hitting it while it was still connected
18 on the differential end but disconnected on the
19 transmission end, correct?

20 MS. DORMAN: Object to form.

21 A. Just based on looking at the vehicle at the
22 time, no.

23 Q. (BY MS. RODRIGUEZ) All right. Then coach
24 6934, do you have an opinion whether the drive shaft
25 escaped the tag axle harness while it was still

0218

1 connected on the differential end but disconnected on
2 the transmission end?

3 MS. DORMAN: Object to form.

4 A. Again, I saw no evidence that it did.

5 Q. (BY MS. RODRIGUEZ) What then do you believe
6 caused the evidence that you saw, downward impact
7 damage, on the upper locking plate of the tag axle?

8 A. Well, it may have been the drive shaft after
9 separation of both ends, but I don't -- I mean, again, I
10 haven't done a thorough investigation of this.

11 Q. And it may have been the drive shaft while it
12 was still connected at the differential end and not
13 connected at the transmission end, correct?

14 MS. DORMAN: Object to form.

15 A. Well, to that I would say that the
16 directionality and the -- and the -- of the bending and
17 the location and shape of the impact, what appears to be
18 an impact mark doesn't seem consistent with -- with a
19 drive shaft causing that impact damage.

20 Q. (BY MS. RODRIGUEZ) Why not?

21 A. Well, because the -- the rotational damage, I
22 would expect it, if it was impact damage, to be in an
23 upward direction and it's bent downward and there's a --
24 a fairly narrow straight mark which appears to be an
25 impact mark on the top plate as shown in Figure 16,

0219

1 which does not appear to be consistent with the drive
2 shaft contacting it.

3 Q. Okay. So you think that if the drive shaft
4 was impacting the tag locks that -- the way the drive
5 shaft rotates, that if it was a direct blow from the
6 drive shaft it would force those lock -- the clamp
7 plates up; is that your testimony?

8 MS. DORMAN: Object to form.

9 A. Most likely.

10 Q. (BY MS. RODRIGUEZ) Which way does the drive
11 shaft rotate, clockwise or counterclockwise?

12 A. Depends which way you're looking.

13 Q. Well, if you're looking at the bus at the
14 transmission end, so you're looking at the back of the
15 bus, which way is the drive shaft rotating?

16 A. From what I recall of the video, I think it
17 was clockwise -- no. Actually counterclockwise.

18 Q. Okay. So is that why you believe the
19 downward -- or if it was -- if the clamp plates had been
20 hit by the drive shaft that it would have produced an
21 upward deformation because the drive shaft was rotating
22 counterclockwise -- rotating counterclock --

23 A. Most likely.

24 Q. Okay.

25 A. And then again, just the appearance of that

0220

1 impact mark or this impact mark.

2 Q. And again --

3 A. As I said, I haven't done a thorough
4 investigation, but that's what I see.

5 Q. Well, what additional investigation would you
6 do?

7 A. I don't know. I'd probably want to look at
8 the drive shaft more, look at the various components, I
9 mean, do a more thorough investigation so -- a quick
10 visual, which is basically what I did.

11 Q. Well, we gave you two days to look at these
12 coaches and you only stayed there one day; isn't that
13 true?

14 A. I didn't know anything about two days. I know
15 I was there one day.

16 Q. Well, did you ever tell Ms. Dorman or
17 Mr. Dacus or anybody on behalf of MCI that you'd like to
18 spend more time with the exemplar coaches inspecting
19 them?

20 MS. DORMAN: Object to form.

21 A. No. Because the objective wasn't to
22 investigate the cause of the failure of these exemplar
23 coaches, in my perspective.

24 Q. (BY MS. RODRIGUEZ) What was your objective in
25 looking at those coaches?

0221

1 A. My objective was to see what it is -- it was
2 that Greyhound was presenting as evidence for their

3 position.

4 Q. Oh. So your objective was to go and rebut or
5 substantiate Greyhound's contentions with regards to
6 those coaches?

7 MS. DORMAN: Object to form.

8 A. I don't know, Tamara, because I don't know
9 specifically what their contentions were. What I do
10 know is those -- those exemplar coaches were provided by
11 Greyhound for inspection by -- by myself and others on
12 behalf of MCI.

13 Q. (BY MS. RODRIGUEZ) Well, when you went and
14 looked at those coaches, that was on January 23rd or
15 24th of this year, correct?

16 MS. DORMAN: Object to form.

17 A. 25th, I think.

18 Q. (BY MS. RODRIGUEZ) Okay. And did you already
19 have Mr. Jones's second report by that time?

20 MS. DORMAN: Object to form.

21 A. I don't recall. I don't think so.

22 Q. (BY MS. RODRIGUEZ) What was your
23 understanding of why Greyhound had pulled these coaches
24 out of service and was using them as exemplars in this
25 case?

0222

1 A. My only understanding was that they -- that I
2 was told that Greyhound believed these were examples of
3 other coaches that had suffered a drive shaft
4 separation.

5 Q. And so you were going to look to see if you
6 agreed if it suffered a drive shaft separation?

7 A. No. I just went to see what --

8 MS. DORMAN: Object to form.

9 A. I went to see whatever it is I saw.

10 Q. (BY MS. RODRIGUEZ) Well, you determined
11 though after looking at those exemplar coaches in
12 Richmond that they all suffered a drive shaft
13 separation, correct?

14 MS. DORMAN: Object to form.

15 A. No. The Americanos coach was not -- that was
16 a test coach.

17 Q. (BY MS. RODRIGUEZ) The 60624?

18 A. Well, I saw broken drive shafts. Again, I
19 haven't done a thorough investigation of what they were.
20 They were presented to me as drive shaft separation
21 events.

22 Q. Well, I understand that, sir.

23 MS. RODRIGUEZ: Objection, nonresponsive.

24 Q. (BY MS. RODRIGUEZ) I'm asking what you saw
25 when you got out there. Moving aside -- setting aside

0223

1 the Americanos test coach, which you said you didn't
2 look at for purposes of your analysis, correct?

3 MS. DORMAN: Object to form.

4 A. Well, I looked at it. No. I did look at it,

5 but I didn't spend a lot of time with it.

6 Q. (BY MS. RODRIGUEZ) Well, your report says,
7 these coaches have been used for test purposes but they
8 had not suffered a drive shaft failure so there were no
9 observations pertinent to the issues addressed by this
10 report, correct?

11 A. Yes. It doesn't say -- it doesn't say I
12 didn't make any observations or take any photographs. I
13 did.

14 Q. Okay. But you've not expressed any opinions
15 and you don't plan to express any opinions on 60624, do
16 you?

17 A. That's correct.

18 Q. All right. So ones you do express opinions
19 on, 60628, 6468, 6934, and 6352, right?

20 A. Correct.

21 Q. And did you determine if all of those coaches
22 sustained a drive shaft failure?

23 A. They --

24 MS. DORMAN: Object to form.

25 A. They were all represented to me that they did,
0224

1 and I did do a thorough investigation.

2 Q. (BY MS. RODRIGUEZ) So you don't know whether
3 they -- after looking at them, you're not able to tell
4 the jury one way or another if those buses sustained a
5 drive shaft failure?

6 A. Well, I saw --

7 MS. DORMAN: Object to form.

8 A. I saw evidence that they probably did. But,
9 again, I haven't done any sort of thorough investigation
10 of that.

11 Q. (BY MS. RODRIGUEZ) And the evidence that you
12 saw that they probably did is either witness marks that
13 you saw in the tag axle structure and the broken drive
14 shafts?

15 MS. DORMAN: Object to form.

16 Q. (BY MS. RODRIGUEZ) Correct?

17 A. Well, broken drive shafts, I mean, one that --
18 6352, I would say the separation of the U-joint. And
19 when you say a drive shaft separation, I mean, there
20 were -- the reason I'm hesitating is because obviously
21 drive shaft from the evidence I saw did come apart from
22 these -- from these coaches at some point.

23 Q. And you saw the yoke on the drive shaft broke
24 on the transmission end, correct?

25 A. Of which one?

0225

1 Q. Of all of them, right?

2 MS. DORMAN: Object to form.

3 Q. (BY MS. RODRIGUEZ) Except for the -- there
4 was one that you -- the drive shaft had been replaced
5 already?

6 A. Right.

7 Q. And that's 6 -- 60624, correct?

8 A. Yes.

9 Q. But on 60628, 6468, and 6352, the ears on the
10 yoke of the drive shaft were broken --

11 A. Right.

12 Q. -- on those drive shafts, right?

13 A. Yes.

14 Q. And that would be consistent with the drive
15 shaft failure, correct?

16 A. It's consistent with a -- a connection failure
17 of the drive -- drive shaft --

18 Q. Okay.

19 A. -- and subsequent damage to the drive shaft.

20 Q. All right. And that -- you know, I'm -- I
21 understand the failure may have occurred at the U-joint
22 connection. I wasn't trying to infer that -- I can see
23 where you're taking issue with that question.

24 A. Okay.

25 Q. But I guess the better way to say it is, it's

0226

1 consistent with a drive shaft separation at the
2 transmission end?

3 A. Yes.

4 Q. Okay. Now, looking at units 6468 and 6934,
5 the impact damage that you saw on those units --

6 A. 6468 and --

7 Q. And 6934?

8 A. 6934. Okay.

9 Q. Would it be fair to say that all of the impact
10 damage that you saw to those coaches that you documented
11 is a result of the drive shaft separation at the
12 transmission end?

13 A. No. I -- that wouldn't be fair to say that.
14 I haven't done a thorough investigation of all the
15 damage.

16 Q. Okay. Well, just the impact marks that you
17 documented, have you made a determination of what caused
18 those?

19 A. Well, generally speaking, they were consistent
20 with the separation of the drive shaft, but I haven't
21 gone through and confirmed that on every single one.

22 Q. Well, what else could cause those impact marks
23 if it wasn't the drive shaft being separated at the
24 transmission end?

25 MS. DORMAN: Object to form.

0227

1 A. Who knows? Impact by other -- other
2 components or other items.

3 Q. (BY MS. RODRIGUEZ) And by other components
4 and items, what are you referring to?

5 MS. DORMAN: Object to form.

6 A. Well, failure could be anything. Rocks thrown
7 up by the -- by the vehicle going down the road, in
8 theory.

9 Q. (BY MS. RODRIGUEZ) What's the more likely
10 explanation?
11 MS. DORMAN: Object to form.
12 Q. (BY MS. RODRIGUEZ) Do you have an opinion on
13 that?
14 A. The more like --
15 MS. DORMAN: Object to form.
16 A. The more likely explanation is that I haven't
17 done a thorough analysis.
18 Q. (BY MS. RODRIGUEZ) All right. So you
19 wouldn't be able to say, correct?
20 MS. DORMAN: Object to form.
21 A. I cannot say on every single witness mark or
22 impact mark, no. I have not done that analysis.
23 Q. (BY MS. RODRIGUEZ) What additional analysis,
24 let's say, specific to coach 6468, would you have to do
25 to be able to tell this jury, in your opinion, what
0228
1 caused the impact damage marks that you saw?
2 MS. DORMAN: Object to form.
3 A. I don't know. I would probably want to look
4 at other -- other components on the underside of the
5 bus, look at the impact marks more closely than I did.
6 And, again, I wasn't there to assess
7 specifically what each impact mark was or wasn't. I
8 wasn't doing a thorough investigation of each of
9 these -- these coaches and the cause of all this damage.
10 Q. (BY MS. RODRIGUEZ) And why is it that you
11 didn't do a more thorough investigation at that time?
12 MS. DORMAN: Object to form.
13 A. Because the focus of my -- my interest is not
14 on the other coaches, on the subject coach. And I was
15 looking at these merely for comparison of the extent of
16 the deformation, for example. And, again, just to see
17 what area of information I could, given the time
18 available.
19 Q. (BY MS. RODRIGUEZ) All right. And would the
20 same be true of the more extensive investigation that
21 you would do for coach 6934 and 6352, what you've
22 already described?
23 MS. DORMAN: Object to form.
24 A. Generally speaking, yes. I don't consider
25 I've done a thorough investigation of any of these
0229
1 coaches.
2 Q. (BY MS. RODRIGUEZ) Is there anything else
3 that you would do for any one of these coaches in terms
4 of investigation that you haven't done?
5 A. You said a --
6 MS. DORMAN: Object to form.
7 A. -- thorough investigation?
8 Q. (BY MS. RODRIGUEZ) Yes, sir.
9 A. Yes, but I don't know what specifically.
10 Q. Okay. Do you have an opinion whether the

11 locking cylinder, the tag lock cylinder, on coach 6352
12 was robust enough to withstand an impact from a drive
13 shaft?

14 MS. DORMAN: Object to form.

15 A. It depends on the amount of impact, the extent
16 of impact. But you're getting beyond an area that I
17 expect to opine on.

18 Q. (BY MS. RODRIGUEZ) Okay. And that's fair.
19 If you -- if that's not an area of your expertise, then
20 I'll -- I'll ask someone else. Is that what I hear you
21 say?

22 A. I think that's more of a design issue.

23 Q. So then would the same be true for the
24 steering lock cylinder on the accident bus, that would
25 be outside of your area of expertise, whether it was

0230

1 robust enough to withstand an impact from a drive shaft?

2 A. Again, I think that's getting more into design
3 issues.

4 Q. Okay.

5 A. That's outside of my area of expertise. Yes.

6 Q. Do you have an opinion of how far the drive --
7 a drive shaft should extend into the tag axle harness
8 for the tag axle harness to serve as an adequate guard
9 for the drive shaft?

10 A. No.

11 Q. And is that because it's beyond your area of
12 expertise?

13 A. Yes.

14 Q. Okay. I note in your opinion on the February
15 report that you note that both gears of the transmission
16 end yoke from the test bus were broken off, but only one
17 of the subject coach was broken off. And I'm looking
18 again at page 5, bullet point 2.

19 A. Yes.

20 Q. Other than the fact that you're pointing out a
21 difference, is there a significance to that difference,
22 in your opinion?

23 MS. DORMAN: Object to form.

24 A. It's an observation that I made. It's not --
25 I didn't attach any further significance to that other

0231

1 than as an observation.

2 (Exhibit Nos. 7, 7A, 7B marked.)

3 Q. (BY MS. RODRIGUEZ) Do you have Exhibit 7?

4 A. What was that?

5 Q. Here it is. If you would take a look at
6 Exhibit 7A and B. And when I look at Exhibit 7A, I
7 totaled up the total bills that Fowler, Inc., has
8 charged for your time and Dr. Fowler's time to MCI and
9 their lawyers is about 64,000. Can you take a look at
10 those and see if you agree with that rough estimate?

11 A. How much did you say?

12 Q. About 64,000. Does that sound right, sir?

13 A. No.
14 MS. DORMAN: You want a calculator?
15 A. It seems like a lot more than that. Too high
16 maybe. You're asking me to whom?
17 Q. (BY MS. RODRIGUEZ) To --
18 A. Just MCI.
19 Q. Just to MCI.
20 A. Oh, I'm sorry. I misunderstood.
21 Q. That's why I --
22 A. So you're talking about Hartline Dacus?
23 Q. Sure. And I marked it 7B to the -- remember
24 we -- we marked -- you --
25 A. Oh, I see. I'm sorry.

0232

1 Q. Okay. So assume with me that 7A represents
2 the MCI bill and 7B represents the ArvinMeritor bill?
3 A. Sorry.
4 Q. No problem. So what has Fowler charged, based
5 on those records, to MCI for work that you've done and
6 Dr. Fowler and Dr. Lund have done?
7 A. Roughly speaking, about 64,000, yes.
8 Q. Okay. And then if you look at the 7B,
9 ArvinMeritor bills, does it appear that about 75,000 has
10 been billed to ArvinMeritor for work that you and
11 Dr. Fowler have done?
12 A. No. Actually you look at those bills -- let
13 me see. Again, you understand I wasn't involved in
14 this -- the invoicing. But it looks like, for example,
15 on the bill of August the 1st, 2001, 24,000. It was
16 actually split between MCI and ArvinMeritor. Okay. So
17 some of that should be included in -- in the first
18 batch.
19 Q. Okay. So instead of the 24,000 --
20 A. All going to Meritor, half of it was
21 Meritor --
22 Q. Okay.
23 A. -- half goes to MCI.
24 Q. Do we know if the 12,011.40, if we have an
25 invoice for 12,011.40? It doesn't look like we do.

0233

1 A. No. I think -- I think it was probably --
2 Q. Okay.
3 A. -- this was sent to both.
4 Q. All right. So on the 64,000 for Mer -- for
5 MCI --
6 A. Right.
7 Q. -- we need to add about \$12,000, so that will
8 bring MCI's bill up to what? 60 --
9 A. 76.
10 Q. Excuse me. 76?
11 A. Plus another 9,000.
12 Q. Okay. That's 85?
13 A. 85. And this one doesn't say.
14 Q. Okay. So let's assume that that's to

15 Meritor --
16 A. Yeah.
17 Q. -- correct?
18 A. Okay.
19 Q. The last page of 7B?
20 A. Okay.
21 Q. So Fowler has billed about 85,000 to MCI?
22 A. To MCI's attorneys, yes.
23 Q. And does this not include your preparation
24 time for the deposition and traveling to get here to
25 Texas and being with me all day long, right?
0234
1 A. That's right.
2 Q. Okay.
3 A. It's not a freebie.
4 Q. I understand. How much time do you think
5 you're looking at adding to that bill?
6 A. Oh. How much time?
7 Q. Yes, sir.
8 A. Probably talking about --
9 MS. DORMAN: Object to form.
10 A. -- 20 to 30 hours, I would estimate.
11 Q. (BY MS. RODRIGUEZ) Okay. And then your math
12 seems to be better than mine.
13 A. No.
14 Q. If you can tell me what you think, based on
15 7B, that Fowler, Inc., has billed Meritor --
16 A. Okay.
17 Q. -- to date?
18 A. Well, if I'm reading this correctly and this
19 last one went to Meritor, it looks like about 52, 53
20 thousand.
21 Q. Okay. And then your time for depo prep and
22 being here, that all goes to MCI, correct? And you're
23 not going to divide that time up to Meritor, are you?
24 A. I bill my time to Fowler. I don't know what
25 they're going to do, but I assume not.
0235
1 Q. Okay. So it looks like the total billed by
2 Fowler on this case is about 140,000, not including your
3 depo prep and time? Does that sound about right?
4 MS. DORMAN: Object to form.
5 A. I forgot what we said for --
6 Q. (BY MS. RODRIGUEZ) 85 for MCI?
7 A. Plus 60 did we say? I think we said -- I
8 think we said 54 whatever, 53.
9 Q. That would be about 138,000. Does that sound
10 about right?
11 A. Close enough.
12 Q. Okay. All right. Now, just some more
13 housekeeping matters. I saw some parts in here that are
14 marked RX676X and CT676X. Do you know where these came
15 from?
16 A. I believe they came from ArvinMeritor or

17 counsel for Arvin Meritor.

18 Q. All right. And so you're not going to give me
19 any -- you're not going to give me and the jury any
20 opinions on these parts, correct?

21 A. Correct.

22 Q. All right. And then I see here -- you
23 actually had two of them, but you had a disk containing
24 the deposition of Dennis Hazmir (phonetic) and Grant
25 Gellar (phonetic). Did you review these depositions?

0236

1 A. Yes, I think so.

2 Q. Okay. Did you look at the videos of the
3 containment loop that Mr. Gellar and Mr. Hazmir talked
4 about in their depositions?

5 A. Briefly.

6 Q. Does that containment loop have any bearings
7 on your opinions in this case?

8 A. No.

9 Q. Okay. And then there have been some
10 additional drive shaft testing that were conducted by
11 Mr. Jones in -- in this month. Have you seen those
12 tests?

13 A. I'm not sure. I may have briefly seen it, but
14 I'm not certain it was Mr. Jones' or not.

15 Q. Okay. Did you get any -- let's just put it to
16 you this way: Did you get any additional drive shaft
17 testing this month, videos?

18 A. Me, personally?

19 Q. Yes, sir.

20 A. No.

21 Q. And you haven't reviewed any drive shaft --
22 new drive shaft testing videos this month?

23 A. I briefly saw one this morning.

24 Q. Okay. What was your -- describe the -- what
25 you saw.

0237

1 A. You know, I really didn't pay -- spend a lot
2 of time. It was just before my -- the depo this
3 morning. So there was a video, apparently it's just
4 been received, briefly looked at it, but I -- I
5 certainly had not had time to analyze it.

6 Q. And that was something that Ms. Dorman showed
7 you or Mr. Dacus?

8 A. Yes.

9 Q. Which one?

10 A. Both.

11 Q. Okay. And was that the video -- I'm trying to
12 figure out which one it was. Is that the one where it
13 looked like, instead of having the tag lock, that area
14 was clamped down and everything was painted orange?

15 A. Everything was painted orange. There was some
16 sort of block instead of a --

17 Q. Okay.

18 A. Which I think is what you're referring to.

19 Q. And have you seen the video where it --
20 there's part of it is painted green and yellow?

21 A. That doesn't ring any bells.

22 Q. It's a drive shaft separation with no guard,
23 similar to the one that Mr. Jones conducted in
24 September 2011?

25 A. That doesn't ring any bells with me, Tamara.
0238

1 Q. Was there any -- do you have any comments or
2 any opinions on what you read from Mr. Hazmir or
3 Mr. Gellar's depositions?

4 A. No.

5 Q. Okay. And this disk, do you know if -- it
6 says, Lund 6/30/11 inspection?

7 A. Right.

8 Q. Do you know if the items that are contained on
9 this disk are in your notebooks?

10 A. Yes. That's these -- that's the photographs
11 from Dr. Lund's inspection at MSI.

12 Q. Okay. And I'm looking at this disk. It
13 looked like it came from ArvinMeritor's counsel. It
14 looks like it pertains to U-joints, correct?

15 A. It says, photos taken 6/30/11, U-joint and
16 SEM. So without looking at it, what I think that is is
17 also data from the same inspection that Dr. Lund was at,
18 but this would be the data from -- from MSI, I assume.

19 Q. All right. Let's go ahead and we'll mark
20 those two because I'm not sure that I have those
21 already.

22 MS. RODRIGUEZ: Counsel on the phone or,
23 Ms. Dorman, do you know if you've already produced
24 these -- this data?

25 MS. DORMAN: It came from Tom.

0239

1 MS. RODRIGUEZ: Tom?

2 MS. DORMAN: I know we haven't.

3 MS. RODRIGUEZ: Are you still there?

4 MS. DORMAN: He may have just left. I
5 heard a -- a noise. So I can't speak to that. Sorry.

6 MS. RODRIGUEZ: All right. We'll go
7 ahead and mark it.

8 (Exhibit No. 20 and 21 marked.)

9 Q. (BY MS. RODRIGUEZ) We've marked Lund
10 inspection as 20 and the MSI 6/30/11 inspection as 21,
11 right, Dr. Coates?

12 A. That's what you've done.

13 Q. Okay. And then these disks from Exponent, did
14 you review anything on these disks that form your
15 opinion?

16 A. I -- I don't think -- I don't recall without
17 seeing what's on these. I --

18 Q. Okay. We'll go ahead and --

19 A. I'm not aware of anything.

20 (Exhibit No. 22 marked.)

21 Q. Since you're not sure what's on them, we'll go
22 ahead and mark these as an exhibit, Exhibit 22, which
23 represents three disks from Exponent.

24 And then it looks like you received a disk
25 that contains Dr. Pratt's work product. Do you recall
0240

1 that?

2 A. (Moving head up and down.)

3 Q. Had you ever worked with Dr. Pratt before this
4 case?

5 A. Never heard of him.

6 Q. All right. But you did have a chance to
7 interact with him in different things, inspections in
8 the case, right?

9 A. I don't recall Mr. Pratt being there. If he
10 was, I wasn't aware of it.

11 Q. Okay. You don't remember being a -- at any of
12 the inspections of the accident bus with Dr. Pratt?

13 A. Again, if he was there, I wasn't aware he was
14 Dr. Pratt. I mean, I just -- I don't --

15 Q. Okay.

16 A. I didn't know. I'm not saying I haven't met
17 him, but I'm not aware that I have met him.

18 Q. And have you reviewed Dr. Pratt's report or
19 deposition in the case?

20 A. I looked at his report at one point. I think
21 I reviewed his deposition, but that got more into the
22 ArvinMeritor side of things so I didn't pay much
23 attention to it.

24 Q. Okay. So you're not going to -- if Dr. Pratt
25 gave opinions on U-joints, you're not going to give any
0241

1 rebuttal opinions on that, correct?

2 A. No. Again, U-joint issues I'm going to leave
3 to or defer to Dr. -- Dr. Fowler.

4 Q. All right. Now Dr. Herrera, have you ever
5 heard of him before?

6 A. Who?

7 Q. Juan Herrera?

8 A. I had heard of him. I hadn't heard that
9 pronunciation.

10 Q. How do you call it?

11 A. Herrera.

12 Q. Okay. You know who I'm talking about though,
13 right?

14 A. Yeah. I actually know who that is.

15 Q. All right. And you know Dr. Herrera before
16 this lawsuit, right?

17 A. Yes.

18 Q. Have you -- do you know that he's a
19 metallurgist such as yourself?

20 A. I do know he's a metallurgist, yes.

21 Q. Do you hold him in high regard in terms of his
22 metallurgy abilities?

23 A. I have nothing to criticize him for in terms
24 of his metallurgical abilities. I've known him -- or
25 met him on a number of occasions.

0242

1 Q. All right. Have you guys ever been on the
2 same side working together on a case?

3 A. Well, it's usually different parties, but we
4 may have been other -- kind of like co-defendants. I
5 don't recall.

6 Q. And Dr. Herrera has given some opinions in the
7 case about why the drive shaft on the accident bus
8 separated. That's not an area that you plan to get into
9 in this case; is that true?

10 A. That's right. That became the area that I'm
11 deferring to Dr. Fowler on.

12 Q. Okay. That leads us to Mr. Jones, Aaron
13 Jones. Have you ever met or heard of Aaron Jones before
14 this lawsuit?

15 A. I think I've heard of him. I'm not certain
16 I've ever met him before. It's possible I might have.

17 Q. You do know he's a metallurgist like yourself?

18 A. Yes.

19 Q. And have you read his reports and depositions
20 in this case?

21 A. Yes.

22 Q. And you've had an opportunity to review his
23 entire file, correct?

24 A. Yes.

25 Q. Is there anything that you can recall as

0243

1 you -- that you disagree with that Aaron Jones has
2 opined in this case?

3 MS. DORMAN: Object to form.

4 A. Well, I think we've already discussed certain
5 issues along those lines.

6 Q. (BY MS. RODRIGUEZ) All right. We've talked
7 about his testing, correct?

8 A. Yes.

9 Q. And we talked about that -- what your opinions
10 are about what the exemplar coaches that he looked at
11 and you looked at, correct?

12 A. Yes.

13 Q. All right. And is it your understanding that
14 it's his opinion that the witness marks and impact marks
15 on the exemplar coaches, it's his opinion that those
16 were caused by the drive shaft, correct?

17 A. That's my -- my understanding of his opinions,
18 yeah.

19 Q. And your opinion is, well, I think some of
20 them are caused by the drive shaft, but not all of them,
21 right?

22 A. Basically, yeah. I don't think the evidence
23 is definitive that it's all from the drive shaft.

24 Q. What other disagreements do you have with

25 Mr. Jones' opinions?

0244

1 MS. DORMAN: Object to form.

2 A. I'd have to go through his depo again, I
3 think, and reports. But I know he gets into issues of
4 design, containment issues, which is outside of my area
5 of expertise. I -- I don't know whether it's within his
6 or not.

7 Q. (BY MS. RODRIGUEZ) You know, I'm curious
8 about the metallurgy aspect in this case. Is there any
9 metallurgy lab testing that you or Mr. Jones or
10 Dr. Herrera some -- could do on the impact marks on the
11 tie rod or the tag lock or the tag axle harness where
12 you could test it metallurgically and say, yes, this is
13 from an impact by a drive shaft versus something else?

14 MS. DORMAN: Object to form.

15 A. That's an interesting question. It depends on
16 what the something else was. If, for example, the
17 something else was stainless steel components and
18 there's transfer of material to an impact then the
19 answer is probably, yes, you can analyze to see if
20 there's any chromium on the part that was hit. If
21 you're trying to differentiate between two steel parts
22 then that would be more difficult, if not impossible.

23 Q. (BY MS. RODRIGUEZ) Well, now, what are the
24 drive shaft ear yokes, the ears made out of? What
25 material is that?

0245

1 A. I -- they appear to be a cast steel. I -- I'm
2 not sure I have the specific alloy in the information I
3 have on that.

4 Q. Sure. But is cast steel fairly brittle?

5 A. Cast steel?

6 MS. DORMAN: Object to form.

7 Q. (BY MS. RODRIGUEZ) Yes, sir.

8 A. Well, I suppose they put cast iron, and it
9 depends, depends on, you know, whether it's a ductile
10 cast iron versus a gray cast iron, for example.

11 Q. Did you look at the drive shaft ear yokes on
12 the accident bus and make a determination whether those
13 were fairly brittle?

14 A. No.

15 MS. DORMAN: Object to form.

16 Q. (BY MS. RODRIGUEZ) What would you need to do
17 to do that, to make that determination?

18 MS. DORMAN: Object to form.

19 A. One thing that you could do, one might be to
20 look at the microstructure to see if it is cast iron,
21 for example, to see if it's ductile versus gray cast
22 iron. Probably the most definitive way would be to
23 machine and test -- impact test specimen and measure the
24 impact of it.

25 Q. (BY MS. RODRIGUEZ) And how would you do that?

0246

1 A. How? You would take it -- take it or send it
2 to a lab that's a machine and a specific type of spec --
3 probably the Charpy impact specimen and run a Charpy
4 impact test.

5 Q. Okay. Now, the -- the determination of how
6 the tag axle bent, whether it was -- I'm sorry. The
7 determination of how the tie rod was bent, whether it
8 was caused by the drive shaft impact versus any side
9 loading, can you think of any testing from the
10 metallurgical perspective that can be done to assist the
11 jury in determining which occurred?

12 MS. DORMAN: Object to form.

13 A. Metallurgical, not specifically just
14 metallurgical. I think the sort of testing that we
15 talked about earlier where I may get involved or may get
16 involved with a mechanical engineer, it would be more of
17 a mechanical engineering type test.

18 Q. (BY MS. RODRIGUEZ) And that would be the
19 separation of the drive shaft at the transmission end to
20 see where it goes and what impact mark it makes?

21 A. Well, I --

22 MS. DORMAN: Object to form.

23 A. It would be probably a combination of tests,
24 the sort of thing that Kevan Granat did, and maybe some
25 other tests.

0247

1 Q. (BY MS. RODRIGUEZ) All right. But one of the
2 tests you told us about earlier that you contemplated
3 and you discussed with Mr. Dacus was separating a drive
4 shaft at a transmission end, right?

5 A. No. I don't think that we got into that level
6 of detail, Tamara. It was just what a rotating drive
7 shaft impact entailed. It wasn't which end of it
8 failed. We just didn't get into that detail.

9 Q. Well, how would the drive shaft then be
10 rotating if it was not -- if it was still connected on
11 the transmission end?

12 A. Again, that's what I'm saying; we haven't got
13 into that level of detail, how we're going to run the
14 test.

15 Q. Okay. And then Mr. Granat's testing, you
16 acknowledge that when he put the side loading on that
17 that produced two bends in the tie rod, correct?

18 MS. DORMAN: Object to form.

19 A. I have no idea. At the end of the test there
20 were apparently two bends.

21 Q. (BY MS. RODRIGUEZ) And you weren't there for
22 the entire test, correct?

23 A. I wasn't there for any of the tests.

24 Q. All right. You -- did you see the mockup
25 after the test had been conducted?

0248

1 A. After the test had been conducted, yes.

2 Q. So you saw -- what you saw had the two bends

3 in the tie rod, correct?

4 A. What I recall.

5 Q. Are there two bends in the tie rod of the
6 accident bus?

7 A. Well --

8 MS. DORMAN: Object to form.

9 A. -- at the time there were two bends. There
10 was one bend and then it was bent back again.

11 Q. (BY MS. RODRIGUEZ) Well, that's not what I
12 mean. I mean in the tie rod at one time, not because
13 the tow truck people bent it back.

14 A. Two separate bends at two different locations
15 you're talking about?

16 Q. Yes, sir.

17 A. I don't recall seeing two different locations.

18 Q. What other dissimilarities were there between
19 Mr. Granat's test and the accident bus other than he
20 produced two bends and the accident bus only had the one
21 bend in one location?

22 MS. DORMAN: Object to form.

23 A. I don't know. I haven't -- I haven't really
24 studied his testing detail.

25 Q. (BY MS. RODRIGUEZ) Okay. Are you relying on
0249

1 Mr. Granat's testing in forming any of your opinions?

2 MS. DORMAN: Object to form.

3 A. I would say only to the extent that his test
4 does show that bending -- a bending will cause or can
5 cause the tag axle locking mechanism to be pulled apart.

6 Q. (BY MS. RODRIGUEZ) So it's your understanding
7 that when Mr. Granat ran his test it unlocked the tag
8 lock?

9 A. Again, I'm not sure quite that level of
10 detail, but he said he produced deformation on the pin,
11 it says, as I noted in my notes, consistent with the
12 type of loading I saw in the subject coach.

13 Q. Well, sir, if you're going to rely on his
14 testing in support of your opinions, don't you think
15 it's important for you to know whether his testing
16 reproduced an unlocked tag lock?

17 MS. DORMAN: Object to form.

18 A. Well, I said, I'm limited in my -- my -- how
19 much I'm relying on Kevan Granat, but that's really his
20 area to talk about. So I'm really not relying heavily
21 on Kevan Granat's testing at all --

22 Q. (BY MS. RODRIGUEZ) All right.

23 A. -- in my opinion.

24 Q. Well, if you're relying on it at all and
25 you've had an opportunity to look at the test mockup
0250

1 after he conducted the testing, you don't think it's
2 important to know whether his side compression produced
3 an unlocked tag axle, same as the side compression that
4 you believe occurred with this accident?

5 A. Again --
6 MS. DORMAN: Object to form.
7 A. -- I'm not the one to analyze his test setup,
8 the forces, whether it's -- I mean, there's a lot of
9 aspects that I -- it's just outside of my area of
10 expertise. So, no, I don't think it's important.
11 Q. (BY MS. RODRIGUEZ) Then what about the test
12 are you relying on? If you're relying on it for a very
13 limited part, what part are you relying on?
14 A. The part that I made notes on it. It caused a
15 bending of the pin, similar -- and some marks, witness
16 marks on the tag axle locking plates, similar to what I
17 saw in the subject coach.
18 Q. Okay.
19 A. That's -- that's it.
20 Q. So if you were to put a pin -- his pin next to
21 the accident coach, the jury's going to see both pins
22 bent forward, correct?
23 A. That's what I recall from seeing his pin, yes.
24 Q. All right. Do you know how much side forces
25 he applied?

0251

1 A. No.
2 Q. Do you know --
3 A. Again, I haven't studied his test in detail.
4 Q. Do you know what side forces were applied on
5 the accident bus?
6 A. No.
7 Q. And that --
8 A. It's out of my area of expertise.
9 Q. Okay. In terms of literature in support of
10 your opinion, would that be contained in Exhibits 2
11 through 5?
12 A. There is some in there, but that's really more
13 directed to Dr. Fowler's testimony.
14 Q. Okay. Do you have any literature in support
15 of your opinions?
16 MS. DORMAN: Object to form.
17 A. Only what I've been provided by counsel in
18 this case.
19 Q. (BY MS. RODRIGUEZ) What literature is that?
20 A. Well, it's depositions, engineering drawings,
21 documentation.
22 Q. Well, I guess we need to get a definition of
23 literature then. To me literature is science -- you
24 understand what scientific literature is, articles,
25 peer-reviewed documents as opposed to deposition in a
0252
1 lawsuit or a maintenance manual or drawings from a
2 manufacturer. Do you discern the difference now between
3 scientific literature and those other items you've
4 described?
5 MS. DORMAN: Object to form.
6 A. Well, your earlier question didn't say

7 scientific literature and I know there is a difference.

8 Q. (BY MS. RODRIGUEZ) Okay.

9 A. And I acknowledge there is a difference. And
10 that's not what your question asked.

11 Q. Thank you for forcing me to ask you a better
12 question. So let me ask the better question now.

13 MS. DORMAN: And if I might, so you know,
14 by my count we've got about five minutes left in your
15 six hours.

16 Q. (BY MS. RODRIGUEZ) Are you relying on any
17 scientific literature in support of your opinion?

18 MS. DORMAN: Object to form.

19 A. I -- in answer to that I would say there's no
20 specific scientific literature I can cite. I -- to the
21 extent of my experience and I have looked at literature
22 on failure analysis and witness marks and impact in
23 general in the past, but I have not gone back and cannot
24 cite any specific literature that would be pertinent to
25 this case.

0253

1 Q. (BY MS. RODRIGUEZ) All right. And can you
2 think of any scientific literature that has it analyzed
3 a separation of a drive shaft or what impact marks it
4 would make?

5 A. I can't think of any specifically, no.

6 Q. Are you relying on any metallurgical or
7 engineering standards in support of your opinions other
8 than the two standards that we referred to in your
9 report?

10 A. I have not, no.

11 Q. Okay. And then has your testimony ever been
12 excluded by a court?

13 A. Not as far as I know, no.

14 Q. Have your opinions ever been limited by a
15 court on the ground that you did not follow a generally
16 accepted or scientific methodologies?

17 MS. DORMAN: Object to form.

18 A. Not yet.

19 Q. (BY MS. RODRIGUEZ) Are you -- were you an
20 expert in the Doetsch versus American Household case
21 that was filed in Southern California in 2007?

22 A. And what?

23 Q. And I'll write out the spelling. I'm not sure
24 if I'm pronouncing it right.

25 (Exhibit No. 23 marked.)

0254

1 A. Oh, Doetsch. Yeah.

2 Q. Doetsch, were you involved in that case, sir?

3 A. I don't remember American Household. I mean,
4 that's -- but there was a case.

5 Q. A Doetsch case. Was that filed in Southern
6 California?

7 A. There was a case, yeah.

8 Q. Were you -- your opinions or your testimony

9 excluded in that case, to your knowledge?

10 A. You know, I'm not really sure what happened in
11 that case. I know it was -- I don't know whether it was
12 dismissed or what happened in the end on that case.

13 Q. That would be something you would be
14 interested in learning or knowing if that ever happened
15 by a court?

16 A. What's that?

17 Q. That the court determined that your opinion
18 should be excluded on the ground that you did not follow
19 a generally accepted or scientific methodology?

20 A. I would want to know that.

21 MS. DORMAN: Object to form.

22 A. Sure.

23 Q. (BY MS. RODRIGUEZ) And do you know if NTSA
24 has investigated the -- the component parts that we're
25 here about today in this lawsuit?

0255

1 A. No knowledge one way or the other.

2 Q. Would that make a difference to you or be of
3 any interest to you?

4 MS. DORMAN: Object to form.

5 A. That's not my area, I don't believe. I just
6 have no information in that regard.

7 Q. (BY MS. RODRIGUEZ) Okay. And you've been
8 courteous to me. Have I been courteous to you today?

9 A. More than courteous. Thank you.

10 Q. I think that those are all the questions that
11 I have. Thank you.

12 MS. RODRIGUEZ: And I'll pass the
13 witness.

14 (Reporter's time: 5:22 p.m.)

15 EXAMINATION

16 BY MS. DORMAN:

17 Q. Dr. Coates, do you need a break or --

18 A. No.

19 Q. -- can you go a few more minutes?

20 A. Yeah, sure.

21 MS. DORMAN: Can I have an exhibit
22 sticker, please?

23 MS. RODRIGUEZ: There you go. You get
24 the whole box.

25 Q. (BY MS. DORMAN) I want you to first, if you
0256

1 can, turn to the protocol for the July 2011 testing that
2 was done at MSI in Chicago or outside of Chicago.

3 A. July 2011?

4 Q. Yes, sir.

5 MS. DORMAN: What exhibit are we on?

6 THE REPORTER: Next will be 24.

7 MS. DORMAN: Thank you.

8 A. Okay.

9 Q. (BY MS. DORMAN) All right. Is -- that's in
10 your binder that's marked as exhibit what? The whole

11 binder is --
12 A. 3.
13 Q. Okay.
14 A. Okay.
15 MS. DORMAN: I hate to ask what the next
16 one is of 3. 3F, G --
17 THE REPORTER: I don't show any for 3.
18 THE WITNESS: No.
19 (Exhibit No. 3A marked; Re-marked as 3A1.)
20 Q. (BY MS. DORMAN) Oh. Okay. So 3A. Is
21 that -- is what I've marked as Exhibit 3A the protocol
22 that you had for the inspection and examination of the
23 tag axle lock plates and cylinder locking pin up at MSI
24 back in July of 2011?
25 A. Yes.
0257
1 Q. And you were kind enough to attach some photos
2 to it so we could let counsel know what it was we were
3 looking at, correct?
4 A. Yes.
5 Q. And did you prepare that protocol?
6 A. I did.
7 Q. Okay. And do you know if Aaron Jones had a
8 copy of that protocol?
9 A. I think he was provided at the time of
10 inspection if not before.
11 Q. Okay. And what does it say about testing of
12 the tag axle lock cylinder pin?
13 A. Well, one thing it says the items to be
14 examined include, and it goes on to say cylinder locking
15 pin recently removed from the subject vehicle.
16 Q. Okay.
17 A. There is a photograph of it.
18 Q. And does it discuss how it is to be tested?
19 A. It talks about the three items that were going
20 to be examined and it does say sectioning of the lock
21 plates and cylinder lock pin to remove a small section,
22 approximately 1 square inch each, for hardness testing.
23 Q. And so explain to the ladies and gentlemen of
24 the jury what sectioning is?
25 A. That's basically cutting it with a -- with a
0258
1 band saw or grinder.
2 Q. And was that accomplished with the -- the
3 plates that had been removed from the subject vehicle?
4 A. Yes. I think both plates or two of the plates
5 were sectioned.
6 Q. Okay. And is it your testimony that we were
7 not allowed to section or remove the pin from the tag
8 axle locking cylinder?
9 MS. RODRIGUEZ: Objection, leading.
10 Q. (BY MS. DORMAN) You can go ahead.
11 A. My understanding was that we asked for --
12 permission was requested at the time of the inspection

13 to -- to section the pin, to do that testing, and it
14 was -- my understanding, that it was disallowed.

15 (Exhibit No. 24 marked.)

16 Q. Okay. And I will show you what I've marked as
17 Exhibit 24.

18 MS. DORMAN: Tamara, if you want to take
19 a look at it. It's a FedEx invoice for shipping the
20 drive shaft.

21 Q. (BY MS. DORMAN) Have you seen what I've
22 marked as Exhibit 24?

23 A. Before now?

24 Q. Yes.

25 A. Yes, I have.

0259

1 Q. And what is Exhibit 24?

2 A. It's a copy of a Federal Express invoice for
3 shipping from Fowler, Incorporated, to Dynamic Analysis
4 Group, dated -- let's see, invoice date March 9th, 2012.

5 Q. What is the shipping dated that's listed?

6 A. It says, picked up February the 28th, 2012.

7 Q. And where did you get this document?

8 A. From Fowler, Inc., from Joseph at Fowler.

9 Q. And who is Joseph?

10 A. Joseph is the -- basically the engineering
11 assistant or he does just about everything at
12 Fowler's --

13 Q. Okay. Office -- the office person?

14 A. Yes.

15 Q. When did you -- if you remember, when did you
16 receive the drive shaft from Greyhound, unit 6468?

17 A. When did I receive it?

18 Q. Yes, sir. Let me back up a little bit. When
19 we were in Richmond on January 25th of 2012, do you
20 recall if the drive shaft for unit 6468 was present with
21 the coach?

22 A. It was not.

23 Q. And do you know why it was not?

24 A. No, I did not -- I did not know why.

25 Q. Okay. And so did you receive that drive shaft

0260

1 at a later time?

2 A. Yes. I subsequently learned that it was
3 available and, the best of my recollection, it came from
4 Aaron Jones' office.

5 Q. And after you and Dr. Fowler examined that
6 drive shaft from GLI unit 6468, what did you do with it?

7 A. It was --

8 MS. RODRIGUEZ: Objection, form and
9 leading.

10 A. After that it was requested that we ship it to
11 Kevan Granat at Dynamic Analysis Group and they made
12 arrangements for Joseph to go ahead and check it.

13 Q. (BY MS. DORMAN) And is the invoice that I've
14 attached as Exhibit 24 a true and correct copy of the

15 FedEx invoice for that shipment of the drive shaft from
16 your -- from Dr. Fowler's office to Kevan Granat's
17 office in Houston?

18 A. Yes, I believe it is.

19 Q. And what is -- was the total cost for that
20 shipment?

21 A. \$390.35.

22 Q. All right. Thank you, sir.

23 MS. DORMAN: That's all I have.

24 (Reporter's time: 5:28 p.m.)

25 EXAMINATION

0261

1 BY MS. RODRIGUEZ:

2 Q. And I'll research -- recess -- well, let me
3 ask you, Dr. Coates --

4 A. Yes.

5 Q. -- the drive shaft on unit 6468, do you have
6 any opinions on that, your review of that drive shaft?

7 MS. DORMAN: Object to form.

8 A. Well, I made some observations in the notes.

9 Q. (BY MS. RODRIGUEZ) If you could give those to
10 me, I'd appreciate it.

11 A. They're included in Exhibit 2. I have one
12 page of notes that I made.

13 MS. DORMAN: And you're out of time but
14 I'll let him --

15 MS. RODRIGUEZ: Okay.

16 MS. DORMAN: -- explain.

17 Q. (BY MS. RODRIGUEZ) What are the notes that
18 you made?

19 A. Well, as I say, there's one page of notes with
20 some diagrams. Do you want to make a copy or -- I mean,
21 how do you want to do this?

22 Q. Well, if you'll just tell me in reviewing your
23 notes what your -- what opinions you have or
24 observations -- let's -- what's the better
25 characterization, opinion or observation?

0262

1 A. Observation.

2 Q. Observations you had of that drive shaft?

3 A. The observations that I made note of were
4 there were both -- both ears were broken off, there were
5 score marks on the drive shaft, on the transmission
6 yoke, the -- when they discovered the ears, there were
7 impact damage. Two of the bolts appear to be overload
8 failure. Well, one bolt was missing and one bolt I've
9 got bolt fractured possibly -- possible fatigue.

10 Q. Okay. And do any of those observations affect
11 any of your opinions in this case?

12 MS. DORMAN: Object to form.

13 A. No. I don't think so.

14 Q. (BY MS. RODRIGUEZ) All right. I'll go ahead
15 and recess the deposition until I have an opportunity to
16 review your entire file, and then I'll visit with

17 Ms. Dorman or Mr. Dacus if I need to re-depose you.
18 Thank you.
19 A. Thank you.
20 (Deposition concludes at 5:31 p.m.)
21
22
23
24
25

0263

1 CHANGES AND SIGNATURE
2 WITNESS NAME: DAVID COATES
DATE OF DEPOSITION: MARCH 21, 2012
3 PAGE LINE CHANGE REASON

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3 I, DAVID COATES, have read the foregoing
deposition and hereby affix my signature that same is
4 true and correct, except as noted above.

5 _____
DAVID COATES

6
7 THE STATE OF _____)
COUNTY OF _____)
8

9 Before me, _____, on this day
personally appeared DAVID COATES, known to me (or proved
to me under oath or through _____)
10 (description of identity card or other document) to be
the person whose name is subscribed to the foregoing
11 instrument and acknowledged to me that they executed the

same for the purposes and consideration therein
expressed.

Given under my hand and seal of office this

_____ day of _____, _____.

NOTARY PUBLIC IN AND FOR
THE STATE OF _____
COMMISSION EXPIRES: _____

NO. 2010-03-1717-C

DANIEL CAMPOS, ET AL,) IN THE DISTRICT COURT

)

Plaintiffs)

)

VS.) 197TH JUDICIAL DISTRICT

)

AMERICANOS, U.S.A.,)

L.L.C., ET AL,)

)

Defendants) CAMERON COUNTY, TEXAS

REPORTER'S CERTIFICATION
DEPOSITION OF DAVID COATES
MARCH 21, 2012

I, STEFANIE COX, Certified Shorthand Reporter in
and for the State of Texas, hereby certify to the
following:

That the witness, DAVID COATES, was duly sworn by
the officer and that the transcript of the oral
deposition is a true record of the testimony given by
the witness;

That the deposition transcript was submitted on
_____ to the attorney for Defendant,
Motor Coach Industries and MCI Service Parts,

Ms. Melissa Dorman, for examination, signature and
return to me by _____;

That the amount of time used by each party at the
deposition is as follows:

5 Ms. Melissa Dorman - 00 HOURS:06 MINUTE(S)
Ms. Tamara L. Rodriguez - 06 HOURS:00 MINUTE(S)
6 Mr. Justin Hill - 00 HOURS:00 MINUTE(S)
Mr. Thomas M. Buillion, III - 00 HOURS:00 MINUTE(S)
7 Mr. Eric Green - 00 HOUR(S):00 MINUTE(S)

8 That pursuant to information given to the
9 deposition officer at the time said testimony was taken,
10 the following includes counsel for all parties of
11 record:

12 Ms. Melissa Dorman, Attorney for Defendant, Motor
Coach Industries and MCI Service Parts;

13 Ms. Tamara L. Rodriguez, Attorney for Defendant,
14 Americanos, U.S.A., L.L.C.;

15 Mr. Justin Hill, Attorney for Defendant,
Consolidated Plaintiffs;

16 Mr. Thomas M. Buillion, III, Attorney for
17 Defendant, ArvinMeritor, Inc.;

18 Mr. Eric Green, Attorney for Defendant;

19 I further certify that I am neither counsel for,
20 related to, nor employed by any of the parties or
21 attorneys in the action in which this proceeding was
22 taken, and further that I am not financially or
23 otherwise interested in the outcome of the action.

24 Further certification requirements pursuant to Rule
25 203 of TRCP will be certified to after they have

0267

1 occurred.

2 Certified to by me this 2nd of April, 2012.

3

4 STEFANIE COX, Texas CSR 5384
Expiration Date: 12/31/13
5 Firm Registration No. 60
COMPEX LEGAL SERVICES
6 11811 North Freeway
Suite 500
7 Houston, Texas 77060
(800) 969-6424

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0268

1 FURTHER CERTIFICATION UNDER RULE 203 TRCP

2 The original deposition was/was not returned to the
3 deposition officer on _____;

4 If returned, the attached Changes and Signature
5 page contains any changes and the reasons therefor;

6 If returned, the original deposition was delivered
7 to Ms. Tamara L. Rodriguez, Custodial Attorney;

8 That \$_____ is the deposition officer's
9 charges to the Defendant, Americanos USA, L.L.C., for
10 preparing the original deposition transcript and any
11 copies of exhibits;

12 That the deposition was delivered in accordance
13 with Rule 203.3, and that a copy of this certificate was
14 served on all parties shown herein on and filed with the
15 Clerk.

16 Certified to by me this _____ day of
17 _____, 2012.

18
19
20 _____
21 STEFANIE COX, Texas CSR 5384

22 Expiration Date: 12/31/13

23 Firm Registration No. 60

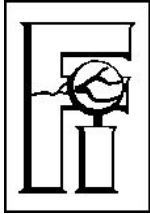
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FOWLER INC.

METALLURGICAL ANALYSIS
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EXPERIMENTAL TESTING

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August 11, 2011

John Dacus, Esq.
Hartline, Dacus, Barger, Dreyer & Kern
6688 North Central Expressway, Suite 1000,
Dallas, Texas 75206

Re: [REDACTED] v. Americanos et al.

Background

Fowler Inc. has been retained by the Law firm of Hartline, Dacus et al., representing Motor Coach Industries, MCI to provide Metallurgical Engineering services and consultation regarding the above referenced matter.

The case concerns a single vehicle rollover accident that occurred on March 16, 2010 on Interstate Highway 37, near Pleasanton, Texas. A 1995 model 102-DL3 MCI passenger bus (VIN 1M8PDMPA2SP[REDACTED]) was traveling southbound when it left the roadway and came to rest on its side in the median. Following the accident, the driveshaft was found separated from the vehicle.

Items reviewed

During the investigation, Fowler Inc. has been provided, and reviewed, the following items:

- Accident Report by TX DPS Trooper Kellert (Campos Plaintiffs 252808-000540)
- MCI000001-001211
- MCI000469-000470
- AUSA002861-AUSA002880
- P000367-P000372
- Scheduling Order
- Plaintiff's Designation of Expert Witnesses
- MCI Standard 25-24-0001 (Raw Material Standard – Raw Material Selection – Steel Products)
- Steel Stainless – AISI 304, UNS S30400

- Bosch Test Track Video
- Brian Lawson Notes
- Reduced Scale Drawing
- MSi Reports
- Photographs - 316 photographs of scene and coach produced by [REDACTED] in response to Plaintiff's Request for Production dated June 17, 2010 (photos taken January 14, 2007, January 15, 2007, March 16-17, 2010, and April 26, 2010 ARAAC)
- Photographs - 83 photographs of scene produced by [REDACTED] in response to Plaintiff Request for Production dated June 17, 2010
- Photographs - 48 photographs of coach taken 06/22/10 produced by [REDACTED] on 07/23/10
- Photographs - Campbellton Photos from DPS Evidence Inspection
- Photographs - Campbellton DPS Evidence Inspection
- Photographs - Bob Rucoba's Inspection Photos taken 07/27/10
- Photographs - Campbellton Inspection - Photo No. L1010152 (from Photos of Items Collected by GLI Investigator at Scene)
- October 26, 2010 letter from Americanos' counsel regarding additional protocols for destructive testing and advising that they are no longer going to be doing the alignment testing, paragraphs 1-5 of the protocol entitled "Protocol for Examination of the Subject Coach."
- Americanos' July 2007 Transmission Change - Driveline Removal
- 102DL3 Maintenance Manual Regarding Removal of Driveshaft
- November 1, 2010 letter from [REDACTED] counsel regarding this week's inspection and testing
- Drawing - 141-1-71_k_1 of 1 - yoke half round end
- Deposition transcript and exhibits for: Trooper Wesley Cooper
- Defendant Greyhound Lines, Inc.'s Responses to Motor Coach Industries, Inc.'s First Request for Production
- Defendant [REDACTED] Lines, Inc.'s Responses to Motor Coach Industries, Inc.'s First Set of Interrogatories
- Defendant [REDACTED] U.S.A., L.L.C.'s Responses to Motor Coach Industries, Inc.'s First Request for Production
- Defendant [REDACTED] U.S.A., L.L.C.'s Responses to Motor Coach Industries, Inc.'s First Set of Interrogatories
- Vehicle inspection Photos taken by Carr Engineering, 7/27/10
- Photographs of Exemplar Vehicle inspection taken by Carr Engineering, 8/2/2011
- Report by Brown Inspection and Mechanical Services, dated 7/11/2011
- Report by Tejas Safety Advantages, dated 7/11/2011
- Report by Accident Research and Biomechanics, dated 7/10/2011
- Report by David Hall and Associates, dated 7/8/2011
- Report by Herrera, Stafford and Associates, dated, 7/11/2011
- Report by ITC Experts, dated 7/11/2011
- Report by Raul Longoria, dated 7/8/2011
- Report by Palacios Accident Reconstruction, dated 7/11/2011
- Report by Argos Forensic Engineering, dated 7/11/2011
- Report of Lawrence Yohe, dated 7/11/2011
- Report of HAAG Engineering, dated 6/10/2011
- Affidavit of Aaron Jones, dated June 7, 2011
- Deposition of Jeff Arta, taken 8/10/2011

- Scene and Vehicle Photographs by Kevan Granat dated 11/14/2010
- MSi data dated 1/14/2011
- Photographs produced by [REDACTED] (AUSA001488-1802)
- CD containing documents produced by [REDACTED] (PDF7031-7624)
- CD containing documents produced by MCI (PDF1-459)
- CD containing documents produced by MCI (471-1211)
- Maintenance Manual Model MCI 102 D Series P/L-3L-15925D January 1995
- Parts Manual Model MCI 102D Series P/N 3L-15-924D January 1995
- Parts Manual Model MCI 102DL3 October 1992 3L-15-924C 1994 3L-15-924D 1995
- Parts Manual Model MCI 102D Series P/N 3L-15-924D Section 13 Transmission January 1995
- Parts Manual Model MCI 102D Series P/N 3L-15-924D Section 8 Engine January 1995
- Parts Manual Model MCI 102D Series P/N 3L-15-924C April 1994
- D Series Operators Manual 45x102, 40x102 Intercity Coach Models MCI May 1994
- Maintenance Manual Model MCI 96-102 D Series P/N 3K-15-1220C Revision A January 1994
- D Series Operators Manual 45x102, 40x102 Intercity Coach Models MCI January 1995
- Arvin-Meritor Manual TP-0445, Parts Failure Analysis
- CD of Carr Engineering Exemplar Vehicle Inspection
- 12 Exemplar U-joint kits, Provided by ITC Consultants
- Exemplar tie rod and tag axle components tested by Dynamic Analysis.
- The subject vehicle and various components from the vehicle

Vehicle and Component Inspections

Dr. [REDACTED] attended a number of vehicle and component inspections on behalf of Fowler Inc. The subject vehicle was inspected at Suburban Towing in Louisville, Kentucky on July 29, 2010, November 4, 2010 and January 12, 2011. In addition, inspections and testing of certain components from the subject vehicle were attended by Dr. [REDACTED] (on January 13-14, 2011 and 29 July, 2011) and by Dr. Russell Lund (on June 30, 2011) at MSI testing in Melrose Park, Illinois.

Driveshaft and U-joint Inspection

As indicated above, the driveshaft was found separated from the subject vehicle after the accident. The driveshaft was formerly attached at one end to a yoke at the transmission and at the other end to a yoke at the differential on the drive axle of the vehicle. The attachments at both ends were by means of universal joints (U-joints). The U-joint assemblies both consisted of a cross, two unflanged bearing cups with needle bearings, two flanged bearing cups with needle bearings (which attached to the driveshaft by means of four bolts), and two bearing straps, which attached the unflanged bearing cups to the yokes by means of four bolts. Following the accident a U-joint cross was found still attached to the differential end of the driveshaft by two legs of the cross. The U-joint cross from the transmission end of the driveshaft was not attached to the driveshaft, nor was it attached to the yoke at the transmission. This U-joint cross was reportedly not recovered following the accident.

The yoke at the transmission had one U-joint strap attached to it by one bolt (Figure 1). Subsequent examinations of this strap indicated it contained no manufacturer's identification markings, although the dimensions and mechanical properties were consistent with it being a "generic" strap. Two of the four strap attachment bolts on the transmission yoke had fractured. The head of a third bolt was mechanically damaged. Laboratory examination of the bolts (at MSI) indicated that they had fractured by shear overload and witness marks on adjacent hardware (including the unmarked strap) indicated that they had been subject to multiple impacts. The transmission yoke end of the driveshaft (Figure 2) was severely impact damaged and fractured. Multiple impact-related witness marks were evident on the yoke of the driveshaft. The deformation of the unmarked strap and the fracture of the attachment bolts was evidently due to impact by the separated driveshaft as it continued to rotate after failure of the transmission U-joint connection. Additional impact witness marks were observed on the surrounding chassis components at the transmission end of the driveshaft.

Some of the driveshaft U-joint components were recovered by the Texas DPS Troopers, including the other bearing strap from the transmission U-joint (Figure 3). This strap was marked "Spicer" and "03-94" indicating it was manufactured by Dana Spicer in March 1994. This strap also showed multiple impact marks with deformation and separation of one of the bolt holes. The mechanical damage is concluded to have been produced following separation of the driveshaft from the transmission yoke.

Amongst the recovered items was an intact bearing cup (Figure 4), a broken section of another bearing cup (Figure 5) and a flange from a bearing cup (Figure 6). The intact

bearing cup was marked "Spicer". The bearing cup flange was marked "Spicer", "01" and "94", indicating it was manufactured by Dana Spicer in January, 1994. The bearing cup showed multiple impact related brinell marks on the inside bearing surface (Figure 4). The brinell marks were relatively uniform in appearance around the inside circumference of the bearing surface and were oriented a few degrees away from longitudinal with respect to the cup. Mechanical indents were also observed in the inside end surface of the bearing cup. The broken section of the bearing cup (Ex. 5) matched the broken bearing cup in the transmission yoke end of the driveshaft (Figure 7). This cup, and broken section, also showed impact marks that were orientated at a similar angle to those found on the "Spicer" cup.

The U-joint cross from the transmission end of the driveshaft was not recovered. One bearing cup and a bearing cup flange that were recovered were most probably from the transmission U-joint and indicates the missing U-joint cross was likely also a Spicer part. The initiating event for the separation of the U-joint was not in any of the parts recovered

The U-joint cross from the differential end of the driveshaft was still attached to the driveshaft (Figure 8). It showed no manufacturer's markings, but was consistent in appearance to a "generic" U-joint cross. The two cross attachment straps on the differential yoke were different in size and appearance (see Figure 9). One strap was marked "Spicer". The other strap was unmarked, but consistent in dimensions and physical properties as being a "generic" part.

Of the eight attachment bolts for the straps on the transmission yoke and differential yoke, two were marked "10.9" (one on the transmission yoke and one on the differential yoke), four were marked "F-C" (three on the differential yoke and one on the transmission yoke) and two were missing their heads. The one cross on the differential end of the driveshaft, two straps (one on the differential yoke and one on the transmission yoke) and three "10.9" marked bolts suggest one "generic" replacement U-joint kit had been installed on the vehicle. The two "Spicer" bearing cups and four "F-C" bolts, indicate one of the U-joints was likely the original U-joint from the vehicle, as built in 1994. However, it is apparent there was mixing of component attachment hardware between the transmission U-joint and the differential U-joint.

Impact related witness marks on the undercarriage of the vehicle in the regions around where the driveshaft would have been attached indicate the driveshaft separated from the transmission U-joint first. The driveshaft remained attached at the differential U-joint for some time, while the rotating driveshaft flayed about the longitudinal axis striking the inside of the tag axle cut out region (Figure 10). Eventually, the differential U-joint connection separated and additional impact damage was produced on the vehicle chassis as the driveshaft separated from the vehicle. There was no evidence found to indicate that the driveshaft struck the tie-rod or tag lock mechanism at any time during the separation events. Further testing of exemplar components is contemplated to investigate this further.

Tag Axle locking mechanism and tie rod

The subject vehicle incorporated a rear drive axle (driven by the engine via the transmission, driveshaft and differential) and a tag axle (undriven and designed to allow maneuverability at low speeds and in reverse). The tag axle steering is locked to the straight ahead position (aligned with the drive axle) by a tongue and pin mechanism during normal, forward operation of the vehicle above about 20 MPH.

Following the accident, it was found that the tag axle locking mechanism was no longer in the locked and pinned position (Figure 11). At the time of the inspection of the vehicle by the undersigned in Louisville (July 29, 2010) the tongue plate that was attached to a transverse tie rod on the underside of the vehicle was located below the upper tongue plate attached to the tag axle. The two tongue plates on the tag axle also showed deformation and witness marks (Figure 12). Review of the accident scene photographs indicated that the deformation on the underside of the tongue plates was most likely not present at that time and most likely was produced during post-accident manipulation of the bus during recovery and/or transportation. Deposition testimony by Jeff Barta, owner of Jeff's Auto Rebuilders, indicated that during the recovery operation an attempt was made to mechanically straighten the tie rod by means of an applying force via an "underreach" arm. Hardness testing of the tag axle locking plate tongues showed no evidence that there was any deviation (in terms of base metal hardness) from the required Engineering Specifications for these items.

Examination of the tag axle locking mechanism components at MSI showed that the locking pin that engaged in the tongue plates had deformation marks in the regions it engaged the slot in the tongue plates. The pin was also bent and partially separated from its shaft. The inside surfaces of the slots in the tongue plates showed deformation consistent with the pin being engaged at the time that a large impact force was applied between the components. The mechanical deformation markings on the locking pin and locking plate slots are consistent with markings produced on exemplar components tested by Dynamic Analysis to simulate stress loading on the subject tag axle locking components applied during the time that the subject vehicle was on its side. It was also found during a vehicle inspection that the air line to the pneumatically operated locking pin was blocked, rendering the locking pin retraction mechanism inoperable. It is evident that the locking pin was engaged and that tag axle was locked to the tie rod at the time of the accident. No evidence was found to indicate that the forces that caused the locking pin to disengage from the locking plates were from any impact by the driveshaft while it was still attached to the differential, or after it separated from the differential.

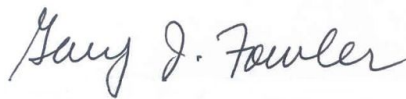
Summary of Opinions

- Separation of the driveshaft initially occurred at the transmission U-joint.
- Following separation of the transmission u-joint, the driveshaft continued to rotate while still attached to the vehicle at the differential end of the driveshaft.
- The rotating driveshaft caused multiple impacts and damage to various parts of the vehicle underside and U-joint attachment hardware (straps, bolts and bearing cups).
- There was not any evidence found to indicate a failure of any of the attachment bolts caused separation of the U-joints.
- The initiating event for the separation of the transmission U-joint was not in any of the parts that were recovered.
- Based on the U-joint parts that were recovered, it is likely that the missing parts included a Spicer U-joint cross.
- Parts of the transmission U-joint assembly appear to be an original "Spicer" U-joint.
- Parts of the differential U-joint assembly appear to be a replacement U-joint assembly.
- There was mixing of the U-joint attachment hardware between the transmission U-joint and the differential U-joint.
- There was not any evidence found that indicated any parts manufactured or marketed by ArvinMeritor failed and caused the U-joint separation.
- All damage observed was caused by impact induced overload forces.
- There was not any evidence found to indicate that the separation of the tag axle locking mechanism was caused by impact from the driveshaft.
- There was not any evidence found to indicate the driveshaft impacted the tie rod and/or the tag axle locking mechanism during or before the accident.
- The physical evidence indicates the tag axle locking pin was fully engaged in the locking tongues at the time of the accident.

We reserve the right to add to, or amend, these opinions based on additional discovery or information that may become available. The opinions expressed in this report are based upon the investigation and review of the of the data provided, the examination of the subject vehicle and components and of exemplar components and the training and experience in metallurgical engineering and failure analysis of the undersigned.



David J. Coates, Ph.D.



Gary J. Fowler, Ph.D.

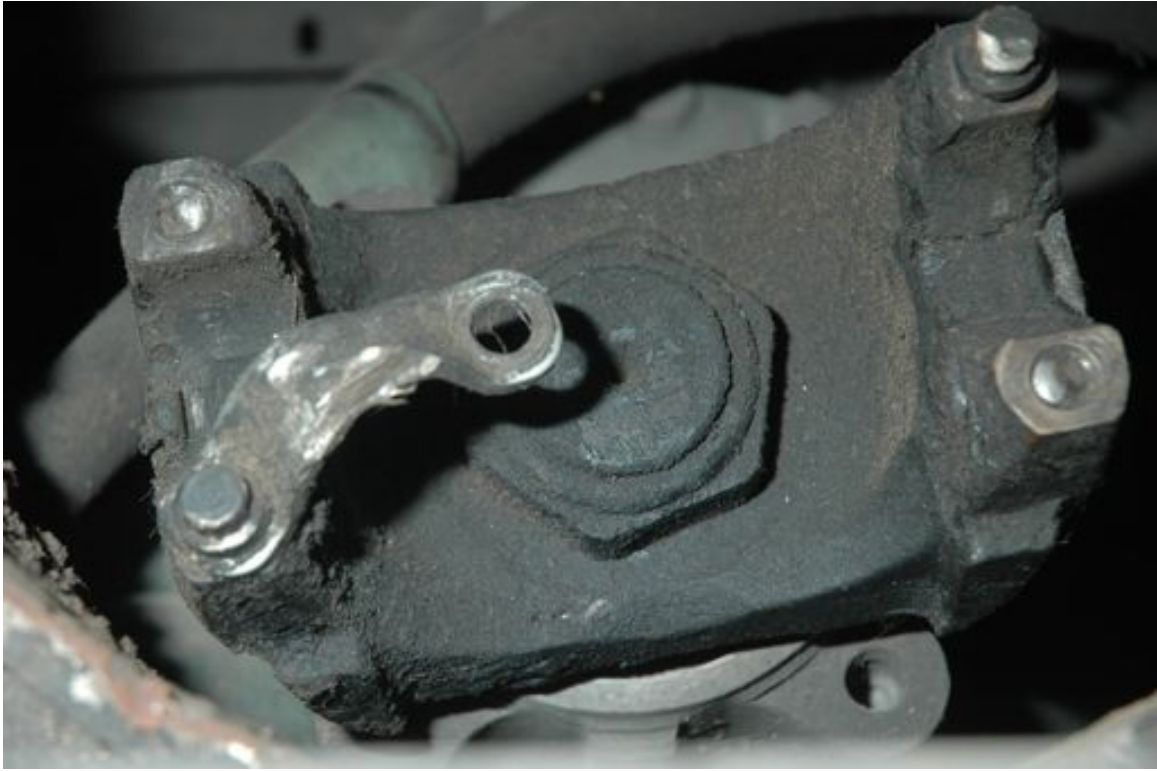


Figure 1



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6



Figure 7



Figure 8



Figure 9



Figure 10



Figure 11



Figure 12

PE12-007

MCI

4-27-2012

Response 9

Expert Report - Dr. David
Coates - WITH Attachments

PE12-007

MCI

4-27-2012

Response 9

Expert Report - Kevan Granat -
WITH Attachments

CAMPOS V. AMERICANOS

Supplemental Report Prepared for:

Mr. John C. Dacus
Hartline, Dacus, Barger, & Dreyer, LLP
6688 North Central Expressway
Suite 1000
Dallas, Texas 75206

Prepared By:



Kevan J. Granat
February 15, 2011

Introduction

I have reviewed additional materials provided regarding the Campos v. Americanos matter. I have reviewed the supplemental reports submitted by consultants for Greyhound and conducted inspections of several coaches referred to in those reports. I have reviewed documentation provided regarding tests performed on a modified MCI 102DL3 coach. A list of these additional materials I have received and reviewed is attached.

Other Incident Coaches

I inspected three coaches that were involved in other incidents under circumstances that were reported by Greyhound's consultants to be similar in some characteristics to the subject crash. These coaches were inspected at a Greyhound garage in Richmond, Virginia on January 25, 2012.

Unit 6468

This coach was a 2000 MCI 102DL3 with vehicle identification number 1M8PDMRA7YP052865. The unit had been refurbished by Greyhound, with numerous components replaced and the interior updated. The coach was equipped with a Detroit Diesel Series 60 engine, ZF Astronic transmission, and a Cadec GPS-based fleet management module. Neither the engine DDEC data nor the Cadec GPS data have been made available for review at the time of this report. Documentation regarding this incident is very limited, with comments that state 'lost driver line; tow from Somerset, PA to RHM; 8/24/11.' There is no indication of a loss of control or crash and there is no physical evidence indicative of a collision or overturn.

The driveshaft and both U-joints were not available for inspection. The transmission-side yoke and the differential-side yoke had both been removed and were also not available for observation. Both drive axle shafts had been removed for towing. The tie rod locking system had previously been disabled and replaced with a fixed, non-retractable pin. The pin was engaged in the locking plates and the tag axle steering was locked. Numerous contact marks were observed on the latch arm assembly and light contact was observed on the tie rod near its midpoint. Additional contact was observed on the fixed, axle-mounted locking plates. The caster latching mechanism was shifted laterally. At the time of my inspection, the axle was in the rearward caster position, corresponding to the position for forward travel. A functional evaluation of the caster latching mechanism was not possible during this inspection.

This coach was involved in an incident where the driveshaft apparently became detached while the vehicle was in motion. The driver was apparently able to maintain control of the vehicle and no crash resulted. This vehicle had recently been refurbished, with components replaced or updated, and the cause of the driveshaft separation is undetermined at this time.

Unit 6934

This coach was a 2000 MCI 102DL3 with vehicle identification number 1M8PDMRA9YP053306. The unit had also been refurbished by Greyhound and was also equipped with a Detroit Diesel Series 60 engine, ZF Astronic transmission, and a Cadec GPS-based fleet management module. Neither the engine DDEC data nor the Cadec GPS data have been made available for review at this point. The limited service documentation regarding this incident states that the unit was 'Towed in to us, driveshaft came out. Driveshaft missing. Damaged other parts.

Broke yoke, bent tag tie rod, broke tag lock.’ There is no indication of a loss of control or crash and there is no physical evidence indicative of a collision or overturn.

This vehicle had been serviced after the incident and a number of components had been replaced, including the driveshaft, both U-joints, the tag axle tie rod, and the fixed tie rod locking plates. The separated driveshaft and both U-joints were not available for inspection. The tie rod locking system had previously been disabled and replaced with a fixed, non-retractable pin. As inspected, the pin was engaged in the locking plates and the tag axle steering was locked. The transmission housing was fractured and the transmission output shaft was displaced from its normal position. The replacement U-joint at the transmission end was resting on top of the tag axle, at the bottom of the pass-through opening. Contact marks were observed on the latch arm assembly. At the time of my inspection, the axle was in the rearward caster position, corresponding to the position for forward travel. The original tie rod was observed separate from the vehicle, without its locking plate and clamps attached. The tie rod exhibited a bend adjacent to the position of the right side clamp, witness marks from both clamps, and a gouge between the clamp positions. The fixed tie rod locking plates were also observed separate from the vehicle. These plates exhibited deformation and contact damage, and the lock cylinder mounting boss was detached, with its welds fractured. The mounting boss and fixed pin were apparently unavailable for inspection. A functional evaluation of the caster latching mechanism was not possible during this inspection.

This coach was involved in an incident where the driveshaft apparently became detached while the vehicle was in motion. The driver was apparently able to maintain control of the vehicle and no crash resulted. This vehicle had recently been refurbished, with components replaced or updated, and the cause of the driveshaft separation is undetermined at this time.

Unit 6352, Mount Gretna Crash

This coach was a 2000 MCI 102DL3 with vehicle identification number 1M8PDMRAXYP052682. The unit was not part of the refurbishment program as the previously discussed units were. The coach was equipped with a Detroit Diesel Series 60 engine, ZF Astronic transmission, and a Cadec GPS-based fleet management module. Neither the engine DDEC data nor the Cadec GPS data have been made available for review at this point. The Cadec module’s compact flash card slot was observed to be empty; the recording media had apparently been removed prior to this inspection.

This coach was involved in a single vehicle crash that occurred on the morning of August 13, 2011 on the Pennsylvania Turnpike near the town of Mount Gretna. According to the Pennsylvania State Police, ‘The crash occurred while Unit #1 was traveling westbound in the left lane. The driver lost control and struck the Jersey barrier. Upon impact, Unit #1 traveled along the barrier. Unit #1 then crossed the travel lanes and struck the north side embankment. Unit #1 then rolled onto its left side facing southeast blocking both lanes. Approx. 18 people plus the driver were on board. Several people were taken to area hospitals for treatment. One passenger was extricated.’ After the crash, the bus driver indicated that he observed an object in the travel lane, turned to avoid hitting it, lost control, and struck the concrete median barrier. The investigating officers determined that ‘driver action’ was the prime factor in causing the crash.

The vehicle exhibited chassis deformation, sheet metal abrasions, and other damage consistent with the police description of the event. I inspected the chassis and observed substantial deformation of the right side tag axle suspension links, consistent with a substantial lateral impact to the axle. The entire tag axle was shifted toward the right and the left tag axle tire and wheel exhibited evidence consistent with an impact with the concrete median barrier. The tag axle was shifted such that the left side of the latch arm was pushed into contact with the transmission end U-

joint. Marks and gouges were observed on the tag axle, consistent with contact from the driveshaft and U-joint. The latch arm assembly, however, did not exhibit any impact marks or gouges as the latch arm in the Campbellton crash coach did. There was no steering stop installed on the left tag axle steering knuckle, while the right stop was apparently fractured off. The steering stop mounting threads and exposed surfaces were covered in residue, indicating that both stops were not functional for an extended period of time prior to the crash. The tie rod locking cylinder had been forcibly detached from its mounting boss and its air supply fittings were fractured. The locking cylinder was not observed with the vehicle. The tag axle tie rod was bent near the right locking plate clamp and the locking plates were disengaged. The caster latching mechanism was observed to be in an intermediate position, not latched in the rearmost position corresponding to forward travel and not in the foremost position corresponding to rearward travel. The driveshaft end U-joint was separated, with one strap and cup remaining attached to the driveshaft yoke and the other strap fractured. The driveshaft loop was deformed from its normal shape. The driveshaft itself was observed separate from the vehicle. Both lobes of the transmission end yoke were fractured and displayed contact damage. Unlike the Campbellton driveshaft, this driveshaft tube exhibited only a light mark indicative of contact between the body-mounted driveshaft loop and the driveshaft itself. This mark did not extend around the circumference of the tube, indicating that there was no extended rotation of the driveshaft while in contact with the loop. The tag axle steering damper was fractured at its mount to the tie rod. The front suspension stabilizer bar system showed evidence of a lateral shift of that axle, as well. A functional evaluation of the caster latching mechanism was not possible during this inspection.

The physical evidence observed on this coach is consistent with the investigating officer's description of the crash. The damage observed on the tag axle is indicative of an impact force which displaced the axle laterally toward the right. As a result of this deformation, the driveshaft was likely contacted by the left side of the tag axle pass-through structure, and subsequently separated. The evidence observed on this vehicle was dissimilar to the Campbellton vehicle in the specific locations of driveshaft contact and in the substantial lateral displacement of the tag axle. The likely cause of this crash is that the driver allowed his vehicle to depart his lane of travel and collide with the concrete median barrier.

Americanos' Brake Testing

I have reviewed materials provided regarding tests performed on an MCI 102DL3 on January 13-14, 2012. The nature of the testing was described in the supplemental reports of Larry Yohe and Thomas Fugger. These reports indicate that the coach was modified such that the operator could directly control the tag axle locking cylinder, the tag axle caster latching cylinder, and an additional pneumatic cylinder installed to force tag axle steering. Thirteen tests were performed, including driving at low speed in a circle and braking tests with the tag axle in various configurations.

Photographs which document the test vehicle configuration show that as many as twelve video cameras were installed on the vehicle, while footage from only four has been provided for review. An additional, external camera was observed, although no footage from that camera has been reviewed as well. The photographs show that the vehicle was instrumented with GPS-based speed and position sensors, accelerometers, and steering input sensors. I inspected the vehicle on January 25, 2012. This coach was a 1994 MCI 102DL3 with vehicle identification number 1M8PDMPAXRP046725. The coach was equipped with a Detroit Diesel Series 60 engine, an

Allison HD740 transmission, and a Cadec GPS-based fleet management module. At the time of my inspection, the instrumentation was no longer installed on the coach. The tag axle system had been modified with the addition of the auxiliary pneumatic cylinder and its mounting brackets, as well as by addition of a second driveshaft loop and supporting structure. The auxiliary cylinder was observed separate from the vehicle, and the vehicle was ballasted with weight bags in each passenger seating area. At the time of my inspection, the caster latch mechanism was observed to be in an intermediate position, not latched in the rearmost position corresponding to forward travel and not in the foremost position corresponding to rearward travel.

A preliminary review of the testing has been performed. I intend to perform a more complete analysis once additional video footage has been provided and after the deposition of the test driver has been reviewed. From my understanding of the reports provided and the theories put forth, it appears that the test most representative of the controllability claim would be brake test number thirteen. Test thirteen was performed with the tie rod steering unlocked and the caster latch mechanism shifted forward, corresponding to the position for rearward travel. After application of the vehicle's service brakes, the vehicle was yawed counter-clockwise and the driver applied a counter steer toward the right, maintaining directional control of the vehicle. The peak yaw rate during this period was approximately six degrees per second, and, as a result of this steer to the right, the vehicle's yaw rate had been brought back to zero. Subsequently, the driver steered the vehicle toward the left, removing all counter-steer input and turning an addition forty degrees toward the left. In response to this input, the vehicle yawed toward the left, with a peak yaw rate approaching eleven degrees per second, and traveled across the adjacent lanes. Throughout this sequence, the vehicle remained controllable and responded to the driver's steering and braking inputs. The driver was able to safely bring the vehicle to a stop completely on the paved surface.

A conclusion drawn from this testing, as relayed in the previously mentioned reports, is that the testing was representative of the mechanical failure that occurred in the Campbellton crash, and that, once this failure occurred, 'the driver was basically in an uncontrollable situation.' This conclusion is in contradiction with the testing itself. During these tests, the driver was able to maintain control of the vehicle, with the vehicle responding to both steering and braking inputs. The tests were performed with an apparently functional caster latching mechanism that was actuated with an apparently unrestricted compressed air system. This system allowed for the mechanism to be indexed between the forward and rearward positions. Contrary to this, the compressed air system that supplied the caster latching mechanism on the Campbellton coach was not functional and was unable to be indexed into either position directly.

My analysis to date is based on a partial review of the testing that was performed, based on the information provided. I understand that depositions of the consultants involved will be provided in the near future, and I understand that additional data are to be provided similarly. I reserve the right to supplement or modify my opinions based on this new information is received and based on additional work that may be performed.

Americanos' Driveshaft Testing

I have reviewed the video and photographs provided regarding tests that were performed on a stationary coach to simulate driveshaft failures. I inspected this coach on January 24, 2012 in Nappanee, Indiana. This coach was Americanos unit 60628 which had been previously used for track testing. The drive axles of the vehicle were elevated off the ground and were supported on jack stands. The tag axle tires were partially unloaded due to elevation of the drive axle. The right

outer drive wheel had been removed and the axle shaft had been modified to connect to a second stationary 'power' coach. This second coach was not available for inspection. The tag axle latch arm assembly displayed contact damage from the free end of the driveshaft and the tie rod locking plate was detached from the fixed locking plates. A functional evaluation of the caster latching mechanism was not possible during this inspection.

According to the documentation provided, this coach had been used for multiple tests, including three tests for which video has been reviewed. Two of these video files are labeled 'video 12' and 'video 15' and they correspond to testing of a secondary driveshaft loop. No additional videos have been provided for review. An additional test was performed by ITC Experts and discussed in a supplemental report by Aaron Jones. This report indicates that the caster latching mechanism was damaged during the prior test runs, but was not repaired and was left in the forward position, corresponding to the position for rearward travel. The U-joint attachment bolts were modified to produce rapid failure of the transmission end U-joint. Operators of the test coach and the power coach attempted to synchronize throttle inputs to approach a target driveshaft rotational rate. This rate was not reached prior to the separation of some U-joint elements and so the operators applied full throttle until the U-joint completely separated.

This testing was performed on a tag axle assembly that had been damaged by prior, repeated driveshaft failure tests. At this point, it is unknown how many tests were performed prior to the ITC test. Use of these components that have been compromised by earlier tests may significantly affect the circumstances or outcome of the subsequent tests that were reported on, as is the case with the caster latching mechanism. The test vehicle was artificially supported above the ground, with the tag axle tires partially unloaded. Unloading of the tag axle tires would have transferred additional load to the drive axle suspension, effectively loaded through the jack stands. This artificially alters the relative heights of the differential and transmission, placing the driveshaft at an angle that is not consistent with the normally loaded suspension position. At this point, the DDEC reports for the test coach and power coach have not been provided for review, so the effect of the operators' attempt at synchronizing throttle inputs and the effect of applying full throttle have not been fully evaluated, although these circumstances certainly differ from the circumstances of the Campbellton subject crash.

Additional Work

In an effort to better understand some of the conclusions reached in the supplemental reports, I have evaluated the performance of an exemplar caster latching mechanism and tag axle. I have cycled the latching cylinder under pneumatic power and also evaluated its positioning without a functioning compressed air source. The latching cylinder is a dual-acting pneumatic cylinder that requires compressed air to index it into a retracted or extended position. The cylinder is controlled by a spool valve that supplies compressed air to one of the cylinder inputs, while exhausting air pressure to the other input. The spool valve is controlled electrically, based on the reverse gear selector status. Under normal operation, the latching mechanism indexes between the forward and rearward positions by extending a clevis attached to the cylinder rod. The clevis contains rollers which contact trapezoidal cams attached to the underside of the latch tongue assembly. When cycled forward, the position corresponding to rearward vehicle travel, the rollers contact the cams and lift the latch tongue up, disengaging the tongue from the latch arm and indexing the latch arm to the forward position. As it moves toward this forward position, the rollers travel beyond the cam, allowing the tongue to return to its prior vertical position and to re-engage with the latch arm

assembly in its forward position. Replaceable wear inserts are present on the tongue and the latch arm at the engagement locations.

When there is no compressed air supplied to the latching cylinder it can be moved by hand, with some effort. When operated with air pressure levels consistent with the vehicle supply pressure, the latching mechanism indexes quickly and distinctly into the two latched positions. When operated at pressures well below the vehicle supply pressure, the cylinder cannot complete the indexing motion and is placed in an intermediate position. Once in this intermediate position, manual rotation of the latch arm, consistent with drive torque application or braking application, does not cause the latch tongue to completely re-engage the latch arm. Thus, faulty air supply to the latching cylinder can cause the mechanism to remain in an intermediate position and can prevent it from latching in either the forward or rearward position. An operator would be alerted to this condition by functional warning lights. The position of the caster latch mechanism will not alter the steer angle of the tag axle tires on a coach that also has no compressed air supplied to the tie rod locking cylinder, as was the case with the Americanos subject coach.

Additional Materials Received and Reviewed

1. Report written by Patrick Mears (08/09/11)
2. Report written by Gregory Wright (08/10/11)
3. Report written by David Coates (08/11/11)
4. Report written by Virgil Hoogestraat (08/11/11)
5. Report written by Robert Rucoba (08/11/11)
6. Supplemental report written by Larry Yohe (01/15/12)
7. Supplemental report written by Thomas Fugger (01/16/12)
8. Supplemental report written by Aaron Jones (01/16/12)
9. David Coates' GLI bus inspection photographs and notes (1/24-25/12)
10. Bob Rucoba GLI bus inspection photographs (1/24-25/12)
11. Carr Engineering exemplar vehicle inspection photographs (08/02/11)
12. Bus and bus parts inspection photographs (06/30/11)
13. Photos of Coach at Jeff's Auto Rebuilders
14. Driveshaft Test video (09/22/11)
15. Aaron Jones photographs (09/20/11)
16. Virgil Hoogestraat Volume I deposition (06/09/11)
17. Virgil Hoogestraat Volume II deposition (07/14/11)
18. Virgil Hoogestraat Volume III deposition and exhibits (09/23/11)
19. Jeffrey Barta deposition (08/10/11)
20. Michael Barta deposition (08/10/11)
21. David Stopper deposition and exhibits (08/12/11)
22. Andrew D. Irwin deposition and exhibits (08/31/11)
23. Glen Reuschling deposition (09/08/11)
24. Thomas Fugger Volume I deposition and exhibits (09/09/11)
25. Raul Longoria deposition and exhibits (09/12/11)
26. Ricardo Palacios deposition and exhibits (09/13/11)
27. Aaron Jones deposition and exhibits (09/14/11)
28. Juan Herrera deposition (09/15/11)
29. Larry Yohe deposition (09/19/11)
30. Frank Brown deposition (09/19/11)
31. Robert Rucoba deposition and exhibits (09/21/11)
32. Thomas Fugger Volume II deposition (02/10/12)
33. Protective Order
34. Defendant Americanos U.S.A., L.L.C.'s First Supplemental Responses to Motor Coach Industries, Inc.'s First Request for Production
35. Defendant Americanos U.S.A., L.L.C.'s Second Supplemental Responses to Motor Coach Industries, Inc.'s First Request for Production
36. Plaintiffs' Notice of Intention to Take the Oral and Videotaped Deposition of Kevan J. Granat, with Subpoena Duces Tecum
37. Plaintiffs' First Amended Notice of Intention to Take the Oral and Videotaped Deposition of Kevan J. Granat with Subpoena Duces Tecum
38. Defendant's First Amended Cross-Notice of Intention to Take the Oral and Videotaped Deposition of Kevan Granat and Subpoena Duces Tecum
39. Americanos & Greyhound's 08/16/11 Supplemental Discovery Responses to all Request for Production
40. Americanos USA, LLC, Greyhound Lines, Inc., and Irma Morado's Sixteenth Supplemental Responses to Plaintiffs and Intervenors' Requests for Disclosures and Second Supplemental Designation of Expert Witnesses with attachments
41. Americanos USA, LLC, Greyhound Lines, Inc., and Irma Morado's Fourteenth Supplemental Responses to Plaintiffs and Intervenors' Request for Disclosure
42. Tom Fugger's Raw Data I & II, emails, notes
43. Aaron Jones' expert file
44. Frank Brown file materials
45. Larry Yohe file materials
46. Locking Procedures
47. Bus 60630 Mileage Report

48. Job Tickets
49. MCI Training Certifications
50. DPS Inspection file for Americanos (2007- present)
51. Mount Gretna crash information
52. Video clip of axle testing
53. Bosch Test Track Chart
54. Test Run Log
55. 1036132-Unit 6132 Turning Angle Measurements
56. 1016934-Unit 6934
57. 1016468-Unit 6468
58. 100ND70S-Unit 6352
59. Documents concerning the three GLI coaches
60. Test 10 Brake Test photographs and DDEC report
61. AUSA000592 – AUSA001135: Vehicle Inspection Report
62. AUSA001762 – AUSA001781-1: Additional scene photographs produced by Americanos
63. AUSA006608 – AUSA006901: Service Standards, Tests, etc.
64. AUSA009354 – AUSA009946: Fleet Maintenance History
65. AUSA010714 – AUSA010716: Driveshaft test w-OE video
66. AUSA11639 – AUSA11755: Documents pertaining to Units 6352, 6934, 6468
67. AUSA011600 – AUSA011613: Documents pertaining to Units 6352, 6394, 6498
68. AUSA011614-0011634: Loop Installs by GLI
69. AUSA011635-011636: AUSA loop installation
70. AUSA001637-011638: Lancaster Police Reports
71. AUSA0011756: Continental vbox Tests and DDEC Files Pre Tests
72. AUSA0011757: ARB Tests 1-9 and Test Setups
73. AUSA0011758: ARB Tests 10-13

Kevan J. Granat

Specialized Professional Competence

- Crash reconstruction, failure analysis, and risk assessment.
- Vehicle dynamics testing and instrumentation.
- Design, testing, and evaluation of automotive chassis systems.
- Computer aided engineering, computer modeling of design, and design verification.

Professional Qualifications

- Master of Science - Mechanical Engineering (MSME), Purdue University, 1992
 - Thesis: "The Use of Interpolated Eigenvectors to Position Coupling Elements between Sub-Structures."
 - Graduate Research Associate: Performed automotive structural analysis and computer modeling of chassis systems for body-on-frame vehicles.
 - Graduate Teaching Associate: Taught an undergraduate mechanical engineering course on vehicle analysis, design, and fabrication.
- Bachelor of Science - Mechanical Engineering (BSME), Purdue University, 1990
 - Elective concentration in automotive design and vehicle dynamics.
 - Recipient of the General Motors GM Scholar scholarship award.
 - Recipient of a National Merit Finalist Scholarship.
 - Recipient of the Society of Automotive Engineers Chapter Contribution Award.
- Dynamic Analysis Group, LLC (2007 to present) Principal Engineer
- Granat Technical Consulting, LLC (2006 to 2007) Principal Engineer
- Tandy Engineering & Associates, Inc. (2002 to 2006)
Performed vehicle handling evaluation, vehicle testing, accident reconstruction, failure analysis, vehicle test instrumentation, and computer aided engineering.
- Carr Engineering, Inc. (1997 to 2002)
Performed vehicle handling evaluation, vehicle testing, accident reconstruction, failure analysis, vehicle test instrumentation, and computer aided engineering.
- Ford Motor Company (1993-1997) Vehicle Dynamics Engineer
Light Truck Chassis Dynamics Department and Advanced Vehicle Technology Department. Designed, analyzed, and tested chassis systems on various light truck platforms, including computer modeling and testing of vehicle handling performance.
- Ford Motor Company (1992-1993) Chassis Design Engineer
Performed design, analysis, and testing of automotive chassis systems.
- Member: Society of Automotive Engineers

Kevan J. Granat Publication List

1. "Use of Interpolated Eigenvectors to Position Coupling Elements Between Substructures, Part I: Theory" K.J. Granat, J.M. Starkey – *Modal Analysis: The International Journal of Analytical and Experimental Modal Analysis* (1066-0763). Vol. 11, no. 1/2, pp. 26-38. July 1996
2. "Use of Interpolated Eigenvectors to Position Coupling Elements Between Substructures, Part II: Applications" K.J. Granat, J.M. Starkey – *Modal Analysis: The International Journal of Analytical and Experimental Modal Analysis* (1066-0763). Vol. 11, no. 1/2, pp. 10-25. July 1996
3. "An Analysis of Yaw Inducing Drag Forces Imparted During Tire Tread Belt Detachments" D. Tandy, K. Tandy, N. Durisek, K. Granat, R. Pascarella, L. Carr, R. Liebbe – SAE 2007-01-0836
4. "Comparative Dynamic Analysis of Tire Tread Belt Detachments and Stepped Diameter ('Lumpy') Tires" N. Durisek, D. Tandy, K. Granat, K. Tandy, R. Pascarella, L. Carr – SAE 2007-01-0846
5. "Vehicle Response Comparison to Tire Tread Separations Induced by Circumferentially Cut Tires and Distressed Tires" D. Tandy, K. Granat, N. Durisek, K. Tandy, J. Baldwin, R. Pascarella – SAE 2007-01-0733
6. "Industry Implementation of Automotive Electronic Stability Control (ESC) Systems" N. Durisek, K. Granat – SAE 2008-01-0593
7. "Analysis of Front Suspension Ball Joint Separations in Motor Vehicle Crashes" N. Durisek, K. Granat, E. Holmes – SAE 2009-01-0101
8. "Repeatability and Bias Study on the Vehicle Inertia Measurement Facility (VIMF)" N. Durisek, K. Granat, G. Heydinger, D. Guenther – SAE 2009-01-0447

Kevan J. Granat Testimony List

Loper (Melody) v. Mack Truck Eastern Dist., LA; 95-1350, 99-2358, Sec L3	Deposition	02/19/01
Loper (Melody) v. Mack Truck Eastern Dist., LA; 95-1350, 99-2358, Sec L3	Deposition	02/27/01
Loper (Melody) v. Mack Truck Eastern Dist., LA; 95-1350, 99-2358, Sec L3	Trial	03/01
Rexwinkel (Brian) v. Loomis Fargo Washoe Co., NV; CV00-1227	Deposition	07/31/01
Kraft (Deborah & Michael) v. Ford Wise Co., TX; 00-12-734	Deposition	11/07/01
Clayton (William) v. Employers Mutual Casualty Ins. Orleans Parish, LA; 99-10447	Deposition	11/13/01
Freedman (Jimm) v. Ford U.S. Dist., NV; CV-S-01-0424-RHL-LRL	Deposition	05/14/02
Zachary (Martin) v. Ford Atlanta, GA; 1-01-CV-0531	Deposition	05/28/02
Rodriguez (Maria del Carmen) v. Ford Hidalgo Co., TX; C-512-00-A	Deposition	06/21/02
Grapsas (Constantine) v. Ford So. Dist., IN; IP-01-5299-B-B/S	Deposition	07/26/02
Tyson (Graciela) v. Ford Travis Co., TX; GN200282	Deposition	01/09/03
Nowakowski (Marisela) v. Ford Hidalgo Co., TX ;C-124-02-B	Deposition	01/16/03
Walkup (Leslie) v. Toyota Eastern Dist., MI; 01-60027	Deposition	03/21/03

Farr (Michael Derek) v. Toyota Hinds County., MS; 96-1170	Deposition	03/25/03
Brymer (Thomas) v. Ford Eastern Dist., TX; 2-02CV-155	Deposition	04/24/03
Walkup (Leslie) v. Toyota Eastern Dist., MI; 01-60027	Trial	06/03
Flores (Sacramento Baez) v. Ford Davidson Co., TN; 01C-1115	Deposition	07/02/03
Rodriguez (Jesus Vidal) v. Ford Davidson Co., TN; 01C-315	Deposition	07/02/03
Ojeda (Engracia Torres) v. Ford Davidson Co., TN; 00C-2979	Deposition	07/02/03
Hutton (Bill) v. Ford Dallas Co., TX; 02-4658	Deposition	08/05/03
Hernandez (Graciela Gomez) v. Ford Hidalgo Co., TX; C-093-02-F	Deposition	08/26/03
Stephen (Cheryl Lynn) v. Ford Los Angeles Co., CA; 00CC11492	Deposition	10/02/03
Perez (Jesus Carlos) v. Ford Nueces Co., TX; 02-61912-4	Deposition	12/02/03
Harrington (George) v. Ford East Baton Rouge Parish, LA; 475874	Deposition	01/29/04
Flores (Jorge Alberto) v. Ford Cameron County, TX; 2002-10-4004-C	Deposition	04/07/04
Smith (Yvonne) v. Alamo Rent-a-Car Western Dist., MO; 2-004045-WAK	Deposition	06/28/04
Westerly (Suzanne) v. Ford Central Dist., CA; CV 02-02123 NM (MCx)	Deposition	07/01/04
Quiroga (Reynaldo) v. Ford Harris County, TX; 2003-06069	Deposition	07/21/04
Loredo (Luis) v. Ford Webb County, TX; 2003CVE000385D2	Deposition	07/28/04

Ellis (Brenda) v. Ford Tarrant County, TX; 067-197473 03	Deposition	08/03/04
Sandoval (Hugo Zacarias) v. Ford Southern Dist., IN; IP03C5787B/S	Deposition	08/16/04
Vuittonet (Juan Marco) v. Kelsey-Hayes Fourth Dist., ID; CV PI 0100323D, CV OC 0103616D	Deposition	08/30/04
Frede (Alicia L.) v. Ford St. Louis, MO; 022-09936	Deposition	09/03/04
Moore (Bertha) v. Ford Marshall County, MI; M-01-347	Deposition	09/22/04
Cavazos (Arthur) v. Ford Travis County, TX; GN301739	Deposition	09/29/04
Graves & Long v. Ford Hinds County, MS; 251-01-953CIV	Deposition	10/08/04
Beatty (Anita) v. Ford Eastern Dist., KY; 6:02-577-DCR	Deposition	11/11/04
Gobert (Mathew) v. Ford Hidalgo Co., TX; C-933-03-F	Deposition	12/01/04
Mead (Kenneth Wayne) v. Ford Matagorda Co., TX; 03-H-0089-C	Deposition	01/19/05
Moody (Ruth Jeanette) v. Ford Robertson Co., TX; 03-0516687-CV	Deposition	03/04/05
Moody (Kevin) v. Ford Northern District, OK; 03-CV784E(C)	Deposition	03/31/05
Munoz (Rose Marie) v. Mazda Nueces Co., TX; 03-3353-B	Deposition	04/08/05
Reynoso (Isabel) v. Ford Brownsville, TX; B-03-120	Deposition	05/05/05
Marroquin (Carlos) v. Ford Nueces Co., TX; 04-61218-1	Deposition	07/22/05
Morales (Claudia) v. Ford Webb Co., TX; 2003-CVE-000801-D1	Deposition	08/05/05

Marroquin (Carlos) v. Ford Nueces Co., TX; 04-61218-1	Trial	09/05/05
Isom, (Anjanae) v. Ford Clark Co., NV; A438131	Deposition	12/02/05
Isom, (Anjanae) v. Ford Clark Co., NV; A438131	Deposition	12/09/05
Phillips (William David) v. Ford Mingo Co., WV; 05-C-1	Deposition	01/10/06
Munoz (Rose Marie) v. Ford Nueces Co., TX; 03-3353-B	Trial	01/20/06
Page (Sandra) v. Land Rover Wood Co., TX; 2003-445	Trial	01/24/06
Jackson (Charlie) v. Ford Jefferson Co., TX; A 174-536	Deposition	04/13/06
Williams (Barry) v. Ford Maricopa Co., AZ; CV2004-011576	Deposition	04/27/06
Reno (Mary) v. Ford Santa Fe Co., NM; D-0101-CV-2005-421	Deposition	08/03/06
Henderson (Sammy) v. Ford N. Dist., MS; 2:04cv21 1-M-B	Deposition	08/21/06
Reno (Mary) v. Ford San Miguel Co., NM; D-0101 CV 2005-421	Trial	09/18/06
Matey (Chris) v. Ford Blaine Co., ID; CV-2005-400	Deposition	10/19/06
Jackson (Charlie) v. Ford Jefferson Co., TX; A 174-536	Trial	11/08/06
Moody (Kevin) v. Ford Northern District, OK; 03-CV784E(C)	Trial	11/16/06
Cardenas (Jose) v. Ford San Diego Co. Superior Court, GIC 850655	Deposition	12/06/06
Pitts (Willie) v. Ford Solano Co. Superior Court, CA; FCS026087	Deposition	12/12/06

Matey (Chris) v. Ford Blaine Co., ID; CV-2005-400	Trial	03/06/07
Khan (Shoukat) v. Ford Eastern District, CA; 1:05-CV-00303-REC-DLB	Deposition	06/21/07
Khan (Shoukat) v. Ford Eastern District, CA; 1:05-CV-00303-REC-DLB	Deposition	07/18/07
Garcia de Mendoza v. Ford Maricopa Co., AZ; CV2003-022124	Trial	11/14/07
Hamada v. Goodyear Los Angeles Co., CA; KC048625	Deposition	05/01/08
Hamada v. Goodyear Los Angeles Co., CA; KC048625	Trial	06/03/08
Moore v. Ford St. Louis Co. , MO; 06CC-03222	Deposition	07/07/08
Mondaca v. Ford Arizona US District Court; CIV05259 TUC FRZ	Deposition	07/10/08
Gurule v. Ford Rio Arriba Co., NM; D-0117-CU-200700214	Deposition	07/14/08
Gurule v. Ford Rio Arriba Co., NM; D-0117-CU-200700214	Trial	08/20/08
Smith v. Michelin Western District, TX; A08CA886SS	Deposition	01/14/10
Grewal v. Mercedes Benz California Superior Court, Ventura Co.; 56-2008-00334158-CU-MT-VTA	Deposition	03/02/10
Anderson v. Greyhound Southern District, NY; 06 CIV 13371, 07 CIV 9299	Deposition	09/29/10
Heinzel v. Ford Clark Co. District Ct., NV; 07-A550264-C	Deposition	11/30/10
Williams v. Daimler Trucks North America Ohio Co. District Ct., WV; 09-C-419	Deposition	10/05/11
Campos v. Americanos Cameron Co. District Ct., TX; 2010-03-001717	Deposition	10/14/11

Soldano v. Daimler Trucks North America Southern District TX, Houston; 4:10-CV-03388	Deposition	12/07/11
Smith v. Daimler Trucks North America 40th District, Ellis County, TX; 80263	Deposition	02/08/12

DOCUMENTS REVIEWED – KEVAN GRANAT

1. Campos Plaintiffs' First Amended Petition
2. Scheduling Order
3. Plaintiffs' Designation of Expert Witnesses
4. Recorded interviews of Jerricah Capers and Nina Feddereson
5. Testing Protocol (July 2010 Inspection)
6. Testing Protocol (October 2010)
7. Photographs – 07/22/10 Inspection of Evidence Photos
8. Photographs - Bob Rucoba's Inspection Photos taken 07/27/10
9. Photographs – H. Zuschlag Exemplar Photos taken at 07/2010 Inspection
10. Photographs - H. Zuschlag Photos of (Subject Bus) Coach 46918
11. Photographs – 316 photographs of scene and coach produced by Americanos in response to Plaintiffs' RFP dated 06/17/10 (photographs taken 01/14/07, 01/15/07, 03/16/10, 03/17/10 and 04/26/10 - ARACC)
12. Photographs – 83 photographs of scene taken 03/16/10 - produced by Americanos in response to Plaintiffs' RFP dated 06/17/10
13. Photographs – 17 photographs of scene and passengers produced by Medina on 07/08/10 in response to Americanos discovery requests
14. Photographs – Dr. David J Coates' Photos taken at 07/29/10 Vehicle Inspection
15. Photographs – 06/23/2010 Supplemental Photos to Ex. 15, produced 7-27-10
16. Photographs – 48 photographs of coach taken 06/22/10 produced by Americanos on 07/23/10
17. Photographs – Dr. David J. Coates' January 14, 2011 Subject Bus Inspection Photos
18. Photographs – Bob Rucoba's 01/21/2011 Scene Inspection Photos and Notes
19. Photographs – Photos & Video of June 30-July 1, 2011 Inspection of Subject Coach
20. Photographs - Photo Nos.: 6828-6834 and 6838-6849 (from Photos & Video of June 30-July 1, 2011 Inspection of Subject Coach)
21. Photographs – Dr. David Coates' 01/20/2011 Inspection Photos

22. Photographs – Greg Wright’s Inspection Photographs:
 - a. Boroscope Photos
 - b. 06/30/2011 Inspection Photos
 - c. Sensor Test Results
23. Metallurgy Examination Results from MSi Testing & Engineering, Inc.
24. Final Vehicle Records for the Americanos Test Coach
25. Bosch Test Track
26. Brian Lawson Notes
27. Reduced Scale Drawing
28. MSi Reports
29. Backup docs
30. Campbellton Passenger Height-Weight Matrix
31. October 26, 2010 letter from Americanos' counsel regarding additional protocols for destructive testing and advising that they are no longer going to be doing the alignment testing, paragraphs 1-5 of the protocol entitled "Protocol for Examination of the Subject Coach."
32. Defendant Greyhound Lines, Inc.’s Responses to Motor Coach Industries, Inc.’s First Request for Production
33. Defendant Greyhound Lines, Inc.’s Responses to Motor Coach Industries, Inc.’s First Set of Interrogatories
34. Defendant Americanos U.S.A., L.L.C.’s Responses to Motor Coach Industries, Inc.’s First Request for Production
35. Defendant Americanos U.S.A., L.L.C.’s Responses to Motor Coach Industries, Inc.’s First Set of Interrogatories
36. Accident Report by TX DPS Trooper Kellert (Campos Plaintiffs 252808-000540)
37. Texas Department of Public Safety District 6C Reconstruction Investigation Report (Campos 252808-000797 - 252808-000800)
38. TX DPS – Lt. Lite Accident Records (Campos 252808-000812)
39. MCI000001-004022

40. AUSA000001-2778, AUSA000001-591, AUSA001226-1257, AUSA001460-1487, AUSA001803-2313, AUSA002830-3860, AUSA003189-3805, AUSA004999-5117, AUSA006608-6901, AUSA006961, AUSA006962-9177, Folder 2010-06-23, AUSA 001488-1802, P000367- P000372
41. Deposition transcripts and exhibits for: Leonor Aguilar, Selina Aguilar, Denise Alvarado, Sylvia Bandala, Daniel Campos, Daniel N. Campos, Carlos Cantu, Deborah Chavez, Trooper Wesley Cooper, Ashli Taylor Decena, Desiree Flores, Eva Garcia, Rogelio Garcia, Miranda Gibson, Amalia Heather, Bianca Herrejon, Eldridge Hughey, Trooper James Kellert, Lt. Timothy Lite, Adrian Lopez, Diana Ann Medina, Jacob Medina, Roman Medina, Margarita Miramontes, Irma Morado, Corporal Keith Olive, Carmen Paz, David Perez, Adriana Pruitt, Victoria Romero, Minerva Santiago, Anna Schermerhorn, Carlos Torres Teran, Sandra Valdez
42. Rough draft of the August 10, 2011 deposition of Jeff Barta
43. Expert Report – Patrick Mears (August 11, 2011)
44. Expert Report – Gregory Wright (August 11, 2011)
45. Expert Report – Dr. David Coates (August 11, 2011)
46. Expert Report – Virgil Hoogestraat (August 11, 2011)
47. Expert Report – Bob Rucoba (August 11, 2011)
48. Bob Rucoba’s 08-02-11 Exemplar Vehicle Inspection Photos
49. Bosch Test Track Chart, Test Bus AAU 60628 Test Run Log
50. AUSA-000592 – AUSA-001135
51. AUSA006608 – AUSA-006901
52. AUSA-009354 – AUSA-009946
53. Photos of the June 30, 2011 Bus Inspection which we received from counsel for Stewart & Stevenson Truck Holding, LLC d/b/a On the Border Freightliner of El Paso; and
54. Photos of the Bus Parts Inspection taken on June 30, 2011 which we received from counsel for Stewart & Stevenson Truck Holding, LLC d/b/a On the Border Freightliner of El Paso
55. Protective Order signed by all counsel on 07-16-10
56. DPS Inspection File for Americanos
57. Greyhound’s 2nd Supplemental Responses to MCI’s 1st Request for Production

58. Americanos 1st Supplemental Response to MCI's Request for Production
59. Morado's 1st Supplemental Response to Perez Request for Production
60. Americanos 1st Supplemental Responses to Perez Request for Production
61. Greyhound's 1st Supplemental Responses to Perez Request for Production
62. Greyhound's 1st Supplemental Objections/Responses to Medina, Medina & Bandala's Request for Production
63. Morado's 1st Supplemental Objections/Responses to Medina, Medina, Bandala's Request for Production
64. Americanos' 1st Supplemental Objections/Responses to Medina, Medina, Bandala's Request for Production
65. Americanos' 1st Supplemental Objections/Responses to Garcia & Dominguez Requests for Production
66. Americanos' 10th Supplemental Objections/Responses to Campos Request for Production
67. Morado's 1st Supplemental Objections/Responses to Campos Request for Production
68. Greyhound's 2nd Supplemental Objections/Responses to Campos Request for Production
69. Morado's 1st Supplemental Responses to Herrejon's Request for Production
70. Americanos' 1st Supplemental Responses to Herrejon's Request for Production
71. Greyhound's 1st Supplemental Responses to Herrejon's Request for Production
72. Americanos' 2nd Supplemental Responses/Objections to ArvinMeritor Request for Production
73. Americanos' 1st Supplemental Responses to Garcia Request for Production
74. Greyhound's 1st Supplemental Responses to Garcia Request for Production
75. Morado's 1st Supplemental Responses to Garcia Request for Production
76. Morado's 1st Supplemental Responses to Aguilar Request for Production
77. Americanos' 1st Supplemental Responses to Aguilar Request for Production
78. Greyhound's 1st Supplemental Responses to Aguilar Request for Production
79. Photographs of Coach at Jeff's Auto Rebuilders

80. Fugger Raw Data I & II (File)
81. Aaron Jones' Documents: 100MSDCF
82. Aaron Jones' Documents: 2663K A Jones – 7.29.10
83. Aaron Jones' Documents: 2859K A Jones – 8.27.10
84. Aaron Jones' Documents: 3309K A Jones – 11.4.10
85. Aaron Jones' Documents: Inspection 6-30 – 7-1-2011
86. Aaron Jones' Documents: MSI 6-30-2011
87. Deposition Transcript Dr. Juan Herrera (September 2, 2011) without exhibits.
88. E-mails from Frank Brown (produced by Americanos).
89. Meritor axle FG956 CAD model 2L-6-632.
90. Transcript of Glen Reuschling
91. Aaron Jones' Expert File
92. Larry Yohe's Expert File
93. Frank Brown's Expert File
94. Deposition and exhibits of Andrew Irwin
95. Aaron Jones' Documents–Campos Inspection 01-12-2011
96. Aaron Jones' file: 100ND70S – unit 6352
97. Aaron Jones' file: 1016468 – unit 6468
98. Aaron Jones' file: 1016934 – unit 6934
99. Aaron Jones' file: 1036132 – unit 6132 turning angle measurement
100. Deposition transcript and exhibits of Raul Longoria
101. Deposition exhibits for Thomas Fugger
102. Deposition exhibits for Ricardo Palacios
103. Deposition transcript and exhibit link of Aaron Jones
104. Deposition of David Stopper, Exhibits 1-3, 7-18 and 20-24

105. David Stopper Deposition Exhibit 4
106. David Stopper Deposition Exhibit 5
107. David Stopper Deposition Exhibit 6
108. David Stopper Deposition Exhibit 19
109. AUSA010714 - AUSA010716
110. Deposition transcript of Richard Palacios and Kenneth DeJohn
111. September 23, 2011 Video Deposition of Virgil Hoogestraat
112. Deposition transcript and exhibits of Larry Yohe.
113. Deposition transcript and exhibits of Frank Brown.
114. June 9, 2011 Deposition transcript of Virgil Hoogestraat;
115. July 14, 2011 Deposition transcript of Virgil Hoogestraat;
116. September 23, 2011 Deposition transcript and exhibits of Virgil Hoogestraat;
117. Deposition transcript of Jeff Barta;
118. Deposition transcript of Michael Barta;
119. September 23, 2011 Deposition exhibits for Virgil Hoogestraat
120. AUSA010717 - Video Driveshaft Test & Jones Photos 09-20-11.zipx
121. September 21, 2011 Deposition of Bob Rucoba
122. AUSA10607 – AUSA010684
123. Aaron Jones' Expert File Disc 3: Campos MSI Jan 13-14-2011
124. Aaron Jones' Expert File Disc 3: Campos protocol photos 6-3-2011
125. Aaron Jones' Expert File Disc 3: Inspection 6-30--7-1-2011
126. Aaron Jones' Expert File Disc 3: MSI-6-30-2011
127. Aaron Jones' Expert File Disc 3: Photos of U-Joint artifacts transferred to Gary Fowler
128. Aaron Jones' Expert File Disc 3: Spicer
129. September 21, 2011 Deposition exhibit 17 for Bob Rucoba

130. Bob Rucoba's September 21, 2011 Deposition Exhibits
131. Aaron Jones' Expert File Disc 1: John Pratt Work – Photographs & Torque Photos
132. Aaron Jones' Expert File Disc 2
133. Aaron Jones' Expert File Disc 3: Campos MSI Jan 13-14-2011
134. Aaron Jones' Expert File Disc 3: Campos protocol photos 6-3-2011
135. Aaron Jones' Expert File Disc 3: Inspection 6-30--7-1-2011
136. Aaron Jones' Expert File Disc 3: MSI-6-30-2011
137. Aaron Jones' Expert File Disc 3: Photos of U-Joint artifacts transferred to Gary Fowler
138. Aaron Jones' Expert File Disc 3: Spicer
139. Plaintiffs' Notice of Intention to Take the Oral and Videotaped Deposition of Kevan J. Granat with Subpoena Duces Tecum
140. Plaintiffs' First Amended Notice of Intention to Take the Oral and Videotaped Deposition of Kevan J. Granat with Subpoena Duces Tecum
141. Defendants' First Amended Cross- Notice of Intention to Take the Oral and Videotaped Deposition of Kevan J. Granat and Subpoena Duces Tecum
142. Americanos & Greyhound's August 16, 2011 Supplemental Discovery Responses to All Request for Production
143. Leon Faezell's errata sheet and signature page from his August 23, 2011 deposition;
144. Reporter's Certificate Page for Raul Longoria, Ph.D., deposition taken on September 12, 2011
145. Reporter's Certificate Page for Thomas F. Fugger, Jr., P.E. deposition taken on September 9, 2011
146. Reporter's Certificate Page - Reporter's Certificate Pages for the deposition of Frank Brown, taken on September 19, 2011.
147. Reporter's Certificate Page - Reporter's Certificate Pages for the deposition of Lawrence Yohe, taken on September 19, 2011.
148. AUSA010717 - Video Driveshaft Test & Jones Photos 09-20-11
149. AUSA011583 - Video Driveshaft Failure w-o Loop
150. Video 12.wmv

151. Video 15.wmv
152. 100ND70S - unit 6352
153. 1016468_ - unit 6468
154. 1026934_ - unit 6934
155. 1036132_ - unit 6132 turning angle measurement
156. Aaron Jones September 20, 2011 Photos
157. Aaron Jones Deposition Exhibit 7
158. Aaron Jones Deposition Exhibit 8
159. Aaron Jones Deposition Exhibit 9
160. Aaron Jones Deposition Exhibit 13
161. Kevan Granat Depo Exhibit 34 (binder)
162. Larry Yohe's January 15, 2012 Supplemental Expert Report
163. Thomas Fuggers' January 16, 2012 Supplemental Expert Report
164. Aaron Jones' January 16, 2012 Supplemental Expert Report
165. Americanos, Greyhound, and Morado's Sixteenth Supplemental Response to Plaintiffs' and Intervenors' Request for Disclosure and Second Supplemental Expert Designation
166. Attachments produced with Americanos, Greyhound, and Morado's Sixteenth Supplemental Response to Plaintiffs' and Intervenors' Request for Disclosure and Second Supplemental Expert Designation (*Not Bates Labeled*)
167. AUSA011639 – AUSA011755
168. AUSA011600 – AUSA011613
169. Dr. David Coates' January 24-25, 2012 Nappanee and Richmond Virginia GLI Bus Inspection Photos
170. Test Run Configurations
171. MCI-001329 – MCI-001338 – 3-62A – locked (Tag Axle Lockout Procedure)
172. 1995 Parts MCI Manual Excerpt - Tag Axle
173. AUSA011756

- 174. AUSA011757
- 175. AUSA011758
- 176. Test 10
- 177. Rough draft of Thomas Fugger's February 10, 2012 deposition transcript
- 178. AUSA011614-011634-Loop Installs by GLI
- 179. AUSA011635-011636-AUSA loop installation
- 180. AUSA011637-011638-Lancaster Police Reports
- 181. MCI – Virgil Hoogestraat Photos/Drawings: 12-04-1053 a
- 182. MCI – Virgil Hoogestraat Photos/Drawings: 12-04-1053 b
- 183. MCI – Virgil Hoogestraat Photos/Drawings: 12-04-1053 c
- 184. MCI – Virgil Hoogestraat Photos/Drawings: 12-04-1053 e
- 185. MCI – Virgil Hoogestraat Photos/Drawings: 12-04-1053 f
- 186. MCI – Virgil Hoogestraat Photos/Drawings: 12-04-1053 g
- 187. MCI – Virgil Hoogestraat Photos/Drawings: DSC00396
- 188. MCI – Virgil Hoogestraat Photos/Drawings: DSC00397
- 189. MCI – Virgil Hoogestraat Photos/Drawings: DSC00398
- 190. MCI – Virgil Hoogestraat Photos/Drawings: DSC00401
- 191. MCI – Virgil Hoogestraat Photos/Drawings: DSC00403
- 192. MCI – Virgil Hoogestraat Photos/Drawings: DSC00424
- 193. MCI – Virgil Hoogestraat Photos/Drawings: DSC00425
- 194. MCI – Virgil Hoogestraat Photos/Drawings: DSC00426
- 195. MCI – Virgil Hoogestraat Photos/Drawings: DSC08675
- 196. MCI – Virgil Hoogestraat Photos/Drawings: DSC08677
- 197. MCI – Virgil Hoogestraat Photos/Drawings: DSC08679
- 198. MCI Drawing: 12L-4-312_c_1 of 1[1] part 12L-4-308 – lock cylinder assembly

199. Americanos, Greyhound, and Morado's 14th Supplemental Responses to Plaintiffs' and Intervenor's Requests for Disclosure
200. Coates Photo - Driveshaft from GLI Unit 6468 - DSC_0006
201. Coates Photo - Driveshaft from GLI Unit 6468 - DSC_0015
202. Coates Photo - Driveshaft from GLI Unit 6468 - DSC_0017
203. Coates Photo - Driveshaft from GLI Unit 6468 - DSC_0024
204. Coates Photo - Driveshaft from GLI Unit 6468 - DSC_0031
205. Coates Photo - Driveshaft from GLI Unit 6468 - DSC_0034
206. Bob Rucoba's January 24-25, 2012 Nappanee and Richmond Virginia GLI Bus Inspection Photos

CAMPOS V. AMERICANOS

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Kevan J. Granat
August 11, 2011

Introduction

As requested, I have reviewed materials pertaining to the design of the MCI 102DL3 coach as well as documentation of the subject crash. I have conducted inspections of the subject coach, the various related chassis components, the scene of the subject crash, and exemplar 102DL3 coaches. I have performed instrumented, on-track testing of an exemplar 102DL3 coach to evaluate its steering and handling performance under various conditions. I have performed laboratory testing of chassis systems to evaluate the crash forces involved in the subject crash. A list of all materials I have received and reviewed is attached.

Qualifications

I have worked as an automotive engineer for more than twenty years and I have formal training as an engineer. I earned undergraduate and graduate degrees in mechanical engineering from Purdue University in West Lafayette, Indiana, where I performed research on automotive structural analysis as a research assistant on a project sponsored by Ford Motor Company. I presented a thesis to earn a master's degree in mechanical engineering and published peer-reviewed journal articles describing my research.

I subsequently joined Ford Motor Company in 1992 as a chassis engineer for Light Truck Operations in Dearborn, Michigan. I performed design, analysis, and testing of Ford trucks primarily related to vehicle dynamics, ride control, load carrying capacity, and limit handling. I personally instrumented and tested vehicles at Ford's proving ground facilities in Arizona, Michigan, and Florida on vehicle types including light and medium trucks. I also performed component testing and analyzed the design of steering system components, suspension components, and tires. I later moved to Ford's Advanced Vehicle Technology group where I performed further testing, analysis, and simulation of all truck types, from compact pickups to heavy commercial vehicles.

Since 1997, I have been employed in Houston, Texas as an automotive consulting engineer specializing in the analysis of vehicle design, vehicle dynamics, failure analysis, and crash reconstruction. I have performed instrumented, on-track testing of various vehicle types, including passenger cars, pickup trucks, utility vehicles, vans, medium trucks, buses, and heavy trucks. I have performed numerous tests to evaluate vehicle performance before, during, or after the disablement of various steering components, suspension components, or tires. I have published peer-reviewed articles related to disablement testing, as well as other research.

In 2007, I formed Dynamic Analysis Group LLC with another consulting engineer as my business partner. At Dynamic Analysis Group LLC, I continue to consult as an automotive engineer in the areas of vehicle design, vehicle dynamics, failure analysis, and crash reconstruction. Dynamic Analysis Group LLC charges \$250 per hour for my services in this matter. A resume which summarizes my education and experience is attached, along with a list of my previous testimony and publications.

Crash Background

According to the information available, the subject crash occurred on March 16, 2010, on

Interstate Highway 37 near Campbellton, Texas. This was a single vehicle crash involving an Americanos bus with 45 occupants on board. The bus operator was Irma Mendoza Morado, a 47 year-old female and an employee of Americanos.

The Texas Department of Public Safety (DPS) investigated the crash and created a detailed Major Crash Investigation report. The investigating officers determined that “U1 [Americanos coach] was traveling [southbound] on IH-37 when the driver heard a loud noise from underneath the vehicle when a U-joint broke from the driveshaft. U1 driver reacted, locked up the brakes, and skidded onto the improved shoulder. U1 driver overcorrected left and sent U1 into a side skid across the [southbound] lanes and into the center median. The rear end rotated 180 degrees, simultaneously rolling onto the passenger side. U1 sustained right passenger and top damage. The drive shaft was detached from the undercarriage where the bus came to rest. U1 was red, white, blue, and green in color and had 45 occupants including the driver.”

The investigating officers documented the crash-related physical evidence with survey measurements, photographs, and notes. Investigators for the Texas DPS District 6C Reconstruction team concluded that a U-joint had separated from the transmission and that “...the driver (Morado) should have been able to bring Unit 1 to a safe stop despite the mechanical failure. The heavy application of brakes by the driver (Morado) caused her to lose control. It is the opinion of the reconstruction team this crash was caused by Irma Mendoza Morado’s faulty evasive action.”

Vehicle Design Considerations

The subject vehicle is a 55-passenger bus manufactured by Motor Coach Industries (MCI) with the model designation of 102DL3. It was manufactured in November of 1994 as a 1995 model year vehicle with a vehicle identification number of 1M8PDMPA2SP046918. The 102DL3 model coach has a nominal overall length of 45 feet and an overall width of 102 inches. The chassis has three axles: the front, steered axle; a dual-wheel drive axle; and a trailing, or tag, axle. The vehicle’s axle capacities, or gross axle weight ratings (GAWRs), are specified as 14,400 pounds for the front axle, 22,500 pounds for the drive axle, and 12,000 pounds for the tag axle. The gross vehicle weight rating (GVWR) is specified as 44,400 pounds.

The tag axle on the 102DL3 is a self-steering design which allows for improved maneuverability and reduced tire wear at low travel speeds. At speeds above approximately twenty miles per hour, the tag axle steering system is locked and performs as a non-steerable trailing axle. At travel speeds below approximately twenty miles per hour, the tag axle steering lock is disengaged and the tag axle tires are allowed to self-steer, following the path of the vehicle. Steering of the tag axle is accomplished passively, due to the self-aligning forces inherent in the suspension geometry and in the tire forces. The self-aligning forces result, in part, from the axle caster and the tire aligning moment, or pneumatic trail. On the subject model coach, there is no driver-operated or mechanically-operated system that actively steers the tag axle. This is in direct contrast to the front axle, which is actively steered by driver input, while simultaneously being subject to the same passive, self-aligning forces as the tag axle.

The tag axle steering system is similar to that of the front axle, but with a forward positioned tie rod, steering locking system, and reversing pivot. The tag axle tie rod is equipped with a steel locking plate which is aligned between two mating plates affixed to the axle itself. The three plates are slotted to accept a locking pin which locks the plates in a double-shear fashion. The pin is applied from above and is spring loaded and pneumatically loaded downward into the locked position. A pneumatic cylinder is used to retract the pin based on an electrical signal from the

vehicle's speed sensor, processed by a 'speed switch.' The speed switch actuates the cylinder when the speed sensor signal reflects travel below approximately twenty miles per hour, thereby retracting the cylinder pin and disengaging the steering lock for improved maneuvering. When operated in reverse, the tag axle is designed to pivot about its axis to allow proper trailing operation.

The vehicle's drivetrain is a typical rear-engine design with a driveshaft connecting the transmission output shaft to the drive axle differential. The driveshaft is a steel assembly with two U-joints and a splined slip joint. Near the forward end of the driveshaft, or differential end, a steel loop is mounted to the frame as a constraint to limit driveshaft motion in the event of U-joint failure. Toward the rear end of the driveshaft, or transmission end, the tag axle truss itself forms a substantial steel loop around the driveshaft. The rear end of the driveshaft extends completely through the tag axle pass-through loop and attaches to the transmission output shaft, rearward of the aft edge of the tag axle truss.

The Crash Vehicle

I inspected the subject vehicle on November 4, 2010 at a facility in Louisville, Kentucky. The coach was identified with the Americanos unit number 60630. At the time of my inspection, the instrument panel odometer indicated 941,063 miles. I observed sheet metal abrasions and contact damage, primarily on the right side, consistent with overturn on an unpaved surface. All right-side glass surfaces were fractured out. The entry door was detached and observed in the baggage compartment. The axle shafts for the drive axle had been removed post-crash for towing, and the drive shaft was observed separate from the vehicle. All driver controls were found to be in place, including the brake and throttle pedals, steering wheel, shift lever, and dash-mounted switches. The vehicle was equipped with Michelin XZA2 Energy 315/80R22.5 load range L tires at all positions.

I inspected the chassis for crash-specific damage and documented its configuration and condition with measurements, photographs, and notes. The front suspension and steering system were found to be essentially intact, with all steering components connected, from the steering wheel to the road wheels. The drive axle was also found to be mainly intact, although the driveshaft was detached and observed separate from the vehicle. The axle was manufactured by Rockwell International and was equipped with a differential with a 3.07 final drive ratio. The U-joint yoke on the differential was in place, as were the two yoke straps, although one of the straps was separated from the yoke at one end. The corresponding yoke on the driveshaft still had the U-joint cross attached to it. Contact marks were observed around the surface near the differential end of the driveshaft tube, consistent with the location of the body-mounted driveshaft restraint loop. Corresponding marks were observed on the driveshaft loop itself. At the transmission end of the driveshaft, the yoke was fractured, with a portion of the steel lobe missing. Oxidation was observed on the fracture surfaces. The corresponding yoke was still attached to the transmission output shaft. One yoke strap was detached completely, with both strap bolts fractured off. The second yoke strap was attached with one bolt, while the second bolt was fractured off. Contact marks were observed near the transmission end of the driveshaft, consistent with the location of the passage through the tag axle truss. The tag axle structure itself exhibited contact marks and gouges consistent with driveshaft interaction. Marks were observed primarily on the lower portion of the pass-through structure and on the upper portion of the truss. Further damage was observed, consistent with impact level forces, including damage to the axle truss structure and bending of the tie rod. The tie

rod did not exhibit any significant contact marks that would suggest a direct impact from the driveshaft.

The tie-rod-mounted locking plate was observed to be disengaged from the two fixed plates on the axle and was positioned beneath the lower fixed plate. Worn surfaces and contact marks were present on the tie-rod-mounted plate in the shape of the mating portion of the fixed plates. No marks were observed on the plates that would indicate side-to-side oscillatory motion. The gap between the fixed plates was widened toward the front of the plates and contact marks were observed on the fixed plates toward the right side. The right side steering stop was contacted and deformed forward and the steering damper clamp was shifted on the tie rod. The slot of the tie-rod-mounted locking plate exhibited gouging from the locking pin toward the rear end of the slot. The gouge was angled, with metal flow curved in an arc toward the left side of the plate. This damage was caused by counter-clockwise rotation of the locking plate relative to the pin, as viewed from above. The slot exhibited readily apparent wear along both sides and was covered with oxidation. Wear patterns from the mating fixed plates reveal that contact between the plates was rearward on the top of the tie-rod-mounted plate and forward on the bottom. This wear pattern would be indicative of misalignment of the plates over an extended period of time, with the rear of the tie-rod-mounted plate rotated downward. The locking pin was observed to be connected to the lock cylinder and was bent forward.

At the time of my inspection, the deformation of the tag axle tie rod was observed to be less than that seen in police photographs. In photographs taken immediately after the crash, the tie rod is seen to be bent in a forward direction. Some photographs of the recovery effort show that steel chains were bound to the tag axle around the tie rod, the locking plates, and the locking cylinder. This binding apparently altered the condition of those parts. Testimony of individuals involved in the recovery effort indicates that the steel under-reach structure of the heavy vehicle wrecker truck was used to forcibly straighten the tag axle tie rod prior to transport. Unfortunately, there are no known photographs which document the immediate post-crash condition of the tag axle steering system in more detail. Functionality of the pneumatic and electrical control system for the tag axle locking system was evaluated by other engineers. It was determined that the speed sensor output signal was deficient and that air lines controlling the locking cylinder were blocked, preventing retraction of the locking pin via pneumatic cylinder operation.

Circumstances of the Subject Crash

I inspected the crash scene on August 10, 2011 and documented its configuration with notes and photographs. This crash occurred near Campbellton, Texas on southbound Interstate 37 in a rural area. In this area, Interstate 37 is a four-lane, divided freeway with asphalt travel lanes and shoulders. Northbound and southbound lanes are separated by a sloped, wide grass median with sandy soil. In the area approaching the scene of the crash, the roadway curves toward the right and goes downhill.

According to the police investigation, the crash occurred at approximately 9:50 in the morning. The investigating officer indicated that the weather was cloudy and there was light rain. The speed limit was posted at 70 miles per hour. Photographs taken by the police show numerous tire marks on the southbound pavement leading up the median, followed by deep furrows in the median soil, and the bus at its rest position on its right side. The tire marks on the pavement indicate an initial clockwise yaw followed by a counter-clockwise yaw into the median. Preceding the tire marks, the officers documented debris consistent with the separated U-joint. Photographs of

the vehicle's rest position show the tag axle steering lock disengaged and the tie rod bent forward. The driveshaft's rest position was located downstream from the vehicle's point of rest. At its rest position, the right tag axle tire and the outer right drive axle tire are embedded into the median soil as the rear portion of the coach traveled into the opposing slope of the median. The furrows associated with the right side tires are broad and deep.

Data on the electronic control module of the coach's Detroit Diesel engine was imaged by request of the DPS investigators. I have reviewed and analyzed this information by processing the data to calculate the longitudinal acceleration of the vehicle as recorded from the speed sensor. The calculated acceleration values would represent a rapid deceleration rate that would not be achievable by brake application alone. The imaged data included two separate events of this nature, including a last stop record and a separate hard brake record. This information, combined with the results of the inspection of the speed sensor, indicates that a deficiency with the speed sensor likely existed prior to the subject crash.

Testing of Vehicle Performance

I evaluated the steering and handling characteristics of the 102DL3 model coach under various conditions, including the dynamic disengagement of the tag axle steering at freeway speeds. The test vehicle was a 1995 MCI 102DL3, substantially similar to the subject coach. The vehicle was equipped with a manual switch that bypassed the vehicle's speed switch, allowing the operator to manually actuate the tie rod locking cylinder, disengaging the locking mechanism dynamically. The vehicle was instrumented to measure the steering wheel rotation, tag axle tie rod displacement, status of the manual lock/unlock switch, vehicle speed, vehicle position, rotational rates in three directions, translational acceleration in three directions, roll angle, pitch angle, heading, and slip angle. On-board and external video cameras documented the tests. The vehicle was ballasted to simulate loading with 44 passengers and cargo. Testing was conducted on the 8.5 mile high speed oval at Continental Tire's Uvalde Proving Grounds.

I performed numerous tests with the tag axle steering locked or unlocked, as well as dynamically disengaged under varying conditions. I evaluated the stability characteristics of the coach using common handling and stability tests, including frequency response, on-center handling, low-g step steer, and high speed lane changes. I performed these tests at freeway speeds multiple times; with the tag axle steering locked as well as with the steering lock disengaged. Under all conditions, the vehicle remained stable, controllable, and predictable, with a high turning capacity. The tag axle tires exhibited stable performance, following the motion of the vehicle in a controlled manner.

I evaluated the effect of dynamically disengaging the steering lock at freeway speeds, nominally at 70 miles per hour, with some tests as high as 80 miles per hour. These tests were run under varied conditions, including straight-ahead travel, in a left or right turn, on a level surface, or on an uphill or downhill slope while in a left or right turn. I further evaluated the effect of driver input during and after a dynamic disengagement, including intentionally steering before and after disengagement, as well as steering and braking in combination. This was done with the pavement dry as well as with the surfaced wetted by a water truck. Under all conditions, the vehicle remained stable, controllable, and predictable, with a high turning capacity. The immediate effect of a dynamic disengagement would be a slight disturbance input, similar to a light wind loading or slight change in the road surface, and would typically be controlled with small steering adjustments on the order of five to twenty-five degrees. Such adjustments were consistent with the normal operating

characteristics of a motor coach. The vehicle's performance during braking was also stable and predictable, with a high turning capacity while braking.

I evaluated the vehicle's performance further by running 'surprise' disengagements, with the actuation switch being operated at undetermined intervals by a passenger. For these tests the dash indicator lights were covered, the switch was moved to a location behind the driver, and sounds were masked with fan noise. During these surprise disengagements, the coach's response remained stable and predictable and required no significant response from the driver.

Additionally, I intentionally degraded the transmission end U-joint of the driveshaft of a 102DL3 and operated the coach at freeway speeds for an extended period of time. Degradation of the joint was achieved by removing more than half, and then subsequently all, of the needle bearings from both bearings on the transmission yoke and removing the grease from the bearing. The vehicle was driven over 250 miles at 70 miles per hour. The degraded bearing produced a vibration that was sensed when the throttle was released at speed that slowly grew more pronounced as the test progressed. Under these circumstances, significant degradation of U-joint bearings would likely occur over a much longer period than that of this test and would produce vibration that would be perceived by an alert operator.

Laboratory Testing of a Tag Axle Assembly

I have performed instrumented testing on a tag axle assembly to evaluate the crash forces involved during overturn of the subject coach. A test fixture was fabricated and affixed to an exemplar tag axle assembly. The fixture was designed to apply a force to the right tag axle wheel in the same direction as the ground forces would be applied to the subject coach as the tire and wheel impacted and furrowed into the median soil just prior to reaching the vehicle's point of rest. Force application was made by way of a hydraulic cylinder mounted longitudinally between the fixture and the right wheel, with the force directed from rear to front. The fixture was instrumented to measure the applied pressure, displacement of the hydraulic cylinder, and displacement of the tie rod. The test was documented with multiple video cameras. The tag axle was equipped with certain new components, including ball joints, tie rod, tie-rod-mounted locking plate, and steering damper. The locking pin was engaged into the locking plates during the test.

A peak force of approximately 16,000 pounds was applied by the hydraulic cylinder. This force level corresponds to an average acceleration of approximately 0.3 to 0.4 g's applied to the mass of a fully loaded coach. As a result of the applied force, the tie rod was placed in compression, causing it to bend forward and creating a moment about the locking pin. Upon reaching the peak force level, the tie-rod-mounted locking plate abruptly shifted forward in its slot, forcing the rearmost edge of the slot to strike the locking pin. This shifting motion gouged the rear surface of the slot in the same location as the gouges on the subject locking plate and applied a forward force to the locking pin, consistent with the displacement of the subject locking pin. The rotation of the plate was in the same rotational direction as the arcing gouge on the subject locking plate.

This testing shows that ground forces created during the impact furrowing of the right tag axle tire as it approached its rest position are consistent with the deformation and damage observed on the subject coach, including gouges on the tie-rod-mounted locking plate, forward contact of the locking pin, and forward bending of the tie rod. The peak force levels observed during testing are consistent with the levels expected during such motion of the coach.

Review and Analysis of Work by Others

I have reviewed the expert reports provided by other parties to the subject lawsuit. I anticipate the opportunity to review in detail the materials that form the bases of these reports in the future, and I reserve the right to supplement or modify my opinions based on this preliminary review.

A report provided by Greyhound addressed the controllability of a three axle vehicle under varying circumstances. The analysis outlined in the report was a first order mathematical approximation of the handling properties of a three axle vehicle. However, an actual MCI 102DL3 is a complex, nonlinear, high degree-of-freedom mechanical system that is not well characterized by a simple model. A more accurate method to evaluate the handling properties of the 102DL3 design is by performing instrumented, full-vehicle testing on an actual coach, as discussed previously.

Additional reports provided by Greyhound outline testing that was performed on a modified MCI 102DL3 model coach. The coach was modified with a pneumatic actuator to rapidly steer the tag axle to the left. The test coach was driven to speed on a Jennite surface and a right steering input was applied, followed by actuation of the pneumatic cylinder and very aggressive application of the coach's service brakes. I inspected the modified coach on August 8, 2011 and observed that the right side steering stop was fractured from the tag axle, indicating that the steering input applied was of a greater magnitude than would be possible for the subject coach with its intact steering stop. The Greyhound reports provide no basis for the modifications made to the test coach, the magnitude of the steering input applied, or the aggressive brake application. In the tests reviewed, when the coach was steered toward the right, no attempt was made to steer left and maintain a straight course. When the coach was driven straight and the tag steering applied, no loss of control resulted and the vehicle appeared to track in a stable manner. In tests where steering was applied to the right and held, in the direction that would augment any yaw from the applied tag axle steering, and the service brakes were applied aggressively and held, the yaw motion was allowed to progress to a high slip angle. A conclusion reached in the Greyhound report was "the only way the bus would have veered to the right at highway speeds was through the influence of a tag axle that was unlocked and/or was steering to the left relatively early in the accident sequence." However, this conclusion is negated by a statement several sentences earlier: "While holding the steering wheel steady so the bus would travel in a straight line, the bus when into a right curve at about the same curve radius as in previous tests where the bus was intentionally steered to the right." If the response of the vehicle is the same, whether due to driver input or due to forced steering of the tag axle, then an investigator cannot conclude that the response could only be generated by the forced steering of the tag axle. I anticipate the opportunity to review any test data and documentation in more detail.

An additional report provided by Greyhound discussed some of the damage to the tag axle tie rod, concluding that the bend of the tie rod was due to direct interaction with the driveshaft. In its operating position, the driveshaft is essentially horizontal. On an exemplar coach, I manually detached the transmission end U-joint and pivoted the driveshaft about the differential U-joint, and I evaluated the envelope in which the driveshaft can move. Substantial structures of the tag axle prevent the driveshaft from contacting the tie rod, the tie rod locking plates, and the locking cylinder. Further, with the driveshaft attached at the differential, contact forces applied by the moving driveshaft to a component below it would be directed primarily downward rather than in the forward direction as the physical evidence shows. A force directed downward on the tie rod would not produce the counter-clockwise rotation of the locking plate as evidenced by the gouges present.

Summary

1. The subject coach was being driven southbound on Interstate 37 at freeway speed when the rear U-joint of the driveshaft separated. The forward U-joint remained attached for a period, causing the driveshaft to continue to rotate and creating a significant imbalance applied to the differential and drive axle. This imbalance caused the drive axle to oscillate and create a distinctive wavy characteristic in the dual tire marks on the road surface.
2. The driver steered the vehicle to the right and applied the brakes, placing the vehicle in a clockwise yaw. The driver subsequently steered the vehicle to the left while braking aggressively, causing the vehicle to yaw counter-clockwise and enter the soil median at a high sideslip angle. The vehicle was overturned onto its passenger side, causing the right rear tag axle tire and wheel to gouge into the soil surface.
3. The physical evidence from the subject crash indicates that the right tag axle tire and wheel were acted upon by substantial forces during impact and gouging of the median soil. These forces caused displacement and deformation of the tag axle structure and steering system causing it to become disengaged as the vehicle came to rest.
4. The front U-joint detached from the differential as the chassis interacted with the soil in the median. Detachment from the differential allowed the driveshaft to be displaced rearward and exit from the forward driveshaft loop. Subsequently, the driveshaft was likely displaced forward, exiting from the tag axle pass-through and traveling free of the vehicle to its rest position.
5. Dynamic disengagement of the tag axle steering lock at freeway speeds does not cause the MCI 102DL3 coach to go out of control. Such disengagement produces an effect that is similar to a light wind disturbance that is easily controlled with small steering inputs.
6. The MCI 102DL3 coach with unlocked tag axle steering does not become unstable or uncontrollable. With the steering lock disengaged, the steering and handling properties of the vehicle remain stable and predictable, with a high turning capacity.
7. I evaluated the characteristics of the tag axle system on the MCI 102DL3 coach and found them to be appropriate in design, manufacture, and function. I found no evidence of a defect of design, manufacture, or function.
8. The cause of the subject crash was that the driver responded to the U-joint separation by aggressively applying the brakes and steering excessively, ultimately placing the vehicle in a severe counter-clockwise yaw that led to overturn, rather than releasing the throttle, slowing gradually, and coming to a controlled stop.

All of the opinions in this report are expressed within a reasonable degree of engineering certainty. These opinions are based on my work as described above, my inspections related to this crash, all materials I have received and reviewed related to the subject crash and the MCI 102DL3 coach, my training as an engineer, my education and experience, my review of technical literature, and the laws of physics. I reserve the right to supplement or modify my opinions if new

information is received, additional work is performed, or in response to the work and opinions of other experts.

Materials Received and Reviewed

1. Accident Report
2. Police photographs
3. Texas DPS Reconstruction Investigation
4. Lt. Timothy Lite accident records
5. Report written by H. David Feltoon (01/18/11)
6. Report written by David Stopper (06/09/11)
7. Report written by Andrew D. Irwin (06/10/11)
8. Report written by Edward P. Cox (06/10/11)
9. Report written by John L. Caviar (06/10/11)
10. Report written by Richard Cortez (06/10/11)
11. AUSA photographs of subject vehicle (06/23/10)
12. H. Zuschlag photographs (07/10)
13. Evidence inspection photographs (07/22/10)
14. Carr Engineering vehicle inspection photographs (07/27/10)
15. David Coates photographs (07/29/10)
16. David Coates vehicle inspection photographs (01/14/11)
17. Bob Rucoba scene inspection notes and photographs (01/21/11)
18. Photographs produced by Americanos
19. Greg Wright sensor test results photographs
20. Greg Wright vehicle inspection photographs (06/30/11)
21. Greg Wright boroscope photographs
22. David Coates vehicle inspection photographs (07/20/11)
23. Subject vehicle inspection photographs and video taken June 30-July 1, 2011
24. DDEC download photographs
25. AUSA color photographs of bus and scene
26. Recorded statement of Jerrica Capers
27. Recorded statement of Nina Feddersen
28. Daniel Campos deposition & exhibits (08/26/10)
29. Daniel N. Campos deposition & exhibits (08/26/10)
30. Amalia F. Heather deposition & exhibits (08/26/10)
31. Adriana L. Pruitt deposition & exhibits (08/26/10)
32. Anna B. Schermerhorn deposition & exhibits (10/06/10)
33. Leonor Aguilar deposition & exhibits (10/27/10)
34. Selina Aguilar deposition & exhibits (10/27/10)
35. Trooper Wesley Cooper deposition & exhibits (11/08/10)
36. Denise Alvarado deposition & exhibits (11/19/10)
37. Adrian Lopez deposition & exhibits (11/19/10)
38. Rogelio Garcia deposition & exhibits (12/07/10)
39. Deborah Chavez deposition & exhibits (12/20/10)
40. David Rodriguez Perez deposition & exhibits (12/21/10)
41. Victoria Romero deposition & exhibits (01/05/11)
42. Minerva Santiago deposition & exhibits (01/05/11)
43. Margarita Miramontes deposition (01/10/11)
44. Bianca Herrejon deposition & exhibits (01/17/11)
45. Ashli Taylor Decena deposition & exhibits (01/20/11)
46. Miranda Gibson deposition & exhibits (01/20/11)
47. Sylvia Bandala deposition & exhibits (01/24/11)
48. Ramon Medina deposition & exhibits (01/25/11)
49. Diana Medina deposition & exhibits (01/25/11)
50. Sandra Valdez deposition & exhibits (01/27/11)
51. Eva Garcia deposition & exhibits (01/28/11)
52. Carlos Torres Teran deposition & exhibits (01/28/11)
53. Jacobs Medina deposition & exhibits (02/22/11)
54. Carmen Paz deposition & exhibits (02/22/11)
55. Irma Mendoza Morado deposition & exhibits Vol. I (04/07/11)

56. Irma Mendoza Morado deposition & exhibits Vol. II (04/08/11)
57. Trooper James Kellert deposition & exhibits (04/25/11)
58. Lt. Timothy Lite deposition & exhibits (04/27/11)
59. Carlos Cantu deposition & exhibits (06/15/11)
60. Eldridge Hughey deposition & exhibits (06/16/11)
61. Corporal Keith Olive deposition & exhibits (06/23/11)
62. Jeffrey Barta deposition (08/10/11)
63. Plaintiffs' First Amended Petition
64. Plaintiffs' Objections and Responses to Defendant Americanos, U.S.A., LLC's First Request for Production
65. Defendant Greyhound Lines, Inc.'s Response to Motor Coach Industries, Inc.'s First Request for Production
66. Defendant Greyhound Lines Inc.'s Responses to Motor Coach Industries, Inc.'s First Set of Interrogatories
67. Defendant Americanos U.S.A., L.L.C.'s Response to Motor Coach Industries, Inc.'s First Request for Production
68. Defendant Americanos U.S.A., L.L.C.'s Response to Motor Coach Industries, Inc.'s First Set of Interrogatories
69. Plaintiffs' Designation of Expert Witnesses
70. Agreed Scheduling Order
71. Medical Providers List
72. Passenger Height-Weight Matrix
73. Back-up documents for Matrix
74. Final Vehicle Record for Americanos Test Coach
75. Campbellton Metallurgy Examination Results from MSI Testing & Engineering, Inc. (01/14/11)
76. Greyhound proposed protocols – alignment testing, removal of parts
77. Protocol for Destructive Testing – July 2010
78. Bosch Test Track video
79. Brian Lawson notes
80. MSI Reports
81. Brian Lawson's reduced Scale efile
82. MCI 102D Series Maintenance Manual (January 1995)
83. 102AW3 Parts Manual
84. Section 10 – Transmission Parts Manual
85. Section 8 – Engine Parts Manual
86. MCI 102D Series Maintenance Manual (April 1994)
87. D-Series Operators Manual
88. MCI Maintenance Manual (January 1994)
89. 102DL3 Maintenance Manual (January 1995)
90. 102DL3 Parts Manual (January 1995)
91. CM0241 Campaign Detail by Campaign, Model, Serial Number
92. MCI documents produced – MCI000001– MCI004022
93. AUSA documents produced – AUSA000001 – AUSA009177

PE12-007

MCI

4-27-2012

Response 9

Expert Report - Kevan Granat -
WITH Attachments

PE12-007

MCI

4-27-2012

Response 9

Granat, Kevan

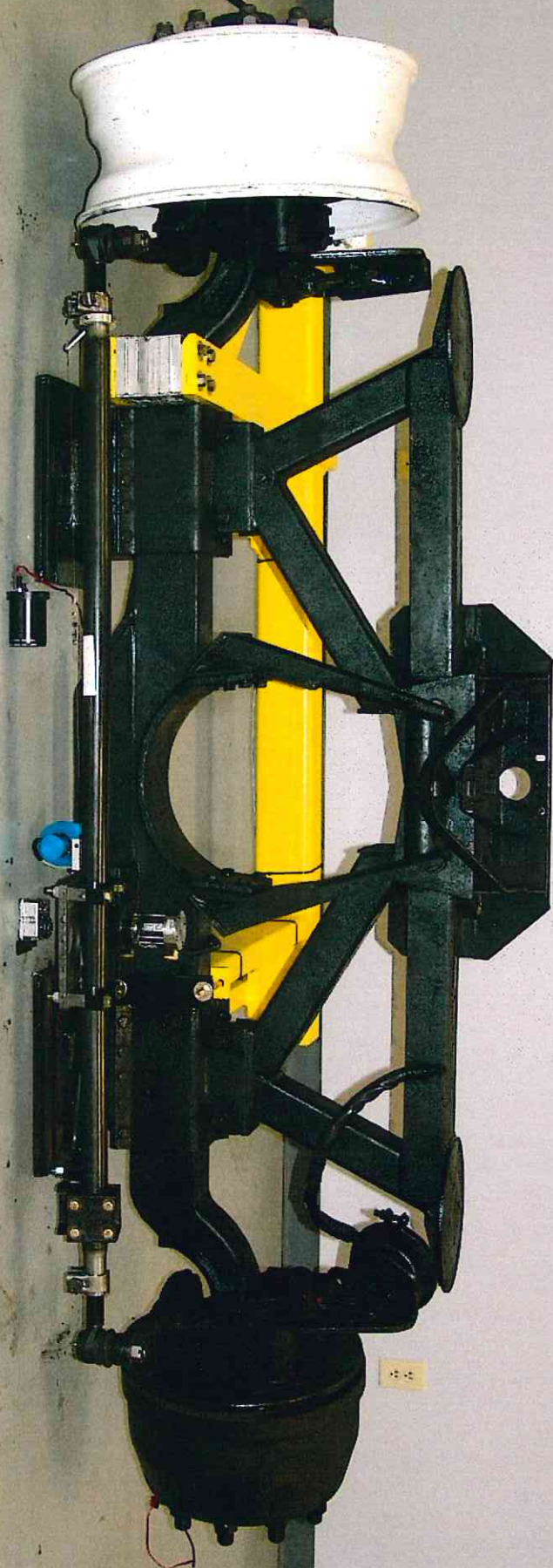
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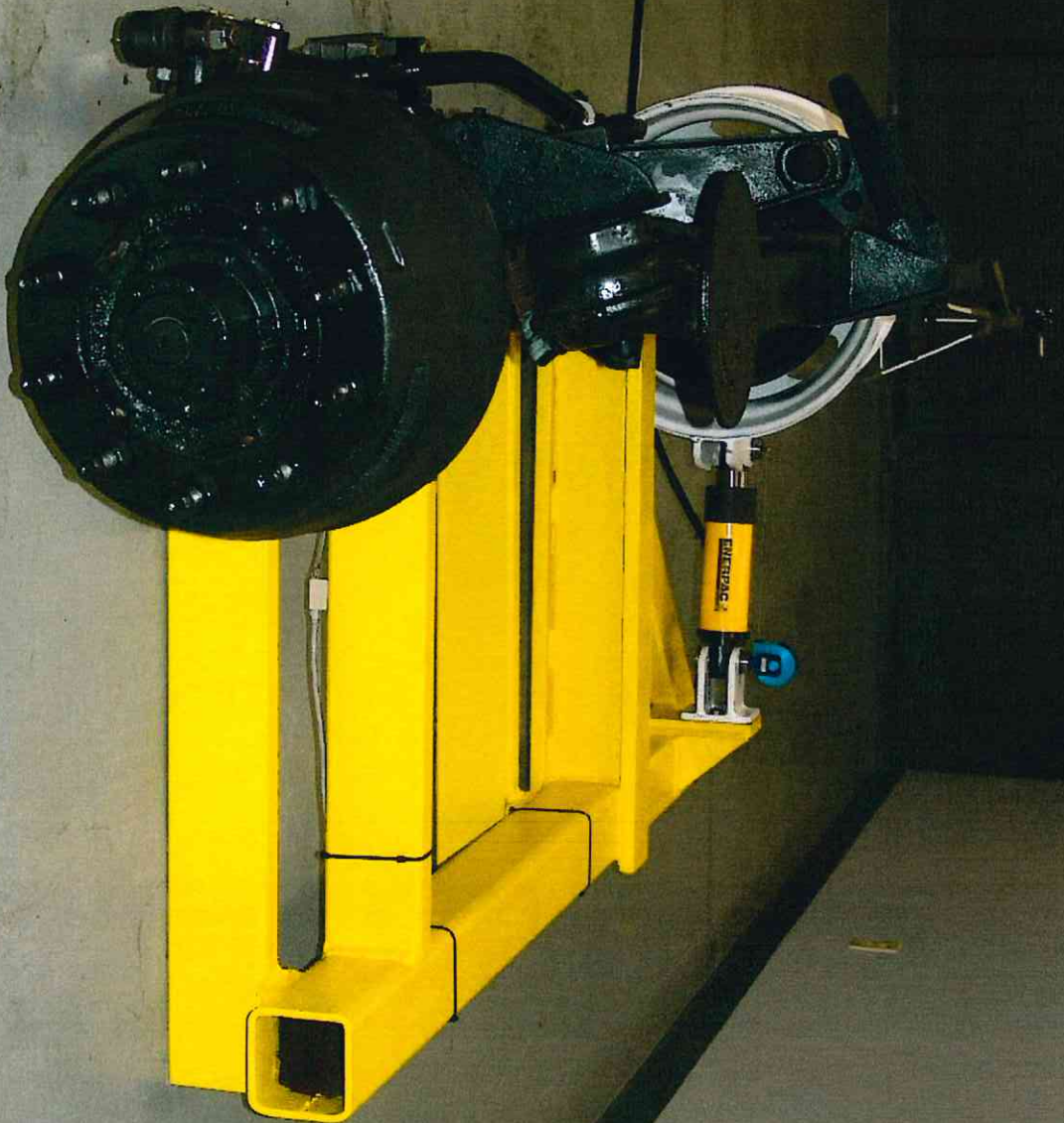
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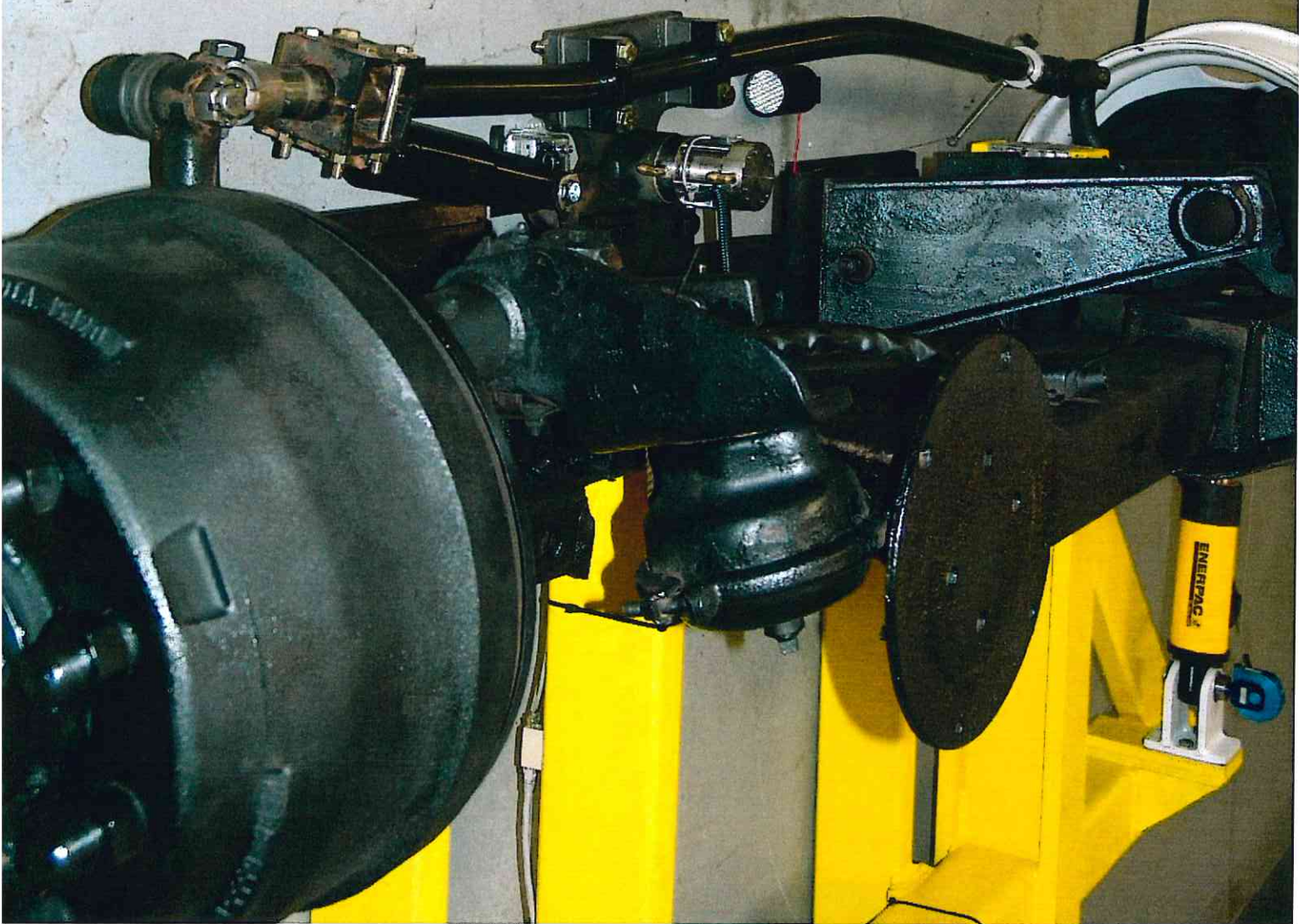
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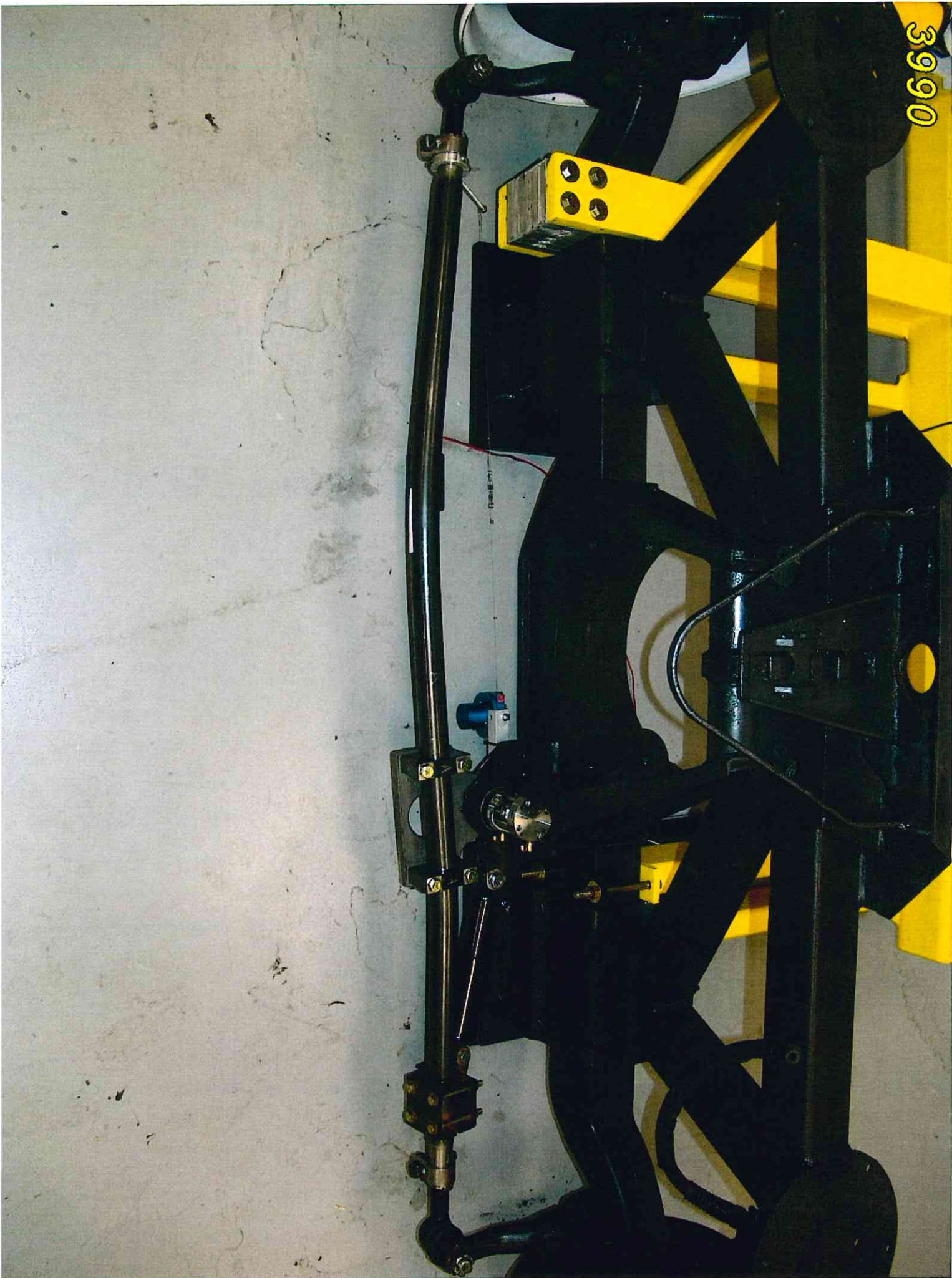
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1 CAUSE NO. 2010-03-001717-C
2 DANIEL CAMPOS,) IN THE DISTRICT COURT
INDIVIDUALLY AND AS)
3 REPRESENTATIVE OF THE)
ESTATE OF CHRISTINA)
4 LOZANO CAMPOS, DECEASED;)
MARIA L. LOZANO; ANNA B.)
5 SCHERMERHORN; ADRIANA L.)
PRUITT; AMALIA F.)
6 HEATHER; AND DANIEL N.)
CAMPOS, ET AL,)
7 PLAINTIFFS,)
)
8 CARLOS TORRES TERAN,)
INTERVENOR,)
9)
JACOB MEDINA,)
10 INTERVENOR,)
)
11 ROGELIO GARCIA,)
INTERVENOR,)
12)
DENISE ALVARADO,)
13 INDIVIDUALLY AND AS NEXT)
FRIEND FOR EDWARD GUZMAN,)
14 JR.; DEBORAH CHAVEZ; NOE)
ESPINOZA; ADRIAN LOPEZ;)
15 EFRAIN DOMINGUEZ)
MANRIQUEZ AND LEOGARDO)
16 RAMONA VALENZUELA)
HERNANDEZ; AND SANDRA)
17 VALDEZ, INDIVIDUALLY AND)
AS NEXT FRIEND FOR ETHAN)
18 MUNOZ AND SAM MUNOZ,)
MINOR CHILDREN,)
19 INTERVENORS,) CAMERON COUNTY, TEXAS
)
20 VS.)
)
21 AMERICANOS, U.S.A.,)
L.L.C., FIRSTGROUP)
22 AMERICA, INC., GREYHOUND)
LINES, INC., IRMA MENDOZA)
23 MORADO, MOTOR COACH)
INDUSTRIES, INC., MCI)
24 SERVICE PARTS, INC. AND)
ARVINMERITOR, INC.,)
25 DEFENDANT(S).) 197TH JUDICIAL DISTRICT

0002

1 *****
2 ORAL AND VIDEOTAPED DEPOSITION OF
3 KEVAN J. GRANAT

OCTOBER 14, 2011

Volume 1 of 1

ORAL AND VIDEOTAPED DEPOSITION of KEVAN J. GRANAT,
produced as a witness at the instance of the Plaintiffs,
and duly sworn, was taken in the above-styled and numbered
cause on October 14, 2011, from 9:44 a.m. to 5:23 p.m.,
via telephone, before Tammy S. Brown, CSR in and for the
State of Texas, reported by machine shorthand, at the
offices of HARTLINE DACUS BARGER DRYER LLP, Three
Riverway, Suite 650, Houston, Texas, pursuant to the Texas
Rules of Civil Procedure and the provisions stated on the
record.

0003

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 24 ALSO PRESENT:
 Mr. Mark Hendryx - Videographer

25
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1 (Exhibits 1 through 4 marked)

2 VIDEOGRAPHER: Today's date is October 14th,

3 2011. We are on the record at 9:44, start Tape 1.

4 KEVAN J. GRANAT,

5 having been first duly sworn, testified as follows:

6 COURT REPORTER: Pursuant to the Texas Rules?

7 MS. DORMAN: Yes.

8 MR. CRAFT: Yes. Ready?

9 EXAMINATION

10 BY MR. CRAFT:

11 Q. Tell us your name, please.

12 A. Kevan Granat.

13 Q. Mr. Granat, my name is Hunter Craft. I think
14 we've met before under similar circumstances, correct?

15 A. We have.

16 Q. You are an expert witness that has been retained

17 by lawyers representing MCI in this case, correct?
18 A. That's true.
19 Q. You understand that my clients are adverse to MCI
20 in this case?
21 A. Right.
22 Q. All right.
23 MS. RODRIGUEZ: Objection, leading and form.
24 MR. CRAFT: This is cross-examination. Are
25 you telling me you can't lead him during cross?

0008

1 MS. RODRIGUEZ: Yeah. Because you haven't
2 proven that he's adverse to you, and you haven't
3 designated any experts contrary in -- to MCI or in support
4 of your claims to MCI. So, yes, I'm taking the position
5 in this deposition this witness is not adverse to you, and
6 therefore, you can't lead.

7 MR. CRAFT: All right. Here we go. Don't
8 nod your head at me and don't point. Make your
9 objection --

10 MS. RODRIGUEZ: You just asked me.

11 MR. CRAFT: -- and let's roll.

12 MS. RODRIGUEZ: I'm just telling you.

13 MR. CRAFT: Do we have an understanding?

14 MS. RODRIGUEZ: Sure.

15 MR. CRAFT: All right.

16 MS. RODRIGUEZ: I'll make my objection.

17 Q. (BY MR. CRAFT) Mr. Granat, you are an expert in
18 what area, sir?

19 A. Primarily, I am a mechanical engineer. I do
20 engineering work in the fields of vehicle dynamics,
21 vehicle design, failure analysis, and accident
22 reconstruction.

23 Q. All right. I'm going --

24 A. Those broad areas.

25 Q. I'm going to hand you what I've marked as

0009

1 Exhibit 3 to your deposition. Can you tell us what that
2 is please, sir?

3 A. Sure. That's my CV.

4 Q. And is that a true and correct copy?

5 A. It is.

6 Q. Is that up-to-date, as we sit here today?

7 A. It is.

8 Q. All right. If you would, please, if you would
9 like to refer to Exhibit 3, give us a thumbnail sketch of
10 your educational background, please, sir.

11 A. Sure. I -- I earned bachelor's and master's
12 degrees in engineering -- mechanical engineering from
13 Purdue. And I wrote a master's thesis on a research
14 project -- an automotive engineering research project for
15 Ford Motor Company.

16 I defended that thesis and was awarded a
17 Master's in Engineering degree from Purdue. My specialty
18 or my area of specialization while at Purdue was design

19 and specifically automotive engineering.

20 Q. All right. Following your education in the field
21 of engineering, give us a thumbnail sketch, if you would,
22 please, about your work experience?

23 A. Sure. After I earned a Master's Degree in
24 Engineering, I went to Ford Motor Company in Dearborn, and
25 at Ford I was a design engineer -- chassis design

0010

1 engineer.

2 And at that position, I worked on the design
3 of light trucks, medium trucks, and heavy trucks; and I
4 also performed testing and dynamic simulation of vehicles.

5 Q. All right. I'm going to hand you Exhibit 4. By
6 reviewing it, am I to understand you are a published
7 author in the fields of accident reconstruction and
8 vehicle dynamics?

9 A. Sure. I think these are primarily vehicle
10 dynamics related papers, failure analysis, those kind of
11 things.

12 Q. Let's talk a minute. You understand the bus at
13 issue in this case is a MCI 102DL3?

14 A. That's right.

15 Q. Give us an idea about your specific experience
16 with that particular motor coach?

17 A. Well, with the 102DL3, I've reviewed numerous
18 documents that have been provided; design drawings,
19 service manuals, and maintenance manuals for these
20 coaches.

21 I've performed testing on several different
22 occasions looking at how the vehicle performs just as --
23 as it's designed, as well as under conditions of certain
24 failure analysis. That would be including tire
25 underinflation, those kind of analyses. I've instrumented

0011

1 several 102DL3s, and then performed high speed testing and
2 track -- under track conditions.

3 Q. All right. Now, you say testing on several
4 different occasions with respect to this motor coach.
5 Give us an idea of the scope of the testing that you've
6 done.

7 A. Sure. I've -- previously, I've done testing of
8 102DL3s fully loaded under conditions of tire
9 underinflation or -- or also as -- in the as-designed
10 condition. I've done that type of testing at proving
11 grounds in Uvalde, Texas.

12 And that involved running a coach for several
13 days on the -- on the test track there; that involved
14 handling, braking, other kinds of maneuvers of the coach.

15 I've also instrumented and performed testing
16 on the -- evaluating the steering properties of a 102DL3,
17 and that testing specifically involved standardized
18 testing on a -- on the test surface at freeway speeds,
19 70 miles an hour and higher, as well as at lower speeds.

20 And that testing, like the other testing I

21 talked about, would have been instrumented vehicle testing
22 with video sensors, data acquisition system.

23 Q. Are you familiar with a feature called a
24 self-steering tear-- steerable tag axle?

25 A. I am.

0012

1 Q. What is that?

2 A. The -- the third axle on the 102DL3 coach is the
3 -- is referred to as the tag axle. That is a self-steering
4 tag axle. And that design is a feature that allows the
5 vehicle to maneuver more tightly in low speed operation.
6 It allows it to save on -- on tire wear on the third axle
7 tires.

8 It's a -- a feature where the tires are
9 passively steered, and they follow behind the vehicle
10 while the coach is maneuvered at low speeds.

11 Q. All right. Is that a feature that is on the MCI
12 102DL3?

13 A. It is.

14 Q. All right. What have you done to become familiar
15 with the features of this self-steering steerable tag
16 axle?

17 A. Well, I've inspected several coaches and looked
18 at the componentry that makes up the self-steering tag
19 axle. I've asked -- obviously inspected the coach that's
20 the -- the subject vehicle in this matter, and evaluated
21 the -- the condition of that and the function of that.

22 And then -- and, additionally, I've -- I've
23 instrumented a vehicle -- a full vehicle, loaded it with
24 ballasts, and performed on-track testing of that coach,
25 evaluating the -- the -- the nature of the steerable tag

0013

1 axle.

2 And that would include instrumenting the --
3 the tag axle itself, as well as other things, to -- to
4 understand how that tag axle steers and how it moves.

5 Q. All right. Let's build upon something you said
6 earlier. Have you had the opportunity, in this case, to
7 inspect the subject coach?

8 (Exhibits 5 and 6 marked)

9 A. I have.

10 Q. (BY MR. CRAFT) All right. I'm going to hand you
11 Exhibits 5 and 6. Can you tell me what those are please,
12 sir?

13 A. Sure. Exhibit 6 looks to be a CD with -- that's
14 labeled that it's my inspection photographs. And then
15 Exhibit 5 is a copy of my vehicle inspection notes.

16 Q. All right. Give us an idea about what you did in
17 terms of inspecting the subject coach. What you were
18 looking for.

19 A. Well, on the subject coach, I inspected the --
20 the configuration of the vehicle. So, that -- that means
21 what axles were installed on the vehicle, what equipment
22 was installed on the vehicle, the general nature of the

23 vehicle.

24 I inspected the exterior of the vehicle,
25 observing damage that would have been caused from the
0014

1 subject crash. And then, I also performed an inspection
2 of the undercarriage of the vehicle, looking at the -- the
3 front axle, the steering system; determining whether the
4 front steering componentry were all intact, and connected,
5 and operable; looking at the drive axle, the rear axle,
6 the tag axle, and the various components that we have on
7 the tag axle and their condition.

8 Q. Were there any particular observations that you
9 made during your subject bus inspection relevant to your
10 opinions in this case?

11 A. Sure. I mean, basically you go through the
12 inspection notes and there are a number of things there
13 that I've noted that are of importance to me.

14 Q. Let's walk through some of the significant ones.
15 You are referring, I believe, to Exhibit 5. Is that
16 correct?

17 A. Exhibit 5.

18 Q. All right.

19 A. Well, in general, the -- much of the -- the notes
20 document the configuration of the vehicle, and that means
21 what specific equipment is installed on the vehicle.

22 In -- a portion of my notes deal with the --
23 the steerable tag axle, as well as the drive axle; and
24 then also the driveshaft and the componentry related to
25 that.

0015

1 So, in my observations of the subject
2 vehicle, I noted that the tag axle steering lock was --
3 was not engaged at the inspection. The -- the tie rod was
4 bent on the tag axle, the steering damper was in place and
5 shifted.

6 There were numerous contact marks in the
7 latch arm assembly on the tag axle. The -- the axle was
8 fundamentally in position and -- and its structure was in
9 place. And the -- the steering arms, ball joints, the tie
10 rod, they were all connected in -- in the sense that they
11 -- they would function; if you were to steer the -- the
12 axle, you could steer it.

13 And for the -- for the driveshaft, I observed
14 that there were -- obviously, the driveshaft was separated
15 from the -- from the vehicle; and there was separation of
16 the -- the transmission and U-joint, as well as the
17 differential and U-joint.

18 Q. All right. I want to focus, if I can, for just a
19 second, on the tag axle that you were talking about.
20 Particularly the tie rod portion of the tag axle.

21 A. All right.

22 Q. Did you have an opportunity to inspect that?

23 A. I did.

24 Q. All right. Did you find markings on the tie rod?

25 A. There was marking from the damper where it had
0016

1 shifted. There were markings near the latch plate area.
2 I would call those lighter markings in that area. Other
3 than that, out at the ends of the tie rod, and anywhere
4 beyond the center, there were no marks.

5 Q. All right. What is the significance of the
6 markings being lighter as opposed to darker, if any?

7 A. Well, I was looking at the --

8 Q. Or "heavier" may be a better word to say than
9 "darker."

10 A. Sure. The -- what I was looking for in the tie
11 rod was evidence of -- of an impact. My understanding of
12 the -- the theory that's been relayed from Mr. Jones was
13 that the -- the tie rod was impacted in a -- in such a
14 manner that it deformed the tie rod.

15 So, I was looking for -- for specific
16 evidence to a heavy impact on that tie rod; and I did not
17 find heavy marks in that area.

18 Q. All right. Now, you had referenced earlier a
19 feature about this tag axle on this particular coach, a
20 locking feature. Do you understand what I'm saying?

21 A. Right. Yes.

22 Q. Give us a thumbnail sketch toward -- explain what
23 that is, please.

24 A. Sure. The -- the locking feature is a -- I'm
25 talking about the -- the lock on the steering of the -- of
0017

1 the tie rod. The lock feature is such that there's a
2 number of metal plates that are allowed to pass through
3 each other, and then there's a locking pin mounted to a
4 pneumatic cylinder.

5 And that pneumatic cylinder is activated by
6 the -- the air supply system in the coach and
7 electronically activated when the coach is at a speed
8 below a threshold speed, which in this case is about
9 20 miles per hour.

10 So, there's a -- there's a tie rod mounted
11 locking plate that's clamped to the tie rod. And then
12 there are two additional mounting or clamping plates that
13 are mounted to the axle itself.

14 And the tie rod mounted locking plate is
15 allowed to pass through the center of the two other
16 plates, such that when the pin is extended through the
17 plates, it performs the function of a double shear locking
18 mechanism.

19 Q. All right. Now, did you have a chance, during
20 your inspection, to personally observe the locking plate
21 on the tag axle?

22 A. I did.

23 Q. Did you notice any significant markings?

24 A. On the locking plate of the -- the tie rod
25 locking plate had wear and some corrosion on that that was
0018

1 consistent with the plate being misaligned in a rotated
2 direction.

3 The -- what I would call the -- the slot of
4 that locking plate had wear on the sides and corrosion on
5 the sides there, just indicating that it had been in
6 used -- in use for some period of time.

7 There were gouges on the -- what would be the
8 rear-most end of that slot; and those gouges were of the
9 same dimension as the locking pin, and they were at the
10 rear edge, and then had metal flow that went up and
11 rotated out at an angle on that slot.

12 Q. What does that tell a guy like me?

13 A. That -- that helps us figure out the direction of
14 motion of that locking plate. And that direction of
15 motion would be in a forward direction, and then also
16 rotating in a counter-clockwise direction if you viewed it
17 from above.

18 Q. And what is the significance of that in this
19 particular case, if any?

20 A. Well, the -- the significance I took from that is
21 that that's consistent with a longitudinal force down the
22 axis of that tie rod. Or it would be a lateral force if
23 you look at the -- the -- the vehicle.

24 And one of the conclusions I drew from that
25 is that that would be consistent with an impact force

0019

1 toward the end of this event where the vehicle furrows
2 into the median, lands on its side, and we've got
3 substantial furrowing as the vehicle is on its side coming
4 to rest.

5 And that would produce a longi-- a
6 longitudinal force on the right rear wheel which would
7 produce the compressive load in the tie rod.

8 Q. Okay. Anything else of significance that we
9 haven't already touched on with respect to your inspection
10 of the subject bus?

11 A. Well, the -- there were a number of flat spots on
12 the tires on the coach, and those were consistent with
13 locked wheel skids. The steering system on the front of
14 the coach was -- was intact, in the sense that it was --
15 it was connected. So, rotating the steering wheel would
16 rotate the front tires.

17 I'm trying to think if there was anything
18 else that falls into that category, but I think that's --
19 that's it.

20 Q. When you talk about locked wheel skids, what
21 causes a bus to leave locked wheel skid marks?

22 A. Well, there -- there are -- these marks that are
23 on the tires are isolated to one area, and that's
24 consistent with a locked wheel skid. And the cause of
25 that would be just basically locking up that wheel in

0020

1 rotation. So, the primary cause of that would be heavy
2 brake application.

3 Q. All right. I'm going to hand you some photos
4 that were taken by the Troopers and the DPS of the scene
5 in this case, and hand those to you and ask you to look
6 through them. Do you see any photographs evidencing this
7 heavy brake application resulting in locked wheel skids at
8 the scene?

9 A. Sure. I mean, basically all of the photographs
10 are various levels of -- of heavy braking and sections of
11 locked wheel skid.

12 Q. All right. Of the photographs that we've given
13 you, let's go as far upstream as we can of the accident
14 sequence where you can see these locked wheel skids as a
15 result of heavy braking.

16 MS. RODRIGUEZ: Objection, leading.

17 A. Of these four, the most upstream one is right
18 here (indicated).

19 Q. (BY MR. CRAFT) All right.

20 A. And I can't read the -- the number that's up
21 there, it's cut off.

22 Q. That's okay. Let's put an exhibit sticker on it.

23 MR. CRAFT: What are -- what are we on,
24 Justin? 7?

25 MR. HILL: Yes, 7.

0021

1 (Exhibit 7 marked)

2 MR. CRAFT: If we can, I'm going to go to the
3 Elmo, Mark. Put up Photograph No. 7.

4 Q. (BY MR. CRAFT) Give us an idea, just for a
5 second, in terms of background, what we're looking at,
6 where we're facing, et cetera.

7 A. Okay. We're facing in the direction of the
8 vehicle travel -- or the vehicle was traveling. And the
9 -- the coach is seen at its rest position off in the
10 distance, just left and above center.

11 The -- the marks that we're looking at here
12 are a midsection of the -- the marks that lead off to the
13 shoulder to the right. And what we've got here are some
14 heavy braking marks that ultimately lead to locked wheel
15 skids.

16 We've also got some -- some dynamic effects
17 due to the driveshaft imbalance. Since we've disconnected
18 the -- the -- the driveshaft to the transmission end,
19 we've got some dynamic effects showing up in these tire
20 marks, particularly in the dual axle tire marks.

21 Q. I want to go back to something; you made the
22 statement we see heavy braking marks leading to locked
23 wheel skids.

24 A. Right.

25 Q. Give me an idea where we're talking about on this

0022

1 photograph where you're seeing these heavy braking marks.

2 A. Well, there's -- there are different tire marks
3 from the different tires and they are different in nature.
4 To the left of this photograph, we see the dual axle or

5 the drive axle tire marks.

6 Q. You're talking where -- is that where my pen is
7 pointing (indicated)?

8 A. Correct.

9 Q. Okay.

10 MS. RODRIGUEZ: Objection, leading.

11 A. Those marks would be consistent with the -- the
12 drive axle on the left side; and those are the marks that
13 I'm talking about that have a dynamic nature to them.

14 There's some oscillation within those tire
15 marks. That indicates to me that that's consistent with
16 heavy braking. The end of those marks, as we go up where
17 you can see some orange paint off in the distance, toward
18 the end of those marks, that's where you see the -- the
19 marks -- the oscillation stops, and then we have a more
20 significant locked wheel skid there where we have
21 striations within the tire mark that move longi--
22 longitudinally within the tire mark.

23 Q. (BY MR. CRAFT) All right. Now, as I'm pointing
24 to my pen, this mark on what I would guess -- I guess is
25 sort of the right-hand side of that inside lane or the

0023

1 outside lane --

2 A. Correct. Yes.

3 Q. What is that?

4 A. The -- there's a heavier mark and then there's a
5 lighter mark to the right side of that. The heavier mark
6 is consistent with the -- the right side on the dual or
7 drive axle; and then the -- the furthest mark to the right
8 is consistent with the -- the tag axle on the right side.

9 The -- the marks don't run parallel. When
10 you compare this photographs and -- this photograph with
11 other photographs, you'll see that those marks converge
12 and diverge, so they're not from the duals -- both of them
13 aren't from the duals; but the -- the left of those two
14 right marks is from the -- the right side dual tires. And
15 that one also shows the -- the oscillation that we see in
16 the left side tires.

17 Q. All right. Now, as we move from the bottom to
18 the top of this picture, we're going upstream to
19 downstream. We're flowing downstream, correct?

20 A. Correct.

21 Q. All right. Does the vehicle exit its lane of
22 travel at any point in this photograph?

23 A. Sure. The tire marks lead off to the -- the
24 shoulder, and you can see beyond that orange paint there
25 where the -- where the tire marks cross the -- the white

0024

1 fog line on the right side.

2 Q. Am I pointing in the right area?

3 A. Yes.

4 Q. All right. Would you agree with me, as we're
5 going upstream to downstream, that these, what you titled,
6 heavy braking marks leading to locked wheel skids, are

7 occurring before the bus exits its lane of travel to the
8 right-hand side?

9 MS. RODRIGUEZ: Objection, leading.

10 A. There -- certainly the heavy braking marks are --
11 the locked wheel skids are as it's leaving the -- the lane
12 of travel.

13 Q. (BY MR. CRAFT) All right. Just to accommodate
14 an objection -- that I'm about 99 percent is going to get
15 overruled anyways -- let's me ask the question a
16 different way.

17 MS. RODRIGUEZ: Object to side-bar.

18 Q. (BY MR. CRAFT) Do these skid marks that we're
19 seeing here as a result of heavy braking, occur before or
20 after the point where you testified the bus exits its lane
21 of travel on the right-hand side?

22 A. It would be before.

23 Q. All right. Earlier when you were talking about
24 your experience with this particular motor coach, you
25 referenced some full vehicle testing that you had done in

0025

1 this case. Is that correct?

2 A. That's right.

3 (Exhibits 8 through 10 marked)

4 Q. (BY MR. CRAFT) I'm going to hand you what I
5 have marked as Exhibit 8. Can you tell us what that is
6 please, sir?

7 A. Exhibit 8 appears to be a -- a printout of the
8 test binder that I've created documenting the testing that
9 I -- I performed.

10 Q. All right. And Exhibit 9 is a thumb drive
11 containing individual test videos and photos. Let me ask
12 you a question for just a second. During this full
13 vehicle testing that you performed, did you take the time
14 to video the tests?

15 A. Sure. I had multiple video cameras at multiple
16 locations. Those -- those would include exterior
17 ground-mounted cameras, exterior cameras mounted on a
18 chase vehicle. Cameras mounted on the coach including a
19 -- a driver's steering view, a tag axle tire view, and
20 then tag axle locking cylinder view, and a driveshaft or
21 center of axle view.

22 Q. When you decided to video the tests, did you
23 video all of them or was there a selection process
24 involved as to which test runs would be video'd?

25 A. No, everything's videotaped.

0026

1 Q. All right. Do you think that is the appropriate
2 way to run a scientific test, if you're going to use that
3 evidence to present to somebody?

4 MS. RODRIGUEZ: Objection, leading.

5 A. Certainly, in -- in the -- the environment the
6 testing is presented, meaning in litigation matters it's
7 -- it's -- it's essential that it's documented well.

8 Q. (BY MR. CRAFT) Sure.

9 A. So, this is all documented that way.
10 Q. And I'll hand you Exhibit 10; that is a video of
11 all of the -- or it's a disk containing all the video of
12 all of the runs from all of the camera angles that you did
13 in this -- this testing, correct?
14 MS. RODRIGUEZ: Objection --
15 A. I don't think this is.
16 MS. RODRIGUEZ: -- leading.
17 A. This is going to be -- I mean, this is a CD, so
18 it's 700 megabytes. The -- the video from everything was
19 provided on hard drives, and it was like 400 gigabytes.
20 So, it's -- it's not even going to fit on that. No,
21 it's --
22 Q. (BY MR. CRAFT) I got you. So, when we look at
23 your hard drive and it says "individual test videos,"
24 that's where we need to look to find the folder of the raw
25 video footage?

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1 A. That won't even have the raw video footage. It
2 won't fit on a thumb drive. That was provided earlier, I
3 believe, to Counsel; and that's on a separate hard drive
4 very similar to one of these hard drives.
5 Q. Oh.
6 A. It's 400 gigabytes of -- of video.
7 Q. Fair to say you've produced everything that you
8 have in terms of video from the testing?
9 A. That's absolutely everything.
10 Q. All right. Give us an idea what kind of testing
11 you did.
12 A. Well, I did a number of tests evaluating
13 unlocking of the tag steering lock. And so, what I did is
14 I instrumented the vehicle to measure the vehicle's
15 response, the -- the inputs provided to the vehicle.
16 I instrumented the -- the tag axle itself to
17 measure the response of the tag axle. I equipped the
18 vehicle with a -- a foot switch, a simple on/off foot
19 switch that allowed me to unlock the tag axle dynamically
20 and at highway speeds.
21 And that foot -- foot switch was operated by
22 me. I recorded the -- the position of that switch, so
23 that was reflected in my data, as well.
24 And then, I went and drove the coach under
25 various conditions. Those conditions included dynamic --

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1 dynamically unlocking the -- the steering wheel at freeway
2 speeds, and then also conditions where I evaluated the
3 handling of the vehicle with it locked or in its -- its
4 usual condition. And then also unlocked using
5 standardized tests.
6 Q. All right. Let's look at Exhibit 10, if we can,
7 for just a second.
8 MR. CRAFT: Mark, can you go to the video
9 please, sir.
10 VIDEOGRAPHER: Hunter, is it plugged in

11 there?
12 MR. CRAFT: Should be, yes, sir.
13 VIDEOGRAPHER: There we go.
14 MR. CRAFT: Do you have it?
15 VIDEOGRAPHER: We had it earlier. There we
16 go.

17 Q. (BY MR. CRAFT) Well, it's not wanting to
18 cooperate with us, so let's just look at it --

19 A. There you go.

20 Q. -- like this, fair enough?

21 A. Uh-huh.

22 Q. Now, tell us what type of vehicle you used.

23 A. Sure. As the video shows, it's a 1995 102DL3.

24 Q. Okay.

25 A. It's ballasted with 44 passengers; meaning I used

0029

1 sand bags in each seating position or in -- in 44 seating
2 positions.

3 Q. Ballasting a bus, is that something that is
4 normally done?

5 A. Sure.

6 Q. Why is that?

7 A. Well, I wanted to test the vehicle in the
8 condition that's similar to the -- the crash vehicle.

9 Q. Tell us what we're looking at here.

10 A. Okay. This is the foot switch that I described a
11 little bit earlier. And that is just a driver-operated
12 switch that allows me to manually disengage the steering
13 lock on the tag axle steering system.

14 Q. Well, it doesn't want to play for me. Hold on
15 just a second. Here we go. Now, a minute ago you were
16 talking about some of the instrumentation you utilized.
17 Walk us through that and tell us why you did what you did.

18 A. Okay. I instrumented the vehicle to measure
19 its -- its response to my testing; that includes the --
20 the inputs that I applied, meaning I measured the -- the
21 steering angle input, I measured the -- the position of
22 the -- the release switch that I installed for the tag
23 axle steering.

24 And then I also measured the response of the
25 vehicle, and that includes measuring the speed via GPS

0030

1 speed sensors, the position of the coach on the test
2 track, the slip angle, roll angle, those type -- types of
3 gross vehicle movements.

4 I also measured the -- the accelerations that
5 the -- the coach underwent, using an accelerometer that
6 measured accelerations in three directions. Measured
7 rotational rates including yaw rate, roll rate, and pitch
8 rate.

9 And then I also measured the response of the
10 tag axle steering by measuring the displacement of the tag
11 axle steering tie rod.

12 Q. All right. Now, when you're talking about having

13 measured this data during your testing, did you measure
14 the data in some of your tests or all of your tests?

15 A. It's in every test. And the -- the data is
16 provided in Exhibit 8, it's all plotted in the -- the
17 numerous plots that you see in -- in Exhibit 8. These are
18 basically printouts, in graphical form, of that data that
19 was recorded with a data acquisition system on the coach.

20 Q. If we want to see the data from each and every
21 one of your test runs, will there be any runs where we
22 will get a "no data" listing for it?

23 A. I don't think there are any "no data" runs. No,
24 they're all -- they're all documented data files.

25 Q. With respect to the video that you took, what

0031

1 different camera angles did you utilize?

2 A. I used a camera measure -- or a camera that
3 monitored the driver's steering input, external camera
4 that's ground mounted, an external camera that's mounted
5 to a chase vehicle, meaning a vehicle that followed
6 closely behind the test coach.

7 An exter-- or a -- a side-view camera that
8 monitored the -- the tag axle tires; and then, two
9 additional cameras that monitored the tag axle, itself.
10 One that was focused primarily on the -- the locking
11 cylinder, and then one that was focused more centrally on
12 the tag axle.

13 Q. Did you do so on each test?

14 A. I did. The caveat on that is in some instances,
15 the testing wasn't suitable to have a ground camera.
16 Meaning if we were going around the -- the
17 eight-and-a-half-mile oval, the ground camera doesn't
18 really catch that because it's obviously not going to see
19 the entire oval. So, in those tests, obviously, I had the
20 chase vehicle view.

21 Q. Sure. Now, as the Jury looks through your
22 catalog of testing and they want to look at the video,
23 will they find a no-video entry for any of your tests?

24 MS. RODRIGUEZ: Objection, leading.

25 A. No, the -- all the video -- all the raw footage

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1 for the -- the video has been provided. It's all there.

2 Q. (BY MR. CRAFT) Okay. Now, moving on on
3 Exhibit 10, where did you do the testing?

4 A. The testing is -- has been performed at the
5 proving grounds in Uvalde Texas; that's the test facility
6 owned by Continental Tire.

7 Q. Why did you choose Uvalde Proving Grounds to do
8 your testing?

9 A. Well, first, I've -- I've done hundreds and
10 hundreds of tests over the years -- over the last 15 years
11 at Uvalde. I know the facility well and it's an extremely
12 large facility.

13 I believe it's 5,000 acres worth of test
14 surfaces. It's got a very large, high-speed track that's

15 perfectly suited to this type of testing that I performed.

16 Q. All right. Tell us a little bit about your first
17 run.

18 A. First --

19 MS. RODRIGUEZ: Objection, form.

20 A. You -- on Exhibit 10? Exhibit 10, the first run,
21 is a -- is a -- is a dynamic unlock of the tag steering
22 cylinder. And so, that's a run that I did at nominally
23 70 miles per hour. I was driving the vehicle straight,
24 and then dynamically disengaged the -- the -- the steering
25 on the tag axle.

0033

1 Q. (BY MR. CRAFT) All right. What was the purpose
2 of doing this?

3 A. To understand the dynamics of the response of the
4 vehicle if that tag axle steering is unlocked.

5 Q. All right. Tell us whether or not it would aid
6 you in demonstrating to the Jury your findings, if we were
7 to show them the video that you recorded?

8 A. Sure.

9 Q. All right. And as we walk through it, explain to
10 us what's going on if you would, sir.

11 A. Sure. In this video, you can see the -- the
12 coach is coming in at nominally 70 miles an hour, it's
13 actually 71. The vehicle behind it is the chase view
14 camera. You'll see the speed documented on the lower
15 right. It's continuously updated based on the -- the
16 sensors that I put on the vehicle.

17 And then you'll see a -- a little square that
18 turns red -- to a red circle there on the lower right,
19 that's the position of the tag unlock switch that's my --
20 my foot switch. So, I'm monitoring that electronically
21 and measuring that to record that with the data.

22 So, what you can see, as you go through the
23 video, is the vehicle's response from an exterior point of
24 view on the previous video; you can see when the tag is --
25 is unlocked; and then you can also see, you know, the

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1 driver response to that.

2 Q. All right.

3 A. And as you see in this video, there's a momentary
4 shift in steering of a very small angle, and it just
5 drives straight ahead after that.

6 Q. All right. Now, when we see above the tag
7 unlocks, the red light come on, tell us what that means.

8 MS. RODRIGUEZ: Objection, leading.

9 A. That's when the -- the brake -- or the -- I'm
10 sorry, not the brake -- but the foot switch is pressed.
11 That's my driver-controlled foot switch. And that
12 releases the -- the -- the steering lock on the tag axle.
13 That sends a signal to that cylinder such that the
14 solenoid's opened and the pin is retracted.

15 Q. (BY MR. CRAFT) All right. Now, with respect to
16 this video that we're watching from the first run we

17 looked at on Exhibit 10, tell us what it is that you've
18 learned and explain it to us.

19 A. Well, the -- the general conclusion of -- of
20 driving the vehicle at -- at freeway speeds, loaded
21 similar to the -- the subject coach, and then dynamically
22 unlocking the -- the tag steering, the general conclusion
23 there is that it's -- it's not a very dynamic event.

24 It's not an event that would cause somebody
25 to lose control. It doesn't dramatically affect the

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1 steering and handling properties of the vehicle.

2 Q. All right. Tell us what the setup is for the
3 next test we're going to watch.

4 A. The next test is fundamentally the exact same
5 thing. And it's just under a different condition, and
6 that is, as it's labeled here, instead -- instead of
7 traveling straight on the -- the test surface, the coach is
8 going around a right curve and traveling downhill.

9 Q. All right. Explain to us, if you will, what
10 you're observing as this test is ongoing.

11 A. As the driver, I'm observing the -- the feel of
12 the vehicle, the motion of the vehicle; and, of course,
13 I'm recording that with the data.

14 What we see from the -- the video is that, as
15 I mentioned in the previous one, it's not a very dynamic
16 event. You can see when the tag is unlocked, there's a
17 small steering adjustment of maybe five to ten, fifteen
18 degrees, and then the coach continues on its way.

19 Q. Are there any conclusions that you reached based
20 upon this second run that we're watching?

21 A. Basically the same conclusions as the first. And
22 that is, just in a different condition, and that condition
23 being when we're going around a corner, it's basically the
24 same -- same response.

25 Q. All right. This third group of testing that

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1 we're going to watch, set that up for us, please.

2 A. This just builds on the previous run; and now
3 that is downhill and to the right, as far as the roadway
4 is concerned. And this is with -- with brake application
5 in the -- after the -- the tag axle steering has been
6 unlocked.

7 Q. All right. And as we walk -- walk us through the
8 video, if you would, as we --

9 A. Sure.

10 Q. -- play it for the Jury.

11 A. This one's set up essentially the same as the
12 previous runs. We're in a -- a right turn on the track.
13 The tag axle tire -- or the tag axle steering is unlocked,
14 and then the brakes are applied.

15 Q. All right.

16 A. And you can see in the -- the response of
17 vehicle, as well as looking at the data plots, the -- the
18 response is -- is not very dramatic.

19 Q. All right. Let me ask you: You're making a
20 brake application during this run. Did that brake
21 application at the test track result in any skid marks?
22 A. No, that's not a -- not a locked wheel skid type
23 braking maneuver.
24 Q. Were you able to control the bus and bring it to
25 a stop without entering in to a locked wheel scenario?

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1 A. Absolutely. Sure. It's fundamentally the same
2 as bringing the bus to a controlled stop without the --
3 the steering unlocked.

4 Q. And as we watch from a different angle on this
5 test, tell us what observations, if any, you were able to
6 make from this test.

7 MS. RODRIGUEZ: Objection, form.

8 A. Fundamentally the same observations as -- as
9 previously; that the -- the bus remained controllable,
10 there was not a dramatic dynamic event.

11 Q. (BY MR. CRAFT) All right. What is the fourth
12 test we're going to watch?

13 A. This builds, yet again, on the -- the previous
14 test. And then this is just steering the coach to the
15 right, off on to the shoulder, and then -- and then
16 continuing down the shoulder with the coach in that -- in
17 that position.

18 Q. And walk us through the video, if you will; what
19 you're doing and what you're seeing.

20 A. Sure. This is fundamentally the same response as
21 previously. You'll see the tag axle light come on. It's
22 unlocked. I steer to the right. And then just drive down
23 the shoulder. And this one comes back across. So,
24 that's -- when you see the steering view, I steer off to
25 the right, and then steer back to the left.

0038

1 Q. All right. Did your brake application result in
2 any loss of control?

3 A. No. The brake application was still a
4 controllable response, and it was -- was similar to a
5 vehicle that had a -- a locked tag axle steering system.

6 Q. Were there skid marks left by the tires of the
7 bus on the roadway in response to your degree of brake
8 application?

9 A. No, there were not.

10 Q. And again, if you would, tell us what, if
11 anything, you were able to observe or learn from this
12 particular test.

13 A. Well, what you can see --

14 MS. RODRIGUEZ: Objection, form.

15 A. -- in this view is once the tag axle -- the tag
16 unlock light becomes illuminated, then we get a slight
17 shift in the tie rod, and that's consistent with being
18 unlocked.

19 And again, I've measured the displacement of
20 that tie rod; and -- and there's some shifting of the tie

21 rod, meaning the tires are trailing behind the vehicle.
22 It -- it steered off on to the shoulder and then back on
23 to the roadway.
24 Q. (BY MR. CRAFT) And as we're looking from this
25 camera angle, give us an understanding of -- of which is
0039

1 the tag axle or the tag tires.

2 A. The -- we're looking at the right side of the
3 coach. The drive axle tires are the -- the ones in front.
4 And that's a dual axle -- or a dual wheel axle, such as
5 there are two on the right side. You can only see one.
6 The tag axle tire is -- is closer to us, that's the one
7 that has the steering unlocked.

8 Q. All right. It's the back tire?

9 A. Correct.

10 Q. At this point in the video, is the tag axle
11 locked or unlocked?

12 A. It's unlocked. And you can see that just by the
13 indicator on the lower right.

14 Q. Does this particular camera angle help the Jury
15 to understand the performance or the dynamic movement of
16 the tag axle wheels after the tag axle has become unlocked
17 in a downhill curve to the right with an intentional steer
18 at 70-mile per hour?

19 A. Yes.

20 MS. RODRIGUEZ: Objection, leading.

21 Q. (BY MR. CRAFT) Tell us about this next test.

22 A. The next one is -- is similar to the previous
23 ones, except for now I've added the -- the -- that the
24 road condition was wet.

25 So, I had a tanker truck at the test facility
0040

1 wet down the track surface, and then came through there
2 with the coach on the -- the wet surface and did basically
3 the same type of maneuver.

4 Q. Well, let me ask you: Why did you wet the track
5 surface?

6 A. Well, I was trying to go through all the
7 different variables and understand the motion of the coach
8 under different conditions. And in the particular crash
9 that we're -- we're here about, there's some testimony
10 that there was moisture on the road.

11 There's an indication that the -- the wipers
12 were activated on the coach. So, I wanted to evaluate the
13 -- the motion of the coach on a wet surface, just to -- to
14 basically run the entire spectrum of -- of tests.

15 Q. Now, were you able to control the bus when it
16 became -- when the tag axle became dynamically unlocked?

17 A. Sure.

18 Q. All right.

19 A. Sure. It was fundamentally the same as prior
20 runs.

21 Q. Now, on some of these runs, did you know that the
22 tag axle was going to become unlocked, or when it was

23 going to become unlocked?

24 A. Well, on all of these runs, I am -- I'm the one
25 operating the tag axle unlock switch.

0041

1 Q. Uh-huh.

2 A. So, I'm timing it with where I'm going to turn
3 off the road. On those, of course I know when it's going
4 to be unlocked.

5 For a sequence of tests where I went around
6 the 8.5-mile oval, I -- I also did what I would call
7 surprise unlocks; meaning I had an engineer sit behind me
8 with the switch, remotely.

9 I'm masked to the sounds that the switch
10 would make by turning up all the fans on the bus, and I
11 taped over the indicator lights on the dash. And his
12 instructions were to just unlock the -- the tag axle
13 cylinder whenever he chose to.

14 And in those runs, it was basically
15 similar -- similar to this where the -- the response of
16 the vehicle was -- was very stable, controllable. You
17 could kind of detect when it was -- when it occurred,
18 there was a vagueness in the -- the feel -- feeling of the
19 vehicle, a vague steering feel; but essentially it was a
20 -- a -- not a very dynamic event.

21 Q. What differences, if any, did you notice in the
22 controllability of the bus in the situation where the tag
23 axle unlocking was a surprise versus when it was not?

24 A. Really, there was not a dramatic difference. The
25 -- the controllability was -- was -- was fine. There was

0042

1 nothing dramatically dynamic about the event. It was kind
2 of a nonevent.

3 Q. Tell us what we're going to watch next.

4 MS. RODRIGUEZ: Objection, form.

5 A. Well, the next sequence of tests are -- are not
6 dynamic unlocks. These are tests where I came in and
7 performed the tests with the -- with the steering either
8 locked or unlocked. So, I repeated the tests in both
9 conditions.

10 The -- the test that we're looking at here is
11 -- is a high-speed lane change. So, this is a --
12 nominally a 70-mile an hour lane change on the -- the
13 Uvalde main track.

14 And the first one we'll look at here is with
15 the tag axle steering locked. So, that's what you would
16 call the bus operating under normal conditions. It's a
17 level of lane change that if you saw it on the freeway,
18 you would be -- you would be surprised that a coach was --
19 was doing that movement on the freeway.

20 Q. (BY MR. CRAFT) What kind of steering inputs, in
21 terms of -- if you can quantify it, are you offering both
22 to the right and the left during these tests?

23 MS. RODRIGUEZ: Objection, form.

24 A. I think the -- the peak steering input on these

25 runs is about 74, 75 degrees. That would be consistent
0043

1 with what I would call a -- a moderate lane change.

2 Q. (BY MR. CRAFT) All right. Now, this next
3 series, it says, steering unlocked. Tell us what that is.

4 A. This is basically a repeat of the -- the previous
5 test process, but now this is with -- as you can see with
6 the light there, this is with the tag steering unlocked.

7 Q. And again, as we observe the right-hand and the
8 left-hand turns, can you quantify for us, if at all, the
9 amount of steering input you offered either to the right
10 or the left?

11 A. It's similar to the -- the locked runs. I think
12 74 degrees is the -- is the peak. There's a -- a
13 side-by-side comparison of steering after these that's --
14 that would give you an idea of -- of how the steering
15 inputs compare.

16 Q. All right. And again, what are we watching here?

17 A. This is a view of the -- the steering lock
18 cylinder on the tag axle. And you can see that it's
19 unlocked by the indicator light, and then you can also
20 confirm that it's unlocked by the motion of the tag axle
21 tie rod.

22 Q. All right. Now, you talked about the comparison.
23 Set us up here.

24 A. The comparison --

25 MS. RODRIGUEZ: Objection, form.

0044

1 A. -- is really just looking at the two previous
2 tests that we watched. So, this is a comparison of driver
3 inputs for the -- for the lane change.

4 This one's going to be a view of the chase
5 vehicle -- or from the chase vehicle. So, this is what
6 you see behind the vehicle looking at the -- the lane
7 change that we just looked at.

8 Q. (BY MR. CRAFT) All right. And that was
9 comparing the response of the vehicle to similar steering
10 inputs, one with the tag axle locked and one with it
11 unlocked?

12 MS. RODRIGUEZ: Objection, leading.

13 A. One with it locked and one with it unlocked,
14 correct.

15 Q. (BY MR. CRAFT) All right. Did you notice any
16 demonstrable differences, if any at all, in the
17 controllability of the bus with the locked tag axle versus
18 the one with the unlocked tag axle?

19 A. Well, like I mentioned before, there -- there's a
20 noticeable difference in the sense that there's a -- a
21 different feel to the coach. There's a vagueness in the
22 steering.

23 There's a -- a different feel for the coach
24 as you're doing these steering maneuvers, but in general
25 the -- the controllability is -- is notably -- I'm looking

0045

1 for the right word. The -- the vehicle remains
2 controllable or it remains stable in either condition.
3 I'd say the two are very comparable. As you
4 can see from the video, and then you can also confirm with
5 the testing, the maneuverability and the controllability
6 are comparable.

7 Q. All right. Were there any other observations
8 that you made as a result of the dynamic testing that you
9 did at the Uvalde Proving Grounds?

10 A. Well, I also did some additional tests that are
11 documented here. Those tests would include like a low
12 speed maneuverability just to evaluate and confirm the
13 function of the -- the tag axle on this coach; meaning I
14 did low speed maneuverability, basically doing a Figure 8
15 with the -- the test coach.

16 And I did that with both the tag axle
17 steering locked and with it unlocked. And so, I confirmed
18 that operation. In the video, the raw video footage, I
19 also confirmed that the -- the casting of the tag axle
20 system was functional. Meaning when it was placed in
21 reverse, the -- the caster latch switched positions and
22 the tag axle functioned appropriately for reverse as well
23 as forward -- forward travel.

24 Q. Okay. Again, are the results of that testing and
25 the documentation, where are they here? Have they been
0046

1 provided?

2 A. Sure. Everything has been provided in the -- the
3 test data binder that we have here, as well as all of the
4 raw footage, all of the raw data.

5 Q. All right. Did you do any other testing in this
6 case in a laboratory setting?

7 A. I did. I did a test of a -- an axle on a fixture
8 that I put together for that purpose.

9 (Exhibits 11 through 13 marked)

10 Q. (BY MR. CRAFT) Let me hand you Exhibits 11, 12
11 and 13. Tell -- tell us what those are, please.

12 A. Okay. The -- Exhibit 11 is labeled as photos
13 from the -- the lab tests -- my lab tests. Exhibit 12 is
14 labeled the video from that lab test. And then Exhibit 13
15 is a data plot with the data results from that lab test.

16 Q. Now, Mr. Granat, if I call this lab testing is
17 that --

18 A. That's -- that's fine.

19 Q. Okay. All right. Tell us what you were looking
20 for. Why did you do this?

21 A. Okay. Part of the -- the -- the information that
22 we discussed earlier was I was looking for a large impact
23 force that would have bent the tag axle, as -- as I
24 understand the theory from -- from other experts in the
25 case.

0047

1 And I did not see large impact damage on the
2 tie rod itself. So, I was trying to evaluate when in the

3 -- in the entire sequence of events we would have impact
4 level forces that would have bent the tie rod. And, of
5 course, the tie rod can be bent in the -- in the way it --
6 that it is in our subject crash through compressive
7 loading.

8 And what I've done here is I've -- I've
9 simulated the -- the forces that this tag axle wheels --
10 the tag axle wheel would -- would undergo as the vehicle
11 is approaching its rest position.

12 And if you go through the police photographs,
13 you'll see heavy furrowing from the -- the rear portion of
14 the bus due to this tire interacting with the -- the soil.

15 I say this tire. This is the -- the view
16 that we're looking at here, the -- the front of the coach
17 would be toward the bottom of the screen. So, the -- the
18 white wheel that you see on the left side of the screen,
19 that would actually reflect the right rear or the right
20 tag axle tire.

21 And then, I'm applying a force to that tire
22 in the longitudinal direction that would be consistent
23 with that tire and wheel hitting the soil in the median --
24 median and furrowing in, and then wanting to twist that
25 tire about its steer axis in this direction.

0048

1 Q. All right. Now, if we look at the video taken
2 from Exhibit 12, would that help you or aid you in
3 explaining your testing to the Jury?

4 A. Sure.

5 Q. All right. I'm going to hit play. Walk us
6 through what's happening, what you're looking for --

7 A. Okay.

8 Q. -- observations you might be making.

9 A. Sure. This -- in this test you can see to the
10 left of the screen there's a small, yellow cylinder.
11 That's a hydraulic cylinder that's applying a force to the
12 -- the right tag axle wheel.

13 And that force is -- is being applied such
14 that it's in the same direction as a ground induced force
15 would be on that wheel and tire. And it's rather slow
16 movement. I don't -- do you have the audio on?

17 Q. I do.

18 A. Okay. There you go. That sound is the -- the
19 hydraulic pump. So, you'll see the -- the -- the right
20 wheel moving, and then you'll hear a -- a click after a
21 while, and that's where the latching plate on the tie rod
22 shifts relative to the latching pin. And if we can pause
23 it at that point --

24 Q. Sure.

25 A. I'm -- continue there.

0049

1 Q. Okay.

2 A. Okay. Pause it right here. This -- I think we
3 actually missed, in the pause, the -- the shifting of the
4 plate.

5 Q. Let's go back and look at it.

6 A. There you go. That -- that shifting of the plate
7 there is consistent with a forward motion of the -- the
8 locking plate that's mounted to the tag axle tie rod. And
9 that shifting there produced physical evidence on the
10 locking plate at the rear of the locking plate slot.

11 And those marks are of the -- the dimension
12 of the locking pin that would have produced a forward
13 force on the locking pin; and at that point it produced
14 two gouges on the -- the rear-most portion of that slot.

15 And as you can see in the video at this
16 point, you can see the -- the bending of the tie rod and
17 -- actually, just leave it paused here. The bending of
18 the tie rod is -- from this view, it's to the left of the
19 -- the latching plate assembly.

20 And it's bowed forward in the -- in the
21 similar manner that we have in our test -- or in our
22 subject coach. And the -- the force that we've reached at
23 this point is about 16,000 pounds of -- of force on that
24 right tag axle tire.

25 And then beyond that, the force basically

0050

1 drops off. I continue going, but it's -- it's beyond what
2 I think the -- the subject coach would have experienced.
3 So, for all practical purposes, I -- I consider this to be
4 the end of the test.

5 Q. What observations, if any, were you able to make
6 from this test that play in to your opinions, if they do,
7 in this case?

8 A. Well, the -- the impact force that the coach
9 would have experienced as it goes in to the -- the median
10 soil -- and this is as the -- the rear end -- the right
11 rear surface of the coach is rear leading up in to the
12 opposing slope of the median -- that force is directed
13 properly and of the -- the appropriate magnitude to create
14 bending that we see in the tie -- tie rod. And then, it
15 will also create the gouging that we see on the tie rod
16 latching plate.

17 Q. Do you have an understanding or an opinion as to
18 whether or not there would have been a force equivalent to
19 16,000 pounds placed on that tie rod or the tag axle at
20 any time in this accident sequence?

21 MS. RODRIGUEZ: Objection, leading.

22 A. The -- the likely occurrence of that kind of
23 level of force is going to be an impact level force. And
24 so, that's going to be consistent with impact in to the
25 median soil. And it's really the only opportunity that

0051

1 you get a -- a force directed in this direction that's
2 consistent with -- with the level of force that we would
3 expect to see on the side of the vehicle as it goes into
4 the -- the median soil.

5 Like I said, it's 16,000 pounds. The coach
6 weight is on the order of 45,000 pounds. So, we're --

7 we're looking at, roughly speaking, a third of a G, which
8 is -- is less than what you would expect for a furrowing
9 like we see.

10 Q. (BY MR. CRAFT) Okay.

11 A. And that furrowing is shown in the -- in the
12 police photographs very clearly.

13 Q. Have we covered all of your observations that are
14 relevant to your opinion as a result of the lab testing?

15 A. I think so.

16 Q. Have you done any analysis of peak steering
17 inputs, and the opinions regarding the same that have been
18 offered by experts working on behalf of lawyers for
19 Americanos in this case?

20 MS. RODRIGUEZ: Objection, form.

21 A. I have.

22 Q. (BY MR. CRAFT) All right. Is there anyone in
23 particular whose peak steering input calculations you have
24 analyzed?

25 A. Well, I analyzed a couple of different steering

0052

1 inputs, because the -- the steering that is applied to the
2 coach is obviously important in understanding the dynamics
3 of the coach.

4 The -- the two different sets of steering
5 that I analyzed would relate to the -- the reconstruction
6 done by Mr. Fugger, and his simulation with HVE; and then
7 also I analyzed the steering that was applied by Mr. Yohe
8 in a test coach in the -- the testing that was done at the
9 -- the Bosch facility in Indiana.

10 Q. All right. Let's talk about Mr. Fugger for a
11 minute. Tell us who he is.

12 A. Well, he's, as I understand it, an engineer that
13 reconstructed the subject crash, and analyzed the -- the
14 evidence that we see in police photographs.

15 And he created a simulation using a computer
16 program to determine the -- what he considers to be the
17 motion of the vehicle throughout the crash.

18 Q. Now, Mr. Fugger, who was he hired by, to your
19 understanding?

20 A. I understand that he was hired by attorneys
21 representing Americanos.

22 Q. All right. Is he one of the ones that ended up
23 not getting designated or was he designated?

24 A. I -- I don't recall the designation. I know he
25 provided a report, but I -- I don't recall.

0053

1 (Exhibits 14 and 15 marked)

2 Q. Okay. Tell us what Exhibit 14 is, please, sir.

3 A. Sure. Exhibit 14 is a comparison of some of the
4 different steering inputs that -- that have been applied
5 to -- to coaches in the subject -- subject matter that
6 we're here for.

7 And then, also a comparison with some of the
8 expected steering based on driver input studies performed

9 by the National Highway Traffic Safety Administration.

10 Q. If I can, let's put Exhibit 14 up on the Elmo,
11 and let you walk us through it in terms of what you're
12 trying to demonstrate.

13 A. Sure.

14 MS. RODRIGUEZ: Objection, form.

15 A. What's shown in this chart is simply the -- the
16 peak steering input that -- that occurs in several
17 different maneuvers or reconstructions.

18 So, what I've got on here in -- in orange,
19 that is the -- the peak steering input that would be
20 applied in Mr. Fugger's HVE simulation.

21 The HVE simulation actually doesn't have any
22 sort of steering wheel, or steering column, or any of that
23 combined of modeling in there. So -- so, actually
24 Mr. Fugger inputted nine degrees of steering at the road
25 wheels. And the number 232 here comes from just simply

0054

1 multiplying that 9 degrees by the steering ratio. So,
2 I've got Mr. Fugger's reconstruction input.

3 And this is -- this peak steering input would
4 be to the left, and it would be the -- the steering input
5 that takes the -- according to Mr. Fugger, that takes the
6 coach from the right shoulder across the travel lanes and
7 in to the median.

8 Q. All right.

9 A. And then there are other columns in blue on here.
10 The -- the next two, the 99 and 94, are steering angles
11 that are applied during the testing by Mr. Yohe at the --
12 the track in Indiana. And those are based on my analysis
13 of the photographs -- I'm sorry -- the video of the
14 driver's steering inputs.

15 The next column would be the peak steering
16 input applied during the lane change maneuvers that I -- I
17 just showed you on the video. And that would be -- you
18 know, at 70 miles per hour, that would be dynamically down
19 -- basically down what's similar to a highway in
20 performing a high-speed lane change.

21 And then the final bar -- final column there
22 is a number reflecting the average steering input that
23 drivers choose to put in if they are in a -- an emergency
24 avoidance maneuver. And that's based on a study by -- by
25 NHTSA. The study was authored by Mazzae.

0055

1 MR. CRAFT: All right. Let's take a break,
2 if we can, for just a minute. We need to flip-- flip
3 tapes, and we'll go back, okay?

4 VIDEOGRAPHER: We're off the record at 10:44,
5 end Tape 1.

6 (Recess from 10:44 a.m. to 10:51 a.m.)

7 VIDEOGRAPHER: We're on the record at 10:51,
8 start of Tape 2.

9 Q. (BY MR. CRAFT) Mr. Granat, just before we took
10 a break, we were on Exhibit 14. In summary, tell us, if

11 you can, what you're attempting to depict by creating
12 Exhibit 14?

13 A. Well, I'm trying to show basically the different
14 steering inputs that -- that have -- different folks have
15 either used or -- or -- or calculated in the subject
16 matter.

17 And I'm trying to compare the steering input
18 that Mr. Fugger indicates the driver inputted to the
19 vehicle to the left while on the roadway. And that is
20 obviously 230 degrees.

21 And I'm trying to contrast that with the
22 steering that was applied by Mr. Yohe at the test track;
23 and then also contrast that with the steering that's
24 required to do a lane change at 70 -- 70 miles an hour.

25 And then, in general, contrast that further

0056

1 to what's the typical driver response steering in a
2 passenger car.

3 And basically the -- the conclusion I derive
4 from this is that the -- the steering to the left was --
5 was certainly excessive. It was a substantial steer input
6 to the left. And that's -- that, coupled with the
7 substantial brake input, is a cause of the loss of
8 control.

9 Q. Okay. I'm going to put up on the board, if I
10 can, Exhibit 15. Tell us what we're looking at there.

11 A. Okay. Exhibit 15 -- did you say 15?

12 Q. Yes, sir. I'm sorry. 15, 1-5.

13 A. 15 is a very similar chart. And in this chart,
14 I've -- I've basically speed normalized the steering
15 inputs. And by that I mean a lot of these steering inputs
16 were done at 45 to 50 miles per hour.

17 The -- the NHTSA study was -- was 45 miles
18 per hour and it's shown on the right column. The inputs
19 supplied by Mr. Yohe were 40-- 49 miles per hour. And
20 then the -- the reconstruction -- reconstruction by
21 Mr. Fugger was at 70 miles per hour.

22 So, what I've done is I've done a -- a
23 vehicle dynamics calculation to figure out, since
24 sensitivity changes with speed, what is the equivalent
25 steering input at 45 miles an hour, what's the equivalent

0057

1 to this 230 degrees at 70 miles per hour. So, I've tried
2 to --

3 MS. RODRIGUEZ: Objection, nonresponsive.

4 A. -- normalize these relative to the speed of
5 vehicle.

6 Q. (BY MR. CRAFT) Sure. And what have -- what
7 conclusions have you drawn or demonstrated on Exhibit 15?

8 A. It just exacerbates the -- the level of steering
9 input that was applied to the left.

10 Q. By the driver of the motor coach in our case?

11 MS. RODRIGUEZ: Objection, leading.

12 A. Correct.

13 Q. (BY MR. CRAFT) By whom?

14 A. By the driver of the -- the coach.

15 MR. CRAFT: Difference between being a trial
16 lawyer and a depo lawyer.

17 MS. RODRIGUEZ: Object to side-bar.

18 (Exhibits 16 and 17 marked)

19 Q. (BY MR. CRAFT) All right. In addition to the
20 steering analysis and the other work that we've talked
21 about that you've done in this case, did you take the
22 opportunity to visit the scene?

23 A. I did.

24 Q. I'm going to hand you what I've marked as 16 and

25 17. Can you tell me what those are, please, sir?

0058

1 A. No. 16 is a disk that is labeled with my scene
2 inspection photographs. And then No. 17 is a printout of
3 the notes that I took from my scene inspection.

4 Q. All right. Tell us what you did while you were
5 out at the scene.

6 MS. RODRIGUEZ: Objection, form.

7 A. At the scene, I -- I walked through the area. I
8 located the area based on the documentation by the police
9 officers. I walked through the area, and basically took a
10 -- a view of the -- the scene. Noted that it's a downhill
11 section of roadway. It curves to the right.

12 I noted some of the -- the evidence from the
13 subject crash still out there at the scene. I took
14 photographs to document what I saw out there.

15 Basically -- I'm not doing reconstruction, so
16 I didn't do what I would normally do in a -- in a detailed
17 reconstruction sense; but I went through the scene and
18 then tried to understand the layout of the roadway, the --
19 the configuration of the -- the road surface, and then,
20 also, the -- the configuration of the median and the --
21 and the nature of the median soil.

22 Q. (BY MR. CRAFT) All right. From your
23 observations and your work in this case, have you been
24 able to determine whether or not there were any steering
25 inputs offered by the driver of this bus after the U-joint

0059

1 failure?

2 MS. RODRIGUEZ: Objection, form.

3 A. Well -- sure. The -- the bus -- bus was
4 basically steered to the right. And -- and then, as it
5 traveled on the outer shoulder -- or the -- the right side
6 shoulder of the roadway, then the -- the driver steered
7 back to the left.

8 And that's -- that's based on just
9 understanding of the -- the motion of the vehicle during
10 the crash; and then that's -- that would be confirmed by
11 other engineers working on the -- on this matter,
12 including Mr. -- Mr. Fugger.

13 (Exhibits 18 and 19 marked)

14 Q. (BY MR. CRAFT) All right. I'm going to hand

15 you what I've marked as 18 and 19. Can you tell me what
16 those are please, sir?

17 A. Sure 18 is a CD with exemplar vehicle inspection
18 photographs that I took. And then 19 is the corresponding
19 notes that I took from that exemplar inspection.

20 Q. Why did you examine or inspect an exemplar?

21 A. This is the coach that I actually ended up using
22 as a test vehicle. So, I inspected this coach to
23 understand its configuration, its condition; and then
24 specifically I looked at the tag axle on the coach to try
25 to determine if it would be suitable to use as a test

0060

1 vehicle.

2 Q. Did you make a determination as to whether or not
3 it was an acceptable bus for testing?

4 A. It was acceptable. I had the -- the service
5 folks at the facility -- this is -- this was in
6 Loudonville, Ohio. I had them do some work on the coach
7 to make sure everything was working as -- as -- at design
8 intent.

9 (Exhibits 20 and 21 marked)

10 Q. (BY MR. CRAFT) All right. Let me hand you 20
11 and 21. Tell us what those are please, sir.

12 A. 20 and 21 are my inspection photographs. That's
13 20 on a disk, and then 21 are my inspection notes from
14 inspecting several of the components involved.

15 This inspection was done at a facility in
16 Chicago, and it involved inspecting the -- the tie rod
17 mounted locking plate, the air -- air cylinder and its
18 adjacent mounting plates, and then the cylinder itself and
19 its locking pin.

20 (Exhibit 22 marked)

21 Q. (BY MR. CRAFT) All right. What is Exhibit 22?

22 A. 22 appears to be a copy of my report that I
23 authored in this case.

24 Q. What was the date that you authored your report?

25 A. It was submitted August 11th, 2011.

0061

1 Q. All right. Your report contains, I guess, a
2 number of opinions that you've reached in this case. Is
3 that accurate?

4 A. Yes.

5 Q. You're welcome to refer to No. 22, but you
6 certainly do not have to. Mr. Granat, do you have an
7 opinion in this case as to whether or not the tag axle
8 became unlocked during, at any time, this crash sequence?

9 A. I do. And that opinion is that it's -- it's more
10 likely that it came unlocked during its interaction in the
11 median soil.

12 Q. All right. And when we're talking about
13 interaction with the median soil, I want to put a
14 photograph, if I can, up on the Elmo. This is a police
15 photo. It appears to be an overhead shot. You agree with
16 that?

17 A. Yes.

18 Q. When you're talking about interaction with the
19 median -- I tell you what, take this purple marker and
20 give us an idea of the general area where you believe it
21 is most likely that the tag axle became unlocked?

22 A. (Witness complied). Basically, I'm just going to
23 circle the vehicle at its point of rest, because the --
24 the motion of the vehicle, for the last short section of
25 travel -- you know, maybe on the order of five to

0062

1 ten feet -- that motion of the vehicle is going to be
2 consistent with the -- the -- the large impact force
3 that's applied to the -- the right side tag axle tire.

4 (Exhibit 23 marked)

5 Q. (BY MR. CRAFT) All right. And I'm going to
6 mark the photograph that you have put a purple circle on
7 as Exhibit 23. Is that correct, sir?

8 A. Uh-huh.

9 Q. Okay. And if we can, backing out, as we move
10 from the bottom to the top of this photograph, we're
11 moving downstream in the direction of the accident
12 sequence?

13 A. Correct.

14 Q. Where you have circled in purple, is that before
15 or after evidence of skid markings?

16 A. That's downstream of the -- the skid marks. So,
17 that's after.

18 Q. All right. Now, you stated earlier that you
19 believe there was a right-hand steer followed by a
20 left-hand steer. Did I understand you correctly?

21 A. Correct. That's at least based on the physical
22 evidence that we have on the roadway. There may have been
23 additional steers prior to that.

24 Q. All right. With respect to the evidence that's
25 on the roadway and what you can say for certain, if you

0063

1 can generally indicate to us with this purple marker on
2 Exhibit 23 where you believe there is evidence showing a
3 right-hand and a left-hand steering input.

4 A. Just -- well, the -- the right-hand steer input
5 would start near the bottom of the -- the image.
6 Actually, the beginning of the -- the tire marks at that
7 point are going to be below the edge of the photograph.
8 And then that continues up to where we have it looks like
9 a police vehicle off on the right side of the road. So, I
10 would call this the right steer (indicated). And then the
11 left steer is downstream of that (indicated). So, I've
12 labeled those "right" and "left."

13 Q. All right. Now, if we look at Exhibit 23, you
14 have drawn two brackets, one at the bottom of the page on
15 the roadway entitled "right," and that is I believe
16 indicative of the right-hand steering input, you said?

17 A. Correct.

18 Q. And then above that is the left-hand steer input,

19 correct?
20 A. Correct.
21 Q. If we are moving in terms of the accident
22 sequence, is it fair to say that you believe -- physical
23 evidence shows, more likely than not, that the tag axle
24 became unlocked after the right-hand steering input?
25 MS. RODRIGUEZ: Objection, form -- form and
0064

1 leading.
2 A. It would be subsequent to the right-hand steer
3 input.
4 Q. (BY MR. CRAFT) All right. As we look at this
5 photograph, can you tell us in relationship to the
6 right-hand steering input when you believe the tag axle
7 became unlocked?
8 A. On the right-hand steering input?
9 Q. Yes.
10 A. No, it would be subsequent to that --
11 Q. Okay.
12 A. -- so it wouldn't be during that.
13 Q. Same question with respect to the left-hand
14 steering input?
15 A. It would be subsequent to that, also.
16 Q. All right. As we look at Exhibit 7, and we see
17 some of the skid marks that you talked about earlier -- do
18 you remember discussing this?
19 A. Yes.
20 Q. As we talk about some of the first skid marks
21 left by the bus in this case, is -- is there a way to
22 locate where that would be on Exhibit 23?
23 A. Sure. That would be during the right-hand steer
24 down near the -- right where the word "right" is in
25 that -- in that general area.

0065
1 Q. So, when we're looking at Exhibit 7 and these
2 skid marks, we're talking about in the general area where
3 the word "right" appears?
4 A. Correct. Those -- those marks in that area would
5 be the -- the heavy braking; toward the -- toward the end
6 of the right steer is where we would have actual lockup of
7 that -- the drive axle.
8 Q. With respect to this brake application sufficient
9 to cause skid marking, did that occur before, after, or
10 during the time of the initial right-hand steering input?
11 A. During.
12 Q. And did that braking that left skid marks
13 occurring simultaneously with the right-hand steering
14 input occur before or after the tag axle became unlocked?
15 A. That would be before.
16 Q. How long before?
17 A. I don't have a -- a quan-- quantity for that; and
18 it would be -- I would have to defer to reconstruction to
19 figure out the time or the distance there.
20 Q. All right. And we can agree, I guess, by looking

21 at this, that the left-hand steering input was subsequent
22 to the simultaneous skid-mark leaving brake application
23 and right-hand steering input?

24 MS. RODRIGUEZ: Objection, leading.

25 A. Correct.

0066

1 Q. (BY MR. CRAFT) Okay. Let's back up. Can you
2 give me an idea of whether or not the left-hand steering
3 input occurred before, during, or after the simultaneous
4 heavy brake input and steer to the right by the driver of
5 this bus?

6 A. The left-steer input would be after the
7 right-steer input.

8 Q. Do you have an opinion in this case as to whether
9 or not the disengagement of the tag axle on the subject
10 bus caused a loss of control in this vehicle?

11 MS. RODRIGUEZ: Objection, form.

12 A. No, based on the testing -- well, I should say I
13 do have an opinion. But based on the testing that I've
14 performed, I don't believe that the -- the tag axle
15 steering becoming unlocked would cause a loss of control
16 in and of itself.

17 Q. (BY MR. CRAFT) All right. Have you reached an
18 opinion in this case as to whether or not the tag axle
19 system on the MCI 102DL3 is appropriate in design?

20 A. I have. And that -- that opinion is that it is.

21 Q. All right. Do you have an opinion on whether or
22 not the tag axle system on the MCI 102DL3 is appropriate
23 in manufacture?

24 A. From everything that I looked at, it -- it's
25 appropriate in manufacture.

0067

1 Q. With respect to this subject coach?

2 A. Certainly with everything I looked at, yes.

3 Q. All right. Do you have an opinion, in this case,
4 as to whether or not the tag axle system on the MCI 102DL3
5 in this case was appropriate in function?

6 A. Same as the previous; yes, that it was
7 appropriate in function.

8 Q. All right. Have you seen reports and deposition
9 testimony by experts working on behalf of lawyers
10 representing Americanos that address the appropriateness
11 of -- of either the design or manufacture of the tag axle
12 system?

13 A. I have.

14 Q. And what is your understanding about what lawyers
15 working for -- excuse me.

16 What is your understanding about what
17 experts, working for Americanos, have said about the
18 design and manufacture of the tag axle steering system on
19 the MCI 102DL3?

20 A. Regarding the design and manufacture, I don't
21 recall seeing any opinions directly related to
22 manufacture.

23 My understanding of the design criticisms is
24 that the -- the -- the driveshaft would have impacted the
25 tie rod on the tag axle with enough force to dislodge the
0068

1 -- the tie rod from its locking plate, and enough force in
2 a downward and forward direction to bend the tie rod.

3 And that is my -- that -- my understanding is
4 that is the -- the initial understanding of the -- the --
5 those experts. And that that was coupled with a -- an
6 impact or some sort of a undetermined force that also
7 impacted the tie rod, and pushed it to the -- to the side
8 and creating a steer input. So, that's my understanding,
9 their criticism of the design of that.

10 Q. All right. If you were a bus company and your
11 experts in litigation had opined that you were utilizing
12 buses with a design defect, would you continue operating
13 and selling tickets to consumers to ride on those buses?

14 MS. RODRIGUEZ: Objection, form, leading.

15 A. Well, that's not really my area as an engineer.
16 So, that's, you know, something that I don't have an
17 actual engineering opinion of.

18 Q. (BY MR. CRAFT) If you believed that there was a
19 bus that was defective in design, would you put your
20 loved ones on that to take a road trip?

21 A. No.

22 Q. Why not?

23 A. Well, it's common sense in that sense. I mean,
24 there's -- if there's a risk, then -- then you -- you
25 don't get on it.
0069

1 Q. You don't put people on there because their lives
2 are at risk?

3 A. Right.

4 MS. RODRIGUEZ: Objection, leading and form.

5 Q. (BY MR. CRAFT) Do you have an opinion as to the
6 cause of this crash?

7 A. My opinion as to the cause of the crash is that
8 the coach initially underwent a driveshaft U-joint
9 separation, and as a response to that, the driver applied
10 heavy braking at some point -- at several points,
11 achieving locked wheel skids, and simultaneously applying
12 heavy steering inputs or -- or large magnitude steering
13 inputs, and that ultimately led to a loss of control, that
14 led to the -- the coach going out of control into the --
15 the median soil and overturning.

16 Q. All right. Do you have an opinion as to whether
17 or not even with the U-joint separation in this case,
18 whether this eventual outcome was avoidable?

19 A. Well, my analysis, as well as review of the
20 testing that was performed by Mr. Yohe, indicates that the
21 movement of the tie rod as -- as Mr. Yohe's testing was
22 designed to do, doesn't lead directly to a loss of
23 control.

24 And it's only a loss of control when coupled

25 with extreme braking and -- and steering. So, my opinion
0070

1 is that it -- it doesn't lead to a loss of control in and
2 of itself. It's -- it's necessary to have driver input,
3 extreme braking and steering, to cause a loss of control.

4 Q. Do you have an opinion in this case, as to
5 whether or not even with the U-joint separation, this
6 crash should have been avoided?

7 MS. RODRIGUEZ: Objection, form.

8 A. Yeah. Based on the -- the testing that I
9 reviewed from Mr. Yohe, that's the -- the same opinion;
10 yes, that without -- or absent the -- the heavy and
11 extreme brake application and steering, then -- then there
12 is no loss of control.

13 Q. (BY MR. CRAFT) All right. Do you have an
14 opinion as to what could have been done, even in spite of
15 the U-joint separation, to prevent this tragedy?

16 A. Basically, it's -- it's a matter of less steering
17 input, less braking input. That means the -- I kind of
18 compare a -- a U-joint failure to other mechanical issues,
19 such as a -- a tire failure.

20 And the driver, in that situation, basically
21 reduces speed, takes their foot off the throttle, doesn't
22 apply the brakes, and brings the vehicle to a controlled
23 stop, then doesn't apply brakes until the vehicle is down
24 around 20 miles an hour or some much more manageable
25 speed.

0071

1 And then clear -- clearly, that's also
2 coupled with not providing or not inputting dramatic
3 steering angles at the same time.

4 MS. RODRIGUEZ: Objection, nonresponsive.

5 Q. (BY MR. CRAFT) Let's go back to Exhibit 23 for
6 just a second. And you have circled for us where you
7 believe the general area is where the tag axle became
8 unlocked in this wreck, okay?

9 A. Right.

10 Q. I want you to assume, hypothetically, with me for
11 just a second that the Jury chose to believe that the tag
12 axle became unlocked somewhere upstream of where you have
13 indicated that it did, okay?

14 A. Uh-huh.

15 Q. Even with the tag axle becoming disengaged at
16 highway speeds, do you have an opinion as to whether or
17 not this accident was avoidable?

18 A. Well, sure. And -- and I understood that to be
19 the theory by certain experts in the case; and so, I
20 evaluated that specifically with my testing in Uvalde.
21 And that shows that when you lock -- when you unlock the
22 steering dynamically at -- at highway speeds, it's not a
23 dramatic event.

24 The vehicle remains controllable. You can
25 steer it, you can brake it, you can change lanes. Well, I

0072

1 shouldn't say you can brake it; you can apply the brakes
2 and you can change lanes.

3 Likewise, I analyzed the -- the testing by
4 Mr. Yohe, and concluded from that that basically the same
5 conclusions can be drawn in that if you force the steering
6 over as -- as -- as they did in their testing, if you do
7 not apply the brakes aggressively and steer aggressively,
8 then the vehicle remains controllable, and it's basically
9 a benign event.

10 If you, however, apply the brakes heavily and
11 steer, you can -- you can basically place the vehicle out
12 of control and create a -- a dramatic level of sideslip,
13 such as we have in the -- the -- the last sequence of this
14 crash, and then also such that we see in the -- the
15 testing by Mr. Yohe.

16 Q. All right. Now, assuming the same hypothetical
17 with me for just a second that adopting the theories
18 afforded by some of the experts in the case that the tag
19 axle became unlocked somewhere upstream of where you've
20 indicated, okay?

21 A. Uh-huh.

22 Q. Even assuming that, do you have an opinion in
23 this case as to whether or not this incident should have
24 been avoided by the driver?

25 A. Well, assuming that, yes, the -- the conclusion
0073

1 from both of the -- those types of testing, the -- the
2 testing that I did and the testing that Mr. Yohe did, the
3 conclusion from both of those is that if you don't apply
4 the brakes aggressively, and you don't steer aggressively,
5 then the -- the crash is avoidable.

6 Q. All right. You have brought with you a hard
7 drive today.

8 A. Right.

9 Q. Tell us, is this hard drive inclusive of all of
10 the materials that we've requested you bring here with you
11 today that are support of your opinions in this case?

12 A. Right. That's the entire file. I will say that
13 that is without the raw video footage that was provided
14 earlier just because it wouldn't fit.

15 Q. Okay.

16 A. So, that's already been provided. This is
17 everything with the exception of that other raw video.

18 Q. All right. Now, is this a copy I can mark or is
19 this your original?

20 A. That is a copy you can mark.

21 Q. Okay.

22 (Exhibit 24 marked)

23 Q. (BY MR. CRAFT) Then I am going to mark your hard
24 drive as Exhibit 24 with the caveat that it's your file
25 materials minus the raw video that you referenced that was
0074

1 produced earlier, correct?

2 A. Correct.

3 Q. Mr. Granat, you have offered a number of opinions
4 today, have they been based upon your education, training
5 and experience, in addition to your work in this case?

6 A. They have.

7 Q. All right. Have you opined or provided your
8 opinions to a reasonable degree of scientific certainty in
9 this case?

10 A. I have.

11 MS. RODRIGUEZ: Objection, form and leading.

12 A. I have.

13 MR. CRAFT: What I want to do now is I'm
14 going to pass you on, and let some of the other lawyers
15 ask you some questions, but I appreciate your time today.

16 THE WITNESS: Thanks.

17 MS. RODRIGUEZ: Anybody on the phone?

18 MS. DORMAN: Tom Bullion.

19 MS. RODRIGUEZ: Mr. Bullion, do you have
20 questions?

21 MR. BULLION: No, I don't have any right now.

22 MS. RODRIGUEZ: Mr. Granat, do you need a
23 break or are you ready to start back up?

24 THE WITNESS: I'm ready.

25 MS. RODRIGUEZ: Okay.

0075

1 EXAMINATION

2 BY MS. RODRIGUEZ (11:15):

3 Q. Mr. Granat, my name is Tamara Rodriguez and I
4 represent Ms. Morado, Americanos, and Greyhound. You
5 understand that, right?

6 A. I do.

7 Q. We've actually met a couple of times before in
8 connection with this lawsuit, just being at different
9 inspections and that sort of thing, correct?

10 A. That's correct.

11 Q. All right. If you do not understand any of my
12 questions, will you agree to let me know?

13 A. I will.

14 Q. I'm going to start off with just some
15 housekeeping matters and follow up to some of
16 Mr. Craft's -- I think that's his last name -- Mr. Craft's
17 questions, okay?

18 A. Okay.

19 Q. Let's talk about, first of all, the hard drive
20 which I believe he marked as Exhibit 24, correct?

21 A. Correct.

22 Q. I may go through and mark some individual things,
23 just so we can talk about them individually, but I wanted
24 to make sure I understand. Exhibit 4 represents
25 everything that we see on the table, that deposition

0076

1 folder over there, everything you brought with you, your
2 file today, except for the raw video of your test track
3 testing, correct?

4 A. Right. I think you said Exhibit 4 but this is

5 24.

6 Q. 24. I apologize.

7 A. Let me -- let me explain the -- where there's
8 overlap and where there's not, just to make it clear,
9 okay?

10 Q. All right.

11 A. This is the complete file. What you'll see,
12 though, in the other -- the Redweld that we have over
13 there is highlighted depositions. And then the -- the
14 highlighted portions of those have been transcribed or
15 typed such that the -- the excerpts are in my project
16 binder as well as on this disk.

17 Q. Okay.

18 A. So, you know, you're not going to have the -- the
19 full printout of the deposition, but you're going to have
20 what's been highlighted. And then the full deposition
21 will -- will be there, as well. There are -- if I can
22 find my project binder --

23 MS. DORMAN: Yeah.

24 A. -- there are a couple of things in the front of
25 that that have been received or -- or looked at subsequent

0077

1 to the creation of the hard drive, and those are just in
2 this front tab here.

3 So, those are the only things that I think
4 are not on the hard drive. Everything else is in -- on
5 the hard drive in one form or another.

6 Q. (BY MS. RODRIGUEZ) All right. Let's go ahead
7 and mark what you just pulled out as Exhibit 25, please.

8 MS. RODRIGUEZ: Can you hand me the exhibit
9 stickers? I'm kind of far from him. Thank you.

10 (Exhibit 25 marked)

11 Q. (BY MS. RODRIGUEZ) Did you rely on anything
12 within Exhibit 25 in forming any of your opinions in this
13 case?

14 A. Let me take a quick look at that.

15 Q. You bet.

16 A. The first couple of pages are just additional
17 correspondence, so they're not of any interest. The --
18 the third page is just a Fed Ex tracking summary.

19 The next several pages I reviewed. I think
20 that's only in the sense that I need to do more review of
21 what that represents. And then, I guess, I do have some
22 opinions regarding what's in here as Exhibit 6 to Aaron
23 Jones' deposition. Other than that, no, that's just
24 general additional materials.

25 Q. Go ahead and keep that, because I'm going to ask

0078

1 you about your opinions on Exhibit 6 --

2 A. Okay.

3 Q. -- contained within 25. What additional opinions
4 do you have on -- or comments on that?

5 A. Well, I -- I reviewed Mr. Hoogestraat's
6 deposition, and there was some questioning regarding the

7 -- the calculations that are shown on -- on Mr. Jones'
8 Exhibit 6.

9 And so, I looked back through this exhibit to
10 try to understand what the calculation was. And
11 basically, I -- I went through and tried to evaluate what
12 he did and understand what he did, and see if it -- it has
13 any validity.

14 Q. Did -- what did you conclude?

15 A. Well, I concluded that this is a very idealized
16 type of analysis. I mean, it assumes some things that
17 aren't really happening based on review of the -- of the
18 -- some of the testing that was also provided, I believe,
19 with Mr. Jones' -- or no, with Mr. Hoogestraat's
20 deposition.

21 And basically this analysis that Mr. Jones
22 has done is an attempt to calculate the force associated
23 with a driveshaft that's spinning. And the -- spinning
24 and then free at one end, but constrained at the other
25 end.

0079

1 And the assumption that he makes is basically
2 that the -- the rotation of the driveshaft about its --
3 its original axis -- axis is -- is at the exact same
4 rotational rate as the spinning of the driveshaft itself.
5 And -- and I think that's not a valid conclusion.

6 The -- the motion of the driveshaft is more
7 chaotic than that. And the rotation about that original
8 axis is at a much slower rate than -- than the actual
9 spinning, rotational rate of the driveshaft itself.

10 So, I think the -- the general conclusion is
11 the -- the force estimate that he's got here is going to
12 be an overestimate.

13 Q. By how much?

14 A. I don't think you can quantify that directly, but
15 it -- you know, it's -- it's on the order of certainly
16 five times over.

17 Q. How do you reach the five times amount?

18 A. Well, in just reviewing the -- the footage that's
19 been provided recently -- and that footage -- footage is
20 purported to be a test of a driveshaft disconnecting at
21 the transmission end -- and that's captured by some still
22 images in -- in one of the portions of this exhibit.

23 In reviewing that video, you can see fairly
24 clearly that the rotational rate of the driveshaft is --
25 is greater than the spinning rate. And I -- I'm talking

0080

1 about two different rates here.

2 It's -- it's analogous to a -- a top. If you
3 have a top that you spin on a table, it will spin about
4 its spin axis, but then it will also have a -- a -- what's
5 called a precession rate that goes around that axis.

6 The -- the analysis by Mr. Jones assumes that
7 the spinning rate and the precess rate are the same; and
8 you can see through the video that they're not.

9 Q. Okay. Did you determine by how much the
10 rotational rate about the axis is slower than the spinning
11 rate of the driveshaft itself?

12 A. I attempted, in the -- the limited time that I've
13 had the -- the exhibit, I've attempted to -- to
14 qualitatively identify that and I know it's -- it's
15 significantly slower.

16 Unfortunately, I don't have documentation
17 regarding the frame rate of the -- the video, or the --
18 the spin rate of the driveshaft; so I'm missing a number
19 of variables that help me understand what the actual
20 rotational rates are in the test. So, I haven't -- I
21 haven't had enough information to evaluate that fully.

22 Q. Did you calculate the force with the driveshaft
23 spinning and free at one end and -- and attached at one
24 end?

25 A. I did not. And like I said, I think that's a --
0081

1 a very chaotic type motion and I don't think it's -- it's
2 well suited to -- to model that as a -- just a simple
3 spinning motion of the -- of the driveshaft around its
4 axis.

5 MS. RODRIGUEZ: Objection, nonresponsive
6 after the word "not."

7 Q. (BY MS. RODRIGUEZ) Now, you said that
8 Mr. Jones' analysis in Exhibit 6 assumes that some
9 things -- assumes some things that actually are not
10 happen -- happening. What were you referring to?

11 A. Well, primarily, I'm referring to what we just
12 discussed. The other thing, there is just some -- some
13 things that I don't understand in his -- his analysis
14 here, meaning he's got a radial offset that he uses for
15 the driveshaft, and apparently that's at the center of
16 gravity of the drive shaft.

17 So, that would be roughly the mid point of
18 driveshaft. And his value for that is four inches. Which
19 means the other end of the driveshaft, which was
20 previously connected to the transmission, that end would
21 be traveling on a radius -- at the center of that shaft,
22 it would be traveling on a radius of eight inches, which
23 means we're at a diameter of 16 inches.

24 The -- the portion of the motion that he's
25 trying to -- to calculate this force for is while the --
0082

1 the driveshaft is in the latch arm assembly. And that
2 latch arm assembly has a -- a spacing or a radius down
3 there in the radial part that is about 13 and a half
4 inches.

5 So, getting the center of the driveshaft
6 moving about a 16-inch circle is -- just doesn't make
7 sense when you have a 13-inch circle that it would be
8 moving in, meaning the center of that is going to be
9 moving closer to, you know, perhaps an 11-inch circle.

10 Which means our radius ends up being much -- much smaller.

11 Q. Well, you mention that he has the radial offset
12 of four inches?

13 A. Correct.

14 Q. Okay. Radial offset of what in comparison to
15 what?

16 A. Well, my understanding of his calculations, based
17 on the way he did it and the way he talked about it, is
18 that the -- the radial offset would be the -- the
19 displacement of the center of gravity of the driveshaft
20 about its original axis. So, what that means is -- if I
21 can demonstrate --

22 THE WITNESS: Can I borrow your pen?

23 A. Okay. If this is the -- the differential side of
24 driveshaft, and it's normally spinning in this direction
25 and it's connected at this end; and then his -- his

0083

1 calculation says that it's not only spinning here, as
2 we've detached this end, and now it's rotating like this
3 (indicated).

4 And the four-inch offset would be at the
5 center of the driveshaft. So, he's saying if you look at
6 the original position and then you look at this new
7 position, this point is four inches away from that.
8 Meaning this point at the center of the end would be eight
9 inches away (indicated).

10 Q. (BY MS. RODRIGUEZ) Did you ever make a
11 determinant or calculate what the radial offset would be
12 if it's not four inches?

13 A. Well, I just went through some of that. The --
14 the path of the far end of the driveshaft, the end that
15 was originally attached to the transmission, that end is
16 constrained to go within about a thirteen and a half inch
17 circle.

18 So, because there's -- there's some diameter
19 to the driveshaft itself, that means that center of that
20 endpoint is going to go in more -- more perhaps an 11-inch
21 circle.

22 So, now if we've got 11 inch for the diameter
23 at that end, that's five and a half inch radius; and then
24 take that and if you transfer that back up to the center
25 of gravity of the driveshaft where he measured radial

0084

1 offset, it would be half of that five and a half. So,
2 we're talking two and three-quarters.

3 Q. So, you think the radial offset should be two and
4 three-quarters of an inch?

5 A. Based on the way he did his calculations, that's
6 true; but I've already had -- I've already voiced some
7 other thoughts about the -- the calculations in general,
8 and that, you know, it's a very steady state calculation
9 for a very dynamic and chaotic event.

10 MS. RODRIGUEZ: Let me make sure that we're
11 not having any interference with the audio. Are -- are
12 you able to hear him okay? Just I hear the other people

13 talking.
14 VIDEOGRAPHER: (Nodded head).
15 MS. RODRIGUEZ: Okay. Thanks.
16 Q. (BY MS. RODRIGUEZ) So, have you now told me all
17 of the things that you believe Mr. Jones' analysis in
18 Exhibit 6, which is our Exhibit 25, assumes things that
19 are not happening? Is there anything else that he
20 assumed that you don't think happened?
21 A. Well, I mean, just looking through there, the
22 speed is -- is certainly at 70 miles per hour; so that
23 would assume the very beginning of the event. Maybe that
24 is his assumption, that's fine.
25 The drive ratio that he's got is 3.01, it

0085

1 should be actually 3.07. For some reason, he's got the
2 circumference of a circle formula as πR , but it's really
3 $2\pi R$. Other than that, I think we've covered,
4 generally, my understanding of -- of his analysis, and
5 then some of my thoughts about that.
6 Q. And you've got some thumbnail photos in
7 Exhibit 25. I'm assuming you have the full size photos on
8 -- in some electronic form?

9 A. Yeah. These thumbnails which is a -- a six-page
10 printout here, these are all present on the -- on the hard
11 drive that's Exhibit 24.

12 Q. Do you remember when you got those thumbnail
13 photos?

14 A. I actually generated these thumbnail -- thumbnail
15 images.

16 Q. Well, when -- do you remember when you got the
17 photos of what you're are depict -- what is depicted in
18 the thumbnail photos in your hand?

19 A. The thumbnail photos are just individual frames
20 from the -- the test video that I was provided. Do I
21 recall when? It would have been sometime either earlier
22 this week or last week that I received a video related to
23 these images.

24 Q. Have you done any other analysis of the video of
25 the driveshaft testing with the photos that are depicted

0086

1 in your hand -- the thumbnail photos in Exhibit 25 --
2 other than to pull the thumbnail photos?

3 A. Well, certainly I've gone through everything
4 that's been provided, which at this point is -- I -- I
5 would say preliminary. I've got the video from this test,
6 and I've also received some photographs that apparently
7 document, to some extent, the -- the conditions before the
8 test and after the test.

9 I've gone through that, but I would call that
10 a very, very, very preliminary analysis of what's been
11 done here, because we don't have much information, yet,
12 regarding these tests.

13 Q. Do you have any comments or opinions based on
14 your very, very preliminary evaluation?

15 A. Nothing that I would offer as an opinion at this
16 point. I mean, I've -- I've gone through it. I've looked
17 at it. I understand what it's purported to show. And --
18 and I've looked through the -- the photographs.

19 But really in order to -- to understand this
20 better, I need to know a lot more about the condition of
21 the coach, the condition of all of the components that are
22 involved here. There are some components that appear to
23 be reused from previous tests.

24 I believe there's apparently previous tests
25 that were run. There's some components missing. There
0087

1 are some questions as to whether the driveshaft was -- was
2 applicable to the drive shaft that we have in our subject
3 coach.

4 And then, also, the -- the loading of the
5 coach, meaning how was it -- how was it loaded, how was it
6 weighed down. And, obviously, the -- the test -- looking
7 at the background in the test and some of the photographs,
8 the test is stationary.

9 So, I would say, you know, basically those
10 are some of my preliminary observations, and I'd have to
11 go through and -- and, hopefully, will have a chance to
12 inspect the -- the components that you see in the -- in
13 the video.

14 Q. Why is the loading of the coach important to you?
15 What significance would that have?

16 A. The loading of the coach will affect the -- the
17 placement of the driveshaft as it goes through the latch
18 arm assembly. So, a more lightly loaded coach will have
19 the driveshaft going through a little bit lower in the --
20 I'm sorry -- a little bit higher in the latch arm
21 assembly, and then a heavily loaded coach will be in a
22 different position.

23 Q. Now, the latch arm assembly, are you referring to
24 that -- is that also known as the tag axle harness in the
25 MCI parts documents?
0088

1 MS. DORMAN: Object to form.

2 A. I'm not sure which document you're referring to
3 for the harness. I would have to see that.

4 Q. (BY MS. RODRIGUEZ) Well, you've looked at the
5 MCI service parts manual, haven't you?

6 MS. DORMAN: Object to form.

7 A. I have, but I don't have it under total recall.

8 Q. (BY MS. RODRIGUEZ) Sure. I just want to make
9 sure that you and I are using the same terminology. And
10 so, if you -- you could, get in front of you -- do you
11 have a printout of any part of the MCI manual?

12 A. There are some in there. Do you want me to find
13 some of those?

14 Q. Sure. It would probably be easier if you look --

15 A. Let me --

16 Q. -- than if I try to look. Or it might be in your

17 project binder. I think that's where I saw it.
18 A. I think you might be right. The assembly I'm
19 talking about is labeled No. 9 on this -- this image here
20 (indicated).
21 Q. Okay. And can you circle what you understand to
22 be No. 9, which is called the latch arm assembly in that
23 document, correct?
24 A. Yes.
25 Q. All right.

0089

1 A. (Witness complied).
2 MS. RODRIGUEZ: All right. Let's go ahead
3 and mark that as Exhibit 26, please. That's fine, that
4 corner where you were looking.
5 (Exhibit 26 marked)
6 Q. (BY MS. RODRIGUEZ) Okay. So, have you now told
7 me all your observations of the driveshaft testing videos
8 that you were provided that you have at this point?
9 MR. CRAFT: Object to the form.
10 A. Well, I mean I've provided some of the thoughts
11 that I had on that. I mean, that's -- that's where we are
12 right now. I would call that preliminary.
13 Q. (BY MS. RODRIGUEZ) Okay. But we've discussed
14 them that -- what you have at this point, you've already
15 disclosed to me, correct?
16 A. I think so. Sure.
17 Q. All right. I mean, you understand, Mr. Granat,
18 from giving a deposition in the past, that the purpose of
19 my questioning you today is to find out what your opinions
20 are, correct?
21 A. Correct.
22 Q. Find out the basis for those opinions. Do you
23 understand that, that's --
24 A. Sure.
25 Q. -- part of what I want to do? This may be the

0090

1 last opportunity I get to visit with you before the trial
2 of this case. Do you understand that?
3 A. That could be true. I guess I would be
4 surprised, but --
5 Q. How many times have you given a deposition?
6 A. Maybe 75, something in that area.
7 Q. All right. So, today we're here to explore and
8 find out what your opinions are, and if you have any
9 additional opinions that aren't contained in your report,
10 correct?
11 A. Correct.
12 Q. All right. Now, have you seen some videos of
13 driveshaft testing that have a driveshaft containment loop
14 at the transmission end?
15 MS. DORMAN: Object to form.
16 A. I'm not sure if that's what you would term it,
17 but I've seen a couple of videos that were provided, I
18 want to say, at Aaron Jones' deposition, that would have

19 had an additional structure applied to the -- the latch
20 arm assembly.

21 Q. (BY MS. RODRIGUEZ) What would you call that
22 additional structure? What do you think it is?

23 A. Well, I think you've called it a -- what did you
24 -- what did you call it? A guard loop or something like
25 that? It's a -- similar to a driveshaft loop.

0091

1 Q. Okay.

2 A. And my understanding is that's the intent of it.

3 Q. What are your observations to those videos?

4 MR. CRAFT: Object to the form.

5 A. Similar to the video that we've just discussed
6 previously. I mean, the -- the video's been kind of
7 provided in a void, and so I don't know what else is going
8 on with the videos. I don't know the condition of the
9 vehicle, if it's similar to the subsequent video that was
10 provided. So, my initial observations at this point are
11 -- are limited.

12 Q. (BY MS. RODRIGUEZ) Okay. Do you have any other
13 than wanting to know additional information about the
14 subject vehicle used?

15 A. Well, I mean, similar to all the other comments
16 that I had from the previous video.

17 Q. All right. In your report -- and I believe it's
18 marked, I don't want to re-mark it. Is your report marked
19 as Exhibit 12, I think? Can you pull that out for us?

20 A. Well -- no, it's definitely not 12.

21 Q. Okay. Let's find out which exhibit number it is.

22 A. 22.

23 Q. In Exhibit 22, do you provide any interpretation
24 of the tire prints on the roadway from this accident?

25 A. Only in the sense of looking at what the driver

0092

1 did. Part of my review of the tire prints would be
2 relying on some of what Mr. Rucoba has done in his depo--
3 in his reconstruction of the crash.

4 Q. Well, help me in your report, Exhibit 2, just
5 direct me to where it is -- I may have missed it -- where
6 you interpret the tire prints from this accident?

7 MS. DORMAN: Object to form.

8 A. Primarily that's going to be on Page 9, and that
9 would be Item No. 8.

10 Q. (BY MS. RODRIGUEZ) Where is there an
11 interpretation of the tire prints on -- in No. 8?

12 A. Well, I haven't outlined my opinions on every
13 single mark or piece of evidence that would have been at
14 the scene; but in general, this is a -- a conclusion that
15 I reached based on a number of other pieces of evidence,
16 but that also would include interpretation of the tire
17 marks.

18 Q. All right. So, nowhere other than in this No. 8
19 in the summary, do you put me on notice that you're giving
20 interpretation of tire prints -- any specific

21 interpretation of tire prints in this case, correct?

22 MR. CRAFT: Object to the form.

23 MS. DORMAN: Object to form.

24 A. Sure. If you look at No. 1 on that same page,
25 you'll see the last sentence of that that specifically

0093

1 talks about the -- the dual tire marks --

2 Q. (BY MS. RODRIGUEZ) All right.

3 A. -- that we discussed earlier.

4 Q. So, is there anywhere else in your report, other
5 than in this summary No. 1, last sentence, and No. 8,
6 where you give any specific interpretations of tire prints
7 from this accident?

8 A. Sure. Indirectly in No. 2, I talk about the --
9 the application of the brakes, the steering, and the
10 clockwise yaw. So, that's --

11 Q. That --

12 A. -- based on my interpretation of the tire marks.

13 Q. But in terms of interpreting what tire mark, that
14 are shown in photos, belong to a particular tire, I don't
15 have that data outlined in Exhibit 22, correct?

16 MR. CRAFT: Objection, form.

17 A. Well, I think you do based on the items that we
18 just talked about. I mean, those conclusions are drawn
19 based on my entire analysis of the -- of the crash. So,
20 that is based in part on analysis of the tire marks.

21 Q. (BY MS. RODRIGUEZ) Well, the only tire marks
22 that you reference specifically is a distinctive wavy
23 characteristic in the dual tire marks on the road
24 surface. That's under the Summary No. 1. Isn't that
25 true?

0094

1 A. I think that's probably the most direct sentence;
2 but like I said, all the -- or a number of the other
3 conclusions are based on analysis of the tire marks.

4 Q. But you haven't outlined that analysis of the
5 tire marks anywhere in your report, correct?

6 A. I don't know that I would ever outline that in
7 great detail in a report. The report is -- is a summary
8 of my opinions, so the analysis that goes in to that is --
9 is all taken in to -- in to consideration.

10 Q. Well, did you see Mr. Rucoba's report?

11 A. I did.

12 Q. Did you see where he talks about different tire
13 prints, and he opines on which tire left a specific tire
14 print?

15 A. I did.

16 Q. Okay. You didn't do that type of analysis for
17 your report, correct?

18 A. I didn't reconstruct the crash like Mr. Rucoba
19 did; but certainly, I -- I looked at the physical
20 evidence. I inspected the vehicle. I looked at flat
21 spots on the tires of the vehicle. I observed flat spots
22 on the tires of the vehicle in the -- in the median at its

23 rest position. I observed the tire marks on the road.
24 And based on my experience, I know what kind
25 of tire forces, what kind of tire application would create
0095

1 flat spots like that. I know what -- what type of tire
2 wear or tire impressions would -- would be caused by a
3 yawing tire that was not heavily braked.

4 So, all in all, my opinions are based on my
5 review of that, and my understanding of how tire forces
6 are generated. So, it's all baked in to this report.

7 MS. RODRIGUEZ: Objection, nonresponsive.

8 Q. (BY MS. RODRIGUEZ) What I was asking about was
9 Mr. Rucoba's opinions on which tire prints were left by a
10 particular tire. I don't see that anywhere in your
11 report. Is it anywhere in your report?

12 A. Well, sure. We just talked about Item No. 1, and
13 talked about the -- the drive axle tires creating the --
14 the distinctive wavy characteristic on the road surface.

15 Q. Any other reference?

16 A. I would say nothing direct, but it's obviously
17 part of my analysis.

18 Q. All right. Did you rely on Mr. Rucoba's
19 reconstruction of this accident --

20 A. To --

21 Q. -- in forming your opinions?

22 A. To some degree. I mean, our -- our analyses
23 overlap in some areas, but then, they're -- they're
24 separate other ways.

25 Q. Does he say that the first tire print was caused
0096

1 by the tag tire? One of the tag tires in --

2 A. That's my understanding of his analysis. He says
3 the right tag tire caused the first mark that we see in
4 the roadway.

5 Q. Do you agree with that?

6 A. Sure.

7 Q. Okay. And when did you get Mr. Rucoba's
8 information in order for you to rely on his opinions in
9 forming your opinions?

10 A. Well, I would -- would have talked to Mr. Rucoba
11 on the phone quite some time ago. I don't recall a
12 specific date. I received his report, I believe, August
13 11th. I have also received his deposition much more
14 recently; I don't recall specifically when that was taken.
15 So, I've reviewed that. And then some of the exhibits to
16 his deposition, as well.

17 Q. Did you receive his report before or after you
18 prepared yours on August 11th?

19 A. That would be after I prepared mine or
20 simultaneous with the production of my report.

21 Q. Okay. So, any information that you would have
22 used from Mr. Rucoba, in relying on your opinions that I
23 see here on Exhibit 22, those would have been through
24 phone calls with Mr. Rucoba at that point, correct?

25 MS. DORMAN: Object to form.

0097

1 A. No, that would have been relying on my analysis;
2 but then also with an understanding of what his analysis
3 was.

4 Q. (BY MS. RODRIGUEZ) But your understanding of
5 his analysis would have been through phone calls by
6 August 11th, correct?

7 A. I think that's the only contact that I had with
8 Mr. Rucoba before that.

9 Q. Okay. Now, let's go back. You talked about flat
10 spots on tires on the accident coach.

11 A. Right.

12 Q. And which tires did you see that on?

13 A. All the rear tire positions. The -- it would be
14 the left rear drive axle tires and the left tag tire for
15 certain. Just sitting here, I don't recall specifically
16 the right side tires.

17 Q. Okay. But you do have a distinct recollection of
18 left rear drive and left tag tires having flat spots,
19 correct?

20 A. That's my recollection, yes.

21 Q. All right. Do you have any photos of those flat
22 spots that you could show me what you're referring to?

23 A. Sure. The police photographs taken at the point
24 of rest, as well as I understand some -- I don't know the
25 source, but some photographs taken by Americanos or

0098

1 provided by Americanos, show some of the tire tread at its
2 point of rest. So, I'm looking at one of the police
3 photographs numbered 0077.

4 Q. Can you pull it out and show it for the video,
5 please?

6 A. Sure.

7 Q. Thank you.

8 A. And this would be the -- the left side drive tire
9 that's -- we see sky in the background, so we know it's
10 left side. And we see the dual, so we know it's the drive
11 tire.

12 MS. RODRIGUEZ: All right. And I'd like that
13 marked as Exhibit 27, please.

14 THE WITNESS: Can we put that back in here or
15 do we need to keep it out?

16 MS. RODRIGUEZ: What we can do is make a copy
17 and put it back in.

18 (Exhibit 27 marked)

19 Q. Can you circle on 27 where you see that flat
20 spot, please?

21 A. Sure. (Witness complied).

22 MR. CRAFT: Do you want a wider pen?

23 THE WITNESS: That's fine.

24 MS. RODRIGUEZ: Yeah. I've got a Sharpie, if
25 you need it.

0099

1 THE WITNESS: That's fine for this one; Ill
2 use that for the next time.
3 VIDEOGRAPHER: There's about five minutes
4 left.
5 MS. RODRIGUEZ: Okay.
6 Q. (BY MS. RODRIGUEZ) All right. And then just
7 hold up for the camera, if you would, where you've
8 circled the flat spot on the left drive tire, correct,
9 Mr. Granat?
10 A. Correct.
11 Q. All right. How about the tag tire? Can you find
12 a photo of the flat spot on that tag tire?
13 A. I believe there are some additional photos, but
14 it's also shown in No. 83 here.
15 Q. Sir, I'm going to ask you to do the same thing,
16 we'll mark that one as 28 and if you'll just circle what
17 you're referring to?
18 COURT REPORTER: Is this good?
19 THE WITNESS: Yes.
20 (Exhibit 28 marked)
21 THE WITNESS: Can I borrow your Sharpie there
22 or is that --
23 MR. CRAFT: You bet.
24 Q. (BY MS. RODRIGUEZ) And again, for the camera,
25 if you could hold up Exhibit 28, is that where you have
0100
1 marked the flat spot on the left tag tire?
2 A. Yes.
3 Q. Okay. Any more flat spots that we haven't talked
4 about that you can think of as you sit here today?
5 A. Well, I -- I don't have a printout of the
6 Americanos photos here, so I would need to go through
7 those electronically. They'll be on the hard drive.
8 I think, my recollection is, that there are
9 additional flat spot -- flat spots photographed in
10 those -- in those -- that collection of photographs.
11 Q. Of different tires or the same tires?
12 A. I don't recall specifically right now.
13 Q. Do you remember if there were flat spots on any
14 of the front tires?
15 A. I would have to review those -- those additional
16 photographs. I don't have those printed here, so -- my --
17 my recollection is they're -- my -- my recollection there
18 is -- is spotty. I don't recall if I saw flat marks on
19 the front tires or not.
20 Q. All right. You said that your peak steering
21 input during your test track testing was 74 degrees,
22 correct?
23 A. That's during the -- the high-speed lane changes,
24 yes.
25 Q. All right. Where on the data plots can I find
0101
1 that data?
2 A. If you can hand me the test data book that's in

3 front of you there, I'll show you.

4 Q. Sure. And I'm just kind of following up on some
5 of the things that Mr. Craft visited with you about, so
6 I'm going to jump around here a little bit.

7 A. Sure. If you go in to the -- the test project
8 binder here -- the test binder, you'll see Tab No. 7 is
9 the data plots. And if you go through -- using Tab No. 6
10 you see an index of the tests.

11 The open loop or high-speed lane changes are
12 Tests 33 through 36, and there were multiple runs on -- on
13 those. So, if we go to Test No. 33 in the data plots --
14 basically, you just need to go through this data and
15 determine where that peak is.

16 It looks like it could be on Test 34 or it
17 could be on Test 35. Basically, you would have to look
18 through. It could be on Test 36, as well. I'm not sure,
19 just looking at that, which of those peaks is higher. It
20 looks like Test 35.

21 Q. Well, that's what I'm trying to understand in
22 your data is how do you read it. And so, let's pull out
23 Test 35, because I think you said that's the one that it
24 looks like the -- the peak was the highest, correct?

25 A. That looks about right, yes.

0102

1 Q. All right. Can you point on the camera -- turn
2 it around and show it to me, what you're referring to that
3 -- yeah, if you'll just pull that sheet out.

4 A. Sure.

5 Q. -- what you're referring to that leads you to
6 believe that's the highest.

7 A. Okay. In this -- this data plot -- and I'll have
8 to give you some background here. This data plot shows a
9 number of different charts. Time progresses from -- from
10 left to right on here. The speed of the vehicle is shown
11 in blue. This red signal here is the -- the tag axle tie
12 rod. The green signal here is the tag axle tie rod, the
13 unlock switch.

14 And then when we get down to the second
15 chart, the blue signal is the steering angle and the red
16 signal is the steering rate, which means the -- the rate
17 at which the steering is applied.

18 Steering rate is read off of this axis
19 (indicated). The steering angle is read off of this axis
20 (indicated). So, if you look through the blue signal with
21 respect to this axis, you see this is 60 degrees, this is
22 90 degrees, and the peak that we see here is beyond the
23 midpoint of 60 to 90 degrees.

24 Q. Okay. So, the 74 was an approximation --
25 approximation, based on that document which is Test 5 --

0103

1 your raw data for Test 5 -- excuse me -- 35?

2 A. You know, I don't know if it's Test 35. It may
3 be from Test 34 or Test 33. I just looked through all the
4 tests and tried to determine what a peak steering input

5 that I -- I applied was.

6 Q. Well, where did you get 74 from; because that's a
7 pretty specific number that you gave to Mr. Craft. I'm
8 just trying to figure out where you got that number from
9 that it sticks out in your mind.

10 A. Well, that number -- well, that number is what I
11 used on the chart that was marked previously as an
12 exhibit; and that number is from Tests 33, 34, 35, and 56.

13 Those are all the -- the -- the lane changes.
14 So, that's -- it's from -- it's the peak steering input
15 from all of those. The specific one that it was, I would
16 have to back -- go back and look at the raw data to see
17 which that is, but I think it's the one we talked about,
18 Test 35.

19 Q. And when you say "raw data," are you referring to
20 anything other than what's in your hands, the data plots?

21 A. The -- the raw data is part -- provided on the --
22 the hard drive there. The raw data is basically the
23 electronic format that these plots are created from.

24 Q. All right. And what program is that raw data in
25 that those plots were formed from?

0104

1 A. The -- well, the program that the plots were
2 created in is a program called MATLAB, and that's a -- an
3 engineer-- engineering or scientific tool used to work
4 with typical engineering data.

5 The data was recorded -- I used a piece of
6 equipment called a VBOX, and that is a data acquisition
7 and GPS satellite based piece of test equipment that is
8 produced by a company called Racelogic.

9 MS. RODRIGUEZ: All right. I think we need
10 to change tapes.

11 VIDEOGRAPHER: We're off the record at 11:52,
12 end Tape 2.

13 (Recess from 11:52 a.m. to 12:02 p.m.)

14 VIDEOGRAPHER: We're on the record at 12:02,
15 start of Tape 3.

16 Q. (BY MS. RODRIGUEZ) Mr. Granat, what service was
17 done by the service center you requested on the bus that
18 you were going to use for the test track?

19 A. My recollection on that coach was that it had a
20 misalignment of the -- the tag locking cylinder pin. And,
21 obviously, I needed that to retract to unlock the tag
22 cylinder -- I mean, the tag locking plates.

23 Q. Okay. I think it's in your project binder,
24 you've got Loudon (sic), Ohio, exemplar coach --
25 Loudonville, Ohio, inspection and it's -- I think it's

0105

1 Tab 5.

2 A. Right. And I think that one was marked as an
3 exhibit already.

4 Q. Okay. Let's see if we can find it.

5 MS. DORMAN: Actually, I think it is still in
6 there. The Loudonville notes or --

7 MS. RODRIGUEZ: Well, I think all of them.

8 MS. DORMAN: Here we -- here we go.

9 Q. (BY MS. RODRIGUEZ) Okay. Do you have any
10 others, other than Exhibit 19, on the coach?

11 A. On that coach I just have some photographs that
12 go with this.

13 Q. All right. But, sir, is the coach that you're
14 referencing in Exhibit 19, the same coach that you ended
15 up using at the Uvalde track or is it a different bus?

16 A. Well, just looking at the unit number, that's my
17 recollection. I'll con-- confirm that right now for you.
18 Yes, that is the same coach.

19 Q. Okay. And when you looked at the exemplar, you
20 found a misalignment of the tag lock cylinder pin? Did I
21 say that right?

22 A. I lost it. Essentially that's the same, yes.

23 Q. All right. How was it misaligned?

24 A. I don't recall specifically. It was just a -- a
25 difficult motion. So, I wanted it to be smooth

0106

1 retraction, so I had them work on that. I'm not sure what
2 they changed.

3 Q. And I think your notes indicate that the pin was
4 getting stuck or hung up in the lock?

5 A. Right. I -- I have noted here, lock pin hangs,
6 will not unlock smoothly due to deformation of locking
7 plates.

8 Q. Okay. When you say "hang," I interpret that to
9 mean it's getting stuck up in the -- the cylinder? The
10 lock cylinder, right?

11 A. No, the opposite. It's down and engaged, and it
12 won't retract smoothly.

13 Q. Okay.

14 A. With -- my recollection is if you move the -- the
15 tires much, it would -- it would retract, but I wanted it
16 to retract without any sort of restriction whatsoever.

17 Q. Okay. Would it retract when it was supposed to
18 or retract when it -- even when it wasn't supposed to?

19 MS. DORMAN: Object to form.

20 A. It was only when I actuated it.

21 Q. (BY MS. RODRIGUEZ) Okay. How did you actuate
22 it when you were out there in Ohio?

23 A. My recollection on this was that I went in to the
24 left front junction panel and then jumpered across the
25 speed switch to apply 24 volts to the solenoid.

0107

1 Q. And how did you jumper across to the speed
2 switch?

3 A. Basically, that's the foot switch that I think
4 you've had a chance to look at or your -- your folks have
5 looked at. It's just a simple on/off foot switch. So, if
6 I jumper across 24 volts to that solenoid signal, based
7 on, you know, finding that signal on the -- the electrical
8 schematics, then that actuates the -- the cylinder.

9 Q. All right. So, you brought the -- the equipment
10 that you used on the test bus, you brought it up to the
11 exemplar bus in Loudonville at the time you did the
12 inspection?
13 A. Right. I brought that specific piece of
14 equipment.
15 Q. Okay.
16 A. I didn't bring up all my instrumentation.
17 Q. Understood. All right. So, how did -- who --
18 who performed the service on the -- can you give me the
19 unit number so we can start referring to it that way?
20 A. 47805.
21 Q. Okay. Who did the service on Unit 47805, the bus
22 you used out at the Uvalde track?
23 A. That would have been technicians at the
24 Loudonville facility.
25 Q. Is the Loudonville facility an MCI facility?
0108
1 A. That's my understanding, sure.
2 Q. Okay. And so you understood that MCI mechanics
3 worked on Unit 47805 at your request, correct?
4 A. Correct.
5 Q. Do you know what they did to 47805?
6 A. I know that they -- they got the locking cylinder
7 and pin operating as expected. They, I believe, put tires
8 and wheels from another coach, so -- such that the -- the
9 test vehicle would have all the same tires on it rather
10 than a mix of tires.
11 And my recollection is they -- if I remember
12 right, they installed steel wheels rather than the
13 aluminum wheels.
14 Q. Where is the documentation of that work done?
15 A. I wouldn't have that documentation.
16 Q. What did they have to do to correct the
17 misalignment of the tack log -- tag lock cylinder pin?
18 A. I don't know. I'm not sure exactly what they
19 did. They may have replaced some of the plates. They may
20 have replaced the pin itself, but I don't have that
21 information.
22 Q. When was that repair work done?
23 A. It would have been after my inspection on
24 June 1st, 2011.
25 Q. Do you know at what point after or before the
0109
1 testing it occurred?
2 A. Somewhere between those two, that's all I know.
3 Q. All right. Now, the -- the changing the tires
4 out, was that at your direction or someone else's?
5 A. Well, my recollection is that the -- the tires
6 and wheels -- and I think it was specifically the wheels
7 on this coach were -- were to be used for some other
8 purpose.
9 So, my recollection -- yeah, the -- the test
10 vehicle, as I tested it, was equipped with steel wheels.

11 The aluminum wheels were apparently to be used for
12 something else.

13 So, since steel wheels are -- are what we had
14 on the subject coach, that was a fine swap. That was at
15 their decision -- their -- their request to keep their
16 aluminum wheels for something else.

17 Q. Okay. And "their" being -- being MCI?

18 A. Right.

19 Q. You understood MCI owned or owns Unit 487805
20 (sic), correct?

21 A. That's my understanding. That may or may not be
22 the case, but that's my understanding.

23 Q. Okay. And we'll go over the test bus in some
24 more detail, I just wanted to follow up, like I said, on
25 some things Mr. Craft asked you about.

0110

1 When did you create Exhibit 14?

2 A. What is that? Exhibit 14 would have been over
3 the last week or so.

4 Q. Well, let's talk about Exhibit 14 and 15. Were
5 they created about the same time?

6 A. Sure.

7 Q. Okay.

8 A. Those would have been this week in preparation
9 for today.

10 Q. And was -- what was the purpose for your creating
11 those two exhibits?

12 A. Well, I was trying to demonstrate the level of
13 steering input that is applied to the -- the HVE model by
14 Mr. Fugger. So, this is basically a -- an exhibit that I
15 put together that helps people understand what sort of
16 steering input he's got in his reconstruction of the
17 crash.

18 Q. Well, when did you analyze Mr. Fugger and
19 Mr. Yohe's steering inputs?

20 A. Oh, that would -- it would have been over the
21 course of several months, whenever I got their -- their
22 materials.

23 Q. I can't tell from the letters from Hartline
24 Dacus, it just says, "enclosed for your review are
25 materials." Do you have any way of telling when you would

0111

1 have gotten Mr. Fugger's data or Mr. Yohe's analysis?

2 A. I -- I don't believe so, but I think you can go
3 back to their deposition date and I think their files were
4 provided with their deposition. So, that's -- that's
5 going to get you in the right ballpark.

6 Q. All right. Now, let's talk about Exhibit 10.

7 Can you -- if it's a video or disk, can you pull that out
8 for us?

9 A. Sure. Here's No. 10 (indicated).

10 Q. Okay. Where did this video CD come from? Or
11 DVD, whatever it is.

12 A. That was what Mr. Craft handed me just a minute

13 ago.
14 Q. Have you watched Exhibit 10?
15 A. Well, we did during the deposition here.
16 Q. Other than during the deposition, did you watch
17 it to find out what was on here?
18 A. Well, I created that, so that's -- sure.
19 Q. Okay. Where is Exhibit 10 in the materials that
20 you brought?
21 A. It's -- it would be on Exhibit 24.
22 Q. Okay. What's it called on Exhibit 24?
23 A. Should be the same title as the -- the test data
24 book. If you go in to Exhibit 24, you'll see a number of
25 numbered and labeled photographs -- folders, Folder No. 5
0112

1 is my analysis section. Then if you go in to 5, 5A, 5B,
2 5C, 5A would be what includes all my test data for this.
3 So, analysis section, and then full vehicle testing.

4 Q. Well, Exhibit 10 has videos, right?

5 A. It is a video. Sure.

6 Q. Okay. When did you make Exhibit 10, the --

7 A. When --

8 Q. I know you didn't make Exhibit 10, but the -- the
9 contents of Exhibit 10.

10 A. No. I mean, I did make Exhibit 10. Let me --
11 let me see that again. Is this --

12 Q. Okay.

13 A. This is the -- this is the video -- this is
14 edited video of -- of my testing. So, this is -- based on
15 all that raw video footage that you've received in the
16 past, this is an edited video that shrinks it down into
17 something a lot more manageable.

18 Q. Okay.

19 A. This would have been created over the last week
20 or so.

21 Q. Okay. And what was the purpose of creating
22 Exhibit 10?

23 A. Well, that's basically the process I always go
24 through with any sort of the testing is -- is to create a
25 video of the full vehicle testing that shows the vehicle,
0113

1 what I -- I did to instrument the vehicle, and then go
2 through some of the tests that I ran on the vehicle. This
3 would be kind of supplemental to the other videos that
4 were provided earlier.

5 Q. And did you do the annotations on the video on
6 Exhibit 10? Or did someone else from -- at your office
7 do it?

8 A. Well, we have a -- a -- the technician that does
9 video editing, but it was all at my direction. So,
10 they're all my -- my annotations.

11 Q. Who does your video editing at your office?

12 A. It's a -- a gentleman named Adam Spry.

13 Q. And you produced a copy of your bills; if you
14 could pull that out, I think it might be in your project

15 binder.
16 A. It is.
17 Q. All right. Let's go ahead and mark those as
18 whatever the next exhibit is, I believe 29.
19 A. All right. That's in the binder under Tab 13.
20 Q. Okay, sir -- yeah, if you'll just pull those out,
21 we'll mark those as Exhibit 29.
22 (Exhibit 29 marked)
23 A. Collectively?
24 Q. (BY MS. RODRIGUEZ) Yes. And does Exhibit 29
25 reflect all of your bills that you have generated to date
0114

1 on this case?
2 A. Well, they reflect the dates on the invoices, so
3 there's probably -- the -- the last one in the sequence
4 may not be here, meaning it hasn't been generated yet.
5 Q. Sure. That's what I mean. I'm --
6 A. Yes.
7 Q. Just whatever you've generated, that's in
8 Exhibit 29, so far, correct?
9 A. Correct.
10 Q. And those bills go from what date to what date?
11 A. The first invoice reflects time between October
12 1st, 2010, and November 30th, 2010. And then you wanted
13 the -- the end, as well?
14 Q. Right. So, your -- you started working on the
15 file about the first part of October, 2010, correct?
16 A. Correct.
17 Q. And then, the last bill that you've generated so
18 far is August 31st, 2011, correct?
19 A. Correct.
20 Q. And the total amount billed between October,
21 2010, and August, 2011, is approximately \$145,000,
22 correct?
23 A. I would have to add these up.
24 Q. Why don't you go ahead and do that. I -- my math
25 is not great.

0115
1 MS. DORMAN: If we want it precise, we'll get
2 a calculator but --

3 MS. RODRIGUEZ: I said approximately.

4 MS. DORMAN: Okay.

5 A. Did -- what was the number that you said?

6 Q. (BY MS. RODRIGUEZ) 145,000.

7 A. I think that's fairly close.

8 Q. All right.

9 A. It's ballpark.

10 Q. What do you think you've billed or generated in
11 terms of fees since August 31st, 2011?

12 A. I'm not sure. I would have to -- to run the
13 invoices and figure that out.

14 Q. If we're here in mid-October, October 14th, how
15 come we don't have a September invoice?

16 A. I think that would have gone out recently. So, I

17 don't have that here. Either -- either it's gone out
18 recently or it has yet to go out.
19 Q. All right. Will you provide it to Ms. Dorman so
20 that she can provide a copy to me?
21 A. Sure. And if -- if there's a request like that,
22 I need a reminder.
23 Q. Okay. You'll have -- you're going to read and
24 sign your depo, right?
25 A. Okay. Yeah.

0116

1 Q. Okay.
2 A. That will be a reminder.
3 Q. Yeah. Sure. Exhibit 21, you have another set of
4 vehicle inspection notes out of Chicago. Do you see that?
5 A. Correct, I do.
6 Q. What inspection was that?
7 A. This was an inspection at MSI, and this was
8 looking at the components that were taken off of the --
9 the coach. I basically looked at the -- the components
10 prior to them being tested for metallurgical reasons.
11 Q. All right. So, you weren't really looking at a
12 vehicle in its entirety, just components from our accident
13 bus?
14 A. Correct.
15 Q. All right. Now, I hate to do this to you. Let's
16 go back to Exhibit 29. You have an invoice -- I believe
17 it's your last one -- where a wheel was purchased for \$151
18 for Houston Freightliner. Was that for your tag axle
19 mockup testing?
20 A. That was for the lab testing, yes.
21 Q. All right. And when you're referring to lab
22 testing, that's the tag axle mockup that we talked about
23 earlier?
24 A. It's the test fixture that I did at the -- at my
25 shop in the lab.

0117

1 Q. And the test fixture of a tag axle -- or part --
2 parts of a tag axle?
3 A. Correct.
4 Q. Okay. Now, I noticed on -- this is your project
5 binder, Tab 8. You're using 1992 and 1993 MCI Maintenance
6 Manuals. I'm just curious, why are you using those years?
7 A. I'm sorry. Which tab are you talking about?
8 Q. 8.
9 A. 8. Those are just used for very general
10 purposes. Those are used to understand the terminology
11 that MCI uses for all their components, and just their
12 general description.
13 Q. Okay.
14 A. I believe I put these in here prior to my
15 inspection -- the first inspection of the vehicle.
16 Q. All right. But you think it's reliable to use
17 MCI Maintenance Manuals for '92 and '93, in a general
18 sense, correct?

19 A. Well, for a --
20 MS. DORMAN: Object to form.
21 A. -- for terminology, that's fine. Sure. That's
22 all I used it for.
23 Q. (BY MS. RODRIGUEZ) All right. Now, in Tab 8,
24 still, you have some literature; and you've got what
25 appears to be a first page copied.

0118

1 A. On some of these?
2 Q. Yes, sir.
3 A. Sure. Sure.
4 Q. Why -- why do you only have the first page of
5 each? Where's the rest of the literature?
6 A. Well, these are just books. So, I wanted to
7 provide some background documentation for some of the
8 references. I didn't refer to any of these specifically
9 for this case, but these are some examples of some of the
10 vehicle dynamics books that I maintain.
11 Q. Okay. But if you had referred to any of those
12 specifically for this case, would you have photographed
13 the portions of the text that you were referring to out of
14 each book?
15 A. Sure.
16 Q. Okay. And you didn't do that. So, at this
17 point, I don't have anything to go back and look at.
18 A. Well, no. And, then, these books are general
19 references in the sense that some of these I've had in my
20 possession for 20 years; and they're books that I've
21 referred to many times, but I don't have anything specific
22 that I'm -- I'm relying on for this -- this matter. So,
23 that's why there's nothing specific provided with that.
24 Q. May I see your project binder briefly?
25 A. (Indicated).

0119

1 Q. Thank you. Okay. Under Tab 5 -- I'll put these
2 back, but let's just talk about them for a minute.
3 A. Just use the lever there.
4 Q. These are your -- some of the data or is this all
5 of the data from your tag axle laboratory test, the first
6 page?
7 A. Right. It's a -- it's a single run, so it's one
8 data file.
9 Q. Okay. And then you've got some photographs,
10 correct?
11 A. Correct.
12 Q. And then at the back, you've got torque
13 specifications from the January, 1996, MCI Maintenance
14 Manual, correct?
15 A. Correct.
16 Q. All right. And these are all on your disk -- on
17 your hard drive, Exhibit 24, correct?
18 A. Correct.
19 Q. Okay. The GLI Testing Notes and the photographs
20 that are clipped together, and some other miscellaneous

21 documents, where did this data come from?
22 A. Can I go through that?
23 Q. Sure.
24 A. Do you want me to list them off one-by-one sort
25 of?
0120
1 Q. No -- well, generally. Is --
2 A. Generally?
3 Q. -- is it from other experts or is it something
4 you generated?
5 A. A combination. So --
6 Q. Okay. What did you generate? I don't want to go
7 over stuff that other experts have done.
8 A. Sure. The first page, which is double-sided, is
9 a -- a set of notes that I wrote regarding my initial
10 review of the -- the Americanos testing that was done by
11 Mr. Yohe.
12 Q. Okay. Can we mark that first page as Exhibit 30,
13 since those are your notes?
14 A. Separately? Okay.
15 Q. Yes, sir.
16 (Exhibit 30 marked)
17 Q. (BY MS. RODRIGUEZ) And then in that clip, just
18 whatever else is --
19 A. Is mine?
20 Q. -- unique to you, yeah, that you generated.
21 A. The -- let's see. There's a final vehicle record
22 that's not mine, there are notes by Mr. Fugger, Brown, and
23 other folks at the testing, those are not mine. Then
24 there's a set of inspection notes that I took when I
25 inspected that vehicle in Nappanee.
0121
1 Q. Have we --
2 A. -- Indiana.
3 Q. -- marked those separately, already; the separate
4 inspection notes of the subject accident bus?
5 A. The -- no, this is not the accident bus; this is
6 the test vehicle by Mr. Yohe.
7 Q. Oh, okay. You -- you -- I stand corrected. I
8 apologize. Let's go ahead and mark those, then, as 31.
9 A. With video -- I mean, with the photographs or --
10 Q. Sure.
11 A. -- separately?
12 Q. Sure. No. Those are your photos, right?
13 A. Correct.
14 Q. Okay.
15 A. So, this is all 31. Is that right?
16 (Exhibit 31 marked)
17 THE WITNESS: Oh, sideways there maybe.
18 Thanks.
19 A. Do you want these separate?
20 Q. (BY MS. RODRIGUEZ) Yeah, I do. There's a clip
21 right next to you. There you go.
22 A. Okay. Can we put those back in?

23 Q. You bet. Now, it looks like you did some DDEC
24 analysis, correct?

25 A. Correct.

0122

1 Q. What DDEC analysis did you do?

2 A. Well, I took the -- the DDEC report that was
3 downloaded from the subject vehicle, that was done under
4 the direction of the -- the police officers; and I
5 analyzed the last 30 seconds or so that are recorded.

6 And I looked at speed and -- and rpm, as well
7 as brake pedal position. And I differentiated the speed
8 to come up with an acceleration value, and then I
9 integrated the speed to come up with a -- a displacement
10 down the roadway.

11 So, going through that analysis, I
12 determined, you know, that we have a -- a very high
13 longitudinal deceleration at the -- at the -- the
14 triggering time in this DDEC report.

15 And that acceleration would be -- was
16 something that's not capable through braking alone; and
17 then likewise, I looked at the Brake No. 1 -- Hard Brake
18 No. 1 record, and did the same analysis with that.

19 Q. And -- and so, what do you think is causing that
20 longitudinal braking, did you say?

21 A. There's a longitudinal acceleration that --

22 Q. Acceleration. I'm sorry. What -- what -- if it
23 can't be caused by braking alone, what do you think caused
24 it?

25 A. Well, there are a number of possibilities for

0123

1 that, and that was part of this analysis. You can get a
2 high longitudinal acceleration represented if the vehicle
3 impacts something.

4 Also, you can get a -- what appears to be a
5 longitudinal -- longitudinal acceleration, but it's really
6 due to the -- the speed sensor reading some unusual value,
7 which could be the tires locking up, it could be the --
8 the speed sensor malfunctioning.

9 It could be a number of things; but
10 basically, my understanding through this analysis is that
11 it's not due to braking. It's -- it's not a level that's
12 achievable by braking.

13 Q. So what did you determine, out -- out of all the
14 possible causes, what you think was causing that
15 longitudinal acceleration?

16 A. Well, it's not really a longitudinal
17 acceleration, it's -- it's -- that's an artifact that
18 appears to be that. The cause of that is really
19 malfunction of the steering -- I'm sorry -- malfunction of
20 the -- the speed sensor.

21 And that was documented in one of the
22 reports -- I want to say Mr. Wright, but I'll have to look
23 through the -- the reports. There was an engineer or
24 technician that did additional analysis on the speed

25 sensor, and determined that it was nonfunctional below a
0124

1 certain speed in the 40-mile an hour range.

2 Q. All right. So, are you able to glean any
3 information that you use for your analysis and what
4 happened in this case from the DDEC data?

5 A. Well, only in the sense that the speed sensor was
6 likely nonfunctional at speeds below about 45 miles an
7 hour. 40 miles an hour.

8 Q. And how does that help you in terms of your
9 analysis of this -- what happened with this accident?

10 A. Well, as far as analysis of the motion of the
11 vehicle as it relates to vehicle dynamics, as it relates
12 to driver inputs, it's not really directly related to
13 that.

14 It helps me understand the -- the
15 configuration of the coach prior to the crash; you know,
16 just simply that this -- this sensor was non--
17 nonfunctional. And this sensor is what drives the input
18 for the -- the tag lock steering cylinder to actuate. So,
19 that was not likely being actuated based on this.

20 Q. All right. And let's go ahead and mark your DDEC
21 analysis as Exhibit 32, please.

22 A. There's only two pages that are related to my
23 work, and then the rest of it is the actual report. Do
24 you want that?

25 Q. No. Let's save the paper and just do your two
0125

1 pages.

2 (Exhibit 32 marked)

3 Q. (BY MS. RODRIGUEZ) Okay. So, Exhibit 32
4 represents your analysis of the DDEC data in this case,
5 correct?

6 A. Correct.

7 Q. Now, we talked a little bit -- and it's been
8 marked -- your notes from the Loudonville inspection. But
9 as I was going through your Tab 5, I found some more notes
10 -- a second page of notes and some photos.

11 Did -- am I interpreting these documents
12 correctly? Would that be all of your notes and photos of
13 the exemplar bus in Loudonville, Ohio?

14 A. Well, the first set that you've handed me is for
15 47805, and that is the exemplar bus, and that's the coach
16 that I used for a test vehicle.

17 The second set of notes is related to a
18 different exemplar, and that's Unit No. 46930. I looked
19 at two separate buses up there.

20 Q. Okay. Tell me about Unit 46930. What was the
21 engine and transmission configuration on that bus?

22 A. They're both the same. They're both Detroit
23 Diesels, Series 60s, with Allison B500s.

24 Q. Is that what the engine and transmission
25 configuration was on the accident bus?

0126

1 A. The engine is a Series 60; the transmission was
2 an HT740?

3 Q. Do you know what the difference is in length
4 between an Allison HT740 and a B500?

5 A. I don't know that off the top of my head. I know
6 they're different.

7 Q. Do you know what the difference in the driveshaft
8 length would be between a bus with an Allison B500 versus
9 a bus with an HT740?

10 A. I don't have a specific number. I know they're
11 -- they're different lengths.

12 Q. All right. Now, tell me about your inspection of
13 Unit 46930. What additional information did you glean
14 from looking at that bus that you didn't get from looking
15 at 47805?

16 A. Well, this is -- was just a -- a different
17 potential vehicle that I could use for my testing. And
18 this vehicle had a tag axle steering system that had been
19 locked out, meaning the cylinder was not present, and
20 locking assembly had been placed in there. So, that
21 wasn't -- wasn't exactly what I needed for my test.

22 Q. Well, how did you get access to these buses?

23 A. I requested, through attorneys for MCI, that we
24 look for a -- a suitable coach.

25 Q. All right. And so what did you say? I want a --
0127

1 I want to look at 102DL3, 1995 model? Or how specific did
2 you get?

3 A. Well, for -- for my testing purposes, I just
4 needed a 1995 102DL3. So, that's -- and that needs to be
5 functional, meaning it doesn't have a -- a locked-out tag
6 axle steering system. Those were my basic requirements;
7 and that's fairly straightforward, fairly simple.

8 Q. How about when you wanted to go look at the
9 exemplar coaches up in Loudonville? What did you ask for
10 them to pull for you to look at?

11 A. '95 Model Year 102DL3s.

12 Q. All right.

13 A. I think this was -- these two were all of them.

14 Q. Had you ever seen that lock-out kit before?

15 MS. DORMAN: Object to form.

16 A. I believe I've seen documentation of it. I don't
17 believe I've seen one in -- physically, until I saw this.

18 Q. (BY MS. RODRIGUEZ) All right. And so, it's
19 your understanding that if a coach is -- contains the MCI
20 tag locking kit, it -- that disables the actuating
21 function of the pin. Is that true?

22 A. For the steering lock, that disables that. It's
23 basically a -- a fixed pin.

24 Q. Okay. Do you know if that kit can be reversed?
25 Re-actuate the pin?
0128

1 A. Well, I mean, all of those components can be
2 removed. So, in that sense, sure. In this particular

3 coach the -- you know, the -- this one was also -- also
4 had some of the electric-- electrical relays removed from
5 the junction box. So, it was -- it was modified in that
6 sense, not just physically but also electronically.

7 Q. How was it modified electronically?

8 A. The -- the relays that would have driven the --
9 the solenoids were -- were removed from that -- the left
10 front junction panel.

11 Q. Do you know why those were -- were removed?

12 A. No.

13 Q. Did that affect the -- the functioning of the
14 coach in any way?

15 A. It wouldn't have affected it with the -- with the
16 lock-out hardware installed.

17 Q. Did you drive that coach while you were up there?

18 A. I did not, no.

19 Q. Now, I'm looking at Tab 4 of your project binder,
20 and you've got thumbnail photos of various photos. And at
21 the top I see, oftentimes, the photos taken by a -- a
22 particular person. For example, the first one I'm looking
23 at says photographs taken by Bob Rucoba. Do you see that,
24 sir?

25 A. I do.

0129

1 Q. Okay. Yeah. I'm -- I don't want to go through
2 each one of these, but I want to understand your file,
3 okay? So, all of these photos you've told us are on
4 Exhibit 24?

5 A. Correct.

6 Q. Now, if the photos say at the top that they're
7 taken by somebody, I know they're not taken by you, and
8 you got them from somebody else's file, right?

9 A. Right. Yeah. That entire Section 4 is just
10 photographs by others.

11 Q. Okay. That's -- that's what I'm -- thank you.
12 That's what I'm getting at.

13 A. Yeah. In the very, very front of that binder,
14 there's a label for all of the tab numbers. So, that may
15 clarify things a little better.

16 Q. Oh. Yeah. It does say, "Photos by Others."
17 Thank you. All right. I won't waste your time.

18 Okay. In Tab 2, those are your scene
19 inspection notes and photos, correct?

20 A. Correct.

21 Q. And let's go ahead and mark those -- since there
22 aren't very many -- as 33. I want to go through those.

23 A. I think -- did we already mark these? Maybe we
24 didn't. Okay. 33.

25 Q. I think I saw just the notes -- scene inspection

0130

1 notes, but I --

2 A. Okay. You want the photos with it?

3 Q. -- didn't see the photos.

4 A. Okay.

5 Q. I'll be happy to -- let's just mark the photos as
6 33.
7 A. Okay.
8 (Exhibit 33 marked)
9 Q. (BY MS. RODRIGUEZ) Do you want to put 17 in
10 front of you?

11 A. Okay.
12 Q. Mr. Granat, when you were out at the scene, it
13 was on August 10th, 2011, correct?

14 A. Correct.
15 Q. Had that right lane been repaved?

16 A. Yes, it had.
17 Q. So, you were not able to see any of the tire
18 prints that may or may not have existed before it got
19 repaved?

20 A. Certainly, I saw nothing in that -- that right
21 lane that has been resurfaced, that's correct.
22 Q. And you said that you found some pieces from the
23 accident, correct?

24 A. No, not pieces. I just found some paint marks on
25 the shoulder that would have been from a prior
0131

1 investigator; and then also found depressions in the
2 median that were consistent with the motion of our -- our
3 subject coach.

4 Q. All right. Anything else that you noted at the
5 scene?

6 A. No. I mean, everything's noted here. No other
7 physical evidence related to this crash.

8 Q. All right. And the road surface found in good
9 repair. That's obviously not a comment on what the road
10 surface on the right-hand lane would have been like at the
11 time of the accident, because it had been repaved. True?

12 A. Right. Sure.

13 Q. Okay. And what we've marked as Exhibit 30, are
14 those all the photos you look while you were out at the
15 scene?

16 A. 33? Yes. Yes, 33.

17 Q. 33? Okay. Yeah.

18 A. Yes, those are.

19 Q. And I think we need to mark -- I think we need to
20 use 31. What I would like to do is mark your test
21 notebook as 31.

22 MS. RODRIGUEZ: No? 34, my vision is
23 terrible.

24 Q. (BY MS. RODRIGUEZ) Okay. Sir, if we can mark
25 the whole notebook as 34, and I know it may --
0132

1 A. Sure.
2 Q. -- be on 24, but I want it -- I want it as it

3 exists in the notebook format.
4 A. Sure.

5 (Exhibit 34 marked)
6 Q. (BY MS. RODRIGUEZ) Could you hand me

7 Exhibit 34?

8 A. (Witness complied).

9 Q. Thank you. And I -- looking at Tab 8, it says,
10 Analysis. Help me with what these photos are of.

11 A. That was --

12 Q. Describe that.

13 A. Sure. Tab 8 refers primarily to a series of test
14 runs that I did at the end of the entire sequence. Those
15 would begin with Test No. 48 through 82.

16 And those comprise basically 35 laps around
17 the -- the main track at Uvalde, and that was just in the
18 test coach as ballasted and instrumented with basically
19 the -- the U-joint bearings modified, meaning I -- I
20 removed a number of needle bearings from -- from the
21 transmission and U-joint. And then -- and then ran around
22 the track basically in that condition for -- for a couple
23 of hundred miles.

24 Q. And where -- when would those photos have been
25 taken that are under Tab 8?

0133

1 A. Those were taken at the time of the test.
2 Meaning I documented removal of the -- of the U-joint.
3 This was the existing U-joint in there or -- or detachment
4 of the U-joint, I should say; and then removal of a number
5 of needle bearings from that U-joint. And then
6 reassembly. And then it was put in the coach and run for
7 200-and-some-odd miles without needle bearings in one of
8 the -- in two of the -- the cups.

9 Q. And that was on the transmission end or the
10 differential end? Do you remember?

11 A. Transmission end.

12 Q. Okay. You said earlier that you've done testing
13 on several 102DL3s. We know that you tested Unit 47805
14 for this case, correct?

15 A. Correct.

16 Q. How many other DLTs have -- 102DL3s have you
17 tested?

18 A. I think there would be two other, that's my
19 recollection.

20 Q. Do you have any information about those 102DL3s
21 in terms of the year, the --

22 A. My --

23 Q. -- unit number?

24 A. I certainly don't recall the unit number. They
25 would have been a 2000. Each of those would have been

0134

1 2000 model years, as I recall.

2 Q. Where did you get those coaches from?

3 A. Those would have also been through MCI.

4 Q. All right. Was that when you were working on a
5 case for MCI? Another case?

6 A. That was another project for MCI, yes.

7 Q. Okay. Was it in litigation? That project?

8 A. Sure.

9 Q. And when was it that you drove those two other --
10 or tested those two other 102DL3s?

11 A. I could not recite a specific date. It -- it
12 would have been a year ago or more. Maybe a year and a
13 half ago.

14 Q. Was that on a case against Greyhound? Where
15 Greyhound was also involved?

16 A. That was on a case that was a New York bus crash.
17 That would have been -- Greyhound was involved in that
18 case, but it would have been, you know, Plaintiffs versus
19 MCI. Well, it would have been Greyhound versus MCI, I
20 guess. So, yes.

21 Q. Any other testing on 102DL3s, other than the
22 testing you've done in connection with litigation?

23 A. No, it would have been related to litigation both
24 times.

25 Q. And you said that steering and tire testing on
0135 102DL3, was that for the New York bus crash case?

2 A. Yeah. There were two different sets of tests
3 there, they were both related to that case.

4 Q. And I was looking at -- I think it's your -- in
5 your binder you've got test vehicles specifications as one
6 of the first tabs.

7 A. Okay. It's under Tab 1, the vehicle
8 configuration.

9 Q. And does it specify what type of transmission was
10 used for the test vehicle?

11 A. This says Allison; but obviously with the
12 inspection notes, it's an Allison B500.

13 Q. Okay. When did you begin doing any type of work
14 related to buses?

15 A. To buses, themselves?

16 Q. Yes.

17 A. Well, to coaches in general, that would have been
18 when I was at Ford. I worked on a -- a chassis that Ford
19 produced that was used as a -- primarily a -- an RV coach.
20 And that project, I -- I did testing on that coach,
21 driving of that coach. And then also computer simulation
22 of the vehicle dynamics for that coach.

23 That would have been probably the first
24 actual involvement with coaches. And then over the last
25 15 or so years as a consultant, I've -- I've done work on
0136 a number of different coaches.

2 Q. All right. Let's talk just about intercity motor
3 coaches. That's what you understand what -- this bus to
4 be, right?

5 A. Sure.

6 Q. Okay. When did you start doing any type of work
7 on intercity motor coaches? Was it in -- related to your
8 consulting work?

9 A. Sure.

10 Q. So, sometime within the last 15 years?

11 A. Correct.
12 Q. Okay. I notice in your CV you listed several
13 publications, correct?
14 A. Correct.
15 Q. Do any of those publications support any
16 particular opinion in this case?
17 A. They're not directly related to this case.
18 They're examples, I guess, of failure analysis and -- and
19 the effect on vehicle dynamics; but they are vastly
20 different vehicles and different components.
21 Q. Well, let me ask it this way: Are you relying on
22 any of your publications to support your opinions in the
23 case?
24 A. As part of my background, I am. Specifically, I
25 would not -- I don't intend to use those papers to cite as
0137
1 examples of -- of something specific to this case.
2 Q. Okay. And you're an engineer, correct?
3 A. Correct.
4 Q. Let's talk about some of the opinions that you're
5 not going to be giving in the case, correct -- okay?
6 A. Okay. Sure.
7 Q. You're not a metallurgist. True?
8 A. That's true.
9 Q. So, you're not going to be giving metallurgy
10 opinions, correct?
11 A. That's correct.
12 Q. You -- you mentioned that you didn't do an
13 accident reconstruction on this case, correct?
14 A. Correct.
15 Q. And you know other people have done that, right?
16 A. That's right.
17 Q. But do you consider yourself an accident
18 reconstructionist?
19 A. Sure. A vast -- or a large amount of the work
20 that I do is accident reconstruction, so that's -- that
21 would be accurate.
22 Q. Okay. But you're not going to give accident
23 reconstruction opinions in this case, correct?
24 MR. CRAFT: Object to the form.
25 A. Well, I will be -- like we talked about earlier,
0138
1 I will be talking about the tire marks. If you consider
2 that to be the realm of accident reconstruction, I guess I
3 will say that that -- that will be something I will talk
4 about.
5 Primarily I'm talking about vehicle dynamics,
6 but that also is reflected in the physical evidence that
7 we have in the case. So, there's some overlap there. I
8 did not calculate, you know, for instance the speed of the
9 coach. That's a reconstruction opinion that I have not
10 worked on.
11 So, I would say there are some vehicle
12 dynamics opinions that spill over in to accident

13 reconstruction, but that's not the primary focus.

14 Q. (BY MS. RODRIGUEZ) All right. And I didn't see
15 in your report that you comment on the quality or lack of
16 quality of maintenance on the accident bus. Is that
17 true?

18 A. I just have an understanding of the condition of
19 the coach, we talked about that a little bit earlier as
20 far as certain systems functioning and nonfunctioning.
21 How that relates to maintenance, that's really not my
22 area. But I will -- you know, if asked I will talk about,
23 you know, what was working, what wasn't working.

24 Q. Okay. But you're not going to give expert
25 opinions on what Americanos should have done or not done

0139

1 in terms of maintenance on the bus, correct?

2 A. Specifically about like Americanos' procedures,
3 that's not something that I would get in to.

4 Q. All right. And whether the bus was properly
5 maintained or maintenance that should have been done that
6 wasn't done; maintenance related opinions and standard of
7 care type of opinions, you're not going to render those in
8 the case. Is that true?

9 MR. CRAFT: Object to the form.

10 A. I think as it relates to the -- the specific
11 maintenance procedures, that's -- that's accurate.

12 Q. (BY MS. RODRIGUEZ) But I want to take you
13 beyond the next step. I mean, I understand you're not
14 going to give opinions on what the procedures were, but I
15 want to know for this particular bus.

16 The Jury's going to have to consider the
17 conduct of Americanos, and I want to know if you're going
18 to be giving opinions on Americanos' maintenance, other
19 than the condition of the bus for vehicle dynamics
20 purposes.

21 A. I think it's -- my area is going to be focused on
22 the condition of the bus for vehicle dynamics purposes;
23 and that may spill over into, you know, why is it in this
24 configuration, but I think that's probably going to be
25 more -- more accurately addressed by other folks;

0140

1 Mr. Hoogestraat, or other -- or other engineers.

2 Q. Have you been involved in skid testing before?

3 A. Well, it depends on what you mean by "skid
4 testing." I've -- I've been involved in testing for the
5 last 20 years, and -- and, you know, that involves
6 skidding, yawing, all sorts of different configurations or
7 -- or maneuvers.

8 Q. Well, let me ask you this: Do you recognize the
9 difference between a drag factor and a skid factor?

10 A. Skid factor isn't a typical terminology that I
11 would use. A drag factor is basically the average
12 acceleration that a -- a vehicle undergoes during a
13 certain phase of an accident reconstruction. That's what
14 I would call a drag factor. A skid factor is -- is an odd

15 term. Maybe it's -- maybe it's meant to be skid number.

16 Q. Well, did you notice in Mr. Irwin's report, in
17 his deposition he referred to a skid factor and skid
18 testing that he did out at the scene?

19 A. Oh. I recall that vaguely, but I didn't --
20 didn't -- didn't analyze that to any detail.

21 Q. Okay. Well, he -- he tested the coefficient of
22 friction of the road at the accident scene. Do you
23 understand that?

24 A. I understand that.

25 Q. Okay. Can you do that type of testing with a
0141

1 passenger vehicle equipped with ABS brakes?

2 A. You can get a measure for the peak coefficient of
3 friction, that's basically what you would get with ABS
4 brakes. That's going to be dependent on a number of other
5 things like the type of tire, the -- the road surface at
6 the time. I mean, if it's on the -- the repaved road
7 surface, I wouldn't think that would be too valuable.

8 Q. Well, I mean, that's not what you do if you're
9 going to go out and test the coefficient of friction on a
10 commercial motor vehicle case, you're not going to go use
11 a passenger vehicle with -- equipped with ABS brakes, are
12 you?

13 A. I think I wouldn't rely on a single number
14 developed from that type of test. But if that number
15 confirms or -- or matches what references show I would
16 expect for that surface, then, you know, that's fine.

17 Q. So, that is what you do? You use passenger
18 vehicles equipped with ABS brakes to get the coefficient
19 of friction, even though the case involves a commercial
20 vehicle?

21 A. No, that's not what I said. I don't -- I
22 personally don't do skid testing at a scene. What I do is
23 I use references, basically, for that surface.

24 And if it's specifically a heavy truck tire,
25 I'll use references that reflect heavy truck tires on, be
0142

1 it an asphalt surface or a concrete surface. And then
2 I'll use a range of -- of coefficients that basically
3 encompasses the testing that's been done over the last
4 many decades.

5 Q. Where do you get the reference -- references
6 from?

7 A. There are a plethora of references out there.
8 There's a '93 paper that is called "Friction Applications
9 in Accident Reconstruction," that's a -- that's a good
10 paper.

11 There are documents or books that were
12 created by the -- the Northwestern Traffic Institute that
13 are -- that document drag factors or skid factors on road
14 surfaces with different tires. So, there are -- there are
15 tons of references out there for that.

16 Q. Do you remember the references that Mr. Fugger

17 said he used in his deposition?

18 A. I don't recall --

19 Q. Okay.

20 A. -- off the top of my head.

21 Q. In part of your tire print interpretation from
22 the accident scene, did you measure how long the tire
23 prints were at the accident scene?

24 A. No. When I was at the scene, there were no -- no
25 tire marks there, obviously.

0143

1 Q. How about trying to do it from any of the photos?

2 A. No, that's really not -- not something that I
3 would use for my -- my analysis in this case.

4 Q. Have you made any determination with regard to
5 any steering input by Ms. Morado in the actual accident
6 sequence?

7 A. Certainly in -- in terms of direction and where
8 they were in the sequence. As far as magnitude, I don't
9 know that that's really possible.

10 And, I mean, I've analyzed Mr. Fugger's
11 opinions of that, and he's clearly got dramatic steering
12 input to the left and fairly substantial steering input to
13 the right. I've considered that. I don't think you can
14 calculate that with any degree of real accuracy.

15 Q. Well, that's what I was going to ask you is, how
16 would you be able to quantify how much steering input
17 Ms. Morado made at any given time during the accident
18 sequence? Would you be able to do that?

19 A. I think you have to do it qualitatively. I don't
20 think you can do that quantitatively.

21 Q. Okay. And qualitatively being what? What do you
22 mean by that?

23 A. Being we've got a -- a steering input to the
24 right, that is the first thing consistent with some of the
25 physical evidence we have at the scene. That steering

0144

1 input took the vehicle off on to the paved shoulder. And
2 that was followed by a -- a dramatic steering input to the
3 left.

4 A -- a large magnitude steering input to the
5 left that was large enough, when coupled with the locked
6 wheel skid, to place the vehicle in to a complete
7 broadside slide prior to -- to reaching the soil.

8 Q. Well, when you use term like "large" and
9 "dramatic" steering to the left, you're not able to
10 quantify it by what angle or by what degrees, correct?

11 A. I can't put a specific number on it. It's going
12 to be something substantial.

13 Q. Have you made any calculations with regard to
14 what degree Ms. Morado steered to the right, and then to
15 the left as you've described in your testimony?

16 A. I think it's the same answer to the same -- the
17 answer's the same to that question.

18 Q. Okay. When you say I think it will be a

19 significant or large amount, can you give me, in terms of
20 degrees, what you think is significant or a large amount?
21 A. Well, it may be in the -- the ballpark of what
22 Mr. Fugger says; that may be in the right ballpark. It's
23 -- it's clearly more than anything that I would have put
24 in -- into the vehicle at 70 miles an hour in my testing.
25 And so, that's -- it means it's clearly much greater than
0145

1 75, 74 degrees.

2 Q. Well, have you ever evaluated a tag axle lock on
3 a motor coach before this case?

4 A. Before this case --

5 Q. Uh-huh.

6 A. -- I have evaluated only in the sense of some
7 steering testing, where I was doing low speed testing for
8 steering efforts. And that was with a 102DL3 that would
9 have had a self-steering tag axle.

10 That was not the focus of that work, so I --
11 I've got some experience with that, but I'd say this is
12 the first project where it's the focus.

13 Q. Well, on that project, the one where you -- you
14 -- you just referenced, was that the New York case?

15 A. That is. That was.

16 Q. Okay. When you were doing that testing, did you
17 do anything to lock out the tag axle, so it wouldn't
18 unlock at different speeds and interfere with your
19 steering testing or --

20 A. No, that was a coach that was in its normal
21 configuration, meaning that tag axle steering system was
22 functional and, then, operated during the testing as
23 expected.

24 Q. Okay. And was that at low speeds or high speeds?

25 A. Well, that would have been at low speeds since
0146

1 the vehicle was also tested at high speeds up to, I think,
2 70-plus miles per hour.

3 Q. But you didn't configure it with the switch to
4 unlock it, because that wasn't the purpose of that test,
5 right?

6 A. That's -- that's correct.

7 Q. All right. Have you ever evaluated the locking
8 mechanism on a steerable tag axle before this case?

9 A. Only in the sense that we -- we just test related
10 to the other -- the other testing; but that was not the
11 focus. That would have been secondary.

12 Q. Did you evaluate the locking mechanism on the
13 accident bus?

14 A. Certainly at my inspection, I did.

15 Q. Well, I mean, I understand you looked at it, and
16 you considered it, and looked at the configuration. But
17 in terms of functioning and whether it was working or not,
18 that was done by another set of experts, right?

19 A. That's correct. I would be relying on the -- the
20 work that was done by Mr. Hoogestraat at that point.

21 Q. All right. So, in terms of evaluating and
22 testing this functioning, you haven't done that; but
23 you've evaluated it to look at its configuration, correct?
24 A. Sure. That -- that was done by Mr. Hoogestraat
25 and others.

0147

1 Q. I notice in here somewhere --

2 MS. RODRIGUEZ: Let's mark this as
3 Exhibit 35, please.

4 (Exhibit 35 marked)

5 Q. (BY MS. RODRIGUEZ) What is Exhibit 35?

6 A. This was an exhibit that was, I believe, prepared
7 by Mr. Hoogestraat.

8 Q. And when was that prepared, do you know?

9 A. I have no idea.

10 Q. And when did you get it?

11 A. I do not recall --

12 Q. How did you get it?

13 A. I believe this would have been provided with his
14 report. That's my recollection.

15 Q. Who did you get it from?

16 A. It would have been attorneys for MCI.

17 Q. And you think that, Exhibit 35, was attached to
18 Mr. Hoogestraat's report?

19 A. That's my understanding, sure.

20 Q. All right. Did it help you understand how the
21 tag axle lock works?

22 A. Not really. This was sort of after I had done my
23 report, so it wasn't really something that I based my
24 opinions on.

25 Q. Can you describe for us how a tag axle lock on a
0148

1 102DL3 works?

2 A. Sure. The -- the system is basically a
3 mechanical, and electrical, and pneumatic system. And the
4 -- the steering lock is -- is achieved by using a
5 pneumatic cylinder.

6 That pneumatic cylinder is actuated in either
7 one or two directions. It's got a spring-loaded pin, such
8 that if there's no air pressure at all, the spring loads
9 the pin in to the engaged position.

10 There is the -- a couple of solenoids that
11 would actuate the air pressure that goes in to that
12 cylinder, and one of those will either retract the pin or
13 one will engage the pin.

14 The solenoids are powered via the electrical
15 system that's processed through the speed switch. The
16 speed switch is -- is basically what I would call kind of
17 a high-pass filter.

18 Basically, what it does is it says, if the
19 rotational speed of the output shaft of the transmission
20 or the -- in some cases the differential speed -- if that
21 speed reaches a certain threshold, it will apply an
22 electrical signal to the solenoids.

23 So, the rotational speed of the transmission
24 is used to measure the speed of the vehicle. Once that
25 speed gets down to below approximately 20 miles an hour,
0149

1 one of the solenoids is actuated, that would cause the pin
2 to retract.

3 And when that speed then returns above
4 20 miles an hour, the other solenoid is actuated and the
5 pin is caused to extend and travel in to the locking
6 plates.

7 The locking plates are comprised of three
8 separate plates. There's a -- a single locking plate
9 that's on the tag axle tie rod. That's mounted in clamps
10 to that tie rod. There are two additional locking plates
11 that are mounted on the tag axle itself.

12 And they form, basically, a double shear type
13 of a connection. There's a slot that's milled in each of
14 those plates. And that slot is -- is aligned such that
15 the locking pin travels down through the top plate, the
16 moving or tie rod mounted center plate, and then also the
17 -- the lower plate.

18 So, basically, the -- when the cylinder is
19 engaged, if the -- the plates are in alignment, then the
20 pin will extend down through all three of the plates.
21 Likewise, if the plates are in alignment when the pin is
22 re-- retracted, it will pull up and unlock the -- the
23 plates for steering.

24 Q. Okay. How about a tag axle latch? Do you
25 understand how that works on a 102DL3?
0150

1 A. Well, the latching is commonly referring to the
2 -- the caster latching system on the -- on the coach. The
3 -- the caster latching system is mounted above the
4 steering lock.

5 The caster latch is basically a two-position
6 latching mechanism that rotates the -- the lower portion
7 of the tag axle assembly, which would be basically the
8 axle and the latch arm. It rotates that either forward or
9 rearward, based on the direction of the coach.

10 Like with the other system just described,
11 that's an electrical, and pneumatic, and mechanical
12 system. Electrically it's driven based on the reverse
13 lights of the vehicle, meaning it's driven off of the
14 transmission reverse gear position.

15 When it's in that position, the -- the
16 solenoid is actuated, the -- the cylinder is extended, and
17 then the latching becomes unlatched and moves forward in
18 to a -- an extended position and re-latches in that
19 position.

20 And then in that position, there's air
21 pressure that holds the latch in place for reverse
22 operation. Likewise, then, you can put the vehicle in
23 drive. It will move the cylinder to unlatch, and then
24 bring it back in and latch it in to a rearward position or

25 retracted position, and that's the position for forward
0151

1 travel. And then the air -- air pressure in the cylinder
2 will keep it latched in that position.

3 Q. So, it would be fair to say that you had to study
4 how the tag axle lock and the latch system worked for
5 purposes of this case?

6 A. I certainly did do that for purposes of this
7 case.

8 Q. Did you -- you may have had a general
9 understanding of how they worked; but to the detail that
10 you just described for us, you learned that in connection
11 with this case. True?

12 A. I would say to that level, I've reviewed things
13 in this case and looked at the coach in more detail. I
14 had a general understanding from prior work.

15 Q. All right. So, what I said is true, correct?

16 MR. CRAFT: Object to the form.

17 MS. DORMAN: Object to form.

18 A. It's similar.

19 Q. (BY MS. RODRIGUEZ) Do you know how much the tag
20 axle can be steered as it's designed, in terms of degrees
21 from right or left?

22 A. The displacement of the tie rod is about a -- an
23 inch and a half. And it can go as much as two inches.
24 The -- the typical angle, as I understand it, is about
25 eleven and a half degrees.

0152

1 And that would be eleven and a half degrees
2 to the left or eleven and a half degrees to the right. Of
3 course, with adjustment, that could be more or less.

4 Q. Where do you get the one and a half and eleven
5 and a half degrees from?

6 A. The eleven and a half is my understanding from --
7 if I recall, that's my understanding from MCI documents;
8 but that also may be based partly on discussions with
9 Mr. Hoogestraat.

10 The -- the one and a half inches of travel of
11 the tie rod is what I measured with instrumentation I put
12 on the vehicle during my -- my testing in Uvalde.

13 Q. What MCI document are you referring to with the
14 eleven and a half degrees left or right?

15 A. I don't recall specifically. That's why I say it
16 may have been actually from conversations with
17 Mr. Hoogestraat.

18 Q. How many conversations have you had with
19 Mr. Hoogestraat?

20 A. At each inspection that we've been together, I've
21 certainly talked with him. Probably on the phone a couple
22 of times, as well. We met at the inspection in -- in
23 Chicago looking at the components that we talked about.
24 So, I would say a handful.

25 Q. Okay. And the -- what was the purpose of the

0153

1 phone calls with Mr. Hoogestraat?

2 A. Well, some of the purpose is to understand the --
3 the tag axle system specifically like what we just
4 discussed. What's the -- the nominal steering range
5 that's expected from the tag axle.

6 Q. And I'm assuming those phone calls would have
7 happened before you wrote your report, Exhibit 22,
8 correct?

9 A. I think some of them would have been before; some
10 of them would have been after.

11 Q. And did Counsel for MCI participate in those
12 phone calls or did you just talk -- contact Mr. Hoogestraat
13 directly?

14 A. I think that would have been with Counsel present
15 on the phone call.

16 Q. Okay. Do you have any idea of how long those
17 conference calls with Mr. Hoogestraat last-- lasted?

18 A. I don't -- certainly don't have any sort of
19 recollection of that. We could go through the invoices,
20 that's listed on there as a -- as a teleconference or a
21 conference. It won't specifically say "Mr. Hoogestraat,"
22 but it, you know, may give you an idea.

23 Q. I notice on some of your invoices it said,
24 "conference call with client." Who do you consider to be
25 your client?

0154

1 A. Basically, my client would be attorneys for MCI,
2 that would be the Hartline & Dacus law firm.

3 Q. Okay. And so, in those conference calls with
4 client, some of those would have included your calls with
5 Mr. Hoogestraat, as well, correct?

6 A. I think that would have been all of them.

7 Q. Okay. Do you have a CDL? A Commercial Driver's
8 License?

9 A. I don't.

10 Q. Have you ever driven a bus, other than on a test
11 track?

12 A. I think all that's on a test track, basically
13 engineering testing.

14 Q. All right. Never driven a bus with passengers,
15 correct?

16 A. Well, only engineers from my company that would
17 have been supporting work on my tests. No, I'm -- I'm not
18 a commercial bus driver, that's for sure.

19 Q. All right. Let's talk about your opinions. As I
20 understand it, you're giving opinions on how you think the
21 bus handles in various conditions, correct?

22 A. Sure.

23 Q. But you've already told us you're not a bus
24 driver. So, you're not -- is it my understanding you're
25 not going to be giving opinions on what the bus driver

0155

1 should or should not have done?

2 A. No, that's not accurate. The -- well, we've

3 already talked about that to some degree. The opinions
4 that I'm giving are based on a -- an engineering point of
5 view.

6 So, I'm -- I've been -- I've had training and
7 education as a test driver and as an engineer. So, I've
8 driven coaches, heavy vehicles, other commercial vehicles,
9 and buses like we've discussed here, in an engineering
10 environment, and I will be providing opinions about the
11 engineering, the vehicle dynamics, as well as what's, you
12 know, appropriate for a driver to do if they want to
13 maintain control of the vehicle.

14 Q. From your engineering perspective, correct?

15 A. From engineering and vehicle dynamics, in
16 general, sure.

17 MS. RODRIGUEZ: All right. Thank you. We
18 need to take a break and change the video.

19 THE WITNESS: Perfect.

20 VIDEOGRAPHER: We're off the record at 1:03,
21 end of Tape 3.

22 (Lunch Recess from 1:03 p.m.
23 to 1:36 p.m.)

24 VIDEOGRAPHER: We're on the record at 1:36,
25 start Tape 4.

0156

1 Q. (BY MS. RODRIGUEZ) Mr. Granat, I would like to
2 visit with you about the Uvalde test tracking -- test --
3 track testing, okay?

4 A. Okay.

5 Q. Did you select the Uvalde track?

6 A. I did.

7 Q. And you selected it because you thought it would
8 be appropriate for the testing you wanted to do, and you
9 had been out there before, correct?

10 A. I guess in general terms, sure. It's the -- the
11 right test surface and it's reasonably close.

12 Q. When you say "right test surface," what do you
13 mean?

14 A. They have a high-speed track, it's about an
15 eight-and-a-half-mile oval. And that track has some
16 sections that are flat and straight, and then it has some
17 sections that are curved with either hills that go up or
18 down or left or right, depending on which way you travel.
19 So, it had a whole range of different travel paths.

20 Q. Who was present for the testing?

21 A. That would have been myself, and two employees
22 from my company, and then Mr. Dacus.

23 Q. Who were the --

24 A. I think he was there for the second -- not the
25 first day, maybe, but the second day.

0157

1 Q. The testing occurred over three days, correct?

2 A. That's my recollection, yes.

3 Q. Who, from your company, was present for the
4 testing?

5 A. There's an engineer named Jeff -- Jeff Clausen;
6 and then also the -- the video person we spoke about
7 earlier, Adam Spry.

8 Q. If I wanted to determine how much it cost to do
9 the testing, would all of that be reflected in your
10 invoices?

11 A. Sure. That's definitely all in there.

12 Q. Okay. But, I mean, it's not going to be invoiced
13 separately from somebody else?

14 A. Correct. It's all -- it's all in there.

15 Q. Was the track set up with cones to reflect the
16 conditions of the accident scene or was it an open loop
17 track?

18 A. I don't know what you mean by cones to reflect
19 the accident scene. There certainly were cones out at the
20 accident scene. Basically, the track was used as is.
21 Meaning it's a fairly large radius curve going around the
22 corners, and I used the radius that was there. So, it's
23 -- it's similar to a typical freeway.

24 Q. Well, have you ever set up a test track with
25 cones to try to reflect the condition of an accident
0158

1 scene?

2 A. In some certain cases but not in this case, no.
3 I'm not trying to re-create the crash; I'm trying to
4 evaluate the vehicle under certain conditions.

5 Q. All right. So, when you -- when I asked you was
6 the track was set up with cones to reflect the conditions
7 of accident scene, and you said, well, there weren't cones
8 at the accident scene; you've, as an accident
9 reconstructionist, have set up test tracks with cones to
10 reflect, for example, a radius curve, correct?

11 A. I recall instances where I'll evaluate a path
12 that's been suggested by another engineer or another
13 expert, and I recall setting up cones to do that kind of
14 work; but I don't recall setting up cones specifically to
15 reflect a curve like that, no.

16 Q. Did you use any of the DPS Total Station data to
17 set up this -- the test track?

18 A. Oh, no.

19 Q. How about for any of your opinions, did you rely
20 on the DPS Total Station data?

21 A. I looked at it. And I considered it. And I
22 understand, especially through their diagram, the location
23 of -- of the points of evidence that they measured;
24 specifically the numbers involved, I didn't crunch through
25 that. I did not use that for my analysis.
0159

1 Q. Do you have any reason to think that that data is
2 not reliable?

3 A. I would defer to Bob Rucoba on that type of
4 analysis. I haven't done measurements at the crash scene
5 that I would compare that to, so I don't -- don't have
6 anything -- any reason to see that it is unreliable.

7 Q. Did you use anyone else's Total Station data or
8 3-D scanner -- scanner data of the accident scene as a
9 basis for any part of your opinions?

10 A. Not directly, I would say. I mean, I -- I've
11 reviewed other people's work, but I haven't used that.
12 That really doesn't come in to play for my handling
13 analysis.

14 Q. How was the test bus -- bus set up from the
15 perspective of what is required in the MCI manual?

16 A. I'm not sure what you mean by "what is required
17 in the MCI manual."

18 Q. Well, what was the front toe setting on the steer
19 axle of the test bus?

20 A. I did not measure that.

21 Q. Do you know what the MCI manual requires?

22 A. I've seen it in the MCI manual, but I have not
23 committed that to memory.

24 Q. What is -- what -- or, rather, what was the toe
25 setting on the tag axle of the test bus?

0160

1 A. Did not measure that, as well.

2 Q. Do you know what MCI requires for that
3 measurement?

4 A. Only by referring to the documents. I don't have
5 that committed to memory.

6 Q. Who did the modifications to the test bus?

7 A. "The modifications," meaning?

8 MS. DORMAN: Object to form.

9 Q. (BY MS. RODRIGUEZ) In terms of putting the
10 instruments on, adding that switch -- you'd consider that
11 switch to be -- the -- the foot pedal switch, you'd
12 consider that to be a modification, wouldn't you?

13 A. I would consider that to be part of the equipment
14 I used to perform the tests. All of the instrumentation
15 and equipment that was put on there, that was either put
16 on by myself or my two employees that I told you about
17 recently.

18 Q. Mr. Clausen or Mr. --

19 A. Spry. And that would have been --

20 Q. Scribe?

21 A. Spry, S-P-R-Y.

22 Q. Oh, okay.

23 A. And that would have been at my direction.

24 Q. All right. But, I mean, clearly the accident bus
25 didn't have a foot pedal switch, correct?

0161

1 A. Correct.

2 Q. And the accident bus didn't --

3 A. Well, specifically like the one that I had,
4 that's correct.

5 Q. All right. Any of the instrumentation or
6 equipment that you put on the bus, that was not on the bus
7 at the time that the accident occurred, correct?

8 A. Clearly. Well, there was some instrumentation on

9 the coach that was apparently a -- a GPS-based recorder,
10 and there's some photographs that were provided early on
11 that show an individual pulling the data out of that
12 recorder.

13 I've heard that there is -- you know, it was
14 nonfunctional at the time perhaps, but -- but so there was
15 some instrumentation on the coach. It wasn't completely
16 without that.

17 Q. You mean the nonfunctioning KDEC? Is that what
18 you're referring to?

19 A. Correct.

20 Q. How long did it take to put the equipment and the
21 instrumentation on the bus?

22 A. Oh, I don't recall. It's -- it's not an
23 extremely involved process. I mean, it's a matter of a
24 couple of days. In fact -- well, I guess it's about a
25 day. I think I -- I took the instrumentation with me to

0162

1 Uvalde and put it on the coach in Uvalde. So, it would
2 have been about a -- about a day.

3 Q. So, walk me through how that happened. You and
4 your team went out to Uvalde a day or two before you were
5 supposed to be on the track?

6 A. No. I arranged to use the track in Uvalde. I
7 requested that the coach that I looked at in Loudonville
8 be sent to the track. So, that was driven to the track
9 and it was left there for my arrival.

10 Once I got to the test track, I put my
11 instrumentation in the vehicle. I put the ballasts in the
12 vehicle. And put the video cameras, all of the other
13 sensors, and that kind of equipment, in the vehicle.

14 Q. And who drove the bus from Loudonville to Uvalde?

15 A. My understanding is that would have been an MCI
16 driver. I don't recall the name off the top of my head.

17 Q. Have you seen the M7 -- or excuse me -- have you
18 seen the driver pre-trip or post-trip inspection reports
19 for that bus?

20 A. No.

21 Q. Have you seen any of the maintenance records for
22 that bus?

23 A. I don't believe so.

24 Q. If you would, walk me through all the instruments
25 that were put on your test bus.

0163

1 A. Okay. The --

2 Q. Or direct me to a piece of paper if it's --
3 you've already got it outlined.

4 A. Well, it's somewhat outlined; I'll go through
5 some of that in this Exhibit 34, which is my test binder.
6 Probably the easiest way to look through that is to look
7 at the test vehicle photographs.

8 And if you go in to Tab 2 in this section, we
9 can start with Photo 2747, that shows a side-mounted
10 camera that was mounted to record the -- the tag axle and

11 drive axle tires on the right-hand side of the coach.
12 While it's not instrumentation, it's part of
13 what I installed in the vehicle, captured in
14 Photograph 2750 and subsequent photographs, that shows the
15 sandbag ballasts that I used in the luggage compartments
16 or the baggage compartments for the coach.

17 Q. Can you give me that photo number, again?

18 A. These two on this page are 2750 and 2751.

19 Q. Thank you.

20 A. 2757 shows numerous pieces of instrumentation
21 there. And I'll go through those, they're -- they're more
22 clearly defined in subsequent photos. 2758 is the
23 inertial measurement unit, it's IMU. It's a product made
24 by VBOX. And that measures rotational motion in three
25 direction and translational acceleration in three

0164

1 directions.

2 Then there's a test computer shown in 2759
3 that is a Panasonic Toughbook laptop. That is used to
4 monitor all of the -- the transducers while the testing is
5 going on.

6 Photograph 2760 is a VBOX -- VBOX3 unit.

7 Q. 27 what?

8 A. 2760.

9 Q. Thank you.

10 A. And that unit is a GPS-based speed sensor,
11 position sensor, and data acquisition unit. 2762 shows a
12 heads-up display, as well as a -- a data recording LED,
13 and the data recording switch.

14 2768 shows the -- the displacement sensor.
15 It's a string potentiometer mounted to the intermediate
16 shaft of the steering system to measure driver steering
17 inputs.

18 Q. Can you give me the name of that instrument,
19 again?

20 A. It's a string potentiometer. String as in
21 thread, yarn, string.

22 Q. And who's the manufacturer of that?

23 A. That company used to be called Space Age
24 Controls, but now I think it's been purchased by FirstMark
25 Controls. Shown in 2767 is the foot switch that we

0165

1 already talked about.

2 There are numerous ballast photos showing the
3 sand bags that I placed in the -- the passenger seats
4 equivalent to 44 positions. And those are all the way
5 through Photograph 2829.

6 Then we go to Photograph 2852, that shows a
7 camera mounted to the steering damper attachment on the
8 tie rod of the tag axle. And that camera was monitoring
9 the -- the pneumatic cylinder.

10 2856 is another view of a camera. It looks
11 like a -- a Maglite flashlight but there's actually a
12 cigar camera housed within that Maglite flashlight casing.

13 Q. Where was that mounted?

14 A. That is mounted on a cross-member looking down at
15 the tag axle tie rod.

16 Q. When you say cross-member, what are you talking
17 about?

18 A. It's mounted above the driveshaft loop. Then
19 next to that, in the photograph, is a -- a microphone
20 that's mounted in that area to record the audio underneath
21 the coach.

22 And then we go to 2858 through 2856 -- I'm
23 sorry -- 2858 through 2865 -- excuse me -- those all show
24 the -- another string potentiometer that I mounted on the
25 tag axle itself, and it measures displacement of the tie

0166

1 rod on the tag axle.

2 If we go to several of these other photos --
3 photographs, for example, 2872 shows some of the wiring
4 that I installed to monitor the position of the foot
5 switch.

6 So, 2872 shows a -- a connector between a
7 couple of cables, and that was wired down to -- to monitor
8 the voltage across the -- the -- the foot switch or across
9 the solenoid that actuated the tag lock.

10 In addition to that, there are antennas that
11 were placed on the top of the coach. Those antennas are
12 part of the VBOX GBS -- GPS system. Those measure the
13 position of the vehicle, the speed of the vehicle, and the
14 rotation of the vehicle, and -- and roll -- roll angle, as
15 well as slip angle.

16 Q. I need you to go back and I think I wrote a
17 number down wrong. You said 2768, is that the string --
18 first string potentiometer that you told me about?

19 A. Yes.

20 Q. Okay. The cameras that were mounted on the
21 steering damper rod, about how much do you think that
22 camera weighed?

23 A. I'm sorry. Say that, again. What was that?

24 Q. You told us in 2852, that's an image of a camera
25 mounted to the steering damper on the tie rod.

0167

1 A. Right.

2 Q. How much did that camera weigh?

3 A. I don't know. We can -- we can look that up.
4 It's a -- it's a -- actually a contour HD -- it's made --
5 it's designed to be a helmet camera, so it's a camera that
6 would -- you would place typically on a helmet. It's
7 probably five ounces, or four ounces, or something. We
8 can look up the actual number.

9 Q. And you said that another string potentiometer
10 was on the tag axle tie rod, correct?

11 A. There's a string potentiometer that's mounted
12 from the -- across the -- the -- the physical space
13 between the tag axle itself and the -- the tie rod. So,
14 that string potentiometer measure -- measures the

15 displacement of the -- the tie rod in that position.

16 Q. So, is it mounted both to the tag axle and the
17 tie rod?

18 A. Yes. It has to be mounted to the thing that
19 you're measuring and what you're measuring it relative to.

20 Q. Okay. All right. Now, have we now gone over all
21 the instrumentation and equipment that you placed on this
22 test bus?

23 A. I think so.

24 Q. Do you still have all that instrumentation in --
25 with the exception of the ballast -- which I assume you
0168

1 got from the test track, correct?

2 A. I believe that's true. We got the ballast from
3 the test track; and yes, I certainly have all the
4 instrumentation.

5 Q. All right. So, if one of my experts wanted to go
6 out and look at all the instrumentation that you have, you
7 could make that available for him at your office?

8 A. As long as it's not currently installed on
9 something else, yeah, that's -- that's true.

10 Q. Okay.

11 A. And all the -- the calibration sheets for the
12 major pieces of instrumentation are included in Tab 4, so
13 they can look at that, as well.

14 Q. Did you do calibration of those instruments
15 before you left The Woodlands or did you do it out there
16 in Uvalde?

17 A. The calibration is actually done by the
18 manufacturer of the components. So, annually we'll send
19 these components back to the manufacturer to make their --
20 make sure that they're within specif-- specification and
21 we'll get the documentation of that to put in our -- in
22 our binder.

23 Q. Okay. Did you do anything else to prepare for
24 the test -- track testing?

25 MS. DORMAN: Object to form.

0169

1 A. I mean, that's -- that kind of covers a lot. I
2 mean, I -- I got hotel reservations --

3 Q. (BY MS. RODRIGUEZ) Well --

4 A. -- and that kind of stuff, but I mean --

5 Q. Let's talk about it. You called Uvalde test
6 track and you set up a date and time, correct?

7 A. Sure.

8 Q. Did you have to fill out any paperwork for any
9 waivers or forms they had you fill out?

10 A. No, I've tested there multiple times. I've got a
11 -- a complete set of documentation through their system so
12 I can -- I don't have to fill out unique forms to this
13 testing.

14 Q. Who was your contact person when you set up the
15 track testing?

16 A. The lady that schedules all of the client work at

17 the -- the track is a lady named Ella Samarron.

18 Q. Okay. So, you pick up the phone and you call
19 Ella, and say, hey, it's Kevan, again. I want to come out
20 and I reserve "X" amount of days. Is that how it went?

21 A. Generally, I ask when there's availability on the
22 track, so --

23 Q. Was that an open track? Were there other people
24 testing the same day or was it closed for you?

25 A. Well, when I test on the main track, typically

0170

1 that's exclusive use. And actually, with Uvalde, if
2 you're going to go both directions on the main track,
3 which I did, then you're required to use it exclusively.

4 Q. Okay. So, for the full three days, you had the
5 track to yourself?

6 A. Essentially, they -- they do run many, many, many
7 other tests there. They run their internal tests. They
8 have many external customers.

9 When I was not running -- I mean, my testing
10 was obviously done during the daylight. When I was not
11 running, they may have used it for other purposes, of
12 course.

13 Q. Okay. But during the daylight over those three
14 days, you used it for yourself?

15 A. I think that's fair. Yeah. I mean, I wasn't on
16 the track the entire time, but any time that I was on the
17 track, it would have been exclusive.

18 Q. How did you sync your video cameras in order to
19 do the split screen?

20 A. On the -- the split screen is from different
21 runs. So, the split screen is based on the driver
22 steering. Basically it's synchronized on, I believe, the
23 -- the peak steering in one direction.

24 The individual clips are synchronized to each
25 other using an audio track. So, basically all of the

0171

1 cameras are recording audio, and at the beginning of each
2 test a whistle is blown over the radio, a sync whistle
3 with a distinct number of -- of tones, and that's used to
4 synchronize all of the cameras relative to each other.

5 Q. Do -- were they all started -- all the cameras
6 started and stopped at the same time?

7 A. Well, within reason. They're, you know, in
8 different locations, so you can't start them all and end
9 them all instantaneously at the same time, but they're all
10 within a short period of time.

11 Q. And how many cameras did you have on the bus?

12 A. On the bus, there was a steering view, there was
13 a -- a tie rod mounted view, there was a locking cylinder
14 view, and there was a exterior view looking at the tag.
15 So, that was -- I'm sorry -- the tag axle tires. That
16 would have been four cameras on the coach.

17 Q. So, was Mr. Spry running all four cameras?

18 A. I don't recall who was specifically running each

19 camera but Mr. Spry and Mr. Clausen would have run all
20 those cameras, with the exception of perhaps the steering
21 which I would have started.

22 Q. Okay. So, did you and your colleagues use
23 anything other than the whistle, such as a flash of
24 lights, to synchronize each of the cameras?

25 A. To sync-- synchronize the cameras, no, that's
0172

1 whistle.

2 Q. Now -- and I've got the disks with me, and we can
3 go through it, but as I understand it, when you produced
4 your video of the testing, you produced test -- video of
5 the -- you produced 26 videos representing the 46 or 47
6 tests that you did. Is that true?

7 A. I don't think so.

8 Q. Okay. Is --

9 A. I mean, the raw -- the raw footage would have
10 been everything.

11 Q. All right.

12 A. So, that -- I think that's 80-some-odd runs. Let
13 me get a number for you there.

14 Q. 82?

15 A. That's right.

16 Q. Okay. So, if I don't have video for Run 14, 16,
17 18, 20, 22, 24, 26 through 28, 30 through 32, 39 through
18 41, 40-- and 43, can you explain why I wouldn't have that
19 in the -- the first clips that were sent?

20 A. Well, the first clips were some preliminary
21 videos that were -- were provided to show what the testing
22 was. Those clips were created by Mr. Spry. They would
23 have had basically kind of a crude placement of the videos
24 on top of each other with synchronized footage.

25 Those were done, I believe, for an example of
0173

1 each test that was run. Meaning if I ran two separate
2 runs of, say, high-speed lane changes with the -- the tag
3 axle steering unlocked, then it would show one of those.

4 There was never a clip created that showed
5 the other one, but all the raw footage was provided on the
6 -- the hard drive.

7 Q. But none of the raw footage on the hard drive is
8 synchronized with split screens, correct?

9 A. No, and that's something that I would normally
10 never do. That's -- that's -- I mean, it's 400 gigabytes
11 of data, that's -- that would be unnecessary.

12 Q. So, of -- of the ones that did get put in to
13 split screen, who's the one who selected those tests to do
14 split screen?

15 A. It would -- that would have been either myself
16 Adam Spry, based on, you know, having an -- an example of
17 each test that was run. And if somebody needed to make a
18 split screen, then, clearly it's just a matter of
19 synchronizing the audio tracks on those, so --

20 Q. Well, how would --

21 A. -- it's all on the raw footage.
22 Q. How would they do that on the raw footage with --
23 if it's just a start and stop of a whistle? How would
24 they know what goes with which test?

25 A. Well, you just go in sequence. And in addition
0174

1 to the whistle and the sequence of the test -- the
2 sequence of the test just follows the test notes that you
3 have in this data binder.

4 In addition to that, at the beginning of the
5 runs, there's what we call a slate placed in front of the
6 cameras. And that slate is a -- basically a dry-erase
7 board about this big, that lists the vehicle, the -- the
8 configuration, and the test that's being run, as well as
9 the date.

10 Q. So --

11 A. And that slate shows up in the videos.

12 Q. For every -- for all 82 runs?

13 A. Unless we missed one or two, yeah. But the video
14 is there even if the slate's not. And it will be
15 obvious -- obviously, if somebody does three runs in one
16 configuration, and then all the other cameras go to a
17 different slate but this one, and then there's more runs
18 after that, that's obviously been switched to the next
19 run.

20 It -- if you follow it in sequence, it will
21 make perfect sense.

22 Q. Now, how did you sync the data to the tests? The
23 -- the plotting points?

24 A. The data is synchronized with the tests based on
25 a -- an LED light that's on the -- the dashboard. That

0175
1 LED light is illuminated whenever the data begins.
2 Meaning if I press the data trigger, that light
3 illuminates and the -- the steering view captures that
4 light.

5 So, as soon as I start data, the beginning of
6 the data trace is then synchronizable with the steering
7 view, which is, of course, synchronized with all the other
8 views.

9 Q. Okay. So, you have to take that -- the data --
10 the raw data itself and sync it with the steering view to
11 figure out which of the data goes with which video?

12 A. No. That just -- that just lets you line up
13 precisely the data with the video for that test. What I
14 mean by that is when you see that light illuminate on the
15 -- on the steering view screen, that's the beginning.
16 That's time zero for the data.

17 And then you can go through the -- the data
18 and say the -- the speed is 73.2 miles per hour at
19 15 seconds. Then you know 15 seconds from when that light
20 is illuminated on the steering view, you're going
21 73.2 miles per hour. So, that's -- that's that
22 synchronization process.

23 Q. And -- and how is it that all of this starts at
24 the same -- at the same time?

25 A. I'm not sure what you mean.

0176

1 Q. Well, if you say you click the button to the red
2 -- I think you've been calling it the red light. You turn
3 that on to start the -- the recording of the data?

4 A. No, there's a -- a switch that's mounted on the
5 dashboard. And it's off to the right. And you'll see in
6 the video, if you look at the raw footage, I reach over
7 and click that switch on.

8 And as soon as I push the button on that
9 switch, a blue LED up on the dash lights up. The steering
10 view is set up so that it captures that blue LED. When I
11 click that button and start recording the data, it records
12 every single transducer at a hundred hertz from then until
13 I turn that data off.

14 So, all of the transducers are recorded and
15 that's all perfectly synchronized within nanoseconds.

16 Q. But --

17 A. Microseconds at least.

18 Q. But how is that synchronized with the steering
19 view camera?

20 A. Well, when you see that light come on in the --
21 the steering view camera, that's time zero of the data.

22 Q. Okay. And then, so you have to deduct whatever
23 time is on the video so that you can match up the time
24 from the video with the data?

25 A. There -- I don't think there's really a deduction

0177

1 process. Basically, for instance, Mr. Spry is a -- a
2 video editor. He's been doing video editing forever. And
3 he's got software on his computer where he can just put
4 all the clips up there. He can align the audio whistles
5 and line all the tracks up that way.

6 And then he can take the data and align that
7 based on -- you know, put a marker in his software where
8 the LED turns on, and then he knows the data starts
9 exactly at that point.

10 Q. And what software does he use for that?

11 A. I think he used Edius for this.

12 Q. How do you spell that?

13 A. E-D-I-U-S.

14 Q. Do you consider Mr. Spry to be an -- a consulting
15 expert in terms of the video work that he did for you?

16 A. No, he's just a technician that works for me.

17 Q. Okay. Could you do the video -- the -- the video
18 clips and synchronize them the way he did it? You've got
19 that expertise to do it?

20 A. I could do it, but I can't even imagine the
21 invoice that would come from -- that would take me
22 forever. I've used Edius and I'm familiar with how that
23 process works.

24 In fact, I'm -- I've designed the

25 synchronization process for multiple companies. So, I'm
0178

1 very familiar with how that works, but as far as the nuts
2 and bolts of doing it, I definitely think he's -- he's the
3 one that needs to do that.

4 Q. Well, what are the other ways to synchronize the
5 data from a test like that, other than using a whistle?

6 A. That's -- that's a very good way to do it.
7 That's -- over years of experience, I think that's the way
8 to do it. If --

9 MS. RODRIGUEZ: Objection, nonresponsive.

10 Q. (BY MS. RODRIGUEZ) What are the other ways of
11 synchronizing data for track testing other than using a
12 whistle?

13 A. You can use audio. You can use visual. Visual
14 doesn't transmit over radio very well. You can use time
15 code. I've used time code in the past. Every --

16 Q. What's visual?

17 A. You can use a -- a flash of light, for instance.
18 The -- the issue with that is, though, when the coach is
19 around the corner, the audio will be transmitted over a
20 radio very nicely. The -- the -- the flash of light won't
21 go around a corner so well.

22 Q. So, on the raw video footage that we got, there
23 will be a whistle at the beginning and the end of every
24 test run for every view?

25 A. There should be at least for the vast majority of
0179

1 them. Sometimes the -- the whistle will get obliterated
2 by some other noise that's going on, and that's why we
3 have continuous video footage.

4 Even if you miss the first sync whistle,
5 you'll likely get the one before the second test. So you
6 miss both of those, you'll get the one before the third
7 test. So you miss all of those, we do an end sync whistle
8 at the end of each sequence of video.

9 So, you have multiple opportunities to get
10 the whistle even if there -- you know, there happens to be
11 a car driving by on another surface that honks their horn
12 or something.

13 Q. Well, have you watched your raw footage of your
14 video -- of your track testing?

15 A. Oh. That's like 45 or 50 hours' worth of video.
16 I have not sat and watched all that. I have watched it in
17 various formats, but not like that.

18 Q. All right. And the only person you know who's
19 done that is Mr. Spry, in order to make the edits that he
20 made to the video?

21 A. That's right.

22 Q. Okay. If the -- if a -- a whistle is missed on
23 the beginning of a test or at the end of a test, how would
24 a third party who was not present for your testing know
25 how -- how to synchronize that data with that particular
0180

1 test if there was no stop whistle and the video footage
2 was continuous?

3 A. Well, if there are any audio signals, then you
4 can synchronize on that. I don't think it's a case in
5 this, but if there's no audio signal at all for those,
6 then you can synchronize on something else. Meaning --

7 Q. Like what?

8 A. Say you have a -- a camera pointed at the -- the
9 cylinder to lock and unlock the -- the tie rod. You can
10 synchronize on the -- the LEDs that show up on that
11 cylinder. That will synchronize you with the switch.
12 That will synchronize you with the steering view, which
13 will synchronize you with every other view.

14 Q. Painstaking work in -- in order to figure out the
15 details to synchronize, right?

16 A. That's why Mr. Spry does it.

17 Q. Okay. And -- and that's why you do the whistle
18 at the beginning, and at the end of every test; so that
19 you can assure -- ensure the validity and reliability of
20 the data, correct?

21 MS. DORMAN: Object to form.

22 A. No, that's separate from the data. It's -- it's
23 convenient for producing a -- a consistent video that
24 shows you the tests. As far as the validity of the data,
25 that's totally separate. The data measures -- I had set

0181

1 up the data to measure all the sensors regardless of what
2 the -- the video is recording.

3 Q. (BY MS. RODRIGUEZ) Yeah. But from that data,
4 you have made what you call data plots that you assign to
5 a particular test, correct?

6 A. Sure.

7 Q. And when the data comes out, it doesn't get
8 assigned to a particular test; you or one of your
9 colleagues had to do that. Go in and figure it out, and
10 do that, correct?

11 A. No, I think we can short-circuit that. If you
12 look at Section 6 in my data book, you'll see a test
13 index. And that test index documents 1 through 82 tests
14 that were run. The next page -- that's three pages.

15 The next page begins three pages of test
16 notes. These test notes are created by me during the test
17 trip. These are my notes that document the -- the test
18 was -- that was run versus the data file that I recorded.

19 So, what you'll see in here is -- excuse me
20 -- you'll see the -- the test number, a description of the
21 test, some of the conditions of the test, and then a -- a
22 file -- file name, like for example this one is VBOX
23 0026.vbo. That's the data file that recorded that test.

24 So, then, when you go back through the data
25 plots, you'll see the same test number, the same test

0182

1 name, other conditions that may be applicable, and then in
2 the bottom portion of the plot, you'll see the actual file

3 number or file name.
4 Q. Well, who put the data in to the data plots?
5 A. I did.
6 Q. When?
7 A. After the testing was done, over the next several
8 weeks.
9 Q. What did you do to insert that data in to the
10 data plots?
11 A. I didn't really insert. I mean, I just basically
12 created these data plots. This is what I did in the
13 MATLAB software.
14 Q. And when did you make the notes that you just
15 described for us? Did -- was it during the testing?
16 A. Those were during the tests.
17 Q. Was it plugged in -- directly into a computer or
18 did you have a clipboard?
19 A. This is just a -- a spreadsheet, it was kept on
20 the computer. So, this is the actual notes that you see
21 here.
22 Q. So, let me ask you: After you finish every run,
23 you would type into a laptop what your notes were, those
24 -- and that's reflected on that spreadsheet?
25 A. Generally speaking, yeah.

0183

1 Q. Well, did it happen on every run? Or did you
2 miss a couple and you would have to go back and fill in
3 some data?
4 A. It's -- it's all here, whether it was on --
5 immediately after every run or not, I couldn't recall.
6 Q. All right. So, the data plots -- how we get the
7 test number on the data plots, that's in your Tab 6; that
8 is based on your notes that you took during the testing --
9 A. Sure.
10 Q. -- and plug-- plugged it in to that spreadsheet,
11 correct?
12 A. Sure.
13 Q. And it's not based on the whistle?
14 A. I'm not sure I follow what you mean there.
15 Q. Sure. The -- the -- in order to figure out where
16 the data plots -- to make the data plots to figure out
17 where the data starts and stops for each test run --
18 A. Right.
19 Q. -- you're not going back and looking at the video
20 and listening to the audio where the whistle is and --
21 A. No.
22 Q. -- and looking at the data in that sense, are
23 you?
24 A. No, the data and the data plots are separate and
25 stand-alone.

0184

1 Q. Okay.
2 A. Then that is also synchronized with the video for
3 creation of the edited video. Like you'll see on the --
4 on the video, there's a speed display on that video. The

5 data is used to record the speed continuously through the
6 maneuver.

7 And then when we synchronize the data with
8 the video, we can put the speed up on that -- on the
9 video. So, you'll have a continuously updated measurement
10 of the speed of the vehicle as it goes through each of the
11 test maneuvers.

12 Q. And how did you synchronize the data that's
13 recorded in the data plots with the video?

14 A. That's the blue LED that's tied to the data
15 switch on the dashboard of the coach.

16 Q. And that's -- that's Mr. Spry going through
17 looking at the steering view, looking at the blue LED, and
18 then going back to the data and trying to figure out where
19 it corresponds?

20 A. You don't have to figure out where it corresponds
21 with the data. It always corresponds with time equals
22 zero on the data.

23 Q. But, I mean, there's going to be multiple times
24 equals zero on the data, right?

25 A. Well --

0185

1 Q. Because it's stopping and starting?

2 A. -- there's only one time equals zero for each
3 test. If you want to figure out which test corresponds to
4 the video, then you go back to the notes. The -- the
5 notes are in sequence -- the same sequence that the video
6 is in.

7 Q. Now, let's talk about the LED, the red light.
8 And then, you've edited the video to show a large red
9 light at the bottom of the video, right?

10 A. It's not very large, but there's a red circle
11 that I put on the video.

12 Q. Well, it's not as big as the one that was
13 actually on the bus that you put on, is it?

14 A. I didn't put a -- an LED on to indicate the tag
15 lock position. The LED that I was talking about before
16 was just the start and stop LED for the recording data.

17 If you look at the data plots, you'll see --
18 for example, I'm looking at Test No. 40. And this is a
19 dynamic unlock downhill to the right.

20 On the top chart that you see on this page,
21 there is -- there are three different signals being
22 plotted on that top chart. The red one is tie rod
23 displacement. The blue one is the speed of the vehicle.
24 And there's a green one which is the -- the position of
25 the tag unlock foot switch that I've installed on the

0186

1 coach. So, the green one tells you exactly when I put my
2 foot on that switch and actuated that -- that switch.

3 Q. All right. Well, I'm talking about on the bus,
4 you're driving the bus, and you said there is a light on
5 the bus that tells you when the tag is unlocked based on
6 your foot switch, and you had to cover that up when you

7 were doing the surprise unlock testing.

8 A. Yeah. Those are sort of unrelated. The -- I
9 didn't monitor any sort of LED when I was driving the
10 coach. When I put my foot on the switch, that's when it
11 was actuated.

12 Q. Okay.

13 A. That's the way it was -- there's -- there are two
14 dash lights, indicator lights on the dash. One for the --
15 the reverse position of the caster lock assembly and -- or
16 the caster latching assembly, and then one for the -- the
17 tag tie rod locking cylinder.

18 Those are just the original equipment
19 indicator lights on the -- on the coach. And so, when I
20 did the -- the surprise unlock testing, I had to cover
21 that up. I didn't monitor that -- monitor that or watch
22 that in other testing, it might be captured in the
23 steering view, but that's not LED that you see on the --
24 the edited video.

25 Q. Okay. Thank you for clearing that up --

0187

1 correct -- clarifying that for me. The LED -- the red LED
2 that I see on the video is from where?

3 A. That is from this data that -- that is this green
4 plot. If you look at Test 40, for example, in the video
5 you will see at time equals approximately 88 seconds here,
6 when this switch goes from off to on, that's when that
7 light is illuminated on the video. That video, that's
8 just a graphic.

9 Q. All right. I -- I understand. Let's talk about
10 the driver's compartment of the test coach. Was there a
11 red LED that you installed?

12 A. No, there was not.

13 Q. Was there -- were there any LED lights on the
14 underneath of the -- the coach on the tag lock assembly?

15 A. On the cylinder itself there are two LEDs that
16 illuminate whether it's in the fully up position or the
17 fully down position.

18 Q. So, if it's -- when it illuminates, is one, one
19 color and one's another color? Or how -- how does that
20 work?

21 A. I think there are two red LEDs, one that's on the
22 upper solenoid and one that's down on the lower.

23 Q. Okay. So, if it's on -- if the red -- the upper
24 red solenoid illuminates, what does that mean?

25 A. I would have to go back and look at through some
0188

1 -- some of the video. I think that means it's been pulled
2 up in to the unlocked position.

3 Q. And if the red lower solenoid LED illuminates,
4 what does that mean?

5 A. I believe that means it's been pushed down or
6 pressure has been applied to push it down into the locked
7 position.

8 Q. All right. How about with the original equipment

9 on the bus, the red tell-tale light in the driver's
10 compartment, if that illuminates, what does that mean?
11 It's lock-- the tag axle's locked or unlocked?
12 A. Well, there are two of them in there. If you
13 override the -- the speed switch, basically, and manually
14 lock the steering or -- yeah -- at least manually lock the
15 steering at low speeds, that light will illuminate. I
16 don't remember if it illuminates when you're unlocked
17 above speed.

18 Q. Okay. What's the second tell-tale light on the
19 -- in the driver's compartment for?

20 A. That is the tag -- tag steering light that is
21 illuminated when you put the vehicle in reverse.

22 Q. Okay. So, is there any light in the driver's
23 compartment that would tell the driver that the coach --
24 the tag axle's unlocked moving forward?

25 A. Telling you that it's unlocked moving forward?

0189

1 Q. Yes, sir.

2 A. I believe that is the -- the first indicator
3 light.

4 Q. I thought that you said that was when the driver
5 overrides the unlocking, and they lock it up at speeds
6 under twenty, that that red light comes on then?

7 A. Yeah. I don't recall specifically the conditions
8 under which that light illuminates.

9 Q. Okay. How did you validate that the tag axle was
10 unlocked for the tests where you say it was unlocked?

11 A. Well, the simplest way to do that is to look at
12 the data. And you'll see on that first chart that I was
13 talking about, I not only plot the -- the switch position
14 but I also plot the position of the tag axle tie rod.

15 And, for example, in Test 40, you can see for
16 the beginning portion of this plot, the -- the green line
17 and the red line -- the green line being the position of
18 the switch in the locked position and the red line being
19 the actual physical position of the tie rod -- are both
20 zero. So, nothing has moved at that point.

21 And then as soon as I hit the unlock switch,
22 obviously the green signal goes up here, which indicates
23 the switch has been pressed, and you see the displacement
24 from the -- the tag axle tie rod.

25 Q. Okay. So, we would need to look at all your data

0190

1 plots, and look for the green line movement and the red
2 line movement to figure out when the tag axle was
3 unlocked, correct?

4 A. Well, the green line will tell you when I pressed
5 the foot switch. And that's when the electrical signal is
6 sent to the back of the bus that says unlatch this
7 latching plate. Or unlock the -- the tie rod locking
8 cylinder.

9 The -- the red line tells you when that
10 actually occurs. Meaning, if you're going around a

11 corner, and there are cornering forces on the tires, what
12 that -- that can do is put a side load on the -- the
13 plates.

14 And you may request that the -- that the
15 cylinder unlock by overriding the signals, but it may not
16 unlock until there's -- the vehicle is brought closer to
17 straight ahead, where there's no more side load on those
18 plates.

19 So, what you may see in some of these plots
20 is I'll hit the -- the -- the switch with my foot to unlock
21 it, they remain locked because I'm in a corner; and then
22 once the forces on that -- those plates get to a -- a low
23 enough level, then it will unlock.

24 Q. And how did you lock it back up? What did you do
25 to lock it back up?

0191

1 A. Simply take your foot off the switch and -- and
2 drive.

3 Q. So, you have to keep your foot on the switch in
4 order to keep it unlocked, through that manual override
5 system you devised?

6 A. Correct. Correct. It's a -- it would be
7 considered a momentary switch, and that's -- that means I
8 have to have my foot on that while it's unlocked.
9 Mr. Brown -- I think Frank Brown it is -- did the same
10 override, as I understand it, on that coach up there; and
11 he used an on/off position switch, which meant you had to
12 flick the switch to -- to disengage.

13 Q. Do you know if your override switch was wired the
14 same way his was?

15 A. I don't know specifically, but my understanding
16 through his -- either his report or his testimony, was
17 that it was basically the same -- same type of an
18 override.

19 Q. But he said he didn't want to use the bus
20 electrical as the -- part of the override. Did you use
21 the bus electrical as part of the override?

22 MS. DORMAN: Object to form.

23 A. I'm not sure what you mean by what he said. What
24 I used was --

25 Q. (BY MS. RODRIGUEZ) Mr. Brown.

0192

1 A. What I used was the -- the coach's 24 volt bus
2 that's up in that left junction panel. So, I used the --
3 the volt -- the bus -- the bus' own power to actuate that.
4 And it's basically just a signal. It's a 24 -- 24-volt
5 signal.

6 Q. So, if -- you don't have the data plots as you're
7 driving, correct?

8 A. I'm not sure what you mean.

9 Q. I mean, the data plots you have, you said it took
10 you a week or so to prepare those after the testing,
11 correct?

12 A. Well, I mean, obviously I don't have --

13 Q. Right.

14 A. -- the data while I'm -- I'm driving there in a
15 printed format; but what I've got there on the dash is the
16 test computer. And that test computer monitors every
17 sensor, and I've got a -- a graphical display or a numeric
18 display from every -- every sensor while I'm driving.

19 Q. And so, where would I get the real-time of that?

20 A. That's right here.

21 Q. That's the real-time?

22 A. Yes, absolutely.

23 Q. Because that looks like it's edited, because it's
24 got test numbers assigned to it.

25 A. I'm not sure what you mean by real-time, then.

0193

1 The -- the raw data -- which is the actual VBOX.vbo files
2 -- those are all on that hard drive.

3 Q. Okay. That's maybe what I was --

4 A. Okay.

5 Q. -- suggesting it was. You know how on the video
6 we first got some edited clips, and they weren't of all
7 the test runs. And so, I had to ask Ms. Dorman, hey, we
8 didn't get all the video. And then I get this hard drive
9 with the raw data of the video.

10 A. With all the video.

11 Q. And so my question is about the data that you had
12 on computer that was with you in the driver's compartment.
13 Are you telling me that the raw data, unedited, un-put (sic)
14 in to reports, that's on Exhibit 24?

15 A. That's right.

16 Q. Okay. And so, it's just going to flow -- the
17 data is just going to flow continuously, as you saw it in
18 the driver's compartment?

19 A. I'm not sure I follow you there.

20 Q. Thank you for letting me know. You said you were
21 looking at it -- for example, you have your foot on the
22 switch; and so to you that's sending the signal, unlock
23 the tag lock, correct?

24 A. As an example, yeah, that happens in the test.

25 Sure.

0194

1 Q. And then it may or may not, for various reasons
2 which you've already described to us. So, you can look --
3 let's say you're rounding a corner when you hit that
4 switch. You can look up on the -- your laptop screen and
5 see whether it's -- the tie rod's moving to see if it's
6 unlocked or not, correct?

7 A. That wouldn't be something that I did during the
8 testing, no.

9 Q. All right.

10 A. Once I hit the switch on the -- on the floor, I
11 knew that the signal was sent back there to unlock it.
12 Whether it locked immediately or not, that's -- that's up
13 to the -- the physics of that -- that system back there.
14 And so, I didn't monitor that actively on my -- I was

15 driving the coach. I was driving forward.
16 Q. Okay. You said whether it locked immediately or
17 not. Did you mean whether it unlocked immediately or not?
18 A. Sure. Based on what we described earlier --
19 Q. Okay.
20 A. -- what I talked about with going around a
21 corner, you might have a lateral force.
22 Q. Right. Let me just make sure the testimony's
23 clear. You put your foot on the switch. That's supposed
24 to unlock the tag axle in the back, correct?
25 A. Well, that certainly sends an electrical signal,
0195
1 and that actuates the cylinder to -- to pull the pin out.
2 Q. And whether it does immediately or over a period
3 of time, that you're not able to discern imme-- while
4 you're driving the coach, because you're driving, correct?
5 A. That's better discerned by the data, right.
6 Q. Okay. And then, when you left your foot off the
7 switch, it's supposed to lock the tag axle back up,
8 correct?
9 A. Well, I would say electrically, it sends a signal
10 back there to -- to engage the -- the locking pin; and
11 then at the next opportunity where the plates are aligned,
12 it will engage it.
13 Q. Okay. But whether it does engage or at what
14 point it engages, that -- you're not able to discern that
15 as you're driving the coach right then and there, you have
16 to look at the data plots after the fact, correct?
17 A. The best way by far is to look at the data plots,
18 sure.
19 Q. Okay. Now, let's talk about the hard drive a
20 little bit, because when I got it, it looked like totally
21 different testing than what I got from the video clips
22 with the first disk.
23 Is there additional testing or is it
24 different testing on the hard drive that you provided to
25 Ms. Dorman?
0196
1 A. Which -- which -- are you talking about
2 Exhibit 24 or are you talking about the raw video footage?
3 Q. Well, I'm not talking about Exhibit 24, because
4 you've already told us that doesn't have any of your video
5 from the testing, right?
6 A. That has the edited video; then it also has those
7 individual clips. The raw video footage would have been
8 separate.
9 Q. Okay. The raw video footage -- assume that --
10 I'm assuming you gave it to Ms. Dorman on a hard drive,
11 right?
12 A. I believe so.
13 Q. And assume she gave that to me. If I were to
14 look at that, it looks like it has different tests, like
15 it -- it's totally different testing. Is it your
16 testimony that what's on the hard drive is the raw video

17 for Tests 1 through 82?

18 A. I mean, I would have to see it if you -- if you
19 think it's actually -- I mean, you're talking like a
20 different vehicle or --

21 Q. No. Different testing than what was purported on
22 Test 1 through 46, that I only got the 26 videos on the
23 first round.

24 A. Well, the -- the footage that you should have --
25 and I can't verify it, since it's not here -- but the

0197

1 footage that you should have is every second of video that
2 was taken on multiple cameras for every one of these test
3 runs from 1 to -- 1 to 82.

4 Q. Okay. Thank you.

5 A. So --

6 Q. I just want to make sure that that's -- because I
7 don't know that I have that. And I actually have the hard
8 drive with me, but like you said, it would take 50 hours
9 to go through. We -- the Court's not going to let me do
10 that with you. But I just want to make sure I understand
11 what should be on the hard drive.

12 A. Yeah, that should be absolutely everything.

13 Q. Okay. Did you go back and check any of
14 Mr. Spry's work on the video editing?

15 A. Well, when I look through the -- the videos, I,
16 in general, looked -- look at how the -- the video was
17 done. So, I mean, in general terms, sure.

18 Q. Did you read Mr. Fugger's deposition?

19 A. I did.

20 Q. And I think this was attached as an exhibit
21 there. He referenced Test 38, I think it was, where the
22 video appeared to be out of sync. Did you look that over?

23 A. I didn't look at that, no.

24 Q. You're not interested to see if what he mentioned
25 about that was valid or not?

0198

1 A. No. I mean, the -- the video, as edited and
2 provided on the -- the hard drive here, my understanding
3 is that's synchronized. I did not look at the -- at the
4 run that Mr. Fugger's talking about.

5 Q. Now the steering rate that's measured, is that
6 the steering input at the steering wheel itself or a
7 measurement of the tire angle?

8 A. All the steering values are measured at the
9 steering wheel itself.

10 (Conference out of the
11 hearing of the Reporter)

12 Q. (BY MS. RODRIGUEZ) Okay. How do you know that
13 the test data is synced with each test on the video clips
14 that Mr. Spry did?

15 A. It's based on the -- the LED where the data
16 begins. So, that's -- that's the method which we use to
17 synchronize the data. So, that -- that's how it's done.

18 And then if anything looks out of place, then

19 I would, you know, evaluate that; but that's the method,
20 and so that's -- that's an appropriate method to do that.
21 Q. And the LED you're talking about is the blue
22 light in the steering view?
23 A. The blue LED on the dash, yes.
24 Q. Okay. So, we've got the blue LED on the dash,
25 and you're synchronizing that with the zero reference port
0199

1 -- point from your raw data on the various instruments,
2 correct?
3 A. Correct.
4 Q. How about the exterior cameras? How was that
5 synced?
6 A. Same thing. It's via audio. It's by whistle
7 tones. And the -- the whistle is -- when the whistle is
8 blown, it's blown over a -- a radio transmission.
9 And then each of the exterior cameras would
10 have a radio adjacent to them, and, of course, that would
11 capture the -- the sync whistle at that time.
12 Q. Let's pull up Test -- Test 46.
13 A. And you want me to look at the data plot or what
14 is it?
15 Q. No. We'll -- we'll look at the video.
16 A. Okay. Did you say 46?
17 Q. Yeah. And it may be -- what -- what do you
18 think's easier -- easiest to look at that from, either the
19 hard drive or some of your disks? What's going to be
20 easiest, do you think?
21 A. I'm not sure what's the -- the easiest way of
22 looking at that.
23 Q. All right. Well, do you think you'll be able to
24 find it if I put the -- connect the hard drive up to a
25 computer?

0200

1 A. Well, if you have -- well, you can look at those
2 -- the folder that has all the individual video clips, and
3 I believe it should be the second-to-last one of those.
4 Q. (BY MS. RODRIGUEZ) Okay. Let's see.
5 A. There should be, you know, a test 46 wmv file.
6 VIDEOGRAPHER: There's about five minutes
7 left on this tape.
8 MS. RODRIGUEZ: All right. Let's go ahead
9 and change tapes, and I'll pull this up.
10 VIDEOGRAPHER: We're off the record at 2:30,
11 end of Tape 4.
12 (Recess from 2:30 p.m. to 2:41)
13 VIDEOGRAPHER: We're on the record at 2:41,
14 start Tape 5.
15 Q. (BY MS. RODRIGUEZ) Mr. Granat, we've got
16 Test 46, the -- the edited clip up on the computer
17 screen, correct?
18 A. Right. That's my understanding.
19 Q. And I want to -- well, you see it says "Test 46"
20 up at the top, correct?

21 A. Right.
22 Q. All right. And I want to direct you to the five
23 second mark of this testing. We'll go back to four.
24 Okay. And at the five -- well, I went a little bit too
25 far. At this five second mark -- and you've got the data
0201
1 plots in front of you, correct?
2 A. I do.
3 Q. What is the maximum steering excursion on the tag
4 axle based on this center photo and -- and on your data
5 plots?
6 A. On the -- at that time? I mean, you would have
7 to go back and figure out what time that is relative to
8 the data.
9 Q. How do you do that? If I want to edit it -- for
10 any of your tests look at a particular time -- look at all
11 the videos, for example, at the five second mark on
12 Test 46, how do I correspond that with your data plots
13 that you have in your notebook, Tab 7?
14 A. Well, one -- one way you can do that is look at
15 the -- the -- at least on the other edited video, you can
16 look at the indicator graphic that was shown on the other
17 video.
18 This particular test, you would have to go to
19 the raw footage and look at when the -- the steering --
20 I'm sorry -- the -- the dash LED came on. That would tell
21 you --
22 Q. That's the blue one?
23 A. Correct. That would tell you when time zero was,
24 and then you could synchronize that with the data.
25 Q. All right. Do you know if anybody from your
0202
1 office has done that?
2 A. I don't believe so. Unless that -- this clip
3 shows up in the edited video.
4 Q. This -- what's the -- is there a steering angle
5 offset of about 25 degrees for this clip and this data?
6 A. Right. Right. This is in a -- in a curve to the
7 right, so there's a steering input coming in to the test.
8 Q. Does the blue line on your second graph ever go
9 to zero?
10 A. Sure. It goes below zero at about 75 seconds.
11 Q. At 75 seconds in the test?
12 A. Approximately, yes, it goes below zero.
13 Q. Okay. How would we know where that is in
14 connection with this clip? Using the raw data like you
15 said?
16 A. Well, the -- the data is here; you would have to
17 go back to the raw video, and --
18 Q. The raw video, I mean.
19 A. -- and look at the -- the indicator lamp on the
20 -- the dash.
21 Q. Okay. And then let's look at Test 47.
22 A. Okay.

23 Q. What was the curve of the radius for that test?
24 A. I don't know specifically, but within the raw
25 data that you have in the hard drive there's going to be
0203

1 latitude and longitude measurements, and that will tell
2 you the exact path of the bus during this test.

3 Q. And that's in the raw data on -- that you used to
4 plot those points?

5 A. Correct.

6 Q. Okay.

7 A. That data will be on the hard drive that you have
8 on your computer.

9 Q. Have you done that evaluation or calculations?

10 A. Calculate the radius of the curve?

11 Q. Yes.

12 A. I have not.

13 Q. Okay. What was the downgrade? You said you were
14 going downhill on Test 47, what was the downgrade?

15 A. It's a slight downhill. I wouldn't know a number
16 for that. You could get that same number from the data, I
17 believe, or alternatively get that number -- from based on
18 the position of the coach in the raw data, you could get
19 that number from the Uvalde test track.

20 Q. Okay. So, if I wanted to know the curve of any
21 radius, or the downgrade of any hill, for any of your
22 testing that says it was done on a curve or on a hill --
23 and/or on a hill, I would need to look at your raw data,
24 correct?

25 A. That's by far the easiest way to do it. What
0204

1 you'll see in the raw data is the latitude and longitude
2 of the vehicle as it goes through this maneuver, and
3 that's updated a hundred times a second.

4 So, you'll have the position of the vehicle,
5 and that's -- you know, that's absolute position relative
6 to the Earth. So, you just plot it on Google Maps, if you
7 want, and it will show up on the Uvalde test track.

8 Q. And that's assuming I have the software to run
9 that data, correct?

10 A. Not really. The -- that data, the vbo file
11 format, which is the raw data, you can read that with the
12 VBOX Tools software, but you can read that with anything
13 else, as well. It's a text file. So, you could read that
14 in to Excel if you wanted to. Your -- one of your
15 engineers could do that.

16 Q. And so, you wouldn't be able to say that any of
17 the curve -- radius curves or the downgrade were the same
18 as the radius curve at the accident scene or the downgrade
19 at the accident scene, correct?

20 A. No. And that really wasn't the -- the intention.
21 The general curvature of the roadway is -- is part of the
22 test. And obviously I'm -- I'm restricting that to the
23 actual curvature of the roadway at the Uvalde test track.

24 MS. RODRIGUEZ: Objection, nonresponsive

25 after the word "no."

0205

1 Q. (BY MS. RODRIGUEZ) Is there a difference in
2 traction between a completely wet road, like you had in
3 your testing at some points, versus a damp road?

4 A. There's going to be a difference in traction
5 based on moisture con-- content. There's a whole
6 continuum of -- of different traction.

7 Q. If you have water standing on the road, are the
8 tag tires going to get more traction in that situation or
9 less traction?

10 A. I'm not sure I follow what you mean there.

11 Q. Sure. Let's -- and let's compare two roadway
12 surfaces. We've got a roadway surface with water standing
13 on a road. Do you know what I mean by water standing on
14 the road? It's on --

15 A. There's --

16 Q. -- water on top of the road?

17 A. Yeah, there's a whole spectrum of what we can
18 mean there. But there's wetted pavement, then there's all
19 the way through, you know, a quarter inch of water on the
20 road.

21 Q. Okay. And then there's versus a road that's
22 damp; meaning it's wet on the -- to the inside of the road
23 components itself, but there's no water sitting on the top
24 of the roadway.

25 Can you take those two different scenarios

0206

1 and tell me if there is a difference in the traction
2 you'll get between those two different road conditions?

3 A. Well, I'm -- I'm -- I'm not following what you
4 want to go with as far as wet on the inside surface of the
5 road. I'm not following that.

6 Q. Okay. Well, think of it this way: You've got a
7 sponge and it's moist because it's got water inside it,
8 right?

9 A. Sure.

10 Q. Okay. Versus you have got another surface or the
11 sponge that has so much water that there's water sitting
12 on top of it. Those are the two different surfaces that
13 I'm talking about. One where there's water laying on top
14 of the surface and the other where there's water inside
15 the surface. Do you --

16 A. Okay.

17 Q. -- now understand what I mean by the two
18 different surfaces?

19 A. I understand what you're getting at; and I
20 wouldn't characterize the asphalt roadway though as a
21 sponge. I mean, it's -- it can be wet to different
22 levels, meaning you can have a different water depth
23 whether it's the just the aggregate in the -- the asphalt
24 itself is -- is damp on its surface, or you can have a
25 water depth. But I wouldn't characterize it as a sponge.

0207

1 MS. RODRIGUEZ: Objection, nonresponsive.

2 Q. (BY MS. RODRIGUEZ) Exhibit 7, do you see any
3 standing water on the roadway where the accident
4 occurred?

5 A. No, not in this photograph. Not at this time.

6 Q. Did you find any photographs where there was
7 standing water on the roadway where the accident occurred?

8 A. Standing water, I don't recall. I would
9 characterize the -- the roadway as damp.

10 Q. Okay. Now, when you wetted the -- the track over
11 in Uvalde --

12 A. Right.

13 Q. -- did it get to the point where it was damp or
14 was it where there was water on the top of the track?

15 A. It depends on when you ask that question, because
16 the -- I think the temperature that day was over a hundred
17 degrees, meaning we'd have the water truck drive through
18 there and wet the pavement, and if you waited long enough
19 there wouldn't be any moisture.

20 So, there's a -- a continuum of moisture. I
21 would call it basically wet. I didn't try to duplicate
22 the conditions at the crash scene. This is just meant as
23 a -- an example of on a wet surface.

24 Q. Okay. And -- and I'm not suggesting that you
25 were trying to duplicate it, but I notice in some of the
0208

1 videos that -- what appeared to be a splashing effect or
2 you could see the water coming up from the tires.

3 A. Sure.

4 Q. Did you notice that on any of the videos?

5 A. Absolutely.

6 Q. Okay. And that to me would be where the -- the
7 road is on -- on this continuum you've described for us --
8 is more wet than, for example, what we see in Exhibit 7,
9 correct?

10 A. Certainly what we see in Exhibit 7, yes.

11 Q. All right. Now, in that scenario where there is
12 water such that it's splashing up from the tires, are you
13 going to -- is -- get more traction in the tag tires with
14 that type of road condition or less traction with the tag
15 tires with that type of road condition, as opposed to a
16 damp road like Exhibit 7?

17 A. Well, there's -- it's really kind of apples and
18 oranges as far as the exact road surface. There's a
19 difference between the -- the pavements themselves.
20 The -- at the crash scene, it's -- it's a travel-worn
21 pavement, I would describe it.

22 The -- the test track doesn't get nearly the
23 number of vehicles going over that. In addition, because
24 of that, we've got the oils and the different residue from
25 -- from many vehicles passing over the -- the crash scene
0209

1 surface.

2 Those residues are going to change the way

3 the dampness of the -- of the surface is affected. So --
4 so, once again, I go back to the -- the notion, I -- I'm
5 not trying to duplicate that in any precise way. I don't
6 think that's even possible.

7 What I'm trying to do is show that when you
8 drive around the curve with the -- with that tag steering
9 unlocked, there isn't any dramatic behavior of the
10 vehicle.

11 MS. RODRIGUEZ: Objection, nonresponsive.

12 Q. (BY MS. RODRIGUEZ) What I'm talking about is in
13 terms of the difference between the traction on a wet
14 road or a non-wet road. Are you -- are the tag tires
15 going to get more traction on a dry road than on a wet
16 road with standing water?

17 A. Well, that goes back -- back to my previous
18 answer. There's -- there's a continuum. And generally
19 what happens and is well understood -- in fact, it's in
20 the Commercial Vehicle Manual -- is that the initial
21 dampness of the road is sometimes more slick than if the
22 rain continues.

23 Meaning, if you have just a freshly damp
24 road, then you have all of the -- the oils that are
25 present on the surface of the asphalt lowering the

0210

1 friction at that point in time. And then as -- as the
2 rain would continue, you would have a washing off of some
3 those oils, and then you would have an increase in
4 friction.

5 So, if you go from a dry road to a wet road,
6 you're always going to reduce friction from dry to -- to
7 wet pretty much. And there's going to be a bigger
8 reduction on the traction right at the beginning of the
9 rain, dependent on any sort of oils on the surface.

10 MS. RODRIGUEZ: Objection, nonresponsive.

11 Q. (BY MS. RODRIGUEZ) Let's talk about, then, the
12 test track, because you -- the idea of a test track is
13 it's not going to have the oils like you described,
14 right?

15 A. It will have some, but I wouldn't expect as much.

16 Q. All right. And so, if you put water on a test
17 track, your tag tires are going to get less traction, in
18 that scenario, than if the test track is dry, correct?

19 A. I think that's generally true on any surface,
20 you're going to reduce tractive capability on a wet
21 surface comp-- compared to the same surface dry.

22 Q. All right. If I wanted to figure out which of
23 your tests have hard braking, what would I need to look at
24 in the data you provided us?

25 A. The braking is actually in the title of the

0211

1 tests. I don't think I did anything that I would
2 characterize as hard braking.

3 There should be -- for instance, we were
4 looking at Test 46, and that is -- the title of that test

5 is "Dynamic Unlock, Downhill to the Right, Intentional
6 Steer to Shoulder, Braking Wet." That's kind of an
7 abbreviation, but there's braking in that maneuver.

8 Q. What would you quantify or call "hard braking"?

9 A. Well, obviously, if you lock up all the tires
10 that's as hard of braking as you can get. The -- the
11 continuum goes from -- you would measure that in
12 longitudinal Gs.

13 In my example of No. 46, I applied the brakes
14 to achieve about a two-tenths of a G deceleration. The
15 vehicle would -- would be capable of maybe .45, .5 Gs.
16 So, I'm applying a -- an acceleration that would be just
17 less than half of the vehicle's capability. I would
18 consider that kind of a moderate brake stop.

19 Q. What would you consider to be a heavy brake stop?

20 A. Well, there are certainly different manners in
21 which you can achieve that. If you do threshold braking,
22 which is basically controlled braking -- and that is where
23 you brake up to the limit of tire adhesion; so you're not
24 allowing the tires to -- to slide, but you're keeping the
25 tires rolling -- then you're going to get the maximum

0212

1 braking capability of the vehicle. And that's what I was
2 saying was probably .45 to .5.

3 If you applied more braking force, then
4 you're -- you're more in sort of what I would term a -- a
5 panic brake maneuver, and you're locking up the tires.

6 And then rather than achieving the maximum
7 deceleration -- which is related to the -- to the static
8 coefficient of friction, now you're going to go to the
9 sliding coefficient of friction which is lower. So, that
10 might be also, you know, .45 Gs or a little less.

11 Q. All right. Now, did you ever hit the brakes hard
12 enough where you left any tire marks for any of your
13 testing?

14 A. At .2 Gs, I wouldn't -- I wouldn't expect
15 significant tire marks out there. I did not look for
16 that.

17 Q. Do you know if you did leave tire marks for any
18 of your testing?

19 A. I didn't look for that, so I don't know.

20 Q. Other than the inspection that you did of the
21 test bus up in Loudonville, Ohio, did you do any type of
22 mechanical inspection of the bus before you tested it on
23 the track?

24 A. Only in a general sense of confirming that the --
25 the tag locking cylinder was functional, and -- and

0213

1 everything was, you know, operational for the purpose of
2 the test.

3 Q. So, you -- you put your equipment on, and then
4 you operated the equipment, and -- and functioned the tag
5 axle lock to see if it was going up and down. Is that
6 what you just, in general, did?

7 A. Well, I think the first two tests are going to
8 capture my evaluation of making sure the -- the
9 instrumentation and the tag locking cylinder was
10 functional.

11 And the first turn -- I'm sorry -- the first
12 test is labeled "Low Speed Turn, Unlocked." So, for that
13 test, I -- I unlocked the tag locking cylinder, and then
14 drove around in a Figure 8 fashion.

15 And then the second test is low speed turn
16 with the tag axle steering locked. And that's just the
17 opposite test. So, that's -- that's kind of when I first
18 confirmed that the -- the lock and unlocked mechanism was
19 functional.

20 Q. All right. But how about from just a mechanical
21 inspection of the bus. It's sitting there stationary,
22 parked. You're getting ready to start your test tracking.
23 Did you go around and -- and look at the tires?

24 A. Sure. I made sure the tires were inflated to the
25 specification on the certification label. And I think if

0214

1 you go to my instrumentation, Tab 4 in the binder, you'll
2 see a certification of calibration for the tire pressure
3 gauge that I used to confirm that all the tires were
4 inflated to the right level.

5 Q. And where are the tire level readings?

6 A. The tire level readings --

7 Q. Yes.

8 A. -- would be documented on -- likely on the
9 door -- or I'm sorry -- the certification label.

10 Q. No. I mean that you found for each tire, where
11 is the evidence that they were within the specified
12 amount?

13 A. Oh, I measured them with a calibrated pressure
14 gauge --

15 Q. Okay.

16 A. -- and confirmed myself that they were at the
17 right level.

18 Q. And I'm not questioning you, but maybe some other
19 lawyers have questioned that, well, where's the photograph
20 that -- of each calibration that you took. Did you do
21 something like that? Or you just -- you satisfied
22 yourself and didn't photograph it?

23 A. No, I wouldn't photograph this, no.

24 Q. Okay. And I'm not suggesting that you should,
25 but -- okay. So, you -- you checked the air pressure in

0215

1 the tires. Did you check the tread depth?

2 A. Only visually; not measurement-wise.

3 Q. What type of tires were on the test bus when it
4 arrived or when you picked it up at the track?

5 A. They were all Firestone F400s.

6 Q. Do you know if that's the type of tire that's on
7 the subject bus?

8 A. The subject bus was equipped with Michelins.

9 They were the same size, different manufacturer.

10 Q. Were the tires changed out at any point during
11 the testing?

12 A. No.

13 Q. Were the tires changed -- any of the tires
14 changed out after the track testing?

15 A. Well, my understanding, through Ms. Dorman, is
16 that when you folks looked at the bus in California, there
17 was one tire that was different. That was not changed out
18 either before, during, or immediately after my testing.

19 So, I -- I don't know when that was changed
20 out. Obviously, the coach traveled from Uvalde, Texas, to
21 California. I can only surmise that it was changed out
22 some -- at some point prior to -- to your inspection.

23 Q. So, at some point after it leaves -- you leave it
24 in Uvalde, to some point where -- before our testing or
25 inspection, rather, in Los Alamitos, California, the right

0216

1 tag tire got changed out, and you don't know why, or who
2 did it, or when, right?

3 A. That's my understanding. But I -- I haven't
4 looked at the coach in -- in California at all. So, I'm
5 basically going on what other people have said.

6 Q. Did you see the photos of the right tag tire?

7 A. I don't recall seeing any photos of the right
8 tag.

9 Q. Did anyone check the tread depths on the tires
10 during the track testing?

11 A. No.

12 Q. Did anyone check the tread depth on the tires
13 after the track -- track testing?

14 A. No. Other than just visually seeing the tires.

15 Q. So, after every test run, each -- 82 test runs,
16 somebody visually inspected the tread on all of the tires?

17 A. No.

18 Q. Okay. How often were the -- was the tread
19 checked on the tag tires?

20 A. There was no formalized review of the tires. The
21 testing was such that I believe after the first two tests
22 where I did the low speed turns, I looked at the tires to
23 see if there was any sort of scuffing from the locked low
24 speed test. After that, I wouldn't have paid attention to
25 the tread depth. It wasn't -- wasn't material to the

0217

1 testing.

2 Q. What did you see after the first two tests?

3 A. I didn't really see anything of any significance.

4 Q. Did you photograph what you saw?

5 A. No.

6 Q. Do you know if the tread -- tread depth was the
7 same or substantially similar to the test bus?

8 A. I'm not sure I'm following your question.

9 Q. Sure. You -- you know, I'm sorry, that was a bad
10 question.

11 Do you know if the tread depth on your test
12 bus was the same or substantially similar to the tread
13 depth on the tires on the accident bus?
14 A. No, I didn't -- didn't evaluate that for that
15 purpose.
16 Q. Does the newness, type and amount of tread left
17 on a tire affect the coefficient of friction between a
18 tire and the roadway?
19 A. The newness?
20 Q. Yes.
21 A. You mean the -- the gage of the tire?
22 Q. Yes. Sorry.
23 A. I guess -- sure. All of those factors will have
24 an effect to some degree. And like I said, I'm not trying
25 to match that specifically in this case for the purpose of

0218

1 this test.
2 Q. Would you expect any difference in the way a tag
3 axle performs as a result of using different types of
4 tires on the tag axle?
5 A. I think from a general point of view, I wouldn't
6 expect any sort of significant difference.
7 Q. Okay. Did you check the brakes before you --
8 there in Uvalde before you started your track testing?
9 A. Before I started the track testing? I don't
10 believe I would have done any sort of measurement on the
11 brake -- brakes. Certainly while I did the -- the test
12 driving, I used the brakes; but I don't remember checking
13 it out beforehand, no.
14 Q. Did you -- maybe you don't remember this, but
15 Mr. Hill had asked Mr. Yohe or Mr. Brown, "Did you take
16 brake measurements on the test bus at Bosch after every
17 run?" And they said, "No."
18 Did you do that on yours?
19 A. No.
20 Q. That's not reasonable --
21 A. Did not.
22 Q. That's not something you would do in track
23 testing of this nature, is it?
24 A. Not of the nature of the -- the testing that I
25 did, no.

0219

1 Q. And so at no time before, during, or after the --
2 your track testing, did anyone in your group take brake
3 measurements on your test bus, correct?
4 A. That's true.
5 Q. And did you check the brakes on the test bus,
6 look at the condition that they were in, and determine if
7 they were working properly, that sort of thing, before,
8 during or after your testing?
9 A. I determined that they were working properly
10 during the testing, because I'm driving the coach. I have
11 to, you know, accelerate up to test speed and then
12 promptly stop the coach. And so, that -- that worked

13 fine.

14 Q. Okay. How about the condition of the brakes?

15 Did you visually look at the -- the condition of each
16 brakes before, during or after your testing?

17 A. I wouldn't say that I did an inspection of the
18 brakes like that. No, I -- I evaluated them functionally
19 from the driver's seat, but I did not go and inspect them
20 individually.

21 Q. Was the caster latch locked in a straight
22 position before the testing started?

23 A. Can you be more specific about "straight
24 position"?

25 Q. It's locked.

0220

1 A. It was locked.

2 Q. It's -- it's not castered forward?

3 A. It's -- well, it's castered for forward travel;
4 it's not actuated forward, meaning it's retracted.

5 Q. Did you photo document that it was in the locked,
6 straight position?

7 A. It's video documented.

8 Q. What did you do to monitor the caster latch to
9 ensure that it was locked during the testing?

10 A. It's videotaped.

11 Q. Which camera was looking at or showing the caster
12 latch?

13 A. There was a camera we talked about before that
14 was encased in a Maglite flashlight body; and that camera
15 was focused on the latching plates, as well as the latch
16 arm assembly. That camera is shown in 2856 in the -- the
17 test binder.

18 Q. When you went back and looked at your video, did
19 you look to see if the caster latch was -- stayed locked
20 during the testing?

21 A. I -- I looked to see that it was functional; and
22 by that I mean I went back and looked at the video when I
23 was turning the coach around at the end of a test. Some
24 of the tests I would run in one direction then the other.

25 So, at the end of the test, I would stop the

0221

1 vehicle, and then use the -- the three and a half lanes of
2 travel there to -- to reposition the coach and come back
3 the other way.

4 So, when I did that, I had to -- to do a
5 three-point turnaround, place the coach in -- in reverse;
6 and the video, of course, was running at that time so the
7 video captured the function of the tag latching system.

8 Q. Other than that, when you were just running it
9 straight down the -- the track, did you monitor if the
10 caster latch was locked?

11 A. Well, it is monitored by the video.

12 Q. Okay. But that's not something you're doing
13 while you're driving, right? You're monitoring while
14 you're driving, you have to look at that after the fact,

15 right?
16 A. Not directly while I'm driving, that's true.
17 Q. Okay. Did anyone examine the caster latch after
18 any of the runs to determine its position?
19 A. No, we would not have done that. Like I said,
20 though, it's captured on the video; so its position will
21 be known if you need to go back and look through that.
22 Q. Do you know if the caster latch assembly is
23 tilted forward in its current state?
24 A. Well, what do you mean by "its current state"?
25 Q. Meaning during our inspection it was tilted

0222

1 forward. Do you know why it would be tilted forward
2 during an inspection last month?
3 A. Well, if somebody backed the coach in to the
4 inspection bay, that would have it in the forward
5 position.
6 Q. Did you check the alignment on your test bus
7 before you took it out on the track?
8 A. Before I took it on the track, no.
9 Q. Yes.
10 A. No, I evaluated the -- the straight-ahead running
11 of the coach while I was on the track. I did not measure
12 the alignment, no.
13 Q. Can you explain why the tag test bus -- excuse
14 me. Why the MCI test bus that we inspected out in
15 California had a three-eighths of an inch toe-in?
16 A. I certainly haven't evaluated that. I didn't
17 measure it, so --
18 Q. Let's look at some photos, and maybe you
19 recognize these. We'll mark them as Exhibit --
20 MS. RODRIGUEZ: Thanks.
21 Q. (BY MS. RODRIGUEZ) -- 36.
22 (Exhibit 36 marked)
23 Q. (BY MS. RODRIGUEZ) Have you seen these photos
24 before, sir?
25 A. I don't recall. I certainly don't remember

0223

1 seeing these.
2 Q. Okay. Those were sent to be my -- to me by
3 Ms. Dorman. And they purport to be the tire that you used
4 out at the Uvalde test track from the right side.
5 Can you -- do you see that the tire in one of
6 those photos appears to be worn in two different -- in two
7 different ways?
8 A. I'm not sure what you mean by two different ways.
9 Q. All right. Well, let's go ahead and circle it.
10 This -- the white area appears to be a cord --
11 A. Right.
12 Q. -- what is that? Is that evidence of wear?
13 A. That could be, sure. That looks like cords.
14 Q. Okay. What caused this wear on that tire, sir?
15 A. I do not -- do not know.
16 Q. Okay.

17 A. That wouldn't have been on the tire when I did my
18 testing.

19 Q. How do you know that, if you didn't check your
20 tires after each run?

21 A. I didn't --

22 MS. DORMAN: Object to form.

23 A. -- didn't check them after each run; but, yeah
24 that wouldn't -- wouldn't have occurred over the -- the
25 short duration of the testing.

0224

1 Q. (BY MS. RODRIGUEZ) Well, how do you know if you
2 didn't -- that this wasn't on your test bus at any point
3 during your testing, if you didn't check the tires after
4 your testing?

5 MS. DORMAN: Object to form.

6 A. Well, my -- my expectation is from the condition
7 of the tires before the testing, I wouldn't think we'd get
8 to this point. I didn't confirm that.

9 Q. (BY MS. RODRIGUEZ) Okay. Now, do you see the
10 lack of tread depth adjacent to that cord mark?

11 A. I can see kind of a blurry tread pattern area in
12 the photograph. I can't really evaluate what that is.

13 Q. All right. Do you see any other wear on this
14 tire other than the cord marking that we see?

15 A. Well, I -- I can't really tell with this
16 photograph. It looks like it's got shoulder wear on the
17 -- what would be the bottom of the photograph in No. 36.

18 Q. Can you turn that around for the video so I
19 can -- you can point to me where you're talking about?
20 Where's the shoulder wear you just referenced?

21 A. In general, in the area where the cord is visible
22 here, on either side of that (indicated).

23 Q. Would that wear indicate that something was out
24 of alignment?

25 A. That could be consistent with that. It looks

0225

1 like that's on the -- the inner shoulder of this tire. I
2 can't tell the way it would be mounted. If you have a
3 toe-in condition, I wouldn't expect shoulder wear on the
4 inner shoulder, I would expect it on the outer.

5 Q. So you think that this white area is the -- the
6 inner part of the tire?

7 A. I can't tell from this -- this photograph but --

8 Q. Okay. But if you had toe-in, you would expect to
9 see the wear on the outer shoulder of the tire?

10 A. Correct.

11 Q. Of the tag tire?

12 A. Correct.

13 Q. Would that type of wear have any effect on the
14 dynamics of the vehicle?

15 A. I wouldn't expect that to have any measurable
16 impact on the -- the dynamics of the vehicle.

17 Q. How about a three-inch toe-in on the tag tires,
18 would that have a effect on the dyn-- dynamics of the

19 vehicle?

20 A. Generally, toe-in is more of a stabilizing
21 effect. So, I think it would basically make both of those
22 tag tires have kind of a plowing effect. I don't think it
23 would affect it dynamically in a -- in a stability sense.

24 Q. Well, what do you mean by a "plowing effect"?
25 What does that mean?

0226

1 A. Well, think of it as like if you're -- you're
2 learning to ski, and you -- you do the snowplow-type
3 skiing maneuver. It means you've -- you've toed-in the
4 tires.

5 Toe-in means that the -- the forward position
6 of the tires are -- are closer than the rear positions of
7 the tires. And that basically acts as a stabilizing and a
8 -- and a -- a slowing force to the tires.

9 Q. But you -- you're not able to tell the Ladies and
10 Gentlemen of this Jury what the alignment was of the tag
11 tires when you tested this bus, correct?

12 A. I did not measure that. And I can only say that
13 the -- the vehicle performed in an appropriate manner when
14 straight-line running.

15 Q. Do you know what the downgrade was in terms of
16 degrees at the accident scene?

17 A. No, I've not measured that.

18 Q. Do you know what the radius of the right curve
19 was at the accident scene?

20 A. I've not measured that, either. I've been there,
21 I've -- I've looked at it, but I have not measured it.

22 Q. I've heard people refer to some stops on the tag
23 axle as tag axle stops or steering stops. How do you call
24 them?

25 A. I call them steering stops.

0227

1 Q. Okay. Where are the steering stops located on --
2 on the bus?

3 A. Well, there are front axle steering stops and
4 then there are tag axle steering stops. The tag axle ones
5 are out at the -- the steering knuckle.

6 Q. And what is their function?

7 A. The tag axle or any steering stop is a -- a
8 limiting --

9 MS. RODRIGUEZ: Sorry.

10 A. -- it's the -- a mechanical limiting device. So,
11 the -- the steering comes over and the steering knuckle
12 itself will contact the steering stop, which is typically
13 some sort of a -- basically a bolt-type structure.

14 Q. (BY MS. RODRIGUEZ) And the idea is that it's
15 going to -- and for the -- for the tag axle, the idea is
16 that it will limit the amount that the tag tires can turn?

17 A. That, and in addition in -- in this particular
18 instance, we've got the -- obviously the -- the latching
19 system limits the turn of the tires, but also the steering
20 damper itself limits the -- the turn of the tires.

21 Q. Do you know what the steer stops are set at?
22 What the limit is?
23 A. I think the nominal setting is about eleven and a
24 half degrees either direction.
25 Q. The steer stop on your test bus was broken on the
0228

1 right side, correct?
2 A. I believe so, yeah.
3 Q. All right. And it looked like it had been broken
4 off for a while, correct?
5 A. I think so, yes.
6 Q. All right. Was the steer stop on the left side
7 of your tag tire -- your left tag tire also broken?
8 A. I don't recall.
9 Q. Okay. Why not just replace the steer stop?
10 A. I could have -- could have replaced it. I
11 don't -- in my -- my testing, I never reached that level
12 of displacement; so the -- the tie rod damper would have
13 acted -- acted as a steer stop, had it reached that far.
14 It doesn't reach that far, either, though.

15 Q. What is the degree of travel with the tag stops
16 in place versus without the tag stop in place? Steering
17 stop. I used --

18 A. Well --
19 Q. -- I changed the terminology on you. Let me do
20 the question again.

21 What is the degree of travel with the
22 steering stops in place versus without the steering stop
23 in place?

24 A. I haven't evaluated that. I don't have a number
25 for that. I should take that back one step. The -- the
0229

1 steering damper in place will limit the -- the travel to
2 roughly two inches either direction.

3 Q. What are some of the things that can cause a
4 steer stop to break if the steering damper's in place?

5 A. Any sort of steering that exceeds the -- the
6 eleven degrees that we're talking about.

7 Q. How could a driver do that?

8 A. If the steering stop is misadjusted or -- or
9 extended too far, then any sort of parking maneuver would
10 -- would possibly bend that or break that.

11 Q. Did you make a determination if the maximum
12 degree that the tag tires on the MCI bus could turn is
13 substantially similar to the maximum degrees that the
14 tires on the accident bus could turn?

15 MS. DORMAN: Object to form.

16 A. By --

17 Q. (BY MS. RODRIGUEZ) Your test bus?

18 A. The MCI bus is the test bus?

19 Q. Yeah.

20 A. Did I make that determination?

21 Q. Right.

22 A. I did not.

23 Q. Okay.

24 A. I mean, the general condition with damper in
25 place, would be that they turn the same amount.

0230

1 Q. Can you tell us what the maximum degree angle of
2 the tag tires was on the MCI test bus, compared to maximum
3 degree of angle on the accident bus?

4 A. I don't have a number for that, no.

5 Q. If you wanted to induce steer in to a tag tire
6 mechanically while a bus is operating on the road, how
7 would you do that?

8 A. I'm not sure I follow. You mean just in an
9 artificial environment?

10 Q. Yeah. If you wanted to see what happens when you
11 put steer into a tag tire, how would you mechanically
12 accomplish that?

13 A. Well, there's -- there's a couple different
14 scenarios there. One is if you want to evaluate the way
15 that the system steers under just an unlocked condition,
16 then you do the type of testing that I did; and that is
17 just unlock it and then perform maneuvers such as lane
18 changes and monitor the displacement of the -- of the tie
19 rod, the displacement of the steering system.

20 The second method of doing that would be to
21 install an artificial device that -- that would impart
22 steering to the system similar to the -- Mr. Yohe's tests.

23 Q. Okay. So, an actuator?

24 A. Sure.

25 Q. If you wanted a tag tire to -- to turn

0231

1 mechanically while the bus is driving down the road, would
2 you do one of those two things that you've already
3 described? Or would you do something else to accomplish
4 that?

5 A. If you wanted to mechanically force it to turn in
6 -- in a specific direction at a specific angle, then
7 installing an actuator is a fine way to -- to accomplish
8 that.

9 Q. Have you ever used an actuator in this context
10 that Mr. Brown installed on the Americanos test bus?

11 A. In exactly that context no. I mean,
12 clearly we looked at my lab test and there's an actuator,
13 which is a -- a hydraulic cylinder there that actuates
14 that test.

15 Q. Okay. If you wanted to move the tag axle in one
16 direction while the bus is driving down the road, how
17 would you do that mechanically? Same way with an
18 actuator?

19 A. Well, I thought that was your previous question.

20 Q. Well, I was asking about moving the tag tires.
21 And, you know, I think by moving the tie rod, you're going
22 to move the tag tires, right?

23 A. They should be one and the same, if they're
24 connected.

25 Q. Okay. I just wanted to make sure it was the
0232

1 same. Do you have any comments about the actuator that
2 was used on the Americanos test bus?

3 A. Regarding the specific actuator?

4 Q. Yes, sir.

5 A. Not from -- from my point of view. I mean, it
6 was a -- a substantial actuator that's put in there on --
7 on some pretty substantial bracketry. So, I would say the
8 comment is that it's a pretty big actuator.

9 Q. Okay. It was actually smaller than the one they
10 originally put on, did you see that?

11 A. I saw one picture of that maybe -- maybe in
12 Mr. Brown's depo exhibits.

13 Q. Okay. But do you have any criticisms or opinions
14 on the fact that they used an actuator to try to
15 mechanically turn a tag tire or move a tie rod in one
16 direction?

17 A. Well, with that as the stated purpose, that's a
18 fine way to do it. If you want to move the tie rod and
19 you want to steer the coach artificially like that, then
20 that's fine. If you take it a step upstream of that and
21 -- and look at the purpose of the testing, then I would
22 have criticisms of that, sure.

23 Q. And what are those criticisms?

24 A. Just in general about the actuation, is -- is
25 that's clearly not something that we have on the subject
0233

1 coach. I've heard through several different experts'
2 depositions of basically a theory that there's some sort
3 of a -- an impact that causes the tie rod to be forced
4 over.

5 I haven't seen a -- a clear mechanism for
6 that; and I haven't seen a clear description of that from
7 the -- from the experts.

8 Q. Any other criticisms that you have of the
9 Americanos test bus setup?

10 A. Well, that's a little more general. The -- the
11 setup of the coach was -- was not instrumented. That's
12 probably the biggest criticism. There's some difficulty
13 in reviewing the test data -- the lack of test data.

14 There's some, just, difficulty in reviewing
15 the tests because we don't know what steering inputs were
16 applied; we don't know the displacement of the -- the tag
17 axle steering system.

18 It obviously varies throughout the testing,
19 so had we measured that -- had Mr. Yohe measured that, we
20 would have had, you know, some data to analyze after the
21 test is done. There's no continuous measurement of speed,
22 position. You can go through a multitude of -- of signals
23 that we -- we should have had measured on that coach.

24 And as far as the other test setup, I guess
25 if you lump video in to that, we've got different camera
0234

1 views with -- with audio on or off. We've got certain
2 camera views in some tests but not in other tests, that
3 I'm not sure why they were run that way.

4 And then we have some documents that are
5 documented, at least in notes, that aren't -- aren't
6 recorded on video at all. So, as far as the general test
7 setup, those are a few of the -- few of the thoughts that
8 I have.

9 Q. All right. And how about the actual testing
10 itself; what comments, or observations, opinions do you
11 have on the Americanos track testing?

12 A. Well, I think that's -- that's a lot. The -- the
13 testing itself, as I understand through Mr. Yohe's and
14 Mr. Fugger's deposition testimony, the testing is -- is
15 meant to illustrate the theory that they -- that they've
16 put forth.

17 And that theory is that there's a -- a steer
18 of the -- the tag axle that precipitated a loss of control
19 of the vehicle. The -- the testing that was run, there
20 are a number of different maneuvers, at least the ones
21 that we have on video; and in that testing there is no
22 loss of control, there's no high sideslip angles
23 generated, unless the rear axle tires and tag tires are
24 locked.

25 There's a -- a markedly different level of
0235

1 brake application in the -- the testing. Whenever the tag
2 axle tires and drive axle tires are locked, we get this
3 tremendously high sideslip angle for the coach --
4 basically it spins out. And -- and that's just -- that's
5 basically a reflection of common knowledge.

6 If you, as a commercial driver, apply the
7 brakes extremely aggressively, and you lock up all your
8 rear tires, the rear end is going to want to swap ends
9 with the front end. That's -- that's pretty clear in the
10 Texas Commercial Vehicle Driver's Handbook.

11 That's clear from an engineering point of
12 view; you lose your -- your stability provided by the rear
13 tires as soon as you lock those up. In other tests where
14 the rear tires are not locked up, we have a -- a markedly
15 different result.

16 There are other thoughts that I have about
17 that test, but that's -- that's probably the biggest.

18 Q. Well, I -- I need to --

19 A. Here we are?

20 Q. Yeah. This is -- now's the time.

21 A. Okay.

22 Q. Whatever -- whatever other thoughts you have.

23 A. Well, I created a -- a video that I've edited
24 from the testing.

25 Q. Okay.

0236

1 A. And basically that video documents the condition
2 of a couple of tests that should be the -- the most

3 similar speed. And my understanding from Mr. Fugger and
4 from Mr. Yohe is these are what kind of demonstrate the
5 theory of what did happen versus what should have
6 happened.

7 One of those is numbered as Test No. 6 in
8 some of the -- some of the test documentation. That is a
9 run where the tag axle is reported to be unlocked, and
10 Mr. Yohe approaches the -- or the test surface at 49 miles
11 an hour, and he applies -- he applies a steering input of
12 about 94 degrees, and then he applies very heavy brake
13 application.

14 And that's the one where the vehicle yaws
15 around beyond 90 degrees, and -- and goes off of the
16 Jennite surface and on to the other asphalt surface.

17 There's also Test No. 9 which is the -- which
18 is labeled with tag axle locked. And that's run at
19 48 miles per hour, so it's very -- very similar speed to
20 the 49-mile-an-hour run.

21 And the 48-mile-per-hour run is with the tag
22 steering locked. And on that approach Mr. Yohe applies a
23 similar steering input to the right, and then as he comes
24 in to the test surface, he applies the brakes, but it's
25 clearly to a much, much less aggressive level.

0237

1 None of the drive axle tires are locked.
2 None of the tag axle tires are locked. Very basic vehicle
3 dynamics that when you lock a tire, you can't generate as
4 much lateral force as a rolling tire. So, a rolling tire
5 is essential for maintaining stability on the rear-end of
6 the vehicle. And that basically acts as rudder.

7 So, in the tests where he didn't lock the
8 rear tires, basically the rear-end remains tracking as it
9 should, and -- and there's no high generation of sideslip.

10 In addition to the brake application in Run
11 No. 9 being less than Run No. 6, there's a -- a markedly
12 different steering input. The initial steer is very
13 similar, but then as Mr. Yohe applies the brakes, he backs
14 off the steering on the -- on the No. 9 test.

15 So, with the tag axle locked, he's driven it
16 very differently and he's done things that will allow the
17 coach to remain stable. So, I think the intent of the
18 test may have been, here's what happens when the tag axle
19 is unlocked and here's what happens when the tag axle is
20 locked, but they're really dramatically different.
21 They've been driven very differently in braking and
22 steering, and the results reflect that.

23 Q. Do you know Mr. Yohe?

24 A. I think I met him at Nappanee, that's -- that's
25 the limit of my knowledge with Mr. Yohe.

0238

1 Q. All right.

2 A. Or personal knowledge, I should say.

3 Q. Do you know of him professionally, since you're
4 clarifying personal knowledge?

5 A. Well, I've -- I read his deposition.

6 Q. Okay.

7 A. And have -- he's also -- he was involved in
8 that -- the New York case.

9 Q. Okay. He was involved in the New York case?

10 A. Yes.

11 Q. Okay. Now, have you told us about all of your
12 comments, observations, opinions on the Americanos test
13 bus and track testing?

14 A. Well, let me see the -- the binder over there, if
15 you would?

16 Q. Uh-huh.

17 A. I want to make sure I've got -- I've got a
18 section in there under the analysis section that reflects
19 some of the testing done by Mr. Yohe.

20 Okay. Some of this I believe we pulled out
21 and marked as exhibits, but some of this is still in here.
22 Just as a -- a sequential description of -- of the -- the
23 information that I've received, I first received some --
24 some handwritten notes that were photocopied, as well as a
25 -- a typed synopsis of those handwritten notes. These I

0239

1 understand are -- are from Mr. Fugger.

2 And then I received a test run log as well
3 that documents test runs No. 1 through 12. And then I've
4 also got a test run log that is marked as Exhibit No. 2 to
5 Mr. Brown's deposition which documents Tests 1 through 9.

6 Q. Okay. But my question was your comments and
7 opinions --

8 A. I -- yeah, I'm going.

9 Q. Okay.

10 A. Right. The -- in general, looking at the
11 testing, the opinions I alluded to previously are -- are
12 the main ones, meaning if you lock up the tires and steer,
13 you're going to put the vehicle out of control; and you're
14 going to get the result that was -- was -- was achieved by
15 Mr. Yohe.

16 All of the testing is single steer. It's all
17 steer to the right. That's not what happened in our -- in
18 our subject crash. So, to the extent that it's meant to
19 illustrate the subject crash, there's -- there's a -- a
20 lack of a -- a steer reversal.

21 As far as the instrumentation, we -- we
22 touched on that; and that was, basically, there's --
23 there's instrumentation on the coach.

24 I think in this sort of a test environment,
25 you know, you need to instrument the coach to -- to

0240

1 monitor what you're doing, and to, then, later be able to
2 analyze what you're doing and have others analyze what
3 you're doing.

4 The documentation of the testing is -- is
5 confusing, at best, in that there are numerous runs
6 documented by the hand notes -- and one of the ones for --

7 specifically, for example, is No. 10, which appears to say
8 27, I believe that's related to miles per hour, it says
9 forced kick, no video, no data slash skid.

10 So, there's no video, there's no data. I'm
11 not sure what the "no data" refers to because there's no
12 data installed on the coach, and apparently there's no
13 skid.

14 So, we've got a -- a forced actuation of the
15 steering on the tag axle that wasn't documented any way
16 whatsoever. And then when we get back to the next
17 sequence of notes, Test No. 10 just says "no data," and
18 that's on the -- the typed-up summary, the first one.

19 The next one says for No. 10, no video, no
20 data, no data, no data. And then it says for maneuver,
21 drive vehicle over test area track to access and plan next
22 maneuver, which that doesn't comport with the
23 27-mile-an-hour tag force-over. And then, likewise,
24 the -- the Mr. Brown exhibit says the same thing.

25 So, there's -- there's that, plus the first

0241

1 four runs documented by Mr. Fugger have no video
2 associated with those at all. You know, we've got five
3 out of twelve runs that show no video.

4 So, we're -- you know, we're -- or close to
5 50 percent of the tests are totally undocumented apart
6 from sketchy notes that are inconsistent with each other.

7 Q. When you say the first four runs documented by
8 Mr. Fugger, you think that's Mr. Fugger's chart that
9 you're looking at right now?

10 A. I believe this was attached with his
11 documentation. I am -- and so, it's his -- in his
12 materials. The handwritten notes that are previous to
13 that, those are, as I understand it, Mr. Fugger's
14 handwritten notes.

15 Q. Okay. Any other comments?

16 A. Sure. There is a Test No. -- Test No. 11 that is
17 documented to be a forced actuation of the -- of the
18 cylinder that Mr. Brown -- excuse me -- installed to the
19 vehicle.

20 And that indicates that the -- the tag
21 locking cylinder was unlocked. The cylinder was forced
22 over, and for some reason in that test documentation,
23 we've got different camera views with no exterior camera
24 view; but regardless, we've got what appears to be a very
25 benign maneuver.

0242

1 Meaning, once Mr. Yohe and Mr. Fugger tested
2 what I understand to be their theory of what occurred in
3 the crash, the -- the results are that the vehicle
4 remained stable, remained controllable. It looks like a
5 -- a very boring ride for Mr. Yohe.

6 And it looks to me like he could apply some
7 steering to the left and maintain straight running of the
8 coach, quite simply. And obviously on that one, we don't

9 have full locked wheel braking, as well.

10 I think that's everything that I've -- I've
11 got regarding the testing. And like I said, I've created
12 an edited video that may have some more points in there,
13 as well, but I don't recall them right now off the top of
14 my head.

15 Q. And I assume you don't have any notes that you
16 made as you were watching the videos?

17 A. I do have some notes. Those are in here
18 somewhere. Those were marked already. Where are they?

19 Q. Would that be -- how would you have labeled them,
20 so we can find them?

21 A. I don't recall.

22 MS. DORMAN: Do you want to hand me stuff as
23 you go through it?

24 THE WITNESS: Sure. We can just set it right
25 there, is fine.

0243

1 A. Oh.

2 MS. DORMAN: There it is.

3 A. Exhibit No. 30.

4 Q. (BY MS. RODRIGUEZ) Okay. Now, can tires stop
5 moving even though they are not locked up?

6 A. What do you mean by "stop moving"?

7 Q. They're not rotating.

8 A. Well, I think that's kind of a tautology there.

9 That's -- if the tires aren't rotating, they're not

10 moving. So, I'm not sure I follow your question.

11 Q. Well, is there any -- would there be anything
12 that would cause a tire to stop moving, other than it
13 being locked up?

14 A. Can you be more specific about that?

15 Q. Sure. The bus is rolling down the road, all the
16 tires are moving, but one tire or two tires stop moving.
17 Can you think of any reason why one or two tires would
18 stop moving, stop rotating, if the tires are not locked
19 up.

20 A. Yeah, I'm not following that because it sounds
21 like you're saying, if the tires aren't rotating, then
22 it's locked up; but they -- they mean the same thing. If
23 the tires aren't rotating, they are locked up; and if
24 they're not -- if they're locked up, they're not rotating.

25 Q. Okay. So, that's just what I wanted to

0244

1 understand if that was your opinion. Did anyone document
2 whether the tag axle tires on the MCI test bus locked up
3 during any of the tests?

4 A. I wouldn't have documented that in my test notes
5 or anything, but that would be something that you would
6 capture by video for sure. I don't recall that occurring
7 against the test driver.

8 Q. What is the steer ratio -- or how do you define a
9 steer ratio?

10 A. There -- there are a couple of different

11 definitions, main-- mainly what we're looking at for a
12 steering ratio is the overall steering ratio. And what
13 that means is a ratio of degrees of steering wheel angle
14 input compared to degrees of tire or road wheel output.

15 Q. Which tires are steered tires on a 102DL3s with
16 the steerable tag axle?

17 A. Well, obviously, the -- the front tires are
18 steered tires as in virtually all road vehicles. Those
19 are controlled by driver input. The -- the tag axle tires
20 are steerable in the sense that they are self-steering
21 tires.

22 Q. Did you measure the steer ratio on the MCI test
23 bus?

24 A. I have measured the steering ratio on other
25 102DL3s, not on that specific coach, though.

0245

1 Q. Did you measure the steer ratio on the accident
2 bus?

3 A. No, I wouldn't do that.

4 Q. How are we able to quantify the amount of braking
5 that you did for each of the tests during your track
6 testing?

7 A. If you go to the test data plots, you'll see that
8 one of the sensors that I installed on the vehicle is a
9 inertial measurement unit, that's the IMU that we talked
10 about in some of the photographs.

11 And that measures acceleration in three
12 different directions. And by that I mean it measures
13 longitudinal acceleration, which would be relative to
14 acceleration or braking; and it also measures lateral
15 acceleration and vertical acceleration.

16 With regard to actual brake application, what
17 you would do is go and look at my data plots, and look for
18 the longitudinal acceleration, that is labeled "AX," that
19 is measured and recorded in these charts as AX in Gs. So,
20 it's an acceleration in Gs. And that shows up as a red
21 trace on the bottom-most plot of every one of these test
22 plots.

23 Q. And how does that tell you the -- quantify the
24 braking you did?

25 A. It tells you exactly the longitudinal

0246

1 acceleration that you experience in the vehicle, and
2 that's as a direct -- direct result of the braking.

3 Q. Are you able to quantify the braking that
4 Ms. Morado did at any given time during the accident
5 sequence?

6 A. Certainly in -- in the sense that we've got
7 locked wheel braking. So, that's -- that's braking on the
8 order of the level that Mr. Yohe applied during his
9 testing, and that would be braking at a level that's in
10 excess of what I applied during my testing.

11 MS. RODRIGUEZ: Objection, nonresponsive.

12 Q. (BY MS. RODRIGUEZ) Other than locked wheel

13 braking, can you quantify the braking that Ms. Morado did
14 at any given time during the accident sequence?

15 A. No. The -- the locked wheel characteristic is
16 the -- the description of that braking, so that's --
17 that's it.

18 Q. And it's your testimony that, only way you can
19 get a locked wheel -- or a wheel -- is from braking,
20 correct?

21 A. No, I think that's probably the clarification
22 that we needed on your previous question, because I think
23 you said locked wheel is a wheel that's not spinning, and
24 that's kind of the definition of a locked wheel.

25 Q. No, actually --

0247

1 A. With regard to braking, that's a different --
2 different question.

3 Q. My prior question was can tires stop moving even
4 though they're not locked up; and you told me, no, that
5 they're one and the same.

6 A. Right. Your new question is about braking,
7 though --

8 Q. Right.

9 A. -- that's the clarification. If -- if the
10 previous question was about can tires stop moving other
11 than brake lockup --

12 Q. Right.

13 A. -- that's a different -- that's a different one.

14 So --

15 Q. Yeah. That -- that was my previous question.
16 What's the answer to that one?

17 A. Okay. That's not what I heard --

18 Q. Okay. Can --

19 A. -- but now I understand it.

20 Q. Let me -- let me ask you the question, so you and
21 I both --

22 A. Go ahead.

23 Q. -- have a good record. Can tires stop moving
24 even though they're not locked up?

25 A. You did that again. Can --

0248

1 Q. Can tires stop moving even though they are not
2 locked up? Yeah. I thought that's what we --

3 A. The stop moving is locked up. It's -- I think
4 you need to add braking in there.

5 Q. Okay. So --

6 A. I'm just trying to help with the question.

7 Q. -- the only time that you can conceive of tires
8 that are not moving is because they're locked up?

9 A. Yeah. You did it again. The -- the tire is not
10 moving is just basically the same thing as saying they're
11 locked up. Now, if you mean -- I think what you mean to
12 say is, can tires lock up by any other mechanism other
13 than braking. Is that the question?

14 Q. No, but that's a good question. What's your

15 answer to that?

16 A. Well, you got to ask the question.

17 Q. I think that was my -- I think that was later
18 down in my outline. I -- I think we just can agree to
19 disagree on the tires stop moving, but let's look at the
20 -- I think in terms of the braking my question was -- as
21 you so finely articulated: Can tires lock up for any
22 reason other than braking?

23 A. Sure. There are certainly things like in a --
24 the yaw motion of a vehicle. Once you get to 90 degrees
25 of sideslip, the tires can stop rotating at that point;

0249

1 and then you'd have what you could consider a locked-up
2 tire. It's not rotating.

3 Q. Any other condition that you can think of?

4 A. If you were to instantaneously put the
5 transmission into -- to park or something to that effect,
6 you could lock up the tires due to that. That would only
7 be the -- the drive axle tires, it wouldn't be any other
8 tires.

9 Q. Anything else?

10 A. I mean, there's -- there are other kind of
11 unusual circumstances. Obviously you could have a
12 collision with a fixed object, and that can cause a tire
13 to stop rotating. There are -- you know, if we just kind
14 of start going off in to -- in to the more unusual area, I
15 guess there are other reasons. Sure.

16 Q. Now, you had to alter the wiring on the MCI test
17 bus to accommodate your manual switch for the tag lock
18 assembly, correct?

19 A. No. I didn't alter any wiring that was there; I
20 just added my wiring in addition to it.

21 Q. But the wiring that you added would not have,
22 obviously, been on the wiring on the accident bus,
23 correct?

24 A. That is correct.

25 Q. And how is it the wiring -- the addition of the

0250

1 wiring different than what was seen on the accident bus?

2 MS. DORMAN: Object to form.

3 A. The -- the addition that I put on there --
4 obviously, there are a number of wires that are run from
5 all of my sensors to my data acquisition system. Those
6 are totally independent of the coach.

7 The only wiring that I connected to the
8 coach's system would have been, number one, plugging in an
9 inverter to provide power to some of the equipment; and
10 then, number two, adding my switch to the -- the front
11 junction panel.

12 And that switch is just simply adding a
13 switch across two of the -- the wires, one of those being
14 the -- the 24-volt -- volt bus -- "bus" meaning the
15 electrical bus in that junction panel -- and then the
16 other one being the -- the solenoid, the -- the wire that

17 actuates the solenoid.
18 MS. RODRIGUEZ: Okay. I think we need to
19 change tape.
20 VIDEOGRAPHER: We're off the record at 3:41,
21 end Tape 5.
22 (Recess from 3:41 p.m. to 3:52 p.m.)
23 VIDEOGRAPHER: We're on the record at 3:52,
24 start of Tape 6.
25 Q. (BY MS. RODRIGUEZ) Mr. Granat, do you believe

0251

1 that the testing at the Uvalde track was an accurate --
2 accurate simulation of what happened in the subject
3 accident?
4 A. Well, I think we already talked with Mr. Craft
5 about what happened in the subject accident. And what I
6 was trying to do in my Uvalde testing is evaluate the
7 theory that -- that I understood Americanos was putting
8 forth at that point. So, that's accurate testing to
9 reflect the -- the unlock of the tag axle steering.

10 Q. All right. So, you were not trying to simulate
11 what happened with the subject accident, correct?

12 A. No. That's kind of a, if you do what you did,
13 you get what you got. That's not something I would try to
14 do.

15 Q. All right. And did you get any exploding bolts
16 or shear the bolts so that they would fail at some point,
17 drive the bus at 68 miles an hour, and have the driveshaft
18 break at the transmission end?

19 A. I did not.

20 Q. Okay. Did you do any testing with the driveshaft
21 suddenly disconnecting at the transmission end to see how
22 the bus would handle?

23 A. I did not.

24 Q. Why not?

25 A. That just wasn't part of the testing that I did.

0252

1 I was evaluating the effect of the tag steering unlock.

2 Q. So, you, in essence, were looking to -- to test
3 the testing that had been done by Mr. Yohe, to rebut it or
4 -- or confirm it, either way?

5 A. Basically to look at the -- the theory that's put
6 forth, and understand that. And then try to evaluate how
7 does the vehicle respond under those type of conditions.
8 Basically it's an -- an analysis of what is the effect of
9 unlocking the tag axle steering.

10 Q. I want to talk to you about some opinions that
11 you're not going to have. And one of the things that I
12 didn't see in your report -- and I haven't heard from you
13 today, we've been going at this several hours -- is the
14 cause of the U-joint failure.

15 Is it fair to say that you are not going to
16 give opinions on the cause of the U-joint failure in this
17 case?

18 A. That is fair. I am not.

19 Q. Okay. Did you rule out the driveshaft hitting
20 the tie rod as the cause of the tie rod being bent on the
21 subject bus?

22 A. Basically, my analysis was that the -- the tie
23 rod was bent due to impact forces; and that was consistent
24 with impact in to the median soil.

25 So, I understand Mr. Jones' theory that the
0253

1 -- the driveshaft impacted the tie rod. I think I
2 discussed that in my report that the direction of the
3 forced application there, I didn't think, was consistent
4 with bending the tie rod due to an impact force there.

5 Q. So, is that the only way you ruled it out?

6 A. That -- that's -- that was my thought process,
7 sure.

8 Q. Okay. I thought I saw somewhere in your report
9 that you looked at an exemplar coach, and you disconnected
10 the driveshaft at one end and you moved it around?

11 A. No, that was, I think, work that Bob Rucoba did.

12 Q. Okay. I thought you mentioned that you did that.
13 You didn't do that?

14 A. When I was working with the test vehicle, I went
15 in there and I looked at the -- the tag axle passthrough
16 and just basically looked at that -- that geometry; but I
17 did not -- I didn't do like a motion study of the -- the
18 -- the driveshaft.

19 Q. You mean disconnecting it at one end, and holding
20 it with your hands and moving it around, that sort of
21 study?

22 A. Well, I did disconnect it at one end, and then
23 took the -- the needle bearings out of the cups on that
24 one end. And that was, you know, Test 48 through 82.

25 In that sense, I certainly disconnected the
0254

1 end and -- and manipulated the driveshaft by hand; but I
2 didn't do the type of study that Bob Rucoba did.

3 Q. And you weren't present for what he and
4 Mr. Hoogestraat did, correct?

5 A. That's right.

6 Q. Okay. So, I'm looking at Page -- this is
7 Exhibit 22, Page 8.

8 A. Let me get that in front of me.

9 Q. Okay. You say, On an exemplar coach -- and this
10 is in the last paragraph. On an exemplar coach, I
11 manually detached the transmission and U-joint and pivoted
12 the driveshaft about the differential U-joint; and I
13 evaluated the envelope in which the drive shaft can move.

14 A. Right. And that's in the -- the test vehicle. I
15 disconnected to access those bearing cups and remove the
16 needle bearings. And in doing that, I would have manually
17 moved the driveshaft and evaluated its envelope there.
18 But I did not do a detailed study like Mr. Rucoba did.

19 Q. Okay.

20 A. This is sort of a, as I'm underneath there I'm

21 looking at the coach, and -- and I've got that -- that end
22 of the driveshaft detached.

23 Q. And so, your conclusion after -- the next
24 sentence: Substantial structures of the tag axle prevent
25 the driveshaft from contacting the tie rod, the tie rod
0255

1 locking plates, and the locking cylinder are based on that
2 manual detachment on the transmission and U-joint pivoting
3 the driveshaft about the differential U-joint, and
4 evaluating the envelope in which the driveshaft can move,
5 correct?

6 A. That, in part; but also on understanding the work
7 that Mr. Rucoba and Mr. Hoogestraat did; and then also, I
8 believe, on -- on one of the phone calls with
9 Mr. Hoogestraat, he put forth the -- the opinion that --
10 that there are structures in the way when you drop the --
11 the -- the driveshaft down. It contacts structures rather
12 than the tie rod. So, it's based on a number of different
13 things.

14 Q. Are you still of that opinion based on the
15 driveshaft testing videos that you watched?

16 A. Well, the drive test -- driveshaft testing videos
17 that I watched are -- are certainly interesting, and I
18 understand what they purport to show; but I think I need
19 to do a lot more investigation in to that. There's not
20 much documentation there to go on, so I couldn't --
21 certainly couldn't offer an -- an opinion on that yet.

22 Q. So, do you plan to try to rebut that like you did
23 the track testing? Or the theory of the -- of what
24 happens when a tag axle comes unlocked?

25 MS. DORMAN: Object to form.
0256

1 A. Well, my -- my testing isn't really in an -- in
2 an effort to rebut a theory. It's just an analysis of
3 that theory. The theory that I understood that was put
4 forth by -- by experts from Americanos is what I tested in
5 the -- the Uvalde Proving Grounds testing.

6 Regarding the -- the driveshaft testing, I
7 certainly don't have any plans to rebut that testing, but
8 I have plans to analyze it. I need to, you know,
9 obviously be able to see the components and understand the
10 configuration of the coach, the configuration of the --
11 the tire loads, and all those kind of things.

12 Q. (BY MS. RODRIGUEZ) So, the -- the time that you
13 spent -- the three days out on the test track, and couple
14 days, a day or two -- a day to go up and check the
15 suitability of the coach up in Ohio, and then the day
16 beforehand to instrument the bus, you know, a week's worth
17 of preparation and testing, that was all done to test the
18 -- the theory put out by Americanos on what happens with
19 an unlocked tag axle, right?

20 MS. DORMAN: Object -- object to form.

21 A. I think, in general terms, that's the main
22 thrust.

23 Q. (BY MS. RODRIGUEZ) Okay.

24 A. And that also -- that testing included evaluating
25 the coach with a locked tag axle, as well.

0257

1 Q. Did you do any testing to rule out that the
2 driveshaft hit the tie rod and caused the bending seen on
3 the subject bus?

4 A. No. I think that's -- I'm not sure if I follow
5 the question if that's trying to prove a negative, but I
6 did not do testing specifically to prove that -- to --
7 what was your word?

8 Q. Rule it out.

9 A. Rule it out. I did not do that type of testing.

10 Q. Did you do any type of research to rule that out
11 as the cause, the tie rod hitting the -- excuse me -- the
12 driveshaft hitting the tie rod as the cause of the tie rod
13 being bent on the accident bus?

14 A. Specific research? I wouldn't say I've done
15 research. It's more a matter of the direction of an
16 impact force due to the -- the driveshaft, and that
17 direction would be primarily downward.

18 And that's -- that's not the -- the correct
19 direction for a force to unlatch the latch or produce the
20 bending that we see.

21 Q. Did this bus do a full roll?

22 A. My understanding -- understanding of the -- the
23 reconstruction, and certainly my understanding of the
24 evidence is it's a quarter roll.

25 Q. Where did it -- the bus furrow on the ground?

0258

1 And what part of the bus furrowed?

2 A. There were multiple furrows. The first one would
3 be due to the -- the front axle, the right front tire.
4 Those furrow marks are captured in the police
5 photographs -- let me provide some numbers here.

6 Well, the first one is going to be related to
7 the right front, and that is -- that is captured in Police
8 Photo 0119 pretty well. That shows the right front tire
9 furrow marks.

10 There's additional -- additional furrowing of
11 the coach, and that is rear-ward leading furrowing that is
12 as the coach comes to its rest position. And if you look
13 at Photograph 0045 in the police photographs, that's an
14 example of -- of what I'm talking about for the rear-ward
15 leading furrowing.

16 Q. Okay.

17 A. And in that photograph you can see the -- the
18 outer drive axle tire is -- is nearly -- nearly not
19 visible due to the -- the depth of soil furrowing. And
20 then you can see the tag axle tire is also -- nearly the
21 full width of the tire has furrowed in to the soil.

22 Q. And you told us, I think in your report, that --
23 that it was described as sandy soil, correct?

24 A. It's a -- it is a sandy soil to some extent. I

25 don't remember if that's the word I used in the report,
0259

1 but I think that's a fair word. It's a -- what I would
2 characterize as a pretty soft soil.

3 Q. Do you have any literature to support your
4 opinion that the tie rod was bent as a result of the bus
5 rolling over?

6 MS. DORMAN: Object to form.

7 A. I'm not sure what literature -- I mean, that's a
8 very specific occurrence in a crash. I don't think
9 there's literature that would help us understand many of
10 the very specific characteristics of this crash.

11 Q. (BY MS. RODRIGUEZ) Do you have any testing to
12 support your opinion that the tie rod was bent as a result
13 of the furrowing?

14 A. Well, we've gone through that, yeah.

15 Q. In the lab --

16 A. The lab tests.

17 Q. In the lab. Anything else?

18 A. No, that's it.

19 Q. Are you aware of any research to support the
20 opinion that the tie rod was bent as part of the
21 furrowing?

22 A. By that, do you mean independent research?

23 Q. Yes, sir, not -- independent of your lab testing?

24 A. No, I'm not aware of anything that would address
25 that specifically.

0260

1 Q. Are you aware of any testing outside of
2 litigation that supports your opinion that the tie rod was
3 bent as a result of the furrowing?

4 A. No, I'm not aware of anything like that.

5 Q. Do you know if MCI tested the strength of a tie
6 rod?

7 MS. DORMAN: Object to form.

8 A. I do not know that one way or the other.

9 Q. (BY MS. RODRIGUEZ) Is there a margin of error
10 in your testing?

11 A. Well, in the testing itself, I mean the testing
12 is what it is. There's a margin of error in any sort of
13 engineering analysis.

14 Q. What would that have been for your lab testing on
15 the tie rod?

16 A. Well, the margin of error for the -- the actual
17 force that it takes to -- to bend the tie rod in my
18 testing, that margin of error would be very small. It
19 would be on the order of the -- the accuracy of my
20 pressure gauge that I use to measure the -- the pressure
21 applied to hydraulic cylinder. That, I would say, would
22 be on the order of less than 50 pounds.

23 Q. What is this -- what are these CAD drawings of
24 the Meritor axle that I've marked as Exhibit 37?

25 (Exhibit 37 marked)

0261

1 A. I don't know the actual source of these. I was
2 provided these, as well. These appear to be, as you
3 stated, CAD drawings of looking at the -- the steering
4 knuckle, I believe, on our axle. And it shows the
5 steering knuckle from a side view and from a front view.

6 Q. (BY MS. RODRIGUEZ) Did you use those on
7 Exhibit 37 for any reason?

8 A. No, not specifically. I mean, it does confirm
9 we've got three degrees of caster on the -- the first
10 drawing; and then it shows we've got six degrees of king
11 pin inclination on the second drawings.

12 Q. Who did you get 37 from?

13 A. The Exhibit Number's 37.

14 Q. Yeah. But the documents that comprise 37, who
15 did you get that from?

16 A. I don't know. They were provided to me by
17 attorneys representing MCI, so they were part of the --
18 the file that was sent to me.

19 (Exhibit 38 marked)

20 Q. (BY MS. RODRIGUEZ) Okay. And then Exhibit 38,
21 did you use any of these drawings for your opinions?

22 A. I think these are best described as -- as
23 background drawings. They are just part of the
24 engineering drawings for the system, so I didn't use those
25 directly, no.

0262

1 Q. Are they drawings that you specifically requested
2 or was it something that MCI selected for you, and sent to
3 you thinking that they may might be helpful to you?

4 MS. DORMAN: Object to form.

5 A. I do not know. These are not drawings that I
6 specifically requested.

7 MS. RODRIGUEZ: Okay. Mr. Granat, I need to
8 turn you over to Mr. Haynes. He's going to -- so, I'll
9 pass the witness over to Mr. Haynes and he'll finish up
10 the questioning. Thank you.

11 THE WITNESS: Okay. Thank you.

12 MR. HAYNES: And I'm much nicer than her;
13 although, she's been pretty nice today.

14 THE WITNESS: I will concur.

15 MS. RODRIGUEZ: Here, you can have my
16 Sharpie.

17 MS. DORMAN: Parting gift.

18 EXAMINATION

19 BY MR. HAYNES (4:07):

20 Q. Mr. Granat, I don't want to reinvent the wheel or
21 repeat stuff that's already been gone over but --

22 MR. HAYNES: What number are we on?

23 MS. DORMAN: 39.

24 MR. HAYNES: Oh, okay. Thanks.

25 (Exhibit 39 marked)

0263

1 Q. (BY MR. HAYNES) Can you briefly describe the
2 set-up of your compression test that you did in the lab

3 with that --

4 A. Sure.

5 Q. -- Exhibit 39 for me?

6 A. Yes. What this exhibit shows is the exemplar tag
7 axle that I used in my test, and that's -- that's all been
8 painted black for this -- this photograph. Well,
9 actually, this -- yeah, this is a photograph.

10 The fixture that -- that I fabricated is all
11 shown in yellow. And that fixture is just a steel
12 structure that's been clamped to the axle, and it allows
13 mounting for a hydraulic cylinder that you can see is also
14 -- the -- the yellow cylinder over here, it's also yellow.

15 It's -- it's a -- an Inner Pack 25-ton
16 hydraulic cylinder. And that is -- has been designed to
17 actuate and apply a -- a force to the -- this would be the
18 right rear tag axle tire in white.

19 That force is directed, in the global sense
20 of coach, from the rear to front. So, as the coach
21 overturns in the soil and then rotates around, and the
22 rear end of the coach is leading, the -- the forces on the
23 right tag axle tire would have been from rear to front
24 from that furrowing.

25 Q. Not -- not from side to side?

0264

1 A. Correct. Yes. If you look at the -- the
2 reconstruction of the crash, basically -- and that's, you
3 know, the reconstruction of Mr. Rucoba or, I believe, also
4 Mr. Fugger -- as the coach goes in to the -- the soil
5 median, the right front furrows as it -- as it's
6 overturning, and the rear end swings around; and then as
7 it overturns on to its right side, it slides rear-ward
8 leading towards its point of rest.

9 And as the rear-end of the vehicle goes in to
10 the opposing median slope, that's where we got the big
11 furrowing that I talked about in the police photographs.

12 Q. So, would the furrowing -- so, that's why you're
13 saying the furrowing is from back to front instead of from
14 side to side --

15 A. Correct.

16 Q. -- primarily?

17 A. Yes. The -- as the vehicle slides rear-ward
18 leading, and the -- the tag axle tire is embedded in the
19 soil, there's going to be a force applied to that tag axle
20 tire and wheel that is rear to front rather than, you
21 know, inboard or vertical.

22 Q. Okay.

23 A. So, that's the -- the design of the -- this
24 cylinder placement is to -- to simulate that force.

25 Q. Well, was there a way to measure the degree of

0265

1 the force being applied from rear to front or how -- how
2 did you --

3 A. Sure.

4 Q. -- work that out?

5 A. The -- what I've got in the -- the cylinder is
6 attached to a hydraulic actuator. And basically to run
7 this test, you know, I applied -- or I pushed the button
8 and started applying pressure to this cylinder and that
9 starts creating a force.

10 I measured -- using a data acquisition
11 system, I measured the pressure that was being applied to
12 this cylinder. And then in this case, the -- the force
13 that's being applied to the cylinder is just the pressure
14 times the area of the cylinder -- the cross-sectional
15 area.

16 So, I was able to calculate the force based
17 on the pressure. So, I guess, yes, I measured the force
18 applied to the -- to the wheel.

19 Q. Right. And I think my question was just bad.
20 What I was trying to find out was how you came up with the
21 angle for the force to be applied. Did you just -- is it
22 just 90 degrees or --

23 A. It is. It is. If you look at a side-view
24 photograph, you'll see that this cylinder is actually
25 horizontal. I think it might look like it's at a little

0266

1 bit of an angle in this photo, because this photo isn't
2 directly overhead.

3 Q. Okay.

4 A. So, you get a little bit of perspective there.
5 There are photographs taken at that side -- side view, and
6 those would show that it's -- that it's at --

7 Q. It's at 90 degrees?

8 A. Correct. It's -- in the side view, it's -- it's
9 horizontal.

10 Q. And so, basically -- so, if -- and how did you
11 determine that the -- the force should be applied at a
12 90-degree angle versus, you know, 70, or 75, or 80, or
13 something like that?

14 A. Well, the analysis that I was doing was just
15 looking at that rear-ward leading motion of the vehicle;
16 and what would be the effect of a directly rear-to-front
17 applied force on the tire and wheel. So, I -- I've
18 isolated it to the -- that one component direction.

19 Q. And I think you said earlier it was
20 16,000 pounds?

21 A. Right. That's right.

22 Q. And would that 16,000 pounds have been applied
23 basically on the whole bus from back to front or just on
24 the wheel?

25 A. This would be on the tires and the wheel.

0267

1 Q. Have you measured what -- have you come up with
2 an estimate of the force applied from back to front on the
3 bus? On the coach?

4 A. I have not developed that estimate directly, but
5 what I can say is this 16,000 pounds that is being applied
6 to this wheel and tire, that would be applied to a bus

7 with a gross vehicle weight of about 48,000 pounds.

8 I think the -- the subject coach weighed a
9 little bit less than that because it wasn't fully loaded;
10 but basically 45,000 pounds. And 16,000 is roughly .3 or
11 30 percent of -- of 45,000 pounds.

12 So, the effective drag factor, if you will,
13 of -- of this force applied would be about .3 Gs. And as
14 the vehicle is furrowing into the soil, you know, you can
15 get a total drag factor that could be as high as 1 or even
16 higher, 1 G.

17 So, this would be a fraction of the total
18 force applied to the vehicle. The other portion of the
19 total force applied to the vehicle would be applied to the
20 vehicle structure. I mean, we can see in the police
21 photographs there's some furrowing of the structure itself
22 into the soil, as well.

23 Q. I guess what I'm wondering is would the other
24 component parts, going backwards towards the rear of bus,
25 have been subjected to the same amount of force that you
0268

1 determined that right tag wheel was subjected to?

2 A. They're not going to be subjected to the same
3 force because they're different structures, they're going
4 to interact with the soil in a different way. And I'm
5 assuming you mean the -- basically the body structure
6 rear-ward of the -- the tag axle tire. Is that what --
7 what you mean in your question?

8 Q. Well, I'm just wondering about any other
9 structures on the underside of the bus, would they be
10 subjected to the same or approximately the same amount of
11 force as what you calculated the right tag wheel was
12 subjected to?

13 A. Well, the -- the other structures underneath the
14 bus, specific to the tag axle, aren't really going to be
15 contacting the soil. It's only the right tag tire and
16 wheel.

17 So, those are going to be the portions of
18 this tag axle -- tag axle system that are directly being
19 acted upon by the -- by the -- the furrowing force.

20 There's additional furrowing that's going to
21 be going on that's going to be acting on the -- the
22 structure of the vehicle, meaning the body of the vehicle.
23 Like I said, if you look at the police photographs, as the
24 vehicle comes back to its rest position, there's also some
25 furrowing from the sheet metal structure of the vehicle
0269

1 into the soil.

2 Q. Is the -- Exhibit 39, that shows the deformation
3 to the tie rod that was caused by the application of the
4 16,000 pounds of compression force that --

5 A. This is --

6 Q. -- you did in the lab?

7 A. This is actually beyond that. This is the --
8 what I would call the end of the actual test occurs prior

9 to this. The end of the actual test is when the tag axle
10 tie rod locking plate shifted in its mount and created the
11 gouges on the -- the locking plate.

12 And in that configuration, I've got some
13 photographs that show, you know, the -- the deformation of
14 the tie rod. And that's where I believe in the subject
15 coach, we would have -- would have had an unlatching of
16 our -- of our cylinder.

17 In this test, I just kept going. These are,
18 you know, brand-new components, there's no wear. The
19 unlatching doesn't occur in this test -- test, and I just
20 kept going with the force. And you end up with more
21 deformation of the tie rod than you would get, I believe,
22 in the subject vehicle.

23 Q. Do you have a photo that would show the -- the
24 deformation that was produced by your test?

25 A. All right. Well, this was produced by the test,
0270

1 as well, that's just going beyond the --

2 Q. Going beyond the force that you think was applied
3 during the accident?

4 A. Right.

5 Q. Is that correct?

6 A. That's correct. The -- Okay. The -- do you want
7 to mark that?

8 Q. Sure.

9 (Exhibit 40 marked)

10 A. The image that I'm talking about here is
11 Exhibit 40?

12 Q. (BY MR. HAYNES) Right.

13 A. And it would be the top image in that exhibit.

14 Q. All right. And what's the difference between the
15 top photo and bottom photo in Exhibit 40?

16 A. The top photo is at the -- just after the moment
17 when the -- the locking plates shifted, and we got that
18 impact noise on the video that we watched earlier.

19 The bottom image is similar to your
20 photograph that's Exhibit 39, and that's just the -- the
21 continuation or the continued application of force to the
22 tie rod; which to me indicates that we've got unlatching
23 of that -- or unlocking of that pin prior to -- to when we
24 get to that bottom photo.

25 Q. Some -- some time between the top and bottom
0271

1 photo?

2 A. Right. I would think at the point of the -- the
3 top photo. That's when the -- the plate shifted in my
4 test; so that would be consistent with when I expect it to
5 shift in the actual coach. And that would be -- you know,
6 with -- with different parts and different wear on the
7 parts, that's when I think it became unlatched.

8 Q. At the amount of deformation shown on the tie rod
9 in the top photo is when you think the locking plate
10 became unlatched?

11 A. That would have been consistent, yes.

12 Q. Is the deformation you observed in your testing
13 consistent with the deformation observed on the tie rod on
14 the subject vehicle following the accident?

15 A. It's similar, it's a -- in a consistent
16 direction. And I think there's -- you know, after that
17 releases, there may be some force applied by the -- the
18 damper.

19 Obviously, the damper gets shifted, so it
20 applies a force at some point in time. There's some
21 additional force applied there, and there may be some
22 continued deformation that I wouldn't be able to replicate
23 in this kind of a test.

24 (Exhibit 41 marked)

25 Q. (BY MR. HAYNES) Let me show you what I've marked

0272

1 as Exhibit 41. Can you identify that document for us?

2 That photograph?

3 A. Well, I can identify that it's a -- a photo of
4 the subject coach at the crash scene on its -- on its
5 right side.

6 Q. And it shows deformation to the tie rod?

7 A. Correct.

8 Q. Can you circle the deformation to the tie rod
9 that you see in the photograph Exhibit 41?

10 A. Sure. (Witness complied).

11 Q. And then, can you circle the deformation to the
12 tie rod that you see in the -- both the top and bottom
13 photo of Exhibit 40?

14 A. (Witness complied).

15 Q. Did you measure the -- in any way the deformation
16 to the tie rod in your testing?

17 A. Like quantification of the --

18 Q. Sure.

19 A. -- deformation? I did not measure it directly,
20 though, the -- the test was continued. So, it's -- it's
21 more in appearance of your Exhibit 39 than it is the top
22 part of Exhibit 40.

23 Q. Right. Yeah. It's obvious that it's worse in --
24 in Exhibit 39 and the bottom photo in Exhibit 40, than the
25 top photo of --

0273

1 A. Correct.

2 Q. -- Exhibit 40?

3 A. It is.

4 Q. But you didn't measure the actual -- or try to
5 quantify the amount of deformation in either 39 or 40?

6 A. Well, I did measure displacement of the tie rod.

7 Q. Okay.

8 A. I suppose that gives you a measure of -- if I can
9 use that exhibit -- that gives you a measure of the
10 deformation to some degree. The locking pin is still
11 engaged in this top image for Exhibit 40; and my
12 measurement that's plotted with the data of the tie rod

13 displacement measures -- you can see a very faint line
14 over here, that's where the other end of my string
15 potentiometer is mounted.
16 So, that measures the distance -- the
17 displacement between this end of this tie rod and the
18 locking pin. So, I -- basically, I do measure, through
19 the entire sequence, the -- the motion of this point. And
20 that would give you a measurement for the deformation of
21 the tie rod.

22 Q. And where is that in your documentation?

23 A. And if we go to Exhibit 13 -- all right. In
24 Exhibit 13 there are three different plots. The center
25 plot shows displacement of two items in the test.

0274

1 I have a string potentiometer that measures
2 the displacement of the tie rod that we just talked about;
3 and I have another string potentiometer that measures the
4 displacement of the -- the hydraulic cylinder that's --
5 that's being -- you know, you -- that is applying the
6 force.

7 Those are shown in -- shown in the middle
8 plot. The cylinder displacement is in blue and relative
9 to the left axis. The tie rod displacement is in red,
10 relative to the right axis. And as you see, when we reach
11 about 16,000 pounds of force, our tie rod displacement
12 goes from some small value, maybe .05, to .45 in that
13 ballpark. So, four-tenths of an inch roughly. For a more
14 accurate number, you would have to look at the raw data.

15 Q. And -- and that's measured -- you're -- what
16 you're just showing me right now is a measurement for the
17 top photo in Exhibit 40?

18 A. Right. That's -- that's consistent with this
19 point where we have 16,000 pounds initially applied to the
20 tie rod.

21 Q. And then is there a measurement for the
22 Exhibit 39?

23 A. Sure. That would be just the end of the test;
24 and so that's in this area where we're closer to one inch.
25 Basically at the end of the test you get --

0275

1 Q. On Exhibit 13?

2 A. Yes. The measurement drops down after that
3 because then the cylinder is reversed. So, that's the end
4 of the test where this value was at peak.

5 Q. And was there any kind of comparable measurement
6 made for the displacement of the tie rod on the subject
7 coach that's shown in Exhibit 41?

8 A. No. In the subject coach, the tie rod has been
9 deformed post crash by the -- the wrecking company. So,
10 they -- they basically went in there with a -- the wrecker
11 boom and -- and used their hydraulic boom to straighten
12 everything up for towing the vehicle. So, unfortunately,
13 that -- that deformation's gone.

14 MR. HAYNES: Objection, nonresponsive.

15 Q. (BY MR. HAYNES) I -- I guess what I'm talking
16 about: Is there a way to measure the displacement of the
17 tie rod that's shown on the subject coach in Exhibit 41?

18 A. I guess I'm not clear on your question. The --
19 the coach, as it exists now, the subject coach, isn't in
20 that configuration. It's not like that. That tie rod's
21 been modified by the -- the wrecking crew or the wreckers
22 out there.

23 I have not quantified that by any sort of
24 photo analysis, if that's more in line with your question;
25 but -- but either way, I don't have a measurement for the
0276

1 -- the displacement of that tie rod.

2 Q. Right. That's what I'm asking you is whether --
3 whether you're able to measure the displacement of the tie
4 rod as shown at the scene of the accident in Exhibit 41?

5 A. You could do a photo analysis of that, but I have
6 not done that.

7 Q. So, basically, the only way to compare it as a --
8 without doing a photo analysis, would just be to eyeball
9 it and see if it looks similar or not?

10 A. I -- I mean, yeah, it's a qualitative comparison
11 at this point.

12 Q. And if we're going to do a qualitative
13 comparison, I guess we could agree that there is --
14 there's not two bends in the tie rod shown in Exhibit 41
15 as in Exhibit 39?

16 A. Absolutely. That's right.

17 Q. And then, maybe we would have to argue about it,
18 I don't know, but it looks like the tie rod is bent more
19 in Exhibit 41, the photo of the coach on its side at the
20 accident site, than the tie rod is bent following your lab
21 testing shown in the top photo on Exhibit 40?

22 A. Right.

23 Q. Would you agree with that?

24 A. I think we do have more bending in the subject
25 coach tie rod, and that was part of what I was mentioning
0277

1 before. We -- we do have shifting of this steering damper
2 on the tie rod, and that would be consistent with a
3 subsequent force being applied; once this locking pin is
4 disengaged then we have the damper creating additional
5 force, and that would basically end up creating more
6 deformation.

7 So, I think the -- the testing is meant to
8 get us directionally in -- in the right configuration
9 compared to the subject coach. It's not meant to
10 replicate it exactly. These components are basically
11 brand-new, so they're not going to behave exactly the same
12 way.

13 Q. Have you reviewed the recent testing that was
14 regarding the -- I guess call it the driveshaft test
15 video? Can we call it that --

16 THE WITNESS: No, I'm fine.

17 Q. (BY MR. HAYNES) -- for identification purposes
18 today?

19 A. I have reviewed some of that. I've got, I guess,
20 a video labeled Video 12 and another one that's Video 15,
21 and then another one that's not numbered. So, I think
22 there's -- there's more, so I -- I guess I would consider
23 it a partial review.

24 Q. Have -- have you compared the displacement or
25 deformation of the tie rod in the -- in that video after

0278

1 the -- the impact with the driveshaft compared to the
2 testing that you did and then in comparison to Exhibit 41?

3 MS. DORMAN: Object to form.

4 A. Certainly not in any sort of quantitative way.

5 Q. (BY MR. HAYNES) In any way?

6 A. I've certainly looked at all of these and
7 observed the deformation. I guess it's kind of in a
8 limited view from the camera angle that the drive--
9 driveshaft is taken in, but I can see, you know, the
10 deformation that's there.

11 Q. Based on what you've seen so far, is the
12 deformation to the tie rod caused by contact with the
13 driveshaft in that test video, is it consistent with the
14 deformation to the tie rod seen in Exhibit 41?

15 MS. DORMAN: Object to form.

16 A. I'd say based on the limited information I've got
17 at this point, qualitatively, I think they're similar.

18 (Exhibits 42 and 43 marked)

19 Q. (BY MR. HAYNES) Can you identify Exhibit 42 for
20 me, and 43?

21 A. 42 is a photograph that I would have taken of the
22 -- the locking plate -- the tie rod mounted locking plate.
23 And 43 appears to be another angle of the same thing.

24 Q. At what -- at what point did you take these
25 photographs?

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1 A. They would have been after the testing was
2 completed.

3 Q. This -- so this is on your test bus?

4 A. This is on the test fixture.

5 Q. Okay. Right. Sorry. This is the pictures of
6 the locking plate after the lab testing you did applying
7 the compressive force from rear to front that we've been
8 discussing?

9 A. Correct. And this would have been after the end
10 of the testing, and after I separated the latching plates
11 and -- and rotated the steering over so that I could
12 actually see the -- this plate. Otherwise, it wouldn't be
13 visible.

14 Q. And -- and what do those photographs show?

15 A. Well, there are two gouges that are created on
16 the rear-most edge of the slot that we see in this
17 photograph. And those gouges that you see there are
18 consistent with what we see on the -- on the subject latch

19 plate or the tie rod mounted locking plate. They're --
20 they're consistent --

21 Q. And can you take a pen and --

22 A. Sure.

23 Q. -- circle those?

24 A. On both exhibits?

25 Q. Yes, sir. Please.

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1 (Exhibit 44 marked)

2 A. All right.

3 Q. (BY MR. HAYNES) Can you show me -- can you
4 identify Exhibit 44 and show me what you're talking about?

5 A. Sure. This is a photograph of the subject tie
6 rod mounted locking plate.

7 Q. And how are they similar?

8 A. I think this is a photograph of that. I guess, I
9 can't identify it for certainty.

10 Well, they're -- they're similar in that the
11 rear edge of the -- the locking plate has impressions
12 created in it that are of the -- the width of the locking
13 pin.

14 So, those -- in this particular plate we get
15 a -- a different motion in the -- in the sense that it
16 does become disengaged, and these marks that are appearing
17 at the rear end of the -- the slot, then, go up and out at
18 an angle relative to the slot.

19 So, there's disengagement here, whereas in
20 Exhibit 43 that's not completely disengaged. But
21 basically the -- the comparison is that there's this
22 gouging at the rear-ward edge of the slot.

23 Q. And what do you think accounts for that
24 difference in the two photographs?

25 A. Well, the test -- the lab test photograph is --

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1 basically, they're new components and there's not a -- an
2 unlatching of that in that event. In the subject coach,
3 we've got an unlatching of the -- the mechanism.

4 So, we've got -- in addition to the rear-ward
5 created gouges, we've also got a flow of metal created
6 when this plate was bent down and out of the -- out of the
7 way of the -- the locking pin.

8 Q. Can you circle the -- on Exhibit 44 what you
9 think is comparable to Exhibit 43?

10 A. Sure. (Witness complied).

11 MS. DORMAN: 4:30.

12 Q. (BY MR. HAYNES) I'm going back to your report,
13 Page 8. Mrs. Rodriguez was asking you a couple of
14 questions about when you manually detached the
15 transmission and U-joint, and pivoted the driveshaft.
16 Remember that line of questioning?

17 A. I do.

18 Q. And if I understood you right, you said your
19 opinion in that regard was based not only on the manual
20 movement of the driveshaft that you performed on the

21 exemplar coach, but also based on Mr. Rucoba and
22 Hoogestraat's manual testing?
23 A. Right. That -- that was relayed to me the -- the
24 analysis that they did, so that was my understanding of --
25 of their analysis.

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1 Q. And your analysis or testing -- manual testing,
2 static testing, was consistent with -- with what they did,
3 as well?

4 A. I think in --

5 MS. DORMAN: Object to form.

6 A. -- in general terms; it was just less -- less
7 extensive.

8 Q. (BY MR. HAYNES) Yours was a little less
9 extensive?

10 A. Sure.

11 Q. Would it be fair to say that prior to receiving
12 the -- the driveshaft test video from Ms. Rodriguez --
13 prior to receiving that test video, did you believe, based
14 on your manual testing and manual testing done by these
15 other gentlemen, that a -- a driveshaft that's detached
16 from the transmission and U-joint would not be able to
17 come in to contact with the tie rod -- the tie rod locking
18 plates and locking cylinder?

19 MS. DORMAN: Object to form.

20 A. That's -- that's accurate, yes.

21 Q. (BY MR. HAYNES) And after receiving that
22 driveshaft test video, do you still hold the same opinion
23 or are you reserving judgment until you do some more
24 analysis?

25 A. I'm going to have to reserve judgment because

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1 I've got very limited information. So, I would intend to
2 look at those and do some more analysis.

3 Q. I'm going to ask you a few more questions about
4 the -- the testing that you did in Uvalde, and I'm going
5 to try not to reinvent the wheel. I'm not as well-versed
6 on this as Ms. Rodriguez, so if it's -- some of the
7 questions sound similar, I'm -- I'm not trying to ask the
8 same questions.

9 Okay. With that preface: How did you
10 monitor and measure the displacement of the tie rod when
11 the tag axle was unlocked during your Uvalde testing?

12 A. Let me give you some photograph numbers from the
13 test data book.

14 Q. Okay.

15 A. In general what I used was a string
16 potentiometer, and that is just a -- a linear displacement
17 device. So, it's meant to measure the displacement
18 between two points.

19 And what I did was mount that string
20 potentiometer on the tag axle tie rod -- I'm sorry -- the
21 potentiometer itself -- itself was mounted on the -- the
22 tag axle; and then the other end of the -- the cable,

23 which is basically what you would call the string -- the
24 other end of the string was mounted to the -- the tie rod.

25 That is shown -- that is probably best shown

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1 maybe in Photo 2864. Take a look here. The -- what's
2 shown in 2864 is this blue device; and basically what that
3 is is a 42-inch string potentiometer. The -- the
4 device --

5 Q. Let's mark that page as Exhibit 45?

6 A. Sure.

7 (Exhibit 45 marked)

8 A. It's a precision linear displacement measurement
9 device.

10 Q. (BY MR. HAYNES) And we're looking at the --
11 well, I guess it's all the same; but the photo you're
12 pointing at is the bottom left photo?

13 A. Right 2864. So, this -- this string
14 potentiometer has a -- a cable that's basically wound
15 around a spool inside the potentiometer. And that cable
16 exits through this opening that you can barely see here.
17 And that cable is, then, tied to this rod that I've
18 mounted way down on the other end of the tie rod.

19 And so, when the tie rod moves, basically
20 it's moving that rod back and forth as it steers. As it
21 moves that rod back and forth, it pulls the cable out or
22 lets the cable back in to this potentiometer.

23 The potentiometer is a rotary potentiometer
24 means -- and that means as -- as we spool the cable up or
25 we let the cable out, an electrical signal is created that

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1 I measure and -- and record with my data acquisition
2 system.

3 Q. So where in all your testing is that documented,
4 how much displacement there was of the tie rod when the
5 tag axle was unlocked?

6 A. If we go to -- find a representative chart -- we
7 were looking at Test No. 40 in the past. In all these
8 data plots there are -- the same things are being -- being
9 plotted. Meaning the -- the top graph shows the same
10 three signals.

11 The signal in red is the tie rod
12 displacement. So, that's -- this plot is one example of a
13 tie rod displacement that's being measured in red. It's
14 read off of the -- the right axis here.

15 And so, this -- this particular plot would
16 show that as the test is being -- as the test is being run
17 on the approach, the tag axle tie rod displacement is
18 zero inches, as it's approaching.

19 And then I released the -- the locking
20 cylinder with the green switch signal here. It just goes
21 from zero to one, means I've -- I've released the tag axle
22 steering lock.

23 And then you see the -- the red signal now
24 goes non zero, and we have a -- a displacement of the tag

25 axle tie rod. And that shows in this plot we get -- we
0286
1 get about three-quarters of an inch of displacement.
2 Q. And that's in Test 40?
3 A. That's in Test 40 just as an example.
4 Q. Right. And so for each test, we've got this
5 same --
6 A. The same --
7 Q. -- same measurement being -- same signal being
8 measured?
9 A. That's correct.
10 Q. All right. And so, for example in Test 40, it
11 looks like after the tag axle was unlocked, the maximum
12 movement of the tie rod was -- what did you say,
13 three-quarters of an inch?
14 A. About three-quarters of an inch, because it's--
15 it's read from the right vertical axis. So, it's roughly
16 halfway between the -- the .5 and 1.0 mark.
17 Q. Do you have an opinion why it goes back down
18 after the maximum movement of three-quarters of an inch?
19 Because it looks like that happened over a very short
20 period of time, right?
21 A. Right. The -- in this maneuver, if you come down
22 one chart, you'll see the steering input that I applied.
23 So, this is a test where I unlocked the -- the tag axle
24 steering.
25 I was in a slight curve going downhill to the
0287
1 right. And then I steered to the right on to the
2 shoulder, and then steered back to the left across several
3 lanes.
4 So, you'll see in the steering trace, which
5 is in blue in the center plot, that shows that I'm -- I'm
6 actually maneuvering the vehicle right, then left, and
7 then with a -- the small right steering after that. The
8 tag axle steering -- or the tag axle tie rod displacement
9 is trailing, and it's following the -- the path of the
10 vehicle.
11 So, you'll see my steering, and then you'll
12 see the tag axle following that steering. Basically, this
13 is the -- the self-steering effect of the tag axle at
14 freeway speeds.
15 Q. What was the -- what was the maximum displacement
16 of the tie rod during your testing -- any of your testing
17 when the tag axle was unlocked?
18 A. The maximum displacement would be looked at --
19 you would look at Test No. 1, and that is a low speed
20 turn. That is with the tag axle steering unlocked. The
21 test was run roughly at 10 miles per hour.
22 And that is basically a Figure 8 type path
23 where I basically unlocked -- with my foot, I unlocked the
24 -- the tag axle steering, and then drove in kind of a
25 Figure 8 pattern. And that -- that would be the maximum
0288

1 excursion of the tie rod in my testing, and that's on the
2 order of about 1.6 inches.

3 Q. On any of the testing that you did where you were
4 going more highway speeds, what was the maximum displacement
5 of the tie rod, once the tag axle was unlocked?

6 A. I would have to go through each one individually.
7 I would expect that probably the -- the highest
8 displacements are going to be on the open loop lane change
9 or the high speed lane change. And that for unlocked tag
10 axle that is Test No. 35 and Test No. 36.

11 And in Test No. 35, we get about -- we get a
12 range of tag axle steering from about negative quarter
13 inch to positive three-quarters of an inch. So, a total
14 from one end to the other of about an inch.

15 And that appears to be consistent with the
16 open loop lane changes. There are multiple runs in 35 and
17 multiple runs in 36, that appears to be a maximum for --
18 for all of those. And that's kind of a ballpark number.

19 Q. Of about an inch at the most?

20 A. An inch from one extreme to the other, because
21 there -- these maneuvers are both directions.

22 Q. Right. So, it wasn't one inch either to the left
23 or to the right; it was a total movement of one inch?

24 A. On this there's a bit of an offset, and then it
25 ends up being about, you know, a half inch in one

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1 direction and a half inch in the other direction.

2 Q. And then you said on Test 35, the -- the most
3 movement in either direction was three-quarters of an
4 inch?

5 A. Correct. So, there's about an inch of
6 displacement, and that inch is offset about a quarter of
7 an inch.

8 Q. So, if I understand right, your testing was
9 really designed to see what would happen when a tag axle
10 unlocked. Is that fair?

11 A. I think that's a fair general description. The
12 testing was to --

13 Q. Well, you're not going to get anything better
14 than a general description from me.

15 (Laughter)

16 A. I think that's -- that's fair. It's just an
17 analysis of -- of the unlocking of the tag axle system
18 under different scenarios.

19 Q. (BY MR. HAYNES) So to compare that to the
20 testing that Mr. Yohe did, you weren't trying to test the
21 maneuverability of the bus if the tie rod was displaced,
22 you know, a maximum amount of an inch and a half or two
23 inches?

24 A. Well, my testing, I -- I've allowed the tie rod
25 to move as it freely would. I did not try to do, you

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1 know, a forced application of -- of either input or force
2 to the tie rod like Mr. Yohe did in his testing.

3 Q. Right. And you understand our theory that -- you
4 know, you understand what our theory is that the
5 driveshaft impacted the tie rod, bent it, unlocked the tag
6 axle, and that that's what forced the tie rod in one
7 direction or the other, right?

8 A. In general terms, sure. I don't -- I don't know
9 that any of the experts have put it as succinctly as you
10 just did, though.

11 Q. Well, there's probably a reason for that. But
12 you weren't trying to test, if our theory is correct, how
13 would that affect the maneuverability of the coach?

14 A. Not in that exact same manner. I'm trying to
15 analyze the theory, as I understand it, and that is that
16 the -- the tag axle steering becomes unlocked at some
17 point in the maneuver.

18 Specifically, you know, forcing that over and
19 holding it in some steered position, I've not analyzed
20 that; but I can analyze the -- the testing done by
21 Mr. Yohe and -- and use that to -- to help understand the
22 dynamics of that.

23 Q. Right. But you understand that what you were
24 testing is not our theory --

25 MS. DORMAN: Object to form.

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1 Q. (BY MR. HAYNES) -- Right.

2 A. This -- this certainly is -- is my understanding
3 of -- of your theory as it was -- as it was portrayed
4 early on. I understand Mr. Yohe's testing is -- is a
5 different aspect of that. I have not tried to test it in
6 the same way that Mr. Yohe -- Yohe did, that's for sure.

7 Q. Well, like we just discussed, you understand our
8 theory is that the driveshaft not only impacted and
9 unlocked the tag axle, but that it bent the tie rod and
10 displaced it in one direction or the other. And you
11 didn't specifically test what would happen to a motor
12 coach in that scenario. Is that true?

13 A. In that exact scenario as described, that's true.

14 Q. Okay.

15 VIDEOGRAPHER: There's about six minutes left
16 on the tape.

17 MR. HAYNES: Okay. Tell me before I run out.

18 VIDEOGRAPHER: Got you.

19 Q. (BY MR. HAYNES) Okay. Now, I'm going to try to
20 read Ms. Rodriguez's hieroglyphics, so I have to borrow
21 my wife's glasses.

22 With respect to the DPS, do you have any
23 information or knowledge about their experience and
24 training with respect to investigating accidents where
25 steerable tag axle systems are alleged to have been

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1 involved in causing the accident?

2 A. Only in the -- the sense that I've reviewed the
3 depositions of the police officers, and I certainly
4 wouldn't expect training in that specific of a -- of an

5 area for the DPS folks.

6 MR. HAYNES: Why don't you go ahead and
7 change the tape while I try to read this.

8 VIDEOGRAPHER: We're off the record at 4:48,
9 end Tape 6.

10 (Recess from 4:48 p.m. to 4:52 p.m.)

11 VIDEOGRAPHER: We're on the record at 4:52,
12 start Tape 7.

13 Q. (BY MR. HAYNES) Earlier we were comparing the
14 photographs in Exhibits 42, 43, and 44 --

15 A. Right.

16 Q. -- showing the markings on the locking plate,
17 right?

18 A. Correct.

19 Q. What would you expect the contact marks to look
20 like on the locking plate if there had been direct contact
21 with the locking plate by a flailing driveshaft like in
22 the test video you've been provided? How would you expect
23 it to be different if -- or would you?

24 A. I guess I don't have an opinion really based on
25 that video. The -- the video's pretty chaotic.

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1 VIDEOGRAPHER: Your microphone, sir.

2 THE WITNESS: Oh.

3 A. The video is pretty chaotic and it's hard to
4 discern, really, the direction of any force that's applied
5 between the -- the driveshaft and other objects in that --
6 in the video.

7 So, I -- I think the best way to do that is
8 to inspect the components that were involved in that test
9 and -- and then compare.

10 Q. (BY MR. HAYNES) So, as of right now, you don't
11 have an opinion whether the contact marks to the locking
12 plate caused by a flailing driveshaft would be similar to
13 or any different from what we see in the subject motor
14 coach after this accident and from your lab testing
15 applying compressive force?

16 A. I guess I'm not sure on your question. Were you
17 comparing all three or --

18 Q. Well, I'm asking you -- well, I think what you've
19 told us so far is that the -- the markings on the locking
20 plate on the subject coach after this accident are similar
21 to the markings on the locking plate in your lab testing
22 that were caused by the compressive force, right?

23 A. There -- well, they're made at the same portion
24 of the locking plate, and they're in the same direction.
25 The similarity ends in that during my test, these

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1 components were new, there was no misalignment, or wear,
2 or anything, and there -- there's no disengagement of the
3 locking plates from each other. So, the -- the metal flow
4 that we see on the subject coach locking plate wouldn't
5 exist on -- on the test plates.

6 So, there -- there's a difference there. The

7 point of the test is to indicate that with a reasonable or
8 an expectable load applied to the -- the tire -- the tag
9 axle wheel and tire, you do get bending of the tie rod in
10 the direction that's appropriate or similar to -- to what
11 we get in the crash, and that you do get marking on the
12 plate that is in the direction that's similar to what we
13 have in the crash.

14 And then beyond that, you -- you get into the
15 areas where the plates would have separated and that's
16 going to create a different marking subsequent to this
17 test --

18 Q. And --

19 A. -- if that makes sense.

20 Q. And so to be fair, what you don't know and are
21 not prepared to say today is whether the markings on the
22 locking plate caused by a flailing driveshaft like in the
23 test video that you've been provided, would also be
24 similar to the markings on the locking plate on the
25 subject coach after this accident?

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1 A. Right. The markings on the -- the plate that
2 would have been in that driveshaft video, I wouldn't have
3 any opinions on comparing those at this point. I think I
4 would have to do some more analysis and inspection.

5 Q. Based on everything you know so far, would you
6 expect that the markings on the locking plate and the --
7 caused by a flailing driveshaft would be similar or not to
8 what is seen on the -- the subject coach after this
9 accident?

10 MS. DORMAN: Object to form.

11 A. Well, I think based on what I know now, I can't
12 really make that conclusion. I haven't seen the locking
13 plate that was part of that driveshaft testing, so I would
14 have to, actually, have more information, I think, to make
15 that conclusion.

16 Q. (BY MR. HAYNES) At this point, you don't know
17 one way or the other?

18 A. Correct.

19 Q. Well, if they were similar, would it -- would
20 that be something that would -- if the -- if the markings
21 caused by the flailing driveshaft in the test video were
22 very similar to what we see on the subject motor coach
23 after this accident, would that cause you to -- to, at
24 least, reconsider your opinion about our theory in this
25 case?

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1 MS. DORMAN: Object to form.

2 A. Well, certainly if there's presentation of new
3 evidence or that evidence is based on testing that is --
4 that can be well-documented and -- and understood to
5 represent conditions very similar to the subject crash, I
6 would have to consider that.

7 So, I would consider that. And I would, you
8 know, evaluate that, and compare it to the evidence in our

9 crash. And if there's any need to adjust my -- or
10 supplement or modify my opinions, I would certainly do
11 that based on the evidence. I guess --

12 Q. And I -- and I -- well, sorry.

13 A. I was just going to say that with a qualification
14 is that that's just a portion of my analysis. The other
15 portion of the analysis regard-- regarding the -- the full
16 vehicle testing, that's basically what -- you could say
17 that's subsequent to this event and the crash per
18 Americanos' theory.

19 So, if -- if the driveshaft video produces
20 evidence that's very similar to our crash, then we just
21 get back to this -- this testing. And this is obviously
22 testing done with the steering unlocked.

23 So, that comports with the -- the time period
24 after separation would have occurred; and then also my
25 analysis of the -- the testing by Larry Yohe, that --

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1 those opinions are still going to be the same.

2 Q. Right. But your testing doesn't involve a
3 flailing driveshaft that unlocked the tag axle assembly
4 and bent the tie rod, potentially forcing it one way or
5 the other, and turning those tag wheels, right?

6 MS. DORMAN: Object to form.

7 A. Well, as far as full vehicle testing, nobody's
8 tested that. I mean, that's also -- it's certainly not
9 Mr. Yohe's testing. That's a different situation altogether.

10 I understand that his testing was meant to
11 simulate that; but at this point I don't know that
12 anybody's tested that full gamut of what you described.

13 Q. (BY MR. HAYNES) Right. And I guess what I'm
14 saying, you said that still wouldn't -- you know, even if
15 the -- this new testing of a flailing driveshaft ended up
16 having very similar marks to the locking plate as on the
17 subject coach after this accident, you know, we would
18 still have to account for the testing you did. And --

19 A. And that Mr. Yohe did.

20 Q. -- my -- yeah, that Mr. Yohe did. And -- and my
21 response was that maybe neither one of you have totally
22 done the testing that would approximate what happened
23 if -- if the -- the new test video is -- is found to be
24 what really happened in this accident.

25 MS. DORMAN: Object to form.

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1 Q. (BY MR. HAYNES) I mean, nobody has tested that
2 so far.

3 MS. DORMAN: Object to form.

4 A. I think in some characteristics that's -- that's
5 true, yes. The -- the testing by Mr. Yohe has a forced
6 displacement of the steering system that holds it there,
7 and that's not going to replicate precisely what would
8 happen under what you describe as the Americanos theory.
9 And I don't think there's any testing that would replicate
10 that directly, so --

11 Q. (BY MR. HAYNES) And -- and you haven't even
12 attempted do that so far, right?

13 A. No. Like I said, your -- your description of the
14 theory has been the most succinct description that I've
15 heard to date.

16 Q. Maybe not the most accurate, but succinct. You
17 say in your summary on your report that the subject coach
18 was being driven southbound on I-- I-37 at freeway speed
19 when the rear U-joint of the driveshaft separated. The
20 forward U-joint remained attached for a period, causing
21 the driveshaft to continue to rotate and creating a
22 significant imbalance applied to the differential and
23 drive axle.

24 Did I read that correctly?

25 A. I believe so.

0299

1 Q. Okay. My question has to do with have you
2 arrived at any kind of opinion about when the rear U-joint
3 of the driveshaft separated?

4 A. Well, clearly there -- there -- there's debris,
5 there are pieces of debris on the roadway documented by
6 the police officers. Certainly, that would be consistent
7 with the beginning or even possibly the completion of the
8 drive -- or the U-joint separation at that point.

9 You know, it's my opinion that that
10 separation would have happened on the road upstream of the
11 -- the tire marks in that area, or at least it would have
12 began on the road where we see some of that evidence.

13 Q. You say in Paragraph 7 that you evaluated the
14 characteristics -- characteristics of the tag axle system
15 and found them to be appropriate in design, manufacture,
16 and function. Found no evidence of a defect.

17 Is that opinion based to a significant extent
18 on your conclusion from your manual static testing that
19 the driveshaft won't escape the tag axle harness and hit
20 the tie rod and tag lock?

21 MS. DORMAN: Object to form.

22 A. I guess I don't know how to -- to partition that
23 based on different work that I -- I've done. I think it's
24 -- it's based on -- on everything that I've done,
25 including the full vehicle testing, and the lab testing,

0300

1 and all that.

2 Q. (BY MR. HAYNES) Is it based in part on your
3 opinion expressed in this report that the driveshaft will
4 not escape the tag axle harness and hit the tie rod and
5 tag lock?

6 MS. DORMAN: Object to form.

7 A. I suppose you -- you could say that's in part
8 based on that. That's -- that's part of the work that
9 I've done, sure.

10 Q. (BY MR. HAYNES) Give me just a minute here and
11 see if I have anything else. Did we get a list of your
12 testimony?

13 A. Yes.
14 Q. Deposition and trial testimony?
15 A. Yes.
16 Q. I guess that's somewhere on Exhibit 24?
17 A. That is. Also in the project binder.
18 Q. Can we mark it, just so we can have that and
19 don't have to search for it?
20 A. The testimony separately?
21 Q. Yes, sir. I'll mark that as Exhibit 46.
22 (Exhibit 46 marked)
23 Q. (BY MR. HAYNES) Thanks. Earlier, I wrote down
24 that you testified that -- and I may have
25 misunderstood -- on the exemplar test bus, Unit 47805, I
0301
1 think you said the MCI mechanics worked on the bus, and
2 you don't have documentation of the work done by MCI. Is
3 that correct?
4 A. That's true, I don't.
5 Q. What I was confused about was I -- I think you
6 said you inspected the test bus, but I wasn't clear if you
7 inspected it before the MCI mechanics worked on it or
8 after, or both?
9 A. I inspected it before. And then there were
10 some -- some things that needed to be addressed, such as
11 the misalignment of the locking cylinder and plates that
12 we talked about when Ms. Rodriguez was here.
13 And then that was the coach that I used for
14 my testing. So, that vehicle I would have inspected to a
15 different extent when I actually equipped the vehicle and
16 then drove it at the test track.
17 Q. Have you worked on other cases for MCI besides
18 this one?
19 A. I have.
20 Q. Can you give me a ballpark estimate of how many?
21 A. I believe it's -- this would be the third one
22 that I've worked on.
23 Q. What about for the Hartline Law Firm, have you
24 worked on any other cases for them?
25 A. Maybe one or two other ones.
0302
1 Q. Before this or currently pending?
2 A. I believe before this.
3 Q. One or two before this one for this law firm?
4 A. Separate and apart from MCI related projects,
5 yes.
6 Q. Okay. So, you told me the third -- this is the
7 third case that you've worked on on behalf of MCI; and
8 you've worked on a couple of other cases for Hartline
9 Dacus Barger & Dreyer, besides this one, right?
10 A. That's my semi-vague recollection. I think it
11 would be four or five total cases.
12 Q. Okay. Counting any pending right now?
13 A. Correct.
14 Q. And I think you said you had worked on another

15 case against Greyhound, correct?

16 MS. DORMAN: Object to form.

17 A. There's another case that Ms. Rodriguez asked
18 some questions about that was a crash in New York, and
19 that would be a case that I understand Greyhound is in, as
20 well as MCI.

21 Q. (BY MR. HAYNES) In that case are -- is whoever
22 you're working for on the opposite -- taking an opposite
23 position from Greyhound?

24 A. I guess that would be my understanding, I'm sure.
25 I think it's -- in that case, Greyhound may have filed

0303

1 suit against MCI.

2 Q. Have you met with any of the Plaintiffs'
3 attorneys before your deposition took place today?

4 A. Sure. Hunter Craft, I have met on a couple of
5 occasions. He's taken my deposition in other matters.
6 Justin Hill, who was also here, I have met. He has taken
7 my deposition in other matters. And then I've met him at,
8 I believe, several inspections on this matter and other
9 matters.

10 Q. Have you ever talked to any of the Plaintiffs'
11 attorneys in this case regarding your opinions in this
12 lawsuit?

13 A. Only today. And if I talked to Mr. Hill at
14 inspections of this lawsuit, they would only be casual
15 conversations not related to -- to my opinions.

16 Q. Did you talk to any of the Plaintiffs' attorneys
17 today, about your opinions in this case, before the
18 deposition began?

19 A. I talked with them briefly before the deposition,
20 but not specifically about my opinions in this case.

21 Q. What did y'all talk about?

22 A. Basically what I brought with my file, and
23 re-acquainting, since I have met Mr. Craft previously.

24 Q. I mean, did they kind of basically go through
25 what they were going to be asking you; because it -- it

0304

1 looked pretty well coordinated when he was asking you
2 questions?

3 A. There was no coordination from my point of view.
4 I provided my file. I mean, I didn't give him pointers on
5 what to ask, if that's what you mean.

6 Q. No. I really just meant more did y'all have a
7 meeting where he said, look, I'm going to be asking you
8 this and this, and we're going to show this, and that sort
9 of thing?

10 A. We -- we spoke maybe for two minutes prior to the
11 deposition, and I wouldn't describe it as that. It was
12 more of a, I'm going to be taking your deposition today
13 and, you know, I haven't seen you for a -- for a couple of
14 years on prior matters.

15 Q. This time we're on the same side, something like
16 that?

17 A. Not so much.
18 MR. HAYNES: Okay. All right. I think
19 that's all the questions I have. I appreciate your time,
20 Mr. Granat.
21 THE WITNESS: Okay. Thank you.
22 MS. DORMAN: Can we go off record for a
23 second?
24 MR. HAYNES: Sure.
25 VIDEOGRAPHER: We're off the record at 5:11.

0305

1 (Recess from 5:11 p.m. to 5:11 p.m.)
2 VIDEOGRAPHER: We're on the record at 5:11.
3 EXAMINATION

4 BY MS. DORMAN:

5 Q. Mr. Granat, during today's deposition, you listed
6 and described your criticisms or disagreements with the
7 testing and work done by Larry Yohe and Frank Brown. Do
8 you recall that?

9 A. I do.

10 Q. Is there anything that you believe you need to
11 add to that while we sit here today, given the time that
12 has passed since you originally answered that question?

13 A. I think I touched on most everything. There --
14 there were obviously things that I talked about with the
15 documentation of the tests, the lack of instrumentation
16 and recording of the tests, the lack of audio on some of
17 the camera views, the inconsistencies with the notes, and
18 then more importantly the -- the results of the tests as
19 far as what they may be interpreted as.

20 And I think I went through that in fair
21 detail. And like I said before, I created a video that
22 documents that pretty well.

23 Q. And what about the work done by Aaron Jones, the
24 failure analysis slash metallurgist hired by Americanos,
25 do you have any disagreements or criticisms of his work

0306

1 that we haven't gone over today?

2 A. I -- I mean, I remember we talked about the --
3 the driveshaft failing calculation, if you want to call it
4 that, and I think I -- I think I provided my criticisms of
5 that or my cautions with that analysis.

6 I'm trying to think if there's anything
7 specific, but -- but it's late, and nothing comes to mind.

8 Q. I understand. Do you have any disagreements with
9 mischaracterization of how the tag axle was bent during
10 the subject accident? I mean, the -- the tag axle tie rod
11 was bent during the subject accident?

12 A. Well, I think the -- the tie rod displays some
13 bending deformation. That goes from the locking pin area
14 toward the right side of the coach. And I think he
15 describes it as the midpoint of the tie rod. I think it's
16 -- it's more extensive than just the midpoint of the tie
17 rod, though.

18 Q. Any other criticisms or comments that you have on

19 Mr. Jones' work or opinions as you sit here today, after
20 more than six hours of deposition?

21 A. Well, I think as far as the metallurgical stuff,
22 that's kind of somebody else's area and that's really not
23 something I would be prepared to comment on.

24 Q. Okay.

25 A. Otherwise, I think we've -- we've gone through my
0307

1 opinions, and it's pretty clear where they differ or where
2 they coincide.

3 Q. Have you told us about your disagreements with
4 Mr. Fugger's work and opinions that he has given in this
5 case?

6 A. I have -- I've described some of the -- the
7 opinions I have regarding the steering input that he
8 applied to his reconstruction model. There are many other
9 aspects of the reconstruction that he did using HVE that I
10 find, you know, objectionable; or at least unlikely to be
11 accurate to any meaningful degree.

12 So, there -- there are many criticisms I
13 would have for using the HVE modeling the way he has in
14 this suit. I guess in general that's kind of a summary
15 description of -- of issues with Mr. Fugger's
16 reconstruction.

17 Q. Okay. And what about Mr. Longoria's work and --
18 or Dr. Longoria's work and opinions that he's provided in
19 this case, do you have any criticisms or comments about
20 your disagreements with him or -- or his methods?

21 A. Well, there aren't too many very distinct
22 conclusions that he's come to that I can understand from
23 his report or deposition.

24 One of them is basically that a driver may
25 experience trouble controlling a coach with an unlocked
0308

1 tag axle steering system, and I would disagree with that
2 to the extent that my testing shows that there is not a
3 controllability or stability issue with a unlocked tag
4 axle steering system.

5 Separate from that, I understand that his
6 work was done using basically a computer simulation that
7 -- that he put together. And that's based on the Adams
8 software. And I -- when I was at Ford, I was basically
9 doing Adams modeling, creating Adams models for prototype
10 vehicles and production vehicles, and -- and I'm very,
11 very familiar with the process of -- of testing components
12 and systems, and what it takes to create a -- an Adams
13 model that's accurate.

14 And I think to some degree Mr. -- or
15 Dr. Longoria is -- is also familiar with that, and I think
16 he would agree that there are some serious shortcomings
17 of, you know, using as little data that he's got at this
18 point to create a representative Adams model.

19 It's my opinion that the -- the -- the data
20 that he has that he's been able to use as an input to his

21 Adams model is insufficient to get you meaningful results,
22 I think.

23 Q. Other than the criticisms of the Adams modeling
24 and the HVE modeling that you've told us generally about,
25 why do you think that the modeling or simulations that
0309

1 these two experts did would not be valid or reliable?

2 MR. HAYNES: Which ones are you talking
3 about?

4 MS. DORMAN: Mr. Fugger and Dr. Longoria.

5 Q. (BY MS. DORMAN) Other than what you've already
6 mentioned, are there any other reasons you think that
7 their modeling or simulations would not be valid or
8 reliable?

9 A. Well, Mr. Fugger's reconstruction simulations are
10 -- they are based on relatively arbitrary inputs. So,
11 he's -- he indicates that he's modeling an unlocked tag
12 steering system, but what he's really doing is just
13 applying specific steering inputs to the tag axle tires.

14 And those specific inputs are just
15 fundamentally arbitrary for Mr. Fugger. They are results
16 oriented. He's trying to make the vehicle or the -- the
17 model of the vehicle move in a specific way, and there's
18 not a physical basis for the -- the motions that he's
19 given the model.

20 Some of the steering inputs that he's applied
21 to his model are also, I think, excessive. He claims that
22 he's done some -- some validation of his model using the
23 -- the Larry Yohe testing, and I -- I think that's --
24 that's a conclusion that's invalid.

25 Like I said I've -- I've worked at Ford Motor
0310

1 Company doing Adams modeling, and -- and I've done many
2 Adams model correlation test trips. And correlation of a
3 model with the physical response of a vehicle is a very
4 time consuming and involved process that relies on a lot
5 of well-instrumented data. And that's -- that's not what
6 we have in the -- in the case of Mr. Fugger's analysis.

7 Q. Going back to your testing of the MCI coach at
8 the Uvalde test track. What did you do to determine how
9 much ballasting to do to the bus, how much weight to
10 assign to each seat or area of the bus?

11 A. Well, I requested information regarding the --
12 the occupants that were actually on the Americanos subject
13 coach. And based on the available information that we had
14 on the occupant weights, ages, seating positions, I looked
15 at that in a -- basically a matrix format to see what sort
16 of occupant weights we had on the coach.

17 And then I used those to calculate an average
18 occupant weight; and that average occupant weight ended up
19 being fairly close to the 150-pound occupant weight that's
20 -- that's described for typical coach loading.

21 So what I did was I used 150-pound or
22 nominally 150-pound sands -- three bags of 50-pound sand

23 bags in each of the 44 seating positions that I used, and
24 those were relatively uniformly spaced on the coach. And
25 then I also added 35 pounds of cargo for each occupant to
0311

1 the baggage compartments.

2 Now, the -- the actual weight of the sand
3 bags ended up being a bit higher than 50, so I was -- my
4 -- my loading was -- was a little bit higher than what --
5 what you would have for 150-pound occupants.

6 Q. Does that positively or negatively affect your
7 testing results in any way?

8 A. It's really not consequential at all.

9 Q. Why not?

10 A. Well, the differences, if you add up all of
11 the -- the weight that I added with the sand bags, and
12 then you divide by the number of sand bags that I put on
13 there, I think you get 55 or 57 pounds per sandbag. So,
14 it's really not, you know, some substantial difference.

15 Q. Going back to the tag axle itself and how it
16 works. When -- when a driver's driving a 102DL3 that's
17 equipped with a self-steering steerable tag axle, is there
18 any power that goes directly to the tag axle or force that
19 goes to that tag axle?

20 A. No, there's -- it's not an actively steered axle,
21 it's basically a passive steer axle. So, the -- the
22 steering of that system is basically passively following
23 the vehicle as it goes through any sort of path. There's
24 not a steering gear or an actuator that would force the
25 steering one way or the other.

0312

1 MS. DORMAN: I believe that's all I have.

2 Thank you, sir.

3 EXAMINATION

4 BY MR. HAYNES (5:22):

5 Q. Just real quick. Do you have -- just kind of
6 catch-all question. Any --

7 A. Those are dangerous.

8 Q. Not really meant to be, just kind of CYA. Any
9 expert opinions that you have that were not in your expert
10 report and not discussed in your deposition here today?

11 MS. DORMAN: Object to form.

12 A. Yeah. I think -- I think we've covered all the
13 areas. Nothing comes to mind that, you know, is totally
14 outside of what we've discussed.

15 I think we've covered it in general terms for
16 sure; and I think I've answered all the questions as best
17 I could. I'm trying to think if there's any -- any
18 specific area that's -- that's outside of what we
19 discussed, and -- and like I said, nothing comes to mind.

20 MR. HAYENS: Okay. I appreciate your time.

21 MS. DORMAN: And just my CYA. And it's not
22 really a question, it's a comment. Given the status of
23 expert discovery and the fact that we've received some
24 testing after experts have been designated and deposed, we

25 do reserve the right to provide further information if the
0313

1 Court allows supplemental designations and -- and reports
2 to be provided.

3 MR. HAYNES: And if the Court allows that,
4 then, obviously, we may have to come back and meet with
5 you again.

6 THE WITNESS: Sure. I understand that.

7 VIDEOGRAPHER: We're done?

8 MS. DORMAN: I think you're done.

9 VIDEOGRAPHER: We're off the record at 5:23,
10 end Tape 7.

11 (Proceedings concluded at 5:23 p.m.)
12
13
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0314

1 CHANGES AND SIGNATURE

2 WITNESS NAME: KEVAN J. GRANAT

3 DATE OF DEPOSITION: OCTOBER 14, 2011

4 PAGE/LINE CHANGE REASON

5 _____
6 _____
7 _____
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9 _____
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16 _____
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22 _____
23 _____
24 _____
25 _____

0315

1 I, KEVAN J. GRANAT, have read the foregoing
2 deposition and hereby affix my signature that same is true
3 and correct, except as noted above.
4

5 _____
6 KEVAN J. GRANAT
7
8

9 THE STATE OF _____)
10 COUNTY OF _____)

11 Before me, _____, on this day
12 personally appeared KEVAN J. GRANAT, known to me (or
13 proved to me under oath or through _____)
14 (description of identity card or other document) to be the
15 person whose name is subscribed to the foregoing
16 instrument and acknowledged to me that they executed the
17 same for the purposes and consideration therein expressed.

18 Given under my hand and seal of office this _____
19 day of _____, _____.
20
21

22 _____
23 NOTARY PUBLIC IN AND FOR
24 THE STATE OF _____
25
0316

1 CAUSE NO. 2010-03-001717-C
2 DANIEL CAMPOS, _____) IN THE DISTRICT COURT
INDIVIDUALLY AND AS _____)
3 REPRESENTATIVE OF THE _____)
ESTATE OF CHRISTINA _____)
4 LOZANO CAMPOS, DECEASED; _____)
MARIA L. LOZANO; ANNA B. _____)
5 SCHERMERHORN; ADRIANA L. _____)
PRUITT; AMALIA F. _____)
6 HEATHER; AND DANIEL N. _____)
CAMPOS, ET AL, _____)
7 PLAINTIFFS, _____)
_____)
8 CARLOS TORRES TERAN, _____)
INTERVENOR, _____)
9 _____)
JACOB MEDINA, _____)
10 INTERVENOR, _____)
_____)
11 ROGELIO GARCIA, _____)
INTERVENOR, _____)
12 _____)
DENISE ALVARADO, _____)
13 INDIVIDUALLY AND AS NEXT _____)
FRIEND FOR EDWARD GUZMAN, _____)
14 JR.; DEBORAH CHAVEZ; NOE _____)

ESPINOZA; ADRIAN LOPEZ;)
15 EFRAIN DOMINGUEZ)
MANRIQUEZ AND LEOGARDO)
16 RAMONA VALENZUELA)
HERNANDEZ; AND SANDRA)
17 VALDEZ, INDIVIDUALLY AND)
AS NEXT FRIEND FOR ETHAN)
18 MUNOZ AND SAM MUNOZ,)
MINOR CHILDREN,)
19 INTERVENORS,) CAMERON COUNTY, TEXAS
)
20 VS.)
)
21 AMERICANOS, U.S.A.,)
L.L.C., FIRSTGROUP)
22 AMERICA, INC., GREYHOUND)
LINES, INC., IRMA MENDOZA)
23 MORADO, MOTOR)
COACH INDUSTRIES, INC.,)
24 MCI SERVICE PARTS, INC.)
AND ARVINMERITOR, INC.,)
25 DEFENDANT(S).) 197TH JUDICIAL DISTRICT

0317

1 REPORTER'S CERTIFICATION
ORAL AND VIDEOTAPED DEPOSITION OF KEVAN J. GRANAT
2 OCTOBER 14, 2011

3 I, Tammy S. Brown, Certified Shorthand Reporter in
4 and for the State of Texas, hereby certify to the
5 following:

6 That the witness, KEVAN J. GRANAT, was duly sworn by
7 the officer and that the transcript of the oral deposition
8 is a true record of the testimony given by the witness;

9 That the deposition transcript was submitted on
10 _____, to the witness or to the attorney for
11 the witness for examination, signature and return to me by
12 _____;

13 That the amount of time used by each party at the
14 deposition is as follows:

15 Mr. J. Hunter Craft - 01:31

16 Mr. Justin A. Hill - 00:00

17 Ms. Tamara L. Rodriguez - 03:39

18 Mr. Stephen C. Haynes - 01:00

19 Mr. Thomas M. Bullion, III - 00:00

20 Ms. Melissa A. Dorman - 00:11

21 That pursuant to information given to the deposition
22 officer at the time said testimony was taken, the
23 following includes counsel for all parties of record:

24 Mr. J. Hunter Craft and Mr. Justin A. Hill appearing
25 for Plaintiff(s);

0318

1 Ms. Tamara L. Rodriguez and Mr. Stephen C. Haynes
2 appearing for the Defendant(s) Americanos, U.S.A., L.L.C.,
3 and Greyhound Lines, Inc.;

4 Mr. Thomas M. Bullion, III appearing for the

5 Defendant(s) Arvinmeritor, Inc.;

6 Ms. Melissa Dorman appearing for the Defendant(s)

7 Motor Coach Industries, Inc.;

8 I further certify that I am neither counsel for,

9 related to, nor employed by any of the parties or

10 attorneys in the action in which this proceeding was

11 taken, and further that I am not financially or otherwise

12 interested in the outcome of the action.

13 Further certification requirements pursuant to Rule

14 203 of TRCP will be certified to after they have occurred.

15 Certified to by me this 21st day of October, 2011.

16

17

18 Tammy S. Brown, Texas CSR 3269, RMR

19 Expiration Date: 12/31/11

20 Worldwide Court Reporters, Inc.

21 Firm Registration No. 223

22 3000 Wesleyan, Suite 235

23 Houston, Texas 77027

24 800.745.1101

25

0319

1 FURTHER CERTIFICATION UNDER RULE 203 TRCP

2 The original deposition/correction page was/was not

3 returned to the deposition officer on _____

4 _____;

5 If returned, the attached Changes and Signature page

6 contains any changes and the reasons therefor;

7 If returned, the original deposition was delivered to

8 Mr. J. Hunter Craft, Custodial Attorney;

9 That \$ _____ is the deposition officer's charges to

10 the Plaintiffs for preparing the original deposition

11 transcript and any copies of exhibits;

12 That the deposition was delivered in accordance with

13 Rule 203.3, and that a copy of this certificate was served

14 on all parties shown herein on _____

15 _____ and filed with the Clerk.

16 Certified to by me this _____ day of

17 _____, 2011.

18

19

20 Tammy S. Brown, Texas CSR 3269, RMR

21 Expiration Date: 12/31/11

22 Worldwide Court Reporters, Inc.

23 Firm Registration No. 223

24 3000 Wesleyan, Suite 235

Houston, Texas 77027

800.745.1101

0001

1 NO. 2010-03-1717-C
2 DANIEL CAMPOS, ET AL,) IN THE DISTRICT COURT
3)
4 Plaintiffs)
5)
6 VS.) 197TH JUDICIAL DISTRICT
7)
8 AMERICANOS, U.S.A.,)
9 L.L.C., ET AL,)
10)
11 Defendants) CAMERON COUNTY, TEXAS
12
13
14

9

ORAL DEPOSITION OF

10

KEVAN GRANAT

11

MARCH 22, 2012

12

Volume 2

13

14

15 ORAL DEPOSITION OF KEVAN GRANAT, Volume 2, produced
16 as a witness at the instance of the DEFENDANT,
17 AMERICANOS USA, L.L.C., and duly sworn, was taken in the
18 above-styled and numbered cause on MARCH 22, 2012, from
19 9:40 a.m. to 3:47 p.m., before STEFANIE COX, CSR in and
20 for the State of Texas, reported by machine shorthand,
21 at the law offices of Hartline, Dacus, Barger, Dreyer &
22 Kern, L.L.C., 6688 North Central Expressway, Suite 1000,
23 Dallas, Texas 75206, pursuant to the Texas Rules of
24 Civil Procedure and the provisions stated on the record
25 or attached hereto.

0002

1 A P P E A R A N C E S
2 FOR THE DEFENDANTS, MOTOR COACH INDUSTRIES and MCI
3 SERVICE PARTS:

3

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25

0004

1 P R O C E E D I N G S

2 (Reporter's time: 9:40 a.m.)

3 KEVAN GRANAT,

4 having been first duly sworn, testified as follows:

5 EXAMINATION

6 BY MS. RODRIGUEZ:

7 Q. Please state your name for the record.

8 A. Kevan Jay Granat.

9 Q. Mr. Granat, you know my name is Tamara
10 Rodriguez, and I represent the bus driver that was
11 involved in an accident that happened a couple years
12 ago. You're aware of that, correct?

13 A. I am.

14 Q. Now, you've given your deposition previously
15 in this case, but if we could have the same agreements,
16 that you will let me know if you do not understand any
17 of my questions. Will you agree to do that?

18 A. I will.

19 Q. By answering the question, you're
20 acknowledging to me and to the jury that you've
21 understood it, correct?

22 A. At least I think I've understood it.

23 Q. All right.

24 A. I will let you know if I don't --

25 Q. Okay.

0005

1 A. -- understand it.

2 (Exhibit No. 1 marked.)

3 Q. And I've issued a subpoena for you to bring
4 some documents and tangible things with you today. Have
5 you seen Exhibit 1 previously?

6 A. I have.

7 Q. Did you bring the items responsive to Exhibit
8 1?

9 A. I brought my entire file. I believe that is
10 everything responsive --

11 Q. I didn't --

12 A. -- in Exhibit 1.

13 Q. I did not see any invoices in your file. Did
14 you bring that?

15 A. Yes. That's in this binder here under the
16 correspondence and invoices, which would be tab 6 in
17 this one. They're at the end of the correspondence.

18 (Exhibit No. 2 marked.)

19 Q. Okay. We'll go ahead and mark that binder
20 Exhibit 2. Can you describe what Exhibit 2 is to the
21 ladies and gentlemen of the jury?

22 A. Sure.

23 Q. Okay.

24 A. Exhibit 2 basically contains my file since the
25 first deposition. I could go through each of the tabs

0006

1 in some general terms here. The first tab includes
2 inspection notes and photographs, inspections that I
3 have done on some of the other incident coaches, as well
4 as the drive shaft from one of those coaches, and then
5 also the test vehicle that we inspected in -- two test
6 vehicles, one in Nappanee and one in Richmond.

7 Tab number 2 contains reports provided by
8 other folks in this case and then my report as well.

9 Tab number 3 contains a number of my
10 calculations and photographs and analysis that I've done
11 since the previous deposition.

12 Tab number 4 contains some analysis of
13 some of the test data that was provided. And that test
14 data is referring to the Uvalde testing performed by
15 Mr. Yohe and Mr. Fugger.

16 Tab number 5 includes some excerpts from
17 depositions. These have been depositions that I've
18 reviewed since deposition number one. And these are
19 excerpts from the deposition of the full deposition in
20 the rest of the file.

21 Tab number 6 includes correspondence,
22 written correspondence, e-mail correspondence, and then
23 also the invoices that we just discussed.

24 Tab number 7 is a copy of the deposition
25 notice for today.

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1 Tab number 8 has a collection of CDs or
2 DVDs. They include the inspection notes and photographs
3 from the other incident coaches and the test coaches and
4 then there's also some DVDs that include file materials
5 that are in this binder.

6 Q. All right. And your last deposition was in
7 October of last year, correct?

8 A. I believe that's true.

9 Q. And would it be fair to say that all of the
10 work that you've done since your last deposition in
11 October of last year has been into -- in response to
12 work performed by other experts in the case?

13 MS. DORMAN: Object to form.

14 A. I would say primarily I'm evaluating
15 additional work that was produced by other experts. And
16 also, you know, in having reviewed some of the
17 depositions, I'm doing some work in response to that.
18 Primarily that's the case.

19 Q. (BY MS. RODRIGUEZ) All right. And those
20 other experts being the Americanos experts, correct?

21 A. Yes.

22 Q. Have you done any work since your deposition
23 in October 2001 (sic) that you took on your own
24 initiative, irregardless of whatever work that any other
25 expert has done in the case?

0008

1 MR. HAYNES: 2011.

2 Q. (BY MS. RODRIGUEZ) 2011. Thank you.

3 MS. DORMAN: Object to the form.

4 A. Well, the nature of this entire process is I'm
5 evaluating the claims made by other experts. So
6 fundamentally, everything that I've done in the entire
7 case is in response to -- in some degree or another, to
8 what other folks have done.

9 Since the last deposition I've evaluated
10 an exemplar tag axle caster latching mechanism and the
11 entire suspension. That work, I would say, kind of fits
12 your description but it also kind of fits the
13 description I'm doing that in response to work that
14 other people have done as well because there are some
15 new claims in the case regarding the caster latching
16 mechanism, so I evaluated that further.

17 Q. All right. But you wouldn't have or hadn't
18 evaluated the caster latch system until those claims
19 were made by the Americanos experts about the caster
20 latch system, correct?

21 A. Well, I evaluated that system and I -- and I
22 studied that and understood that and -- and have, you
23 know, obviously done testing where that system is part
24 of the coach. But I did not specifically test that as a
25 component that was -- that would have been a component

0009

1 that would have been compromised during the crash as I
2 believe the -- the Americanos experts now have made
3 that.

4 Q. Well, you say you've done some testing where
5 the caster latch was a component on the bus, correct?

6 A. Correct.

7 Q. But you did not test the caster latch on the
8 bus before the Americanos experts raised the issue of
9 the caster latch, correct?

10 A. Well, I evaluated the function of the caster
11 latch. I did not do testing that would be similar to
12 the Americanos testing where they intentionally actuated
13 the latch while driving on the track. That wasn't part
14 of the testing that I did recently.

15 Q. Well, how did you evaluate the function of the
16 caster latch originally?

17 A. I just observed its function in the coach
18 while driving on the test track -- test track surface,
19 observed that it did function between the two indexed
20 positions as -- as expected.

21 Q. All right. And how much have you billed MCI
22 or MCI's lawyers since your last deposition?

23 A. I haven't added that up. We would just have
24 to look at the invoices that are in here.

25 Q. Would you mind taking a look at that for me?

0010

1 A. You want me to just read the amounts or give
2 you a ballpark?

3 Q. Give me a ballpark. My math isn't that good.

4 A. It looks like it's about \$70,000.

5 Q. Mr. Granat, are you a licensed professional
6 engineer in the state of Texas?

7 A. I'm not.

8 Q. Are you licensed anywhere?

9 A. No.

10 Q. Would you agree with me that as an engineer
11 you are entrusted to protect the health, safety,
12 property, and welfare of the public in the practice of
13 your engineering profession?

14 MS. DORMAN: Object to form.

15 A. I think in general terms that's a fair
16 assessment.

17 Q. (BY MS. RODRIGUEZ) Okay. And would you also
18 agree that as a professional engineer you must not
19 perform any type of engineering function which when
20 measured by generally accepted engineering standards is
21 reasonably likely to result in the endangerment of
22 lives, health, safety, property, or welfare of the
23 public?

24 MS. DORMAN: Object to form.

25 A. I'm sure that's a fair -- fair enough

0011

1 statement.

2 Q. (BY MS. RODRIGUEZ) Do you also agree that as
3 an engineer you have an obligation to notify involved
4 parties of any engineering decisions that might endanger
5 the health, safety, property, or welfare of the public?

6 MS. DORMAN: Object to form.

7 A. I think in general terms, sure.

8 Q. (BY MS. RODRIGUEZ) Do you agree that an
9 engineer must issue statements only in an objective and
10 truthful manner?

11 A. Sure.

12 Q. Would you also agree that issuance of an oral
13 or unwritten assertion by an engineer must not be
14 misleading?

15 MS. DORMAN: Object to form.

16 A. I think that's fair, sure.

17 Q. (BY MS. RODRIGUEZ) Do you agree that an
18 engineer must engage in professional business activities
19 in an honest and ethical manner?

20 A. Sure.

21 Q. And that an engineer must practice engineering
22 in a careful and diligent manner?

23 A. I think, sure.

24 Q. All right. And let's talk about your opinions
25 that you've formulated since your last deposition.

0012

1 A. Okay.

2 Q. Explain how the caster latch mechanism works.

3 A. Okay. The caster latch mechanism is basically
4 an index mechanism that has two positions. The system
5 is electropneumatic, meaning it's got electronic

6 controls as well as pneumatic actuators. The system is
7 designed such that when the vehicle is placed in reverse
8 that actuates a switch which actuates a valve. That
9 valve transfers air from one side of the caster latching
10 piston to the other side of the caster latching piston.

11 The caster latching piston, or you could
12 call it a pneumatic cylinder, is a dual acting cylinder.
13 That means air pressure is used to drive the cylinder
14 one direction or the other direction. It basically has
15 two indexed positions. With a functional air supply,
16 that caster latching mechanism will be in one of those
17 two positions basically at all times.

18 The -- the latch in general is -- is based
19 on a movable latch plate. That latch plate has some
20 ramps or cams that are attached to the underside of that
21 latch plate. The end of the cylinder has a clevis and a
22 roller attached to that. The rollers on that clevis act
23 on the ramps or the cams to move the latch plate up and
24 out of the way of its -- its engagement pawls. There
25 are actually two engagement pawls. And that's

0013

1 P-A-W-L-S.

2 Those two engagement pawls will mate with
3 two slots in the latch plate. And basically the
4 position of those pawls in the latch plate will tell you
5 if the -- the -- the axle or the caster latch arm
6 assembly is in the forward or the rearward position.

7 Under operation, the cylinder is actuated.
8 It's -- it pushes the clevis forward. And by "under
9 operation," I'm talking about when it's shifting from
10 the normal driving position forward to the rearward
11 position. So the -- the reverse switch would be set.
12 The cylinder has air actuated to the rear of the piston
13 that drives the cylinder forward, that drives the clevis
14 forward, that lifts the latch plate or the tongue up off
15 of the pawls, and then also pushes the latch arm
16 forward.

17 And then once the -- the rollers and the
18 clevis pass the cams, then the latch plate drops back
19 down and engages the pawl again and that latches it into
20 that second position which would be for rearward travel.

21 Q. And what is the effect on the tires when the
22 caster latch is in forward position?

23 A. I'm not sure what you're -- what you mean by
24 that.

25 Q. Well, do you know what I mean by the caster

0014

1 latch being in the forward position?

2 A. Well, there are a couple of different
3 interpretations. The forward indexed position would be
4 the position for rearward travel.

5 Q. Correct. It's -- it's physically -- the latch
6 is physically moved forward --

7 A. Right.

8 Q. -- from a neutral position?

9 A. Okay.

10 Q. Okay. So if it -- the caster latch is
11 extended forward towards the front of the bus, what
12 would be the effect of the tires?

13 MS. DORMAN: Object to form.

14 A. Well, it depends on the operating conditions.
15 Because the vehicle is sitting and the transmission is
16 being shifted from forward to reverse, the effect on the
17 tires is -- is virtually indistinguishable.

18 Q. (BY MS. RODRIGUEZ) And if the coach is
19 traveling forward down the road, what would be the
20 effect on the tires?

21 A. The effect on the tires is -- is relatively
22 indistinguishable from an outside observer. The effect
23 on the geometry is it shifts the caster angle of the --
24 of that tag axle from a positive 3 degrees of caster to
25 a negative 3 degrees of caster.

0015

1 Q. And so it's your testimony that there is no
2 effect in terms of how those tires handle with a
3 positive ver -- a positive 3-degree versus a negative
4 3-degree of caster?

5 MS. DORMAN: Object to form.

6 A. No. I don't think that was your question.

7 Q. (BY MS. RODRIGUEZ) Well, is it?

8 A. Well, sure. The caster angle changes the
9 location where lateral forces act on those tires.

10 Q. What does that mean?

11 A. Well, the -- I'll break that down a little
12 bit. The tires generate forces based on the contact
13 patch of the tire. The contact patch is basically that
14 entire area where the tire contacts the road. The
15 forces that act on that contact patch are based on the
16 pressure distribution of that contact patch.

17 That contact patch has a pressure
18 distribution on the rolling tire that's going forward.
19 That's what your question was. That has a contact
20 patch -- I'm sorry. That has a pressure distribution
21 that is biased towards the rear of the contact patch.

22 So there's an effective trail distance
23 with a lateral forces act. And by that I mean, lateral
24 forces on the tire act through a certain point on that
25 tire contact patch. And the distance between that

0016

1 certain point and the steering axis of the tire is
2 called the trail. When you change the caster angle of
3 the tire, you can change the total trail of that tire by
4 changing the pivot location about which the tire is
5 steering.

6 Q. And what happens when you change the trail
7 location of that tire?

8 A. Well, it depends on how much you change that
9 trail location.

10 Q. Okay. By 3 degrees?

11 A. Well, by 3 degrees, I've done some
12 calculations looking at the -- the change in trail. And
13 to evaluate that I've looked at the pneumatic trail of
14 the tire. All tires traveling in forward direction will
15 have a certain amount of pneumatic trail. I've looked
16 at the pneumatic trail.

17 And then this effect from the caster is
18 called the mechanical trail. And then there's actually
19 a third component which could be due to spindle offset,
20 which we don't have in this particular case.

21 So I've evaluated the total trail that the
22 lateral forces act at on this inspection and that is
23 comprised of the mechanical trail of the caster and the
24 pneumatic trail. And we evaluated that at the positive
25 3 degrees of caster and the negative 3 degrees of

0017

1 caster.

2 And what I find in my results is that when
3 the vehicle is being driven forward with positive caster
4 or with the latch in the rearward position, we've got
5 2.9 to 4.3 inches, a range of total trail. And that --
6 that would be as designed, 2.9 to 4.3.

7 When the caster is reversed, the
8 mechanical trail now, instead of being due to positive
9 3 degrees of caster, is negative 3 degrees of caster.
10 That mechanical trail added to the pneumatic trail
11 results in a total trail of approximately .7 to
12 2 inches. So the total trail remains positive but is
13 reduced from the previous values to this .7 to 2-inch
14 range.

15 Q. Well, what's the practical effect of the trail
16 being reduced?

17 A. Well, the trail basically defines where the
18 lateral forces act on the tire. And if that trail goes
19 negative then -- then we can get an effect where the
20 tire will steer. As long as that trail remains
21 positive, the -- the forces -- the lateral forces act
22 behind the pivot point and that means there will be a
23 stability of that tire. Meaning, if you have a
24 disturbance, lateral disturbance of that tire, it will
25 still self-center.

0018

1 Now, if you go much, much beyond -- for
2 example, much beyond this negative 3 degrees of caster
3 you can create a negative trail. And in that case, when
4 you have a lateral force disturbance you can get a steer
5 effect of the tire.

6 Q. And what would be the value amounts where you
7 estimate there would be a steer effect of the tire?

8 A. Well, I've done some photographic or
9 videographic analysis of some of the testing that was
10 done by Americanos in -- in Uvalde. And I've
11 determined, based on the caster angle that I see in the

12 video, and that's based on the -- the movement of the
13 latch arm, the movement of the latch arm in that testing
14 was beyond -- well -- well beyond this second indexed
15 position, which I would call the position for reverse
16 travel. The caster was not minus 3 degrees. It was
17 much, much greater than that. I've estimated it at
18 about minus 15-degrees. And that's basically a rough
19 estimate, based on the video, but it's clearly far
20 beyond the minus 3 degrees of the caster.

21 And in doing the calculations to figure
22 out what the trail is, the total trail is, as a result
23 of that caster change, I get approximately 3.9 to
24 2.5 inches of -- of negative caster. I'm sorry. Of
25 negative trail.

0019

1 Now, of course, in those videos we see
2 that the tires do steer and you do have confirmation
3 that you have a negative trail.

4 Q. All right. You said that 2.9 to 4.3 inches of
5 trail is as by design. What did you mean by that?

6 A. Well, the typical forward travel position, the
7 total trail of the tire lateral forces is at the range
8 of 2.9 to 4.3 inches.

9 Q. Where do you get that figure from?

10 A. That's based on my calculations that's in tab
11 3 here.

12 Q. If someone much smarter than me, an engineer,
13 say, were to look at those calculations, do you have
14 your work set out so that they could under see -- they
15 could understand how you reach the calculations?

16 A. Absolutely. I think it's very clear. There
17 are references in this document and then the -- the
18 specific reference, at least a cover sheet of the
19 reference, and the page where the information was found
20 is included right behind the calculations.

21 Q. Have you --

22 A. I think --

23 Q. Oh. I'm sorry.

24 A. I think it's all self-contained.

25 Q. Have you ever done these calculations before?

0020

1 A. Sure.

2 Q. In what context?

3 A. Well, when I was an engineer at Ford I worked
4 on suspension design and that included also steering
5 system design. So part of my work on a daily basis in
6 that position was to calculate very, very specific
7 parameters such as caster, caster change, the actual
8 trail of the -- the tires, the self-aligning moment,
9 which is kind of a function of this trail.

10 I've also -- in my experience at Ford I've
11 tested hundreds of tires on a flat track tire tester to
12 produce tire test data. And that test data is a
13 representation of -- of these lateral forces and

14 aligning moments that reflect exactly this parameter
15 that I'm talking about, the pneumatic trail.
16 Q. So are you relying on your experience at Ford
17 and the work that you did at Ford, whether it be out at
18 the test track or, as you say, in the office doing
19 calculations, in support of your experience for arriving
20 at your work in this case?

21 A. Certainly in part, yes.

22 Q. Okay. Now, let's go back to the 2.9 to
23 4.3 inches of trail. Is that anywhere documented by
24 MCI?

25 A. Not that I'm aware of.

0021

1 Q. And so when you say "as by design," what did
2 you mean?

3 A. Well, if you look at the designing
4 characteristics of that tag axle system, this is the
5 resulting total trail that you would get with that
6 design.

7 Q. What design characteristics are you talking
8 about specifically?

9 A. I'm talking specifically about the -- the
10 caster angle and the -- the spindle offset that you see
11 on that particular axle. Those are physical
12 characteristics of the axle that are documented by MCI
13 and those specifically go into this calculation. So
14 this calculation is a result of their documentation.

15 Q. Okay. So when the caster angle is in the
16 3 degrees negative and positive, correct --

17 A. Correct.

18 Q. -- what's the -- the spindle offset?

19 A. The spindle offset is essentially zero on
20 this -- this axle and -- but basically that falls out of
21 the calculations that I've done. But it has to be known
22 what the spindle offset is to get the actual
23 calculations correct.

24 Q. So really you were just focusing on the caster
25 angle once you determined that the spindle offset was

0022

1 zero?

2 MS. DORMAN: Object to form.

3 A. Well, I wouldn't say I was focusing on that.
4 I mean, that's all added together, but if the spindle is
5 zero then it has no effect.

6 Q. (BY MS. RODRIGUEZ) And how did you determine
7 that the spindle offset was zero?

8 A. I looked at the drawings and then I've also
9 looked at an exemplar axle to confirm basically that
10 visually it's zero.

11 Q. And which drawings are you referring to
12 specifically?

13 A. The MCI drawings that were provided. I think
14 some of them were in the first deposition.

15 Q. There was a bunch. Can you tell me what

16 component part you would have looked at?
17 A. Yes. There's a -- I don't know that I could
18 find it, but there's a -- an image in the documentation
19 that shows a side view of one of the -- the tag axle
20 wheel ends and it shows the angle of the caster
21 mechanism from minus 3 to plus 3 and the total range of
22 6 degrees. And then that same document also shows a
23 side view of that suspension and shows the kingpin
24 destination angle which is a different parameter.

25 Q. All right. And so the kingpin angle is the
0023

1 same thing as a spindle offset?

2 A. No. The kingpin inclination is kind of in a
3 different direction. It doesn't come into play in this
4 specific calculation.

5 Q. Does the movement of the caster affect the
6 kingpin direction or inclination?

7 A. It doesn't affect the inclination.

8 Q. Does it affect any part of the kingpin?

9 A. Well, the caster angle is defined as the
10 kingpin angle in a side view or in the -- what would be
11 the -- the XZ plane of the vehicle. So, yes, the -- the
12 change in caster angle does affect the kingpin and it
13 affects it in that side view plane. But the kingpin
14 inclination that I'm talking about is -- is basically a
15 rearview inclination. And so if you rotate the caster
16 of the axle, it doesn't change that angle from a
17 rearview.

18 Q. Did you factor in any changes to the kingpins
19 in your calculations that you did?

20 A. Yes.

21 Q. Is that part of your calculations?

22 A. Basically as I just described. The change to
23 the kingpin is from a side view and that's the caster
24 angle.

25 Q. All right. And I was asking you about the
0024

1 offset of the spindle and I'm not sure you told me what
2 drawing or described for me what drawing you took that
3 from. You described for me the drawing that you took
4 the caster angle and the kingpin inclination. Does that
5 same drawing tell you that the spindle offset is zero?

6 A. I don't think it actually has it written out
7 as a numeric dimension on there, but you can see from
8 the image that it is zero.

9 Q. All right. Now, so the 2.9 to 4.3 of trail,
10 is that when the coach is moving forward and the caster
11 is negative?

12 A. No. That's when the coach is in the normal
13 operating condition. That would be moving forward with
14 the caster positive or the latch in the -- the rearmost
15 latched position.

16 Q. So the -- the higher the inch of trail, the
17 less steering in the tire?

18 A. No. I'm not following you.

19 Q. Well, you gave me a range from 2.9 to
20 4.3 inches of trail. And so what I'm wondering is, if
21 you have more inches of trail, does that mean that that
22 tire is more steerable or less steerable?

23 MS. DORMAN: Object to form.

24 A. No. If you have a higher value for the total
25 trail, you'll basically have an increase in the aligning

0025

1 moment, and that aligning moment is a restorative
2 moment. Meaning, if you have a longer trail, you'll
3 have a greater restore -- restorative moment in the
4 axle. If you have a disturbance, the longer the trail
5 is, the -- the more rapidly that that angle or steer
6 angle of the axle would be suppressed. It's within
7 limits. I mean, obviously you can have too much trail
8 as well.

9 Q. Well, what would be too much trail?

10 A. Well, if you have too much trail then the
11 lateral forces will create too high of torques around
12 the -- the kingpin, meaning you won't get any steer
13 effect at all.

14 Q. All right.

15 A. Basically, too much trail will effectively
16 lock the axle and make it nonsteerable.

17 Q. So when you say that the trail is reduced from
18 .7 to 2 inches in the reverse negative caster position,
19 correct?

20 A. Correct, with the vehicle traveling forward.

21 Q. Okay. Does that mean that those tires are
22 more likely to trail or not trail?

23 MS. DORMAN: Object to form.

24 A. They will trail. The -- the total -- the
25 total trail measurement is still positive. The aligning

0026

1 moment will be less than it is with the longer trail,
2 but they will still trail.

3 Q. (BY MS. RODRIGUEZ) Okay. So it's going to
4 take it a shorter amount of time to align in that
5 scenario of the reduced trail?

6 A. I'm not sure I follow the --

7 Q. Sure. You know, I guess we need to talk about
8 this in general layman's terms. Why is trail compliance
9 of tag tires important for steering?

10 A. Well, you put compliance in there, so I'm not
11 sure. That kind of changes what we're talking about.

12 Q. Sure. Why would you want the tag tires to
13 trail behind the dual tires?

14 A. I'm still not following the question there.

15 Q. Well, when you're referring to trail, trailing
16 in response to what?

17 A. Well, the trail is a -- a mechanical property
18 of both the suspension and the steering system and the
19 tire itself. And so that's basically a property of --

20 of how tires function.

21 Q. Is it also an indication of how they travel?

22 A. Sure.

23 MS. DORMAN: Object to form.

24 A. The way the forces act about the steering
25 axis, that is a -- has direct bearing on the way the

0027

1 tires move.

2 Q. (BY MS. RODRIGUEZ) And if you are traveling
3 at a speed in excess of 20 miles an hour, would you want
4 those tag tires steering from the back?

5 MS. DORMAN: Object to form.

6 A. Well, I'm not sure what you mean by that. I
7 mean, certainly if you have positive trail then the tag
8 tire steering is no issue whatsoever. And that
9 basically gets back to the testing that I did in Uvalde
10 myself and that is as long as you have positive trail
11 those tires will -- will self-steer and self-align.

12 Q. (BY MS. RODRIGUEZ) How do you define positive
13 trail?

14 A. Well, it's the same way that SAE or the
15 Society of Automotive Engineers defines it. It's
16 basically distance rearward from the forward motion of
17 the tire, the distance rearward between the steer axis
18 and the -- the point of lateral force action.

19 Q. And you've already described that for me,
20 right?

21 A. I have.

22 Q. And that was the contact patch discussion you
23 gave, right?

24 A. Correct.

25 Q. Okay. Is there a numerical value on positive

0028

1 trail by the SAE?

2 A. No. I mean, the definition by SAE is just
3 describing what that particular parameter means.

4 Q. Okay. So if you have a higher value of trail
5 are you going to have less steer in that axle or more
6 steer in that axle?

7 MS. DORMAN: Object to form.

8 A. Well, it depends on what sort of circumstances
9 you're operating under.

10 Q. (BY MS. RODRIGUEZ) Let's assume that we're
11 moving -- the coach is moving forward traveling in the
12 forward position down the road. Under that set of
13 circumstances, are you going to have higher or lower
14 steer if you have a higher value of trail?

15 MS. DORMAN: Object to form.

16 A. That's an interesting question. I don't know
17 that that's -- I don't know that there's a simple answer
18 for that. I think you're going to have similar level
19 of -- of steer to the tires, but I can't answer whether
20 one is greater than the other.

21 Q. (BY MS. RODRIGUEZ) Why not?

22 A. I don't know the answer.

23 Q. Okay. So as an engineer, is it important to

24 you to know what the trail compliances of tires?

25 A. Well, you keep saying "trail compliance," so

0029

1 I'm not sure what you mean by trail compliance.

2 Q. You haven't seen that reference or phraseology

3 in terms of engineering?

4 A. I've not seen trail compliance.

5 Q. Trail compliance, you haven't seen any of that

6 in connection with your work in this case?

7 A. I have not.

8 Q. Okay. You kept mentioning lateral forces.

9 Why is it important as an engineer for you to study

10 lateral forces on a tire?

11 A. As a -- an engineer that evaluates vehicle

12 dynamics, all of the forces and moments that are created

13 by a tire during a maneuver are relevant to the way the

14 vehicle performs. So that's an entire part of -- of

15 vehicle dynamics analysis.

16 Q. Well, how do lateral forces affect the way a

17 vehicle performs, lateral forces on a tire?

18 A. Well, that's a huge, broad question.

19 Q. Well, let me narrow it down. How do lateral

20 forces on a tag tire on a 102-DL3 affect how it

21 performs?

22 MS. DORMAN: Object to form.

23 A. Once again, that's just very, very broad. We

24 need to narrow down the kind of conditions that you're

25 talking about.

0030

1 Q. (BY MS. RODRIGUEZ) All right. If the coach

2 is traveling in the forward position and there are

3 lateral forces in the tag axle, can that affect the

4 steering of the coach?

5 A. Of the -- the front tires or the tag axle

6 tires?

7 Q. Tag axle tires.

8 A. Sure. The lateral forces of a coach with the

9 lateral force on the tag axle tires can affect the

10 steering of the tag axle tires, sure.

11 Q. And can it cause the rear of the coach to

12 swing out in one direction?

13 A. Once again, that depends on --

14 MS. DORMAN: Object to form.

15 A. -- the circumstances that you're talking

16 about.

17 Q. (BY MS. RODRIGUEZ) Well, is it possible?

18 A. If we're talking about the analysis that I've

19 done on the trail, then under those conditions it would

20 not.

21 Q. All right. Do you know if under any

22 circumstances it's possible if lateral forces are put

23 into the tag tires on a 102-DL3, can that force the --

24 or cause the rear of the coach to swing out in one
25 direction?

0031

1 MS. DORMAN: Object to form.

2 A. Well, I'm struggling with the question in the
3 sense that I'm not sure what you mean by lateral forces
4 are put into the tires because that implies that there's
5 some sort of external disturbance, you know, like a road
6 disturbance or something else that -- that steers the
7 tires. So I'm trying to understand your question
8 better.

9 Q. (BY MS. RODRIGUEZ) Sure. What about if the
10 102-DL3 is traveling, making a turn, for example, a
11 right-hand turn, and there are lateral forces by -- on
12 the tag tires, will that cause the rear of the coach to
13 swing out?

14 A. Well, no. When you're making a right turn,
15 the -- the lateral forces are what allow you to make
16 that right turn. The lateral forces are what create the
17 vehicle path going to the right so they're necessary to
18 make that turn.

19 Q. Okay. In that scenario, if the tag axle was
20 unlocked on a 102-DL3, do you know if those lateral
21 forces caused by the right turn can cause the rear of
22 the coach to swing out?

23 A. No. The lateral forces on those tag axle
24 tires would basically go to near zero values, so those
25 lateral forces would be minimized based on the

0032

1 self-steering characteristic of that axle.

2 Q. So it's your testimony that, no, that cannot
3 happen. The answer to my question is no?

4 A. I'm not sure.

5 MS. DORMAN: Object to form.

6 Q. (BY MS. RODRIGUEZ) Let me ask my question
7 again.

8 MS. RODRIGUEZ: Can you repeat back the
9 question?

10 (Requested portion read back.)

11 A. The rear to swing out?

12 Q. (BY MS. RODRIGUEZ) Yes.

13 A. Well, the -- if you're in a -- like a parking
14 maneuver, you'll have a different geometry of the term,
15 that's for sure, because then those tires will be
16 turning and assisting you with the turn. So you'll have
17 a different motion of the rear of the coach. I don't
18 know if that fits your description of swing out. I
19 guess I don't know what your description of swing out
20 is.

21 Q. Sure. Well, have you ever asked MCI what
22 their description of swing out means?

23 A. I have not.

24 Q. All right. Have you ever talked to anybody
25 from MCI about a 102-DL3 or this case?

0033

1 A. Sure.

2 Q. Who? Who?

3 A. Oh. Virgil Hoogestraat.

4 Q. Okay. And when did you have discussions with
5 Mr. Hoogestraat?

6 A. I've talked with him several times on the
7 phone and then I think he's been at the majority of the
8 inspections I've been at.

9 Q. Why were you talking with Mr. Hoogestraat?

10 MS. DORMAN: Object to form.

11 A. Generally, he's very knowledgeable about the
12 coach, and then also if he's at the inspections I'll
13 talk to him just on general terms anyways.

14 Q. (BY MS. RODRIGUEZ) And would you -- would the
15 two of you confer about what you were seeing, the
16 observations that you had at the time of your
17 inspections in the case?

18 A. I don't recall that specifically. Part of my
19 function in this case though is to relay my findings
20 to -- to the other parties involved, so I guess there's
21 some of that to some extent.

22 Q. And would he relay his observations to you?

23 A. Yeah, sure. I could think of an example like
24 the -- his analysis of the speed sensor and the air
25 pneumatic lines to the coach. He certainly relayed that

0034

1 information to -- to me, as well as everybody else, as
2 far as I know.

3 Q. Were you there when the air lines of the coach
4 were tested?

5 A. I was not.

6 Q. Okay. So you don't -- you're not aware that
7 it was found that those lines were actually patent?

8 MS. DORMAN: Object to form.

9 Q. (BY MS. RODRIGUEZ) They were open, they were
10 not clogged?

11 MS. DORMAN: Object to form.

12 A. I've not -- I've not heard that. This would
13 certainly be the first that I've heard of that.

14 Q. (BY MS. RODRIGUEZ) Okay. Mr. Hoogestraat
15 though is your sole source of information about whether
16 those air lines were clogged; is that true?

17 MS. DORMAN: Object to form.

18 A. I think that's been talked about by just about
19 everybody that I'm aware of. I think that's -- that's
20 also mentioned by Mr. Wright. I believe that was also
21 an observation of Aaron Jones, if I recall right. I
22 think that's basically everybody that was at that
23 inspection was of the same conclusion.

24 Q. That the air lines were clogged?

25 A. That's my understanding.

0035

1 Q. And so the opinions that you've expressed that

2 deal with clogged air lines is under the assumption that
3 the air lines were clogged, right?

4 A. Well, I'm relying on other people that have
5 directly investigated that, true.

6 Q. Okay. And have you run your evaluation on the
7 other end, that if the air lines were open how that
8 would affect your evaluation?

9 MS. DORMAN: Object to form.

10 A. Well, the evaluation that we're talking about
11 is a caster trail. At least that's what we were talking
12 immediately prior to this. And that has no bearing on
13 the -- or the air lines have no bearing on that.

14 Q. (BY MS. RODRIGUEZ) No. I wasn't talking
15 about that. I was talking about -- you mentioned the
16 air lines in your February -- you've got it as
17 February 2011, but clearly it's February 2012, right?

18 A. Right.

19 Q. Any other changes you need to make --
20 corrections you need to make to your report?

21 A. I don't think so.

22 Q. Okay. And so you did talk about the air lines
23 being clogged in this report, correct?

24 A. I believe I mentioned that that was an
25 observation by others, sure.

0036

1 Q. All right. And then did you form any opinions
2 based on that observation that the air lines were
3 clogged?

4 A. Just basically the positioning of the caster
5 latch mechanism based on looking at an exemplar
6 mechanism. If the air lines were clogged then it would
7 likely be in an intermediate position and not in that
8 forward latch or rearward latch position.

9 Q. And if the air lines were not clogged then
10 what position would it be in?

11 MS. DORMAN: Object to form.

12 A. Well, it depends on other parameters of the
13 system, but obviously if the system is in proper working
14 condition, then the position of the caster latch
15 mechanism would be in that forward index position for
16 rearward travel or the rearward position for forward
17 travel.

18 Q. All right. Let's get back to this -- the
19 trail. And as an engineer, would it be acceptable to
20 have 3.9 to 2 inches of negative trail on a coach?

21 A. Meaning --

22 MS. DORMAN: Object to form.

23 A. -- that's the way it rolls out of the factory
24 door?

25 Q. (BY MS. RODRIGUEZ) Right.

0037

1 A. That wouldn't be very operable.

2 Q. Why not?

3 A. Because it would create steering of those

4 tires.

5 Q. So at what point would you -- do the tires
6 become steerable? What numerical value?

7 MS. DORMAN: Object to form.

8 A. Whenever the -- well, they're steerable once
9 the tie rod locking cylinder disengages. So they're
10 steerable by design in certain circumstances. If that
11 is -- is unlocked and the caster trail -- I'm sorry, the
12 total trail goes negative, then that would potentially
13 induce some steering. The further negative it goes, the
14 more steering you'll get. The more moment around that
15 steer axis, that will create steer.

16 Q. Okay. So a .7 is pretty close to being
17 negative trail, correct?

18 A. Well, no. It's a positive, so .7 isn't
19 negative.

20 Q. No. I didn't ask if it was negative. I
21 realize that it's not negative. But .7, you would
22 agree, is fairly close to being negative trail?

23 MS. DORMAN: Object to form.

24 A. I'm not sure that that -- the question really
25 means what you might think it means. I mean, positive
0038

1 trail is positive trail, so if you have positive trail
2 you have positive aligning moment. It's less than if
3 you have 3 inches of trail. I think I will agree with
4 that statement, but it's -- it's not negative, meaning
5 once you go negative then your aligning moment changes
6 from a positive value to a negative value so there's a
7 difference.

8 Q. And so the only time the tires or the only
9 time that it would be problematic for you as an engineer
10 is if there was negative trail?

11 MS. DORMAN: Object to form.

12 A. Well, I'm not sure what you mean by
13 problematic, but if you have significant negative trail
14 you will get steering of those tires. If you have a low
15 value of negative trail, you might get some oscillation
16 of the tires, but I don't think you'll have what you
17 might call problematic situation.

18 Q. Okay. So at what point would you put a
19 numerical figure on oscillation versus steer or negative
20 trail?

21 A. I don't know that I can put a point on that.
22 It's a continuum. It's not something you can define a
23 point.

24 Q. Okay. And then at some point it may be
25 undesirable to have steer in the tag tires, correct,
0039

1 while operating the coach?

2 A. Sure.

3 Q. Okay. And at what point would you give the
4 measurement that it would be undesirable steer in the
5 tag tires for a coach moving forward?

6 A. I'm not sure what you mean. What do you
7 mean -- I mean, the coach is designed such that the tag
8 axle tires do steer when you're moving forward, so
9 there's a specific amount of steering that is obviously
10 by design in the tires.

11 Q. Well, would it -- at higher speeds would you
12 not want that steer in those tires?

13 A. Well, as designed, the coach will not allow
14 those tires to steer. As you know the caster -- I'm
15 sorry. The tie rod locking cylinder engages and it's
16 locked. The testing that I did in Uvalde shows that
17 even at high speeds as fast as the coach would go,
18 having that -- those tires steer is not an issue.

19 Q. It's not an issue if assuming the road is like
20 the -- had the coefficient friction surface that Uvalde
21 had and had the -- the space on the track that Uvalde
22 had, right?

23 MS. DORMAN: Object to form.

24 A. No. It's not a function of that. I'm talking
25 about the -- the steerability of that tag axle as you're
0040

1 going at freeway speeds. I think Mr. Yohe offers
2 opinion of that. It really doesn't make the -- the
3 coach handle any -- in any detrimental way.

4 Q. (BY MS. RODRIGUEZ) All right. Well, let's
5 get back to the caster latch and the caster angles.

6 A. Okay.

7 Q. Have you done any track testing or dynamic
8 testing with the caster latch unlocked and the tag axle
9 unlocked?

10 A. By tag axle unlocked I'm assuming you mean the
11 steering cylinder?

12 Q. Yes, the tag axle lock. There's only one tag
13 axle on a 102-DL3, right?

14 A. Right. Since there's two locking and latching
15 type mechanisms, I like to be specific and make sure I
16 understand that.

17 Q. All right. I refer to the tag axle lock as
18 the tag axle lock. I refer to the caster latch
19 mechanism as the caster latch.

20 A. Okay.

21 Q. Do you -- is -- are those terms appropriate to
22 you?

23 A. Yeah. That's fine.

24 Q. Okay. And so have you done any dynamic
25 testing or track testing with the caster latch unlocked
0041

1 and the tag axle unlocked?

2 A. I have not.

3 Q. You said that you did some videographic
4 analysis at the Uvalde testing to look at the movement
5 of the latch arm?

6 A. Correct.

7 Q. And you estimated that the caster angle was at

8 about 15 degrees?

9 A. Negative 15 degrees.

10 Q. I'm sorry. Negative 15 degrees?

11 A. Yes.

12 Q. How did you reach that measurement?

13 A. Basically that's an estimate looking at frames
14 that are grabbed from the video. And looking at how
15 much the latch would move when normally indexed from the
16 rear position to the forward position, and then
17 incrementally how much further than that position did it
18 move in their testing.

19 Q. So did you just eyeball it or did you try to
20 measure it somehow?

21 A. I tried to measure it. It's -- and while I
22 did do some photo analysis to measure it, I would say
23 that that's an approximate just because I'm familiar
24 with the camera that was used underneath there. It's a
25 GoPro helmet camera and they're very wide angle cameras,
0042

1 so there's distortion, what we would call a fisheye
2 effect of that.

3 So apart from actually setting up another
4 camera and physically moving a latch arm to that
5 position, this is the best I could evaluate that. So
6 I've got some documentation in here that shows how I
7 investigated that.

8 Q. All right. When using those standards that we
9 talked about early on in the deposition about issuing
10 statements only in an objective and truthful manner, how
11 scientifically reliable is that negative 15 degrees?

12 MS. DORMAN: Object to form.

13 A. I think it's good. I mean, it's clearly
14 within a couple of degrees, 1 or 2 degrees either way.

15 Q. (BY MS. RODRIGUEZ) And you think that's a
16 scientific way to reach that measurement is to look at
17 it from skewed video cameras?

18 MS. DORMAN: Object to form.

19 A. Sure. I've -- I've evaluated the -- the
20 images pulled from that and I've tried to evaluate how,
21 as you said skewed, but how fisheye that portion of the
22 video is and that's -- I've satisfied myself that that
23 is a reasonable way of looking at that.

24 Q. (BY MS. RODRIGUEZ) How did you evaluate how
25 fisheye that portion of the video camera was?

0043

1 A. Well, there's a -- there's a hole on the horn
2 of the latch arm assembly that moves with that horn.
3 And I just evaluated that looking at that as an ellipse,
4 does the shape of that change as it goes from one
5 position to the next. And based on, you know, the
6 quality of this video, it's essentially the same shape
7 ellipse as you go from one position to the next and that
8 means to me that there's not a tremendous amount of
9 fisheye distortion going on in that area.

10 Q. Let's talk about the tag tires for a minute.
11 The tag tires, as you understand, are designed to travel
12 behind in the same direction behind the dual tires,
13 correct?

14 A. Well, when the coach is going forward, sure.

15 Q. All right. And then -- well, how would you
16 describe that movement of the tires traveling behind the
17 dual tires? What would you call that?

18 MS. DORMAN: Object to form.

19 A. I'm not sure I follow your question because, I
20 mean, that's just -- if I understand your question, it's
21 just that the tires are behind the drive tires. I'm not
22 sure I'm following it.

23 Q. (BY MS. RODRIGUEZ) Okay. Thank you for
24 letting me know. Are you aware of any condition where
25 the tires cock out of that alignment where they're no

0044

1 longer traveling behind the dual tires?

2 A. Well, they're always -- if the coach is going
3 forward, they're always traveling behind the dual tires.
4 You refer to the tires cocking out of position, and I'm
5 not sure I follow your question. But if you mean
6 they're steering into the different position then that's
7 part of the design of the coach. It will -- they will
8 steer under certain circumstances. And then we have,
9 you know, extreme examples of that in the -- the testing
10 that was done by Americanos as well.

11 Q. All right. So but you can see that it is --
12 that the tag tires are capable of cocking out of
13 alignment up against the wheel stop so that they're no
14 longer traveling behind the dual tires, correct?

15 MS. DORMAN: Object to form.

16 A. Yeah. I'm not sure the terminology is working
17 out here because they're always -- if the coach is going
18 forward, they're always traveling behind the dual tires.
19 I mean, it's just a very simple placement of the axle.
20 And when you say "cocking," I'm assuming you mean
21 steering, but maybe -- maybe I'll ask you to rephrase
22 the question.

23 (Exhibit No. 3 marked.)

24 Q. (BY MS. RODRIGUEZ) Well, let me come around
25 to you for a minute. All right. You see I've drawn

0045

1 very rudimentary drawing. Assume with me that the two
2 tires at the front are the dual tires and then the tire
3 behind it is the tag tire?

4 A. Right.

5 Q. Can you make that assumption?

6 A. Sure.

7 Q. And this looks like the tag tire, assuming the
8 coach is moving forward down the road, going straight
9 ahead, tag tire is moving straight in the same alignment
10 as the dual tires, right?

11 A. Okay. Generally, sure.

12 Q. Okay. And then underneath it is another
13 scenario where the dual tires are traveling straight,
14 but you see I have the tag tires rotated in one
15 direction?

16 A. Correct. And then I would refer to that as
17 the tag tires are steered in this particular example, I
18 would say, to the left.

19 Q. Okay. Can you say -- so when I refer to these
20 tires as being cocked out of alignment, that means
21 they're no longer traveling straight behind the duals,
22 but they're cocked in one direction, in this particular
23 drawing, to the left, correct?

24 A. Right. And then the trivial sense which is
25 what I was getting at in your previous question, they're

0046

1 obviously traveling behind the duals. It's just a
2 function of where the axles are placed.

3 Q. Yeah. No. I --

4 A. They're not -- they're not steered in the
5 exact angle as the duals.

6 Q. And I understood that you were almost being
7 cute that I was not insinuating that this tire was no
8 longer behind the duals. I know physically it's not --

9 MS. DORMAN: Object to the sidebar.

10 Q. (BY MS. RODRIGUEZ) But what I was trying to
11 get across is that we've got a different potential
12 situation where they are still physically behind the
13 duals but they're traveling in a different direction?

14 MS. DORMAN: Object to form.

15 Q. (BY MS. RODRIGUEZ) Do you understand that?

16 MS. DORMAN: Object to form.

17 A. Well, they're -- they're going to be traveling
18 in the same direction. They're attached to the same
19 coach. What I would say to help clarify the question is
20 they're steered relative to the drive tires.

21 Q. (BY MS. RODRIGUEZ) All right.

22 A. They're steered to the left.

23 Q. They're no longer in alignment in the forward
24 position with the duals, they're steered to the left,
25 correct?

0047

1 A. They're steered to the left.

2 Q. Okay. So when I say cocked out of alignment,
3 that means that they're steered in one direction
4 opposite or different from the duals. Can you agree
5 with that?

6 MS. DORMAN: Object to form.

7 A. That doesn't -- I mean, if somebody were to
8 say to me that they're cocked out of alignment, that's
9 not what I would take away from that. But I'll
10 understand -- in the context of your question, I can
11 understand that you mean steer to the left.

12 Q. (BY MS. RODRIGUEZ) Well, what do you think it
13 means if someone tells you that they're cock -- that tag

14 tires are cocked out of alignment? What does that mean
15 to you?

16 A. Well, with the actual word "alignment" that
17 means specific very specific with vehicle steering and
18 suspension systems and tires, and that means the
19 alignment properties of the tires. So those would refer
20 to the toe, the camber, and the caster angle of the
21 tires.

22 Q. Okay. And camber, does that change with
23 caster or with the -- does the caster latch affect
24 camber?

25 A. The caster latch?

0048

1 Q. Yes.

2 MS. DORMAN: Object to form.

3 A. Not directly I would say. I mean, it could,
4 but not directly.

5 Q. (BY MS. RODRIGUEZ) Clearly affects caster,
6 correct?

7 A. It does.

8 Q. And you mentioned something about toe in,
9 right?

10 A. I said toe, yes.

11 Q. Okay. Toe. So how is the -- how does the
12 alignment on, for example, the tag axle affect the
13 toeing of those tag tires?

14 A. Well, the toe is basically a measure -- one of
15 the measurements of the alignment of any -- any tire.
16 So it's not that one affects the other, it's kind of the
17 other way around.

18 Q. Well, does the -- if tag alignment, if it was
19 toed in 3/8 of an inch, would that have any effect on
20 the self-steering ability of the tag tires?

21 MS. DORMAN: Object to form.

22 A. I would say it would be negligible.

23 Q. (BY MS. RODRIGUEZ) Okay. But it certainly
24 would not be within the manufacturer's recommendation
25 for forward operation of the coach, correct?

0049

1 A. I don't recall --

2 MS. DORMAN: Object to form.

3 A. -- what the specific specs are.

4 Q. (BY MS. RODRIGUEZ) All right. Did you
5 determine if the caster latch mechanism on the
6 Americanos accident bus was operational at the time of
7 the drive shaft separation?

8 A. If it was operational?

9 Q. Yes --

10 MS. DORMAN: Object to form.

11 Q. (BY MS. RODRIGUEZ) -- at the time of the
12 drive shaft separation?

13 A. My understanding, and that's partially based
14 on what we've talked about before with Virgil's
15 observations of the pneumatic system, is it would not

16 have been operational.

17 Q. And so the only basis for that opinion is
18 based on the information from Virgil's observations?

19 MS. DORMAN: Object to form.

20 A. That would be based on the observations of --
21 I think most everybody at that inspection and that would
22 include Mr. Hoogestraat, Mr. Wright, if my recollection
23 is right, Mr. Jones as well.

24 Q. (BY MS. RODRIGUEZ) And you're talking about
25 the air lines being clogged?

0050

1 A. Correct.

2 Q. Do you have any other -- so what's the
3 evidence that you have that the air lines were clogged
4 at the time of the drive shaft separation as opposed to
5 when Mr. Hoogestraat scientifically blew into it with
6 his mouth, whatever pressure we don't know, a year and a
7 half later --

8 MS. DORMAN: Object to form.

9 Q. (BY MS. RODRIGUEZ) -- after the accident?

10 MS. DORMAN: Object to form.

11 A. Based on the observations of -- of those folks
12 at the inspection, the deterioration of the hoses was a
13 long-term condition. It was not a short-term effect.

14 Q. (BY MS. RODRIGUEZ) Where is that documented,
15 the deterioration of the hose was a long-term condition?

16 A. That was specifically testified by Mr. Wright.

17 Q. The deterioration of the hose?

18 A. I don't know. I don't think he used that
19 word, but he said that the hose condition was not a
20 short-term effect, it was a long-term effect.

21 Q. Well, I understand that might be his
22 observation, but I want to know where the testing is
23 with scientific data to show how long long-term is?

24 A. I haven't evaluated that specifically so you'd
25 have to ask Mr. Wright that.

0051

1 Q. It could be a year, right?

2 A. I don't know how long that would be.

3 Q. All right. So suffice it to say, other than
4 Mr. Hoogestraat blowing into an air hose a year and a
5 half after an accident and observe him observing that it
6 appeared to be clogged, you don't have any other
7 evidence that the caster latch mechanism was not
8 operational at the time of the drive shaft separation;
9 is that true?

10 MS. DORMAN: Object to form.

11 A. My understanding of the inspection that was
12 done, when they evaluated the air supply system was that
13 it was more substantial than that. I know there were
14 observations. There was an application of pressure in
15 the system and then removal of some of the hoses and the
16 valves to determine why there wasn't actuation
17 specifically in the -- the steering lock cylinder.