

1           A.       No.

2           Q.       Besides yourself and Don Stevens, has  
3 anyone else from SEFA worked on this file?

4           A.       From a technical point of view, no.  
5 Obviously, there's some office support for filing and  
6 that kind of activity.

7           Q.       Okay.

8           A.       Only that.

9           Q.       Other than the witness statements  
10 contained in the police file and the summary of witness  
11 statements that has been provided to you by the Butler  
12 firm, have you had any other access to witnesses in  
13 this case?

14          A.       I have not.

15          Q.       So you have not personally spoken to any  
16 witness in the case?

17          A.       I have not.

18          Q.       Have you talked to other experts for the  
19 plaintiffs in this case?

20          A.       I had some conversation with Ron Kirk. I  
21 believe the first of it, May 1st or May the 2nd -- I  
22 can't remember the precise date, but one of those  
23 two -- when we had a general meeting about a variety of  
24 things, and the Belli matter was part of that  
25 discussion.

1 Q. And that meeting was in Atlanta?

2 A. That is correct.

3 Q. At Mr. Fryhofer's office?

4 A. That is correct.

5 Q. Who was in attendance besides yourself and

6 Mr. Kirk and Mr. Fryhofer or other people from the

7 firm?

8 A. Good question. There were other people,

9 but I can't tell you.

10 Q. Was Mr. Stevens there?

11 A. Yes, Don Stevens was there.

12 Q. Was Belli the only case discussed that

13 day?

14 A. No. There were a number of other matters.

15 Q. Did you take any notes of what happened at

16 that meeting about Belli?

17 A. No.

18 Q. Have you spoken with Mr. Kirk since that

19 meeting?

20 A. I have not.

21 Q. Did you speak with him before that meeting

22 about the Belli case?

23 A. I don't believe so.

24 Q. Have you spoken with Dr. Burton?

25 A. No.

1 Q. And you have not spoken to Mr. Gilberg, I  
2 take it?

3 A. I have not.

4 Q. Have you spoken to any of Mr. Kirk's  
5 assistants, such as Mr. Brady?

6 A. I have not.

7 Q. Okay. Mr. Arndt, have you visited the  
8 scene of this accident?

9 A. I have not.

10 Q. Have you relied upon other data by other  
11 individuals about the scene in your work in the case?

12 A. I have.

13 Q. And what specific information from others  
14 have you relied upon?

15 A. I have relied upon the aerial photographs.  
16 There were two of them. I've relied upon the  
17 information, I think, that, in part, was gathered by  
18 Ron Kirk. I have relied upon the numerous photographs  
19 which were taken at different times of the scene, both  
20 at the night of the accident and later on, I think  
21 primarily by Ron Kirk. I have examined all of the  
22 media information that was on the VHS tapes that were  
23 provided by Mr. Fryhofer's office and the officer's  
24 description, general data and presentation.

25 I believe that -- I think that's the bulk

1 of it. There could be some other little pieces in it,  
2 but they aren't very distinct at this moment.

3 Q. Is there anything about the scene which is  
4 unusual or which you believe contributed in any way to  
5 the accident or resulting damage?

6 That's two questions. I'll break them up,  
7 if you like?

8 A. No, that's okay.

9 So when you say "the scene" --

10 Q. The character of the roadway, the  
11 curvature of the roadway, any --

12 A. Geometric architecture of the bend of the  
13 road?

14 Q. Yes, sir.

15 A. Nothing that I can determine.

16 Q. Okay. Have you inspected all three of the  
17 vehicles -- principal vehicles which were involved in  
18 this accident?

19 A. Yes.

20 Q. How many occasions have you examined the  
21 Cherokee vehicle?

22 A. Three occasions.

23 Q. And we have marked previously as  
24 Exhibit 12 to your deposition a dictated set of notes  
25 dated September 26, 2001, which, I believe, are your

1 notes of your -- one of your inspections of the  
2 Cherokee?

3 A. They are my notes of the first inspection  
4 of the Cherokee.

5 Q. Do you have notes related to any other  
6 inspections of the Cherokee?

7 A. No.

8 Q. What were the other dates of inspection of  
9 the Cherokee?

10 A. The 30th of April, 2002. That was for the  
11 purpose of gathering damage information for the  
12 Cherokee and for the Ford Thunderbird. We examined the  
13 Thunderbird at that time, which was the first  
14 opportunity to do that, and then in July, I believe it  
15 was, which was a joint inspection and removal of the  
16 fuel tank.

17 Q. Okay.

18 A. And I believe -- by the way, I think it  
19 was the April inspection that I also had an opportunity  
20 to see the Camry at a different location. I believe it  
21 was actually -- I believe it was in Atlanta, if I  
22 remember correctly.

23 Q. So you've looked at the Thunderbird once?

24 A. Looked at the Thunderbird once. I've  
25 looked at the Camry once. I have examined the Belli

1 vehicle on three different occasions.

2 Q. And the only notes you have of any of  
3 those inspections or examinations of the vehicles are  
4 the notes we've marked as Exhibit 12?

5 A. That is correct.

6 Q. Who accompanied you on your visit of  
7 September 26, 2001, to inspect the Cherokee?

8 A. I think George Fryhofer was with me.

9 Q. Anyone else from your office?

10 A. No.

11 Q. What about the April 30, 2002 visit to the  
12 Jeep and the Thunderbird and the Camry, anyone else  
13 accompany you?

14 A. Don Stevens. There may have been somebody  
15 from Mr. Fryhofer's office. I don't have a specific  
16 recollection about that anymore.

17 Q. Do you know if Mr. Stevens took any notes?

18 A. There are no notes in the file.

19 Therefore, no notes were taken.

20 Q. Is that the visit during which the  
21 digitization of the vehicles took place?

22 A. No. That occurred separately, and that  
23 was accomplished by Gary McDowell and arranged and  
24 worked out by him. Our office only coordinated that  
25 effort but did not attend that effort.

1           Q.       So what did you and Mr. Stevens do on the  
2 30th of April?

3           A.       We looked at the Ford Thunderbird, and we  
4 prepared the plastic, which we spoke about earlier, of  
5 the damage on the Belli vehicle.

6           Q.       And did you make any measurements of the  
7 Thunderbird at that time?

8           A.       I believe that some measurements were made  
9 of the Thunderbird.

10          Q.       Do you have any record or note of what  
11 measurements there were?

12          A.       We either did a plastic or they're in the  
13 file. I'm not certain. As I said, that was an  
14 intermediate step, because we ultimately decided to  
15 digitize the vehicles, and that really provided the  
16 information that we were looking for for the final  
17 analysis. But let me look to see if there were any  
18 measurements of the Thunderbird.

19                   None of the -- apparently, none of the  
20 damaged Thunderbird. At least I don't see them in the  
21 file. We must have not taken them.

22          Q.       And on the July visit related to the  
23 removal of the fuel tank, did you document that in some  
24 form or fashion, either through photographs, notes, or  
25 video?

1           A.       I documented it through digital  
2 photographs only. It was, I believe, documented by  
3 video -- by some videographer. I do not recall the  
4 name anymore.

5           Q.       Do you recall which of the CDs has the  
6 tank removal data on it?

7           A.       Should be labeled.

8           Q.       June 18, 2002, tank removal, which has  
9 been marked as Exhibit 8?

10          A.       That is correct.

11          Q.       Were any other experts for the plaintiffs  
12 present at any of your inspections of these vehicles?

13          A.       No.

14          Q.       Have you also had occasion to inspect  
15 exemplar vehicles in this case?

16          A.       I don't recall that I have.

17          Q.       Have others working for you done anything  
18 about documenting exemplar vehicles?

19          A.       Gary McDowell has, at our direction,  
20 documented exemplar vehicles.

21          Q.       So, Mr. Arndt, am I correct that the only  
22 thing you, yourself, have generated in the way of notes  
23 or dictation is Exhibit 1, which is your handwritten  
24 summary of opinions and related materials, and your  
25 dictated notes regarding the first vehicle inspection,



1     which are Exhibit 12?

2             A.       That's correct.

3             Q.       Other than what may have been marked as  
4     exhibits to the depositions of Dr. Burton, Mr. Kirk, or  
5     Mr. Gilberg, do you have any notes from them related to  
6     their work in the case?

7             A.       I don't recall anything attached to either  
8     Dr. Burton's or Mr. Gilberg's deposition.  There was  
9     quite a number of exhibits attached to Ron Kirk's  
10    deposition, so I think that's the only material that I  
11    have is that from Ron Kirk.

12            Q.       Mr. Stevens told us yesterday that he has  
13    done additional work to that done by Mr. Arndt in order  
14    to understand the vertical motion of the vehicles  
15    following the initial impact.  Have I described that in  
16    a way that you understand my question?

17            A.       Well, I know the question.  But I think  
18    what you meant to say was "in addition to Mr. Kirk,"  
19    rather than me.

20            Q.       You're right, I did.  I did it all day  
21    yesterday, too.  I got y'all mixed up yesterday, too.

22            A.       No, I understand the question correctly.  
23    I just wanted to make sure that we were talking about  
24    the same person.

25                    Yes.  Don Stevens, as a result of a number

1 of conversations we had, did do additional work  
2 relative to the dive and lifting phenomenon associated  
3 with the collision.

4 Q. Did he do that at your request?

5 A. Yes, and kind of fell out of our  
6 conversation. Sometimes it's not real clear that  
7 requests get made, we just know that we need to do the  
8 work.

9 Q. Did you do any of the hands-on work in  
10 generating the data that he used to establish his  
11 opinions regarding the vertical motions of the vehicle?

12 A. No. I discussed with him the ongoing  
13 process that he went through to come to his final  
14 calculations.

15 Q. And have you reviewed those calculations?

16 A. Briefly.

17 Q. Do you know if those calculations have  
18 been provided to Mr. Kirk?

19 A. I have no idea.

20 Q. You haven't provided them to him, I take  
21 it?

22 A. I have not.

23 Q. Do you intend to offer any opinions,  
24 Mr. Arndt, about the reconstruction of the accident  
25 that occurred that forms a basis of this case?

1           A.       That's hard to know.  If I'm asked some  
2 questions about it, I might.

3           Q.       Have you done an independent  
4 reconstruction from that done by Mr. Kirk?

5           A.       I haven't done the reconstruction work  
6 that Mr. Kirk has done.

7           Q.       Have you done anything that you would  
8 include within the general umbrella of accident  
9 reconstruction work?

10          A.       Yes.

11          Q.       What have you done?

12          A.       I've attempted to understand the nature of  
13 the damage of the respective vehicles.  I have analyzed  
14 that and interpreted what it means.  I have examined --  
15 in light of the witness statements, I have examined the  
16 scene -- the many photographs of the scene taken at the  
17 night or early morning of the accident and attempted to  
18 understand the evidence that's at the scene and to  
19 reconstruct the fire in light of that evidence, in  
20 light of the reconstruction work that Ron Kirk has  
21 done, and in light of my general understanding of the  
22 events of that evening.

23          Q.       Have you done any calculations related to  
24 a reconstruction of the accident?

25          A.       No.

1 Q. Do you rely on Mr. Kirk's calculations?

2 A. Generally.

3 Q. What is your understanding of Mr. Kirk's  
4 opinions regarding the reconstruction of the case?

5 A. I think the core of his opinions are as  
6 follows: That the Camry was moving slowly at the time  
7 the impact occurred. I think he indicates 10 to 15  
8 miles an hour --

9 MR. FRYHOFER: You said "Camry."

10 Q. BY MS. OWENS: You mean the Jeep?

11 A. I apologize. Start over so we eliminate  
12 the confusion.

13 The essence of Mr. Kirk's reconstruction  
14 is: That the Camry was stopped at the time this  
15 accident was unfolding; that the Belli vehicle was  
16 traveling slowly, 10 to 15 miles an hour at the time of  
17 impact; that the striking vehicle, the Thunderbird, was  
18 braking sufficiently to leave substantial skid marks  
19 from the front wheels for nominally 64, 65 feet, on the  
20 average, prior to impact; that the Belli vehicle left  
21 the collision area around 40 miles an hour -- that is  
22 its post-impact speed is 41, 42 maybe, something on the  
23 order of 40 -- and that it rotated clockwise; that its  
24 left rear corner struck the rear of the stationary  
25 Camry, which, in turn, drove it forward to its rest

1 position; and that the Belli vehicle then spun out  
2 counterclockwise to its rest position.

3                   With respect to the Thunderbird, that the  
4 closure speed was in the range of 60 to 70 miles per  
5 hour, and that the Thunderbird continued down the  
6 roadway southbound on I85, coming to its rest position  
7 adjacent to the Camry.

8           Q.       Do you have an understanding about what  
9 the principal direction of force of the impact was to  
10 the Jeep?

11           A.       Yes.

12           Q.       What is it?

13           A.       It's six o'clock.

14           Q.       And was there any overlap, or was it  
15 center-line-to-center-line impact?

16           A.       It was not center-line-to-center-line  
17 impact. It was offset somewhat to the driver's side.

18           Q.       Now, your inspection notes from your  
19 initial vehicle inspection, which we've marked as  
20 Exhibit 12, on the first page, there's an indication  
21 of, in your dictation, that there may be some slight  
22 angular component to the impact?

23           A.       Yes.

24           Q.       Is that still your view?

25           A.       That was an impression from the damage. I

1 do think that Kirk, in his reconstruction, did end up  
2 with some shallow angle. I don't remember the number  
3 anymore.

4 Q. So I take it that if there was an angle,  
5 and how much the angle was, that's not important to  
6 your opinions in the case?

7 A. It's small. It's an observation of the  
8 damage. It's a conclusion from that observation. I  
9 don't think on the final analysis it matters very much.

10 Q. Do you have an understanding about what  
11 the delta V of the Thunderbird was at the time of  
12 impact?

13 A. As a result of impact, the Thunderbird  
14 slowed down about 35 miles an hour.

15 Q. So the delta V of the Thunderbird would be  
16 about 35 miles an hour?

17 A. Yes.

18 Q. What about the delta V of the Jeep?

19 A. Approximately the same. It accelerated  
20 approximately 35 miles an hour.

21 Q. Have you --

22 A. I think, actually, Ron Kirk said in the  
23 range of 30 to 35 for both vehicles, now that I reflect  
24 a little more on that.

25 Q. And have you attempted to translate that

1 delta V into a BEV?

2 A. I haven't. But given the nature of the  
3 collision, it would be in the range of 30 to 35 miles  
4 per hour equivalent barrier velocity for each vehicle,  
5 separately.

6 Q. And is that assuming a moving barrier or a  
7 fixed barrier?

8 A. It's assuming that the vehicles reached a  
9 common velocity during the collision, that is, it was  
10 synchronous, and that the damage that is reflected is  
11 related to a rigid barrier impact velocity equivalent.

12 Q. Do you have any opinion about what the --  
13 well, strike that.

14 Do you have any disagreements with  
15 Mr. Kirk's opinions about the reconstruction?

16 A. Not fundamentally, no.

17 Q. What about other than fundamentally?

18 A. Well, they're -- it's a planar model, so  
19 it has some limitations in that respect. And the  
20 underride diving effect does have some impact on the  
21 respective vehicle skid paths. But in the final  
22 analysis, all said and done, as I look at that, a  
23 number of factors around this accident, I don't  
24 disagree in any basic way with Mr. Kirk's  
25 reconstruction.

1 Q. Do you have an understanding of what the  
2 relative bumper heights of the Thunderbird and the Jeep  
3 are in a non-braking situation?

4 A. Yes. There are some exhibits that depict  
5 that.

6 Q. Okay. Let me show you what's been marked  
7 as Exhibit 17A and ask if that's one of the exhibits  
8 you're talking about?

9 A. Yes.

10 Q. And what does it tell us about the  
11 relative bumper heights of the vehicle?

12 A. This exhibit demonstrates that the bottom  
13 surface of the Jeep Cherokee is 19.6 inches above  
14 ground level in its normal ride height. This would be  
15 curbed, not with any occupants or other --

16 Q. Curb weight?

17 A. Yes, it's curb weight.

18 Q. Okay.

19 A. And that the top of the bumper of the  
20 Thunderbird at -- just above the bright trim piece, at  
21 the top of the bumper is 22-1/2 inches high.

22 Q. Can I see the sketch?

23 Thank you.

24 A. Those dimensions do not, however, provide  
25 any specific information or understanding of the impact



1 of the shape and form of the bumper at engagement.

2 Q. Well, tell me what impact the shape and  
3 form of the bumpers would have.

4 A. Well, one looks at that exhibit -- I  
5 forget the number --

6 Q. 17A.

7 A. -- 17A, one can observe that the bumper of  
8 the Thunderbird has kind of a contour or wedging shape  
9 at the top, which provides a ramp -- if that's the  
10 right word -- should engagement occur, a ramp that  
11 tends to disengage initial engagement. Or if we look  
12 at that diagram specifically where the Thunderbird's  
13 aligned with the -- that is, the front bumper of the  
14 Thunderbird is aligned with the rear bumper of the  
15 Cherokee, and these are both at curb weights, that  
16 there is an innate or inherent tendency, just based on  
17 shape and form, heights considered, for an underride to  
18 occur relative to the rear of the Cherokee in a  
19 collision -- rear collision event.

20 Q. Do you hold any opinion that the design of  
21 the rear bumper of the Cherokee is defective?

22 A. No.

23 Q. Do you have any opinion about the crash  
24 pulse in this case, in this accident, either its  
25 duration or its shape?

1           A.       I haven't formed an opinion. I would say  
2 that the primary pulse duration is around 100 or 110  
3 milliseconds in length.

4           Q.       And is that the --

5           A.       That's fairly typical. The average pulse  
6 duration, there's average pulse level, that is, the  
7 average g level of that pulse could be computed. I  
8 think there's enough information to do that. I haven't  
9 done it.

10          Q.       Okay. There was a secondary impact of the  
11 Cherokee with the Camry?

12          A.       That is correct.

13          Q.       And do you have an understanding from  
14 Mr. Kirk's testimony about what the delta V was that  
15 was experienced by the Jeep at the time of that impact?

16          A.       I may have highlighted it in his depo. I  
17 don't recall at this moment.

18          Q.       Is that secondary impact important or  
19 significant to any opinion that you intend to express  
20 in the case?

21          A.       It is reflected in some of my opinions.

22          Q.       Do you believe that the secondary side  
23 impact between the Cherokee and the Toyota caused any  
24 damage to any of the fuel system components?

25          A.       Of what?

1 Q. Of the Jeep.

2 A. No. The fuel system components had  
3 already been damaged. May have rearranged the damage  
4 somewhat.

5 Q. Did it cause any damage to the Toyota fuel  
6 system?

7 A. No.

8 Q. Did any of the fuel which was involved in  
9 this fire come from any vehicle other than the  
10 Cherokee, in your opinion?

11 A. We would have to examine the time line on  
12 that to fully answer the question.

13 To begin with, the initial cause and  
14 origin fuel, that is, that fuel which started the  
15 initial fire, that fuel which fueled the fire initially  
16 at rest after the vehicles came to rest, the only  
17 source of fuel for that fire was the Cherokee. As a  
18 fire ensued and the heat built up substantially, both  
19 the Camry and the Thunderbird -- there's likely some  
20 fuel in the later-on fire from both of those vehicles.  
21 I think if one examines my opinion, if one examines  
22 the -- we looked at one still photograph -- aerial  
23 photograph of the fire, and there's quite a bit of news  
24 coverage video that it's clear that there are  
25 significant other sources of fuel later on in the fire,

1 likely from the Thunderbird -- my opinion -- from the  
2 Thunderbird and from the Camry.

3 Q. From what you've said, I understand that  
4 it's your opinion that any injuries which may have  
5 resulted to any of the Jeep occupants from fire were  
6 caused solely by consideration of fuel from the  
7 Cherokee itself?

8 A. On the Cherokee, and even a bit more  
9 specific, from the initial -- the very early fire, the  
10 initial fire that started with the Cherokee.

11 Q. Have you done any calculations in an  
12 attempt to quantify the crush energy that was involved  
13 in this accident, the initial accident between the  
14 Thunderbird and the Cherokee?

15 A. I have not made any specific calculations,  
16 but I believe that we have already implied it from  
17 talking about the rigid barrier equivalent velocities.  
18 It would be a fairly straightforward task to convert  
19 those to energies, combine those energies, and we'd be  
20 looking at the approximate order of magnitude of the  
21 initial collision energy.

22 Q. Do you have or intend to offer any  
23 opinions about medical causation?

24 A. No.

25 Q. You will rely on Dr. Burton -- or defer to

1 Dr. Burton on that topic?

2 A. I do.

3 Q. Do you have an opinion about how much fuel  
4 was contained in the fuel tank of the Cherokee before  
5 the collision occurred?

6 A. I don't know the specific amount, although  
7 my opinion is that there was not a lot of fuel in the  
8 tank.

9 Q. That's a 20-gallon tank, correct?

10 A. That is correct.

11 Q. How full would you estimate -- or would  
12 you opine that it was?

13 A. Possibly significantly less than half  
14 full. My sense is it's a quarter full, maybe even a  
15 little less than that.

16 Q. And why do you say that?

17 A. The lack of fuel spill handling evidence  
18 on the road at the crash scene. That is, the initial  
19 impact scene, number one.

20 Second, the extensive amount of damage to  
21 the fuel tanks. Had there been a lot of fuel in there,  
22 I would have expected to see signs of  
23 overpressurization of the tank, or even other types of  
24 failures associated with overpressurization.

25 And the lack of a fire trail from fuel

1 leak. It's kind of a collateral opinion. There just  
2 isn't any fuel on the road there from point of impact  
3 to point of rest.

4 Q. So no ground fire?

5 A. No ground fire in the -- in the period or  
6 time or distance span from initial impact between  
7 Thunderbird and Belli to rest position. There's  
8 probably some ground fire from sometime after the  
9 impact between the Belli vehicle and the Toyota Camry.  
10 There's an expansion of the fire at that second impact,  
11 but none other than that. The Camry's probably the one  
12 that initially ignited on fire by the impact between  
13 the Belli vehicle and the Camry. The Ford is already  
14 on fire as it comes to rest.

15 Q. And the fuel that is causing that fire is  
16 from the Cherokee and the Thunderbird, initially?

17 A. All of the fire that occurs before these  
18 vehicles come to their rest position, stated a slightly  
19 different way, is a result of fuel from the Cherokee.

20 Q. Okay. You indicated that you did not see  
21 an occasion of overpressurization in the tank?

22 A. That's correct.

23 Q. Do you see any signs of hydrostatic  
24 failure of any type?

25 A. Well, to me, that's fairly synonymous.

1 Overpressurization is hydrostatic pressure buildup. I  
2 saw none.

3                   There are two holes that I can observe in  
4 the tank body proper only. And then, of course, a  
5 failure in the fuel filler neck assembly.

6           Q.       Okay. Was there any failure of the fuel  
7 cap on the Cherokee in this accident?

8           A.       No, I don't believe so. I'd have to look  
9 again at the pictures, but I don't believe so.

10                   MR. FRYHOFER: What do you want to do  
11 about lunch, Diane?

12                   MS. OWENS: Whatever you want to do.

13                   THE WITNESS: I would like a lunch.

14                   MR. FRYHOFER: Do you want to do that now,  
15 12:15, and come back at 1:00?

16                   MS. OWENS: Sure.

17                   (A recess was taken from 12:15 p.m.  
18 to 1:15 p.m.)

19           Q.       BY MS. OWENS: I want to return for a  
20 moment to Exhibit 17A and also 17B, 17A being the  
21 engagement of the Thunderbird to the Cherokee at normal  
22 bumper positions.

23                   We talked about that, correct?

24           A.       Yes. I call it normal ride height, but  
25 that's another way to say it the way you phrased it.

1 Q. All right. And you've measured from the  
2 top of the Thunderbird bumper to the ground as being  
3 22.5 inches?

4 A. Yes.

5 Q. And then 17B is a diagram entitled Vehicle  
6 Engagement at Impact?

7 A. Yes.

8 Q. And the measurement there for the  
9 Thunderbird bumper is 20.8?

10 A. Yes, relative to the Jeep being at normal  
11 trim height. The commonality between those two  
12 diagrams is that the Cherokee is at the same trim  
13 height, and we've changed the bumper height of the  
14 Thunderbird, that is, the front bumper of the  
15 Thunderbird.

16 Q. Now, as I understood you before -- I may  
17 be wrong, so please correct me if I'm wrong -- the  
18 Thunderbird measurement from a -- from the top of the  
19 bumper to the ground --

20 A. Yes.

21 Q. -- is the measurement shown on 17B of  
22 20.8 inches, similarly, from the top of the bumper to  
23 the ground?

24 A. Yes.

25 Q. And so that would be a difference of --



1 A. Something --

2 Q. -- 1.7?

3 A. Yes. 1.8, is it?

4 It's 1.7.

5 Q. And this is premised on the assumption  
6 that the Cherokee's orientation, vis-a-vis the ground,  
7 has not changed by the braking of the Cherokee?

8 A. That is correct.

9 Q. Do you believe that the Cherokee was  
10 braking at the time of impact by the Ford?

11 A. I have no information one way or the  
12 other.

13 Q. So for purposes of your opinions in this  
14 case, you are assuming that the Cherokee bumper was in  
15 its normal ride height versus the ground?

16 A. I'm not making any assumptions relative to  
17 that at all.

18 Q. Mr. Arndt, in the supplemental  
19 interrogatory responses that was served upon us by the  
20 plaintiffs in this case, there's also an indication  
21 that you would testify regarding a defect existing in  
22 this fuel system, because the fuel tank was unshielded.

23 Do you intend to offer any opinions about  
24 shielding in this case?

25 A. Well, in a large sense, that's about not

1 being adequately protected. I don't -- I'm not going  
2 to offer a specific opinion about a lack of shielding  
3 of the tank in the present -- in the present design  
4 location. I would say that shielding is a good design  
5 characteristic.

6 Q. Do you have an opinion about whether or  
7 not, if there had been shielding of this tank, the  
8 outcome would have been different in this particular  
9 accident?

10 A. I do.

11 MR. FRYHOFER: Objection, vague.

12 Q. BY MS. OWENS: What is that opinion?

13 A. I assume that you mean by "outcome," fire,  
14 and the result.

15 Q. Breach of the fuel system and a fire and  
16 the result.

17 A. It would have been the same.

18 Q. Now, are you aware that this model  
19 Cherokee came with an optional skid plate for offroad  
20 applications?

21 A. I understand that there is an optional  
22 skid plate available for this vehicle.

23 Q. Do you believe that in this accident the  
24 presence of that skid plate would have made any  
25 difference in the breach of the fuel system or the

1 result?

2           A.       It may have changed the extent of  
3 deformation and eliminated the breaches in the fuel  
4 tank proper, but I don't believe that it would have  
5 eliminated the fuel filler failure.

6           Q.       In looking at Exhibit 1, which is your  
7 summary of opinions document, which I've copied for all  
8 of us at the lunch break, in paragraph number 2, you  
9 indicate that the brake dive of the Thunderbird  
10 exacerbated the geometry and structural mismatch  
11 between the front of the Thunderbird and the rear of  
12 the Belli Jeep Cherokee, right?

13          A.       That is correct.

14          Q.       Do you believe in this particular accident  
15 that some change in the bumper structure of the  
16 Cherokee would have resulted in a different outcome in  
17 this accident in terms of the fuel system performance?

18          A.       Well, I suppose one could conceive of some  
19 change in the bumper design that would change the  
20 outcome, but I'm not -- I'm not really addressing the  
21 bumper of the Cherokee, per se. I'm trying to identify  
22 its characteristics relative to the world, but it's  
23 intruded upon, that's all.

24          Q.       And what are its characteristics relative  
25 to the world that it's in?

1           A.       It provides a bumper function for -- I'm  
2 not even sure for pushing anymore. Maybe it's  
3 historically there. But it does allow the respective  
4 structural elements at the rear of the vehicle, that  
5 is, the right side and left side frame rails, to be  
6 effectively engaged by a rear-moving barrier that's  
7 used in the 301 test and allows the vehicle to handle  
8 the forces -- nature of that engagement and the  
9 energies to meet the standard.

10          Q.       And 301 is the subject of two paragraphs,  
11 I believe, in paragraphs 19 and 20?

12          A.       That is correct.

13          Q.       And your opinions as summarized in those  
14 paragraphs are that this vehicle met the requirements  
15 of FMVSS 301?

16          A.       Well, what I said is Chrysler certified  
17 that it met the requirements of FMVSS 301.

18          Q.       Do you have any reason to doubt that  
19 certification?

20          A.       No.

21          Q.       And you will not be offering any testimony  
22 that it didn't meet 301, will you?

23          A.       I haven't seen any that said it didn't  
24 meet it.

25          Q.       And then paragraph 20, you indicate that

1 one of your opinions is that FMVSS 301 does not  
2 sufficiently validate the crash performance design of  
3 the 1991 Jeep Cherokee?

4 A. That's correct.

5 Q. And is that a criticism of the standard,  
6 or the test, or the vehicle, or all of the above?

7 A. Well, the standard's a minimum standard.  
8 It's a recognition that while that is a minimum  
9 standard, and while that standard is promulgated by the  
10 government as a necessary minimum standard, that using  
11 that standard as a crash test methodology to assess the  
12 performance of the fuel system is not very realistic  
13 when one looks at the larger picture of collisions,  
14 because it's rare that there is a collision in the real  
15 world that has the crash characteristics of a rigid  
16 moving barrier. Not to say that won't happen on  
17 occasion, but the fact is that the kind of collision  
18 that occurred in this accident is more like the real  
19 world, and that one needs to be able to take the  
20 reality of what the standard is and isn't, and look at  
21 the performance of the vehicle from these different  
22 perspectives.

23 And that is what I'm really addressing  
24 with that combination of statements there.

25 Q. So, as I understand what you've said, this

1 number 20 is really addressed to the inadequacy of the  
2 standard, vis-a-vis, the real world accidents that  
3 occur?

4 A. You could phrase it that way. You know,  
5 I'd prefer to say it differently.

6 I think the standard has some value, in  
7 particular, if you look at the historical application  
8 of the standard. In cars, it made an enormous  
9 difference at an early time. But today, it is not  
10 sufficient engineering proof that the fuel system is  
11 adequate, and my opinion 29 really kind of goes to the  
12 next step of that process in addressing what really may  
13 be needed in the final analysis.

14 Q. You said 29 --

15 A. Did I say 29? I meant 21.

16 Q. There aren't 29 --

17 A. No, there aren't.

18 Q. -- unless you had a page you didn't give  
19 me.

20 A. No, it was 21. I misspoke.

21 Q. All right. Well, let me ask you a couple  
22 questions about 301 for a minute, if I can.

23 Have you determined what the energy was  
24 involved in this accident between the Thunderbird and  
25 the Cherokee compared to the energy involved in the 301

1 test?

2 A. I have not made that specific calculation,  
3 but I can, and I'm not even sure that's quite the right  
4 question -- I'm sorry -- as I begin to answer the  
5 question.

6 In the spirit of trying to get to, I  
7 think, what the question's about, let me just go ahead  
8 here. You know, I haven't compared the amount of  
9 energy absorbed by the Belli vehicle to that absorbed  
10 as a result of the 30-mile-per-hour rear barrier  
11 standard. I think that really is the comparison one  
12 wants to start making.

13 I can tell you that, based on experience,  
14 that the difference is fairly substantial, and that the  
15 energy imposed on the Belli vehicle was substantially  
16 more than that which would have been as a result of  
17 this collision, substantially more than that which  
18 would have been imposed on the Belli vehicle as a  
19 result of running the standard 301 rear-moving barrier  
20 test, rigid barrier test at 30 miles an hour. And all  
21 the information's available to make those calculations.

22 Q. And by "substantially," can you quantify  
23 that in any way for me as a range or a percentage?

24 A. Probably 300 percent more, something on  
25 that order. And, again, the number would work it out.

1 Q. Now, has there been a proposal to add a  
2 car-to-car crash to the 301 standard?

3 A. I have seen some proposed rulemaking, some  
4 dialogue around that.

5 Q. That would be a 50-mile-an-hour  
6 car-to-car?

7 A. I believe that's what's being discussed.

8 Q. And GM has done some 50-mile-an-hour  
9 car-to-car testing?

10 A. They have.

11 Q. Okay. And have you had a chance to look  
12 at that in previous cases?

13 A. I've seen some.

14 Q. Do you know if Ford uses that  
15 car-to-car -- any car-to-car testing in validation of  
16 their fuel system design?

17 A. I haven't seen any.

18 Q. What about any other --

19 A. That doesn't mean that it's not done.

20 Q. I understand. You can only say what  
21 you've seen.

22 Have you seen anything from any other  
23 manufacturer besides GM that indicates other  
24 manufacturers are using any sort of car-to-car testing  
25 as a part of their fuel system design program?



1 A. Not that I can recall.

2 Q. Can you compare the energy absorbed by the  
3 Cherokee in the Belli accident with a 50-mile-an-hour  
4 car-to-car impact involving this vehicle?

5 A. Well, you'd have to make a lot of  
6 assumptions. The answer is yes, one could make a  
7 comparison. We'd have to define a lot of things before  
8 we made that comparison, and that's where the  
9 assumption side of it comes into play.

10 Q. What do we need to define?

11 A. We need to define the weight of the  
12 striking vehicle.

13 Q. Assume it's the weight of the Thunderbird.

14 A. Okay.

15 Q. What else do we have to define?

16 A. Need to define the nature of the  
17 structures of the striking vehicle.

18 Q. Assume it's a Thunderbird. Can you do  
19 that, or would it --

20 A. I'd have to think about that. I would be  
21 hesitant to do that.

22 Q. Do we need an SUV that has the same bumper  
23 height?

24 A. No. What we need is something that  
25 matches the structural crush characteristics that the

1 vehicle that's striking the Belli vehicle here in this  
2 hypothetical situation that has a -- one assumption  
3 could be that its structural deformation characteristic  
4 is the same.

5 Q. As the Cherokee?

6 A. As the Cherokee.

7 That's one assumption.

8 Q. Okay.

9 A. Another assumption is that as a rigid  
10 barrier, like a rigid barrier, which is a bit of an  
11 anomaly when you talk about a car-to-car, and not very  
12 realistic in actuality.

13 And I suppose another assumption would be  
14 that we know accurately the deformation characteristic  
15 of the striking vehicle.

16 All of those are going to give some  
17 different result. There's a very common assumption  
18 made that energy gets split evenly between the striking  
19 vehicle and the struck vehicle.

20 Q. But that's not necessarily true?

21 A. It's not necessarily true.

22 Q. If I ask you: Do you have an opinion  
23 whether a 50-mile-an-hour car-to-car crash involving a  
24 Cherokee into a Cherokee would be more severe than this  
25 accident or less severe than this accident, could you

1 answer that?

2 A. Well, in terms of -- I can answer pieces  
3 of it.

4 In terms of the total energy incipient  
5 upon the collision event, it's less.

6 Q. Which is less?

7 A. The 50-mile-an-hour Cherokee front into  
8 the rear of a Cherokee.

9 Q. Okay.

10 A. In terms of the geometry and the  
11 structural interaction, I don't know. I'd have to kind  
12 of look at that.

13 In terms of the energy absorption  
14 characteristics of the respective vehicles, again, one  
15 could look at crash test results and see what they are,  
16 but I can't really assess that here today.

17 Q. Do you believe that -- or do you advocate  
18 a change to FMVSS 301 in terms of rear impacts?

19 A. Frankly, I think the standards are not  
20 really very effective anymore, particularly that  
21 standard. That's probably a compromise that ends up  
22 with a test condition that's too general. It's not  
23 specific enough to handle individual vehicle design  
24 considerations and would just kind of change the  
25 playing field and the rules a little bit, but would

1 probably end up directing energies and resources to a  
2 new static level that I think that the best invasion  
3 comes without regulation, just allowing the designers  
4 to do their job. They do a better job in the long  
5 haul.

6 Q. So do I understand from that you're not  
7 advocating a specific change to 301, or you don't opine  
8 that it needs to be changed to some -- in some specific  
9 way?

10 A. Well, I haven't thought a lot about it in  
11 the context of your question. So, you know, I'd have  
12 to be more considerate, I think, in a larger  
13 perspective about what I would say about 301.

14 I'm giving you a sense that I have about  
15 the process at this time, and that's all I can do.  
16 It's my thoughts about it. I answered the question.  
17 It may not be my final position on it.

18 Q. If you were charged with the  
19 responsibility to come up with a standard for a company  
20 that was making automotive products in terms of fuel  
21 system performance to be tested in a certain way for  
22 rear-end collisions, what would you do?

23 A. Say the question again.

24 Q. God, I'm not sure I can. I will try  
25 again.

1                   If you were charged with the  
2 responsibility of coming up with a validation program  
3 or a testing standard or both for an automotive  
4 products manufacturer to deal with rear-end collisions  
5 and the fuel system performance, what would you  
6 recommend be done?

7           A.       Well, I'm not sure I'd do it that way.  
8 Although I think in the final analysis you need what  
9 you're suggesting in your question, I think that's  
10 probably approaching it from the wrong direction, given  
11 where the knowledge, the technology, and the know-how  
12 exists today.

13                   The real question, in my view, is how can  
14 I -- how can I as an engineer, or how can I -- I'm not  
15 trying to be real personal about this -- how can I as a  
16 company providing a safe vehicle design the fuel system  
17 in the best possible way. And there's ample  
18 information around now to answer that question in a  
19 rather straightforward manner by saying: Get the fuel  
20 tank into the center of the vehicle out of the many  
21 known crush zones; clean up the environment; deal with  
22 the filler neck.

23                   And the truth of the matter is, for the  
24 proper development program, that is the best one can  
25 do, rather than, say, keeping the tank in the back and

1 saying let's revise the standard. You're never going  
2 to remedy a fundamental problem if you keep the tank in  
3 the back.

4 Q. So is it your -- one of your opinions in  
5 this case that the simple fact of the location of the  
6 tank behind the rear axle makes it defective?

7 A. That is what I said, yeah. I said that in  
8 my opinions.

9 Q. Do you believe that any vehicle that has a  
10 tank -- a fuel tank behind the rear axle is defective?

11 A. Well, I'd be hesitant to say that. And I  
12 haven't looked at every vehicle. I'm concerned  
13 fundamentally that rear-mounted tanks are a problem,  
14 but there may be circumstances and situations in some  
15 vehicles where it's not a problem.

16 Q. Why do you opine that it was a problem in  
17 this vehicle where it might not be in others?

18 A. Because this vehicle is not unlike a lot  
19 of vehicles in some respects in that, as an SUV, for  
20 its fully intended range of uses, it tends to be  
21 structurally stronger. It tends to have a suspension  
22 system, particularly in the 4-by-4 mode, that has the  
23 vehicle a little higher. And in the world where cars  
24 are being designed for aerodynamic efficiency, and the  
25 front of vehicles, not just cars, but the fronts of

1 vehicles are tending to be aerodynamically-contoured to  
2 minimize aerodynamic losses, a vehicle like this SUV is  
3 very vulnerable to underride. And it exposes the fuel  
4 tank to underride damage that would not be exposed, for  
5 example, in a 30-mile-an-hour barrier -- moving-barrier  
6 impact, as an example. And there's just not enough  
7 space for this vehicle to be protected.

8 Q. Would it be your opinion in any SUV with a  
9 behind-the-axle fuel tank location that the fuel system  
10 is defective?

11 A. I can't answer that.

12 Q. What vehicles in 1991 were -- what SUVs  
13 had behind-the-axle fuel tank locations?

14 A. I haven't made a specific list of those.

15 Q. Did any have midship fuel tank locations?

16 A. I don't know.

17 Q. Would you agree any location where you put  
18 a fuel tank is potentially subject to collision forces?

19 A. Yes.

20 Q. Have you ever testified that any vehicle  
21 that had a midship location was defective in its  
22 design?

23 A. No.

24 I need to qualify that answer just a  
25 little bit. I've never testified about any midship

1 tank location that it was defective in design because  
2 of location and crush potential.

3 Q. Does that mean that you have testified  
4 that midship tank vehicles were defective in some other  
5 aspect of the fuel system?

6 A. I have dealt with, I think, one case  
7 involving subshielding.

8 Q. Do you remember what vehicle that  
9 involved?

10 A. Yes.

11 Q. What was it?

12 A. It was a Chrysler minivan.

13 Q. Do you remember the name of the case?

14 A. I'm sorry, I don't.

15 Q. Were you deposed?

16 A. Yes.

17 Q. Any other cases where you can recall  
18 testifying that some aspect of the fuel system of the  
19 vehicle with a midship tank location was defective?

20 A. No.

21 Q. Mr. Arndt, do you believe that a sport  
22 utility vehicle with a midship tank and a left-side  
23 fill pipe location would have survived this accident  
24 without a compromise of the fuel system?

25 A. I believe that it would have survived. I



1 would be hesitant to say that it would have survived  
2 without some small leakage, but not of the nature that  
3 occurred in this accident.

4 Q. And would that some small leakage have  
5 caused a fire, in your view?

6 A. It's always possible that with fuel  
7 leakage there can be a fire. I think the whole nature  
8 of the fire would have been so dramatically changed  
9 that the opportunity for escape would have been  
10 sufficient, if indeed there was a fire.

11 Q. Where do you believe the potential for  
12 leakage or small leakage would be in a midship tank  
13 with a left-side fill SUV?

14 A. Well, one has to always deal with the  
15 filler neck, because -- regardless of location. So one  
16 has to make sure that it is free to move if the outer  
17 panel gets stressed relative to the tank position, that  
18 it stays together by design.

19 And the other, I think, important thing is  
20 to ensure in the process of implementing the tank in  
21 its midship location, that that environment is clean  
22 and free of anything that might move into or around the  
23 tank and puncture it. The biggest area of concern  
24 would be the rear axle and suspension components,  
25 making sure that they're designed in a way to be as

1 friendly, if that's the proper word, as possible to the  
2 tank.

3 Q. What about the drive shaft?

4 A. What's the question?

5 Q. Well, in this hypothetical SUV with the  
6 midship tank and the left-side fill, if it was  
7 4-wheel-drive, there would have been a drive shaft  
8 going to the rear axle, correct?

9 A. Yes.

10 Q. What do you do about a midship tank in  
11 that scenario?

12 A. Put a shield around -- between the edge of  
13 the tank and the drive shaft. But drive shafts are  
14 relatively smooth objects, at least in the area where  
15 they traverse by the fuel tank. And so there is  
16 room -- there is tolerance in the design for drive  
17 shaft contact. What there is not tolerance for is  
18 sharp objects, say a differential hitting the tank.

19 Q. In this particular case, did you observe  
20 the damage to the drive shaft in the Cherokee?

21 A. I did.

22 Q. It was -- well, first of all, the rear  
23 axle was moved forward, correct?

24 A. Yes.

25 Q. And there was an, about, what, 90-degree

1 bend in the drive shaft?

2 A. Well, there was a significant lateral  
3 displacement if you look at the -- let me rephrase the  
4 response.

5 If you look at the normal alignment,  
6 longitudinal alignment of the Cherokee, what you will  
7 find is that there was a significant lateral  
8 displacement into the driver's side at the rear of the  
9 drive shaft, if I remember correctly.

10 Q. Let me show you the page of your diagrams  
11 that's been marked Exhibit 17D, and there's four panels  
12 on this. Does the --

13 A. Upper right-hand corner?

14 Q. Upper right? Or upper left-hand?

15 A. Would be the upper right-hand as we look  
16 at -- well, either the upper right or the upper left.

17 Q. Upper right.

18 A. Either one. Either upper right or upper  
19 left give a perspective. But the upper right, as we  
20 look at it, provides the best perspective of the  
21 lateral displacement of the drive shaft.

22 Q. Now, if the fuel tank was in a midship  
23 location, meaning between the two axles and between the  
24 frame rails -- is that a correct -- a good definition  
25 of "midship"?

1           A.       Yes.

2           Q.       Could that drive shaft, in this accident,  
3 have potentially caused damage to it?

4           A.       Can potentially cause damage.

5           Q.       Do you believe it would have been damaged  
6 enough to cause a fire from a fuel system leakage?

7           A.       I think it would be a deformation. I  
8 suspect that it won't cause a leakage, because the  
9 drive shaft is generally lower than a tank and would,  
10 you know, move off the corner. And it tends to be  
11 smooth.

12          Q.       By the way, Mr. Arndt, do you believe that  
13 a plastic fuel tank would have performed differently in  
14 this accident if it had been located in the Cherokee  
15 and all other things were the same?

16          A.       No.

17                    When you say "performed differently," I  
18 interpret that to mean would it have changed the  
19 outcome.

20          Q.       Yes, sir.

21          A.       Would not have.

22          Q.       It would still -- there would still have  
23 been a compromise of the fuel system and a fire?

24          A.       Yeah. Probably would have happened a  
25 little differently, but it would have been the same

1 result.

2 Q. In reviewing the various DaimlerChrysler  
3 documents that were provided to you, did you find in  
4 those documents a description of what the internal  
5 performance standard is for rear-end collisions for  
6 this particular vehicle?

7 A. I think I saw it in there. I'd have to  
8 try to find it.

9 Q. Do you recall what it was?

10 A. No, not as I sit here right now.

11 Q. Do you have an opinion about whether it  
12 was adequate or inadequate?

13 A. I'd have to look at it again. I think  
14 it's probably very similar to the standard in that  
15 respect.

16 Q. So if it's similar to the Federal Motor  
17 Vehicle Safety Standard, then it would be your opinion  
18 that it's inadequate?

19 MR. FRYHOFER: Objection; vague as to  
20 "it."

21 MS. OWENS: Okay. I'll ask it again.

22 Q. BY MS. OWENS: If we assume, as you've  
23 indicated, that it's your recollection that the  
24 internal Chrysler standard is similar to the Federal  
25 Motor Vehicle Safety Standards in terms of performance

1 in a rear-end collision, vis-a-vis the fuel system,  
2 would it be your opinion that the internal  
3 DaimlerChrysler standard is ineffective or insufficient  
4 for the same reasons you previously expressed regarding  
5 the Federal Motor Vehicle Safety Standard?

6 A. Well, let me look at the standard, if I  
7 can find it. First off, I need to find the standard.  
8 Just a moment here. There's several components to the  
9 answer to that question. Let me just go to the  
10 question of standards first.

11 It appears to me that Chrysler adopts the  
12 federal standards as a dynamic testing criteria. And I  
13 would have the same comments about those that I did  
14 about the overall federal standard.

15 In terms of Chrysler's overall design  
16 guidelines, I think that they recognize, particularly  
17 on the protection side, for example, that that goal --  
18 that design guideline is a good guideline. It  
19 represents the proper kind of consideration. It  
20 doesn't specify implementation details, however.

21 MR. FRYHOFER: For the record, I think you  
22 referenced -- when you say "the guideline," what are  
23 you talking about?

24 THE WITNESS: I'm talking about fuel  
25 system design guidelines, which is a Chrysler document.

1 There are lots of design guidelines in the document  
2 that relate to details of implementation, which is also  
3 acknowledgment about the standards.

4 MS. OWENS: Okay. May I see that for a  
5 moment?

6 THE WITNESS: Sure.

7 Q. BY MS. OWENS: The documents that you've  
8 been referencing are contained within a packet of  
9 material that includes the deposition of Lazarus,  
10 Mr. Perion, which is marked as Exhibit -- Lazarus is  
11 14; Perion is 18.

12 It appears that the fuel system design  
13 guidelines that you are referencing are marked as  
14 Exhibit 12 to the deposition of Mr. Perion?

15 A. That is correct.

16 Q. And do you know what case? Is that from  
17 the Nelda Sue Butler case?

18 A. It is.

19 Q. And this document is highlighted in  
20 certain areas?

21 A. Yes.

22 Q. Is that your highlighting?

23 A. Some of it is. Not all of it.

24 Q. Do you believe, Mr. Arndt, that -- or do  
25 you hold the opinion that DaimlerChrysler Corporation

1 violated its internal standards represented in that  
2 document in the design of the fuel system in the 1991  
3 Jeep Cherokee?

4 A. I don't know that they fully executed the  
5 possibilities of the design guideline. In particular,  
6 if you examine what was going on in Chrysler in the --  
7 in some of the other product lines, this design  
8 guideline is a broad guideline that fits all their  
9 products, that it appears that the degree to which or  
10 the rigor -- the degree -- the rigor to which it's  
11 implemented is not uniformly applied.

12 Q. Can you answer my question "yes" or "no"?

13 A. No.

14 Q. Would you agree with me, Mr. Arndt, that  
15 the location of the fuel tank alone does not mean it is  
16 defective?

17 A. I could accept that, yes.

18 Q. Conversely, is it your opinion that merely  
19 the fact of placing the tank behind the rear axle  
20 constitutes a defect in design?

21 A. That's not necessarily true.

22 Q. Have you ever testified in a case where  
23 the fuel tank was behind the axle that that location  
24 did not make the design defective?

25 A. I have never been asked to testify in a



1 case that would draw that opinion.

2 Q. In the cases where you have testified and  
3 it involved a rear-mounted tank, have you testified in  
4 each instance that the fuel system was defective  
5 because of the location of the tank?

6 A. In those cases that I have been asked to  
7 testify about collision fire issues that involve tank  
8 protection, and if the tank's located in the rear  
9 overhang area, it is likely that I've testified that it  
10 was defective.

11 Q. In turning to Exhibit 1 to your  
12 deposition, numbered paragraph 3, one of the opinions  
13 that you intend to express details the underride, which  
14 I think we've already discussed, but it also goes on to  
15 indicate that the underride allows the Thunderbird to  
16 penetrate deeply into the underbody of the Belli  
17 vehicle?

18 A. That is correct.

19 Q. How far did the Thunderbird penetrate into  
20 the Belli vehicle?

21 A. The front penetrated up to the rear axle.  
22 I don't know what that dimension is, but that's fairly  
23 substantial.

24 Q. Did any part of the Thunderbird actually  
25 contact the rear axle?

1           A.       I'd have to look at the graphics to answer  
2 that question with certainty.

3           Q.       Did any portion of the Thunderbird  
4 physically contact the fuel tank or any other part of  
5 the fuel system of the Cherokee?

6           A.       Yes.

7           Q.       And did that physical contact of the  
8 Thunderbird to the fuel system result in any breach of  
9 the fuel system of the Cherokee?

10          A.       It did.

11          Q.       What areas of the Cherokee fuel system  
12 were contacted directly by the Thunderbird?

13          A.       Largely, the underbody. The bottom half  
14 of the fuel tank was caught between the top of the  
15 front -- top part of the Thunderbird and the underbody  
16 floor of the Cherokee. That caused massive deformation  
17 and volume reduction of the tank.

18                    There was also relative motion between the  
19 tank and the outer body structure on the left-hand  
20 side, which, as a result of that contact, there is  
21 crushing contact that caused fuel filler neck  
22 separation.

23                    And then there are a couple other small  
24 holes in the tank that I may have identified the  
25 location associated with their fracture. One of them

1 is associated with a very severe bend and appears to be  
2 more a stress-induced failure in the tank. The other  
3 hole is a small tear or puncture. I don't know that I  
4 have the specific source for that. There may have been  
5 some other fuel leakage, although it's not possible to  
6 say with certainty because of the degree of engagement  
7 of the fuel tank. At least dynamically, some fuel  
8 could have been forced out of the sender unit  
9 attachment -- sender unit assembly attachment to the  
10 tank.

11 That's all I can define has breaches or  
12 potential breaches caused by contact.

13 Q. Was the sender unit or any part of the  
14 sender unit detached from the tank?

15 A. My observation was that the sender unit  
16 remained physically engaged in the cap-meeting surface  
17 of the tank, and it seemed, at least in the condition  
18 that I observed it, to be fairly rigidly affixed in  
19 consideration to all of the fire damage.

20 Q. So do you believe or hold the opinion that  
21 the sender unit in some way was compromised to allow  
22 fuel to escape from its point of attachment to the  
23 point --

24 A. I think compromised in the context of the  
25 question you're asking is somewhat elusive, because

1 it's a dynamic phenomena. There may be some relative  
2 movements and distortions that upset the seal  
3 momentarily or create some stress to create at least a  
4 momentary access between the inside and the outside of  
5 the tank and would allow for some small leakage. I  
6 think that's entirely in the realm of possibility in  
7 this case. But in the scheme of the leakages, it's  
8 very small.

9 Q. So do you intend to express any opinion  
10 that the design or performance of the sender unit in  
11 this accident constitutes a defect?

12 A. No.

13 Q. Did you see any indication of seal failure  
14 in the tank itself?

15 A. No.

16 Q. How far forward was the tank moved?

17 A. We'd have to measure it off of the  
18 drawings.

19 Q. Do you have Mr. Stevens' drawings that  
20 were marked yesterday?

21 A. I do, I believe. Just one moment.

22 I have those.

23 Q. Thank you.

24 In looking at Exhibits 16, 17, and 18 to  
25 Mr. Stevens' deposition yesterday, are those the

1 depictions of the penetration of the Thunderbird into  
2 the Jeep that we've earlier referred to?

3 A. These are -- yeah, this set of diagrams  
4 depicts it. There could be others, but this gives  
5 quite a few -- quite a number of views of it.

6 Q. And does it allow you to determine whether  
7 the amount of penetration was greater on the left side  
8 of the Cherokee, the center, or the right side?

9 A. It was likely greater on the left side of  
10 the Cherokee.

11 Q. Were you -- as I understand what you said,  
12 you have not noted anywhere in your file the numbers  
13 related to the penetrations?

14 A. I have not.

15 Q. Did the penetration extend beyond the  
16 C-pillar of the Jeep?

17 A. On the driver's side, yes.

18 Q. Did the Thunderbird penetrate beyond the  
19 filler pipe location on the left quarter panel?

20 A. Yes.

21 Q. You've indicated earlier that you believe  
22 that there was damage to the filler pipe and that there  
23 was filler pipe pull-out, I believe, correct?

24 A. I don't think I stated it exactly that  
25 way.

1 Q. Okay.

2 A. I think what I stated -- if I stated it  
3 that way, I misspoke.

4 What I stated was that there was fuel  
5 system damage, and that that is likely a result of a  
6 failure in the flexible connection for the upper fuel  
7 fill pipe and the stub located in the tank.

8 Q. Okay. Did the upper portion of the fill  
9 pipe pull away from the flexible connection --

10 A. Do you mean by --

11 Q. -- or was it separated?

12 A. Do you mean by that did the flexible  
13 connection come off of the lower end of the upper fill  
14 pipe?

15 Q. Yes.

16 A. I couldn't see that. I couldn't make that  
17 determination.

18 Q. Was the upper portion of the filler pipe  
19 separated from the stub?

20 A. I believe the fuel -- I believe that the  
21 hose connection with -- hose under the clamp remained  
22 on the stub, if I remember correctly. I'd have to  
23 check that with some photographs, but I believe that's  
24 true.

25 Q. And I guess what I'm trying to understand,

1 and may just be I'm not following you, but let me try  
2 and ask it again.

3 Did the filler pipe pull out of the tank?

4 A. No. Let me -- I can see what the -- I  
5 think what the issue is here, I think it's a matter of  
6 semantics here.

7 Q. Okay.

8 A. Maybe I can go back and quickly resolve  
9 this misunderstanding.

10 The fuel filler system consists of the  
11 upper fuel-filled pipe with cap attachment to the outer  
12 body, an intermediate rubber hose, and a stub in the  
13 tank. The intermediate rubber hose is attached to the  
14 lower end of the upper metal pipe and the stub and  
15 clamped into place.

16 What I believe happened is that that  
17 flexible connector was separated somewhere or another.  
18 Whether it pulled off the upper end of the upper pipe,  
19 I don't know. But a failure occurred in that flexible  
20 section, the intermediate flexible section.

21 Q. Let's look at Exhibits 12P -- I'm sorry,  
22 17B and 17C.

23 And do those show the components we have  
24 been discussing?

25 A. Yes.

1 Q. These are specific drawings of the  
2 Cherokee exemplar fuel tank, correct?

3 A. Yes.

4 Q. And they show in red the upper half of the  
5 tank?

6 A. Yes.

7 Q. And what is the --

8 A. Well, in that particular exemplar, there  
9 was a shield on.

10 Q. Okay.

11 A. So the shield got digitized.

12 Q. There was a skid plate?

13 A. Yes.

14 Q. And it shows us the fuel tank straps?

15 A. Yes.

16 Q. And then it shows coming out from the tank  
17 a green area?

18 A. That's a flexible hose.

19 Q. And a yellow area?

20 A. That's the upper fuel filler pipe.

21 Q. And the area adjacent to the flexible  
22 pipe?

23 A. That is a small flexible hose that comes  
24 out of the tank and connects to the fill pipe. But the  
25 upper end is called a filler breather line. It allows



1 for the air that's displaced during filling to exit the  
2 tank.

3 Q. And is the sending unit shown?

4 A. The sending unit, just kind of solid  
5 green, round device that's on the front face of the  
6 tank. You see it in several diagrams here.

7 Q. Okay. And is the stub that fits into the  
8 metal stub -- well, let me ask you this.

9 Is there a metal stub that the flexible  
10 hose connects to inserted into the tank?

11 A. It's right at this location here.

12 Q. All right. You're circling it on the --

13 A. The lower end of this green flexible pipe.

14 Q. Okay. And from what I understood you to  
15 have said a moment ago, the flexible connection failed  
16 in some way?

17 A. Yes.

18 Q. Whether it burned or was torn or otherwise  
19 damaged, it was damaged and failed?

20 A. It was burned, but it wasn't burned -- it  
21 was burned as a consequence of the fire. Burning did  
22 not cause the failure.

23 Q. Okay.

24 A. It failed prior to the fire as a result of  
25 some stress incited into the connecting -- flexible

1 connecting part of the system that either pulled it off  
2 the upper pipe or physically separated the flexible  
3 line.

4 Q. And do you have an opinion about what the  
5 failure mode was for that flexible connector?

6 A. Overstress.

7 Q. Well, did that overstress result because  
8 of direct impact from the Thunderbird?

9 A. More likely a result of pulling of the  
10 tank relative to the upper pipe connection.

11 Q. What do you mean by that, displacement of  
12 the tank forward?

13 A. Relative displacement between the tank and  
14 the upper fuel filler pipe connection at the outer  
15 body.

16 Q. And I think I've already asked you, but  
17 you have no specific notation in your file about how  
18 far the tank moved, correct?

19 A. I don't have any specific measurement, but  
20 we have sufficient information to answer that question.

21 Q. Did the upper end of the filler neck that  
22 extends through the quarter panel, did it also move  
23 relative to its normal location?

24 A. It remained affixed at the top, but  
25 reoriented itself in the collapsed structure.

1 Q. Do you intend to express an opinion that  
2 the flexible hose connector in the fill pipe assembly  
3 was defective in its design?

4 A. No. I would say, however, in the  
5 rear-mounted tank that a different filler neck design  
6 needs to be implemented.

7 Q. And how does it need to be different?

8 A. Well, you either need to put a ball check  
9 valve in the filler opening so reverse flow can occur,  
10 or you need to make sure that the fill pipe can -- the  
11 upper end of the body attachment can freely move away  
12 from the outer body panel with the fuel standards so  
13 that the intermediate connections do not get stressed  
14 to failure.

15 Q. Is it possible in this case, Mr. Arndt,  
16 that the flexible hose was impacted physically by the  
17 Thunderbird or some portion of the Thunderbird?

18 A. I suppose it's possible.

19 Q. Were there any holes in the metal portions  
20 of the fill pipe?

21 A. Didn't see any, but I didn't see all of  
22 it.

23 Q. Meaning you didn't see the flexible hose?

24 A. No, no.

25 I assumed you meant the metal parts of the

1 pipe.

2 Q. I do.

3 A. And I didn't see any in the stub. And I  
4 don't recall seeing any in the upper pipe.

5 (A recess was taken from 2:21 p.m.  
6 to 2:27 p.m.)

7 Q. BY MS. OWENS: Mr. Arndt, I think I may  
8 have already asked you this, and I apologize if I'm  
9 repeating myself, but just to make sure, do you believe  
10 that direct contact between the Thunderbird and the  
11 Cherokee fuel tank caused any damage to the fuel tank?

12 A. Yes.

13 Q. What damages do you believe it caused?

14 A. The high degree of deformation.

15 Q. And that's when it was caught between the  
16 Thunderbird and what was the floor pan above it and the  
17 Cherokee bumper below it?

18 A. No. Actually, the tank is -- the tank on  
19 the Cherokee is strapped onto the underbody, the rear  
20 floor of the Cherokee. And the front portion of the  
21 hood radiator cross member, that general area crushed  
22 the fuel tank.

23 Q. And did that crushing of the fuel tank  
24 result in a hole or a tear or a breach of the tank?

25 A. There are two holes that are a consequence

1 of that deformation.

2 Q. Can you show me either from the diagrams  
3 or from your photographs what those two holes are?

4 A. In the photographs that are numbered 77  
5 and 78 of the group that are 1 through some 317, I  
6 think, there is a hole that is a puncture hole that I  
7 referred to. Actually, 76 also contains it.

8 That hole's likely caused by a rear body  
9 cross member fracture which is in the foreground of one  
10 of these pictures. Take 76, for example.

11 The other hole is a very small one, if I  
12 remember it correctly. I'm trying to find a picture of  
13 it. It's associated with a very tight crease  
14 associated with the bending of the tank. It's likely  
15 stress induced as a result of bending and deformation.

16 I have it in 75, but it's not a very good  
17 picture.

18 Q. Okay.

19 A. Photo 75, maybe photo 89.

20 I did photograph it in those pictures that  
21 were taken at the time of the fuel tank removal, and  
22 there will be some really clear photos of it in that  
23 grouping, although I can't point to it at this moment.

24 Q. 75 is one of them, though?

25 A. Yes. What did I say the other one was?

1 Q. 76, 77 and 78 are the hole, and you were  
2 looking for the tear?

3 A. Yes. 75.

4 Q. Okay. And I've also pulled out Exhibit  
5 12 -- or 12 -- no, 17V, which is the CAD depictions of  
6 the damage to the tank, correct?

7 A. Yes.

8 Q. Okay. So orient me, if you would, as to  
9 where the hole that is referenced in photograph 76, 77  
10 and 78 is.

11 A. Just a moment, please. That hole -- okay.  
12 We're going to refer to 17V, as in Victor.

13 That hole would be -- looking at the lower  
14 left-hand diagram in 17V, that hole would be somewhere  
15 in this area right here.

16 How do you want me to denote that?

17 Q. Any way that you're comfortable denoting  
18 it.

19 A. How about if I just draw a small circle?

20 Q. That'd be great.

21 A. I may not be drawing the specific -- at  
22 the location, but it's right in this location. Let me  
23 draw that in pen. Might show up better.

24 It's right in the location that I'm  
25 indicating this circle.

1 Q. Okay. And you indicated that one of the  
2 rear cross members is depicted in the foreground of  
3 photograph 76, for example; is that correct?

4 A. Yes.

5 Q. It's also shown in 77?

6 A. Yes.

7 Q. And there is a fracture of the metal in  
8 that location?

9 A. Yes.

10 Q. Do you believe that that fracture area on  
11 the rear cross member somehow caused the hole in the  
12 tank that you referred to?

13 A. If I remember correctly, I lined that  
14 fracture edge up with the hole.

15 Q. So --

16 A. I guess the answer is yes.

17 Q. Okay. And the other tear that you spoke  
18 of is depicted in 75, at least?

19 A. Let's see here.

20 Q. That's 76, 77 -- there it is.

21 A. I'm not sure that -- I think that's  
22 suspicious that there's a hole there, but it's very  
23 small, the one in 75. 76 is the other hole. As I look  
24 at it, it reminds me.

25 Q. Okay.

1           A.       It's right here, but it's very, very  
2 small. Looks like something associated with some just  
3 local concentrated deformation.

4           Q.       All right.

5           A.       It's very small.

6           Q.       To clean up our record, 76 and 77 are of  
7 the hole associated with the fracture of the rear cross  
8 member?

9           A.       Yes.

10          Q.       And 75 and 78 are of the tear?

11          A.       Well, 75 is of a deformation area that's  
12 suspicious if there's a hole, but you can't see. If  
13 it's there, it's extremely small.

14          Q.       Okay.

15          A.       And 78 is a hole, and it's right in the  
16 small deformation area.

17          Q.       And you circled on the photograph?

18          A.       Yes.

19          Q.       And can you use Exhibit 17V, as in Victor,  
20 and show me where that hole as depicted in photograph  
21 78 is on the tank?

22          A.       Possibly.

23          Q.       Use an X this time, if you would.

24          A.       Okay. Approximately here with the X.

25          Q.       All right. Thank you.



1                   And which photograph were you looking at?

2           A.       I was looking at photograph number 50 and  
3 photograph number 26. You need to mark those, or --

4           Q.       They're already marked.

5           A.       Okay.

6           Q.       I think.

7           A.       We marked them as a group --

8           Q.       Right.

9           A.       -- earlier on.

10          Q.       And as to that tear, Mr. Arndt, do you  
11 believe it was caused by contact with another component  
12 or simply the result of deformation?

13          A.       It looks like it's deformation. I can't  
14 say, with absolute certainty.

15          Q.       So in --

16          A.       Okay.

17          Q.       Okay. In paragraph 4 of Exhibit 1, your  
18 summary of opinions, where it indicates that the fuel  
19 tank was breached, have we talked now about those, the  
20 breaches?

21          A.       Yes.

22          Q.       That would be the hole and the tear?

23          A.       Yes.

24          Q.       And it says it was displaced relative to  
25 the filler connection causing filler neck failure, and

1 we've talked about that, haven't we?

2 A. We have.

3 Q. And it was caused to be severely crushed  
4 which caused a rapid expulsion of fuel from the damaged  
5 fuel system?

6 A. That's correct.

7 Q. Now, in terms of the deformation itself,  
8 you have opined, I think, that you can account for only  
9 one tear in the tank as a direct result of that crush  
10 and deformation?

11 I'm not sure that's a very good question.  
12 Shall I try it again?

13 A. I think it's a good idea.

14 Q. Okay. Based on what you've discussed with  
15 me earlier today, am I correct in understanding that  
16 the crush deformation of the tank, in terms of causing  
17 damage to the tank itself, produced only that tear that  
18 we've discussed and which you've marked as X on  
19 Exhibit 17V?

20 A. Well, what I said is that small tear is a  
21 result of deformation.

22 Q. Of the tank itself?

23 A. Of the tank itself.

24 Q. Correct. The hole which you marked by a  
25 circle in Exhibit 17V is most likely the result of

1 interaction with the rear cross member?

2 A. Yes.

3 Q. And the deformation and crush to the tank  
4 resulted in what you've described as a rapid expulsion  
5 of fuel, correct?

6 A. Resulted in an enormous volume reduction  
7 in the tank, which in itself caused an expulsion of  
8 fuel.

9 Q. The tank got squeezed, and it caused the  
10 fuel to come out faster than it otherwise would have?

11 A. That's exactly right.

12 Q. Have you calculated that rate of  
13 expulsion?

14 A. No.

15 Q. In paragraph 5, you then go on to say that  
16 the ignition source for that fuel could have been  
17 either electrical or friction sparks?

18 A. Correct.

19 Q. Have you determined which is more likely?

20 A. No.

21 Q. And in terms of a time line, Mr. Arndt,  
22 have you tried to prepare a time line of what event  
23 took place when in terms of this accident sequence?

24 A. Are you talking -- is that a general  
25 question, or is that relative to tank crush and fire

1 eruption?

2 Q. Well, I'll start with the general  
3 question.

4 Have you done anything about preparing a  
5 time line of this accident sequence?

6 A. Well, I understand it broadly in my mind,  
7 and I could probably do something on a second-by-second  
8 basis over the collision to point of rest sequence.

9 Haven't done that.

10 Q. All right. You've testified earlier today  
11 that you believe and opine that the crash pulse of the  
12 initial Thunderbird/Cherokee impact was probably 100 to  
13 110 milliseconds; is that correct?

14 A. What I said was that the primary crush  
15 pulse was 100 to 110 crush pulse.

16 Q. The crush as opposed to crash?

17 A. As opposed to the rebound.

18 Q. Okay. And during that 100 to 110  
19 milliseconds, do you believe that the three areas of  
20 damage to the fuel system that you've talked about in  
21 paragraph 4 all occurred?

22 A. Yes.

23 Q. Can you narrow it down any more than that,  
24 say, you know, this happened the first 50 or this  
25 happened in the second 50?

1           A.       I would say that the failures, more likely  
2 than not, happened in the last half of the pulse -- of  
3 the primary deformation pulse, that  
4 100-to-110-millisecond time period.

5           Q.       So between 50 and 110 milliseconds?

6           A.       Yes.

7           Q.       And when do you believe that the ignition  
8 of fuel occurred?

9           A.       At the end of the crash pulse, 100  
10 milliseconds, thereabouts. Could have been 200. Kind  
11 of placed it at 100. Could have been just a little  
12 longer.

13          Q.       Okay. So would your opinion be that most  
14 likely at about 100 milliseconds the fire started?

15          A.       Didn't start before 100. Most likely at a  
16 hundred or later, but probably wasn't beyond 200.

17          Q.       Okay. And at what time do you believe  
18 that the fire traveled into the occupant compartment of  
19 the Cherokee?

20          A.       It was inside of the occupant compartment  
21 within a half a second after initial impact.

22          Q.       And when did the -- at what point in time  
23 in the collision sequence the Cherokee come to rest?

24          A.       Somewhere around three-plus seconds.  
25 Something after three seconds. Maybe around four.

1 Q. And at what point in this time line did  
2 the impact with the Camry occur?

3 A. Sometime before three seconds. I don't  
4 have the exact time event, but it's in the calculation  
5 somewhere.

6 Q. And after the fire was in the occupant  
7 compartment, which I believe you said was within a half  
8 a second after the impact, how long did it continue to  
9 burn in the occupant compartment?

10 A. Until the fire was suppressed by the fire  
11 department.

12 Q. Mr. Stevens yesterday shared with us a  
13 page of notes that he took of a conversation with you  
14 regarding the flame ball.

15 A. Yes.

16 Q. And it should be over there in the --

17 A. I'm familiar with it.

18 Q. -- the investigative file.

19 Here it is. It's Exhibit 12 to the  
20 deposition of Mr. Stevens.

21 A. Yes.

22 Q. Is that an accurate reflection of your  
23 opinions?

24 A. It's an accurate reflection of the fire  
25 that was outside of the vehicle, and it represents my

1 opinion.

2 Q. And included in the middle of this page is  
3 a height, which is the X-axis, and is the Y-axis time?

4 A. Yes.

5 Q. So it would indicate that the maximum  
6 height of the flame ball was reached at about a half a  
7 second and was maintained for about another tenth of a  
8 second?

9 A. Yes.

10 Q. And when the flame intruded into the  
11 occupants' compartment, do you have any opinion about  
12 what the temperature of the flame was or what the  
13 temperature of the air was in the occupant compartment?

14 A. That's a highly variable proposition.  
15 Under perfect burning conditions, perfect fuel/air  
16 mixtures, temperatures could be well in excess of 2,000  
17 degrees Fahrenheit. And it may very well have been  
18 that in some specific areas.

19 I think my opinion is that a better way to  
20 kind of assess that is that it's not that high because  
21 the mixing conditions of fuel/air are not perfect, and  
22 they're variable. But 1,500 degrees Fahrenheit,  
23 probably somewhere around there, maybe a little less.  
24 Some areas it could have been hotter, but the bulk of  
25 the fire is well in excess of a thousand degrees

1 Fahrenheit.

2 Q. And burn injury is a product of time and  
3 temperature, correct?

4 A. Yes.

5 Q. At a thousand degrees Fahrenheit, how long  
6 could a human being breathe that air?

7 A. Well, if, indeed, the body would allow the  
8 air to be taken in to any extent -- to some extent it  
9 does happen -- the body will probably react in a way to  
10 stop the breathing function. It's just not going to  
11 let a lot of thousand-degree-Fahrenheit air into your  
12 body. It's much like when you're swimming, and if you  
13 take a big gulp of water and it gets in your lungs,  
14 your lungs literally shut your breathing down for a  
15 finite period of time until you clear it. So the  
16 response would be very, very similar.

17 Just not a whole lot of that  
18 high-temperature air is going to get into the body as  
19 long as the body can sense it and respond to it.

20 Q. Do you intend to offer any opinion at  
21 trial about what the effect of those temperatures would  
22 be on the occupants of the Jeep?

23 A. Well, at those temperatures, it would  
24 be -- external burns would be instantaneous and very  
25 serious.



1 Q. Within a period of how long?

2 A. Milliseconds when exposed to those  
3 temperatures. But really the time response of the fire  
4 into the Jeep is longer than that. It's more like a  
5 half a second. So for a period of time, these  
6 occupants, at least, are going to get subject to some  
7 flash fire of order of magnitude six-tenths of a  
8 second, three-quarters of a second, maybe a second at  
9 the most, subsides and continues to burn.

10 Q. And if, hypothetically, the occupants were  
11 exposed to temperatures of a thousand to 1,500 degrees  
12 Fahrenheit for one second, would that be a  
13 survivable --

14 MR. FRYHOFER: Go ahead and finish your  
15 question and then I'll object.

16 Q. BY MS. OWENS: -- accident?

17 MR. FRYHOFER: I'm going to object on the  
18 grounds of lack of foundation and the fact that the  
19 witness hasn't been offered in the area of injury  
20 causation or the field of medicine.

21 MS. OWENS: Let me change my question  
22 then.

23 Q. BY MS. OWENS: Do you intend to offer any  
24 opinions, Mr. Arndt, about how long the occupants  
25 survived after the point of impact?

1                   MR. FRYHOFER: Let me just say we're  
2 not -- we are not going to elicit any such opinions  
3 from him.

4                   (A discussion was had off the record.)

5           Q.       BY MS. OWENS: What was the -- in your  
6 opinion, Mr. Arndt, what was the primary source in  
7 terms of the breach of the fuel system for the fuel  
8 which ignited and burned in this accident?

9           A.       The largest component of fuel leakage  
10 occurred out of the upset filler neck.

11          Q.       So do you have an opinion about whether or  
12 not the outcome to the fuel system would have been  
13 different had the filler pipe not been displaced  
14 relative to the tank?

15          A.       Could you repeat that question, please.

16          Q.       Certainly.

17                   Do you have an opinion about whether or  
18 not the outcome to the fuel system from this impact  
19 would have been different if the filler pipe had not  
20 become separated from the tank, which I understood you  
21 earlier to say was a result of relative displacement of  
22 the two components?

23          A.       It's possible that it would have been the  
24 same.

25          Q.       Do you believe it's more probable than not

1 it would have been the same?

2 A. Well, that depends, to some extent, on the  
3 quantity of fuel in the tank. With the extent of  
4 volume reduction and the dynamic volume reduction, my  
5 suspicion is that there would have been another -- the  
6 failure would have been transferred to a different  
7 place, and there would have been a different failure  
8 mode, likely a tearing of the tank due to hydrostatic  
9 pressure buildup.

10 Q. In 17V, the lower left-hand cell is the  
11 one that you have marked the holes -- the hole and the  
12 tear?

13 A. I have.

14 Q. And just to make sure I'm clear, is this a  
15 view from the rear?

16 A. Rear forward. Standing at the back  
17 looking forward.

18 Q. And so the tear and the hole are both on  
19 the rear edge of the tank?

20 A. As crushed, they're at the back edge of  
21 the tank.

22 Q. As uncrushed, where would those areas be?

23 A. Let's see.

24 Q. Do you need these, as well?

25 A. No, I don't think so.

1 I believe also at the back edge of the  
2 tank.

3 Q. If this vehicle had been equipped with a  
4 different design of filler pipes so that it broke away  
5 from the upper attachment at the quarter panel to be  
6 allowed to move with the tank, do you believe the  
7 filler pipe would have been compromised anyway?

8 A. I haven't made that determination.

9 Q. So you have no opinion?

10 A. Not at this time.

11 Q. How far was the rear bumper of the  
12 Cherokee moved forward?

13 A. Depends upon where you make that  
14 measurement.

15 Q. On the left side.

16 A. The level of crush on the left side is on  
17 the order of 48 inches.

18 Q. That's just for the bumper?

19 A. Well, I think that's the max crush.  
20 Whether that is the bumper or not, I'm not certain.  
21 You'd have to make a determination.

22 Q. What about the axle? How far was the rear  
23 axle moved as a result of this collision?

24 A. I didn't measure it specifically, but  
25 probably in excess of five to six inches to some --

1 it's somewhat variable.

2 Q. Have you ever worked on a case, Mr. Arndt,  
3 where there was a breach of a fuel tank caused by a  
4 broken drive shaft?

5 A. I have never seen a tank breached by a  
6 broken drive shaft.

7 Q. In addition to the drive shaft in this  
8 vehicle, there's also a 4-wheel-drive shaft, isn't  
9 there?

10 A. The front shaft, yes.

11 Q. That works?

12 A. It's a short shaft. It goes to the front.  
13 Comes out of the transfer case way on the front of  
14 this, on the right-hand side.

15 Q. Did you ever see that 4-wheel-drive shaft  
16 in your examinations of this vehicle?

17 A. I don't recall seeing it.

18 Q. You have pictures of the underbody, don't  
19 you?

20 A. I do.

21 Q. Can you look and see for me?

22 A. Sure.

23 I cannot identify it in my underbody  
24 photographs.

25 Q. If you want to retain 4-wheel-drive

1 capacity in a vehicle, does that influence or affect  
2 the ability to utilize a midship fuel tank location?

3 A. I don't think it has to. It could.

4 Q. In what way could it affect the use of  
5 midship location?

6 A. Depends on where you want to place it. If  
7 you place it on the same side as the transfer case, it  
8 might limit the amount of space available to put volume  
9 and storage.

10 Q. Capacity is always a consideration of a  
11 fuel system designer, isn't it?

12 A. Definitely.

13 Q. It's a legitimate criteria, isn't it?

14 A. I would agree.

15 Q. Have you ever seen a vehicle where the  
16 fuel system had been compromised because of a  
17 4-wheel-drive shaft damaging any components of the fuel  
18 system?

19 A. I haven't observed that.

20 Q. What was the path or paths by which the  
21 fire entered the passenger compartment of the Jeep?

22 A. Through the breached rear windows. That  
23 would be both rear side windows and the back window  
24 that is associated with the back door through the upset  
25 of the back door relative to its opening or closure

1 space and through some seam separations in the wheel  
2 housing -- rear wheel housing areas at the back.

3 Q. Do I understand correctly that it is not  
4 your intent to testify that there was any defect in the  
5 structure of the vehicle which allowed the flame to  
6 enter the passenger compartment?

7 A. I would not offer that opinion.

8 Q. In paragraph number 8 of Exhibit 1, which  
9 is the summary of your opinions, you indicate that one  
10 of your opinions is that the secondary impact of the  
11 Cherokee to the Toyota caused more fuel spillage; is  
12 that correct?

13 A. Correct.

14 Q. Could you explain to me how you believe  
15 that occurred?

16 A. We have a diagram that illustrates the  
17 nature, at least, of the initial engagement of the  
18 Cherokee with the Toyota.

19 Q. Is that the one Mr. Stevens brought with  
20 him yesterday?

21 A. Maybe. There it is.

22 Q. Okay. What exhibit number is that, sir?

23 A. Stevens Exhibit 19.

24 Q. Okay.

25 A. As we look at this diagram, we must

1 remember that the Toyota is stationary at the time this  
2 crush interaction is occurring and that the Belli  
3 vehicle or the Cherokee is turning clockwise and moving  
4 longitudinally, that is, center of gravity is moving  
5 down the roadway.

6           When the collision occurs, the clockwise  
7 rotation is stopped and the vehicle spins off of the  
8 right rear corner of the Toyota. During this  
9 stopping -- rotational stopping action and changing it  
10 from clockwise to counterclockwise, there is a force  
11 that's applied at about three o'clock at the rear of  
12 the vehicle, which is the right -- the left rear, the  
13 driver's side. And whatever fuel's left in the tank is  
14 caused to dynamically surge out of the tank, primarily  
15 the filler neck opening. It spews out on and around  
16 the Toyota. Of course, the Cherokee's on fire, and the  
17 Toyota is ignited.

18           Q.       And just to be sure I'm clear, you're not  
19 stating any opinion that the secondary impact with the  
20 Toyota caused any additional damage to the fuel system  
21 of the Cherokee, correct?

22           A.       I don't believe that it changed any -- no,  
23 it did not cause any additional damage. It did  
24 probably impact some of the deformation to the body,  
25 the outer left rear body of the Cherokee.



1           Q.       Okay.  And in looking at the diagram that  
2 was marked as Exhibit 19 to Mr. Stevens' deposition, it  
3 indicates that the left rear of the Cherokee impacted  
4 about the center line of the rear of the Toyota?

5           A.       That's a fair statement of at least that  
6 initial engagement.

7           Q.       Okay.  And how did the Jeep continue to  
8 move after that initial engagement?

9           A.       Up to this -- right up to the moment  
10 before impact occurs between the Cherokee and the  
11 Camry, the Cherokee's center of gravity is moving down  
12 the roadway, car's skidding sideways, driver's side  
13 lead, the car is rotating clockwise.  Upon impact, the  
14 forces are acting at the back of the vehicle, stops the  
15 rotation of the Camry.  The center of gravity still  
16 wants to continue to kind of go down the roadway.  And  
17 so for that to happen, the Camry kind of -- I mean  
18 the -- without writing on this thing --

19          Q.       The Jeep?

20          A.       -- the Jeep kind of wraps around the  
21 corner of the Camry.  You can see that deformation in  
22 the side door.  That is an artifact of that.  And the  
23 Jeep rotation changes to a counterclockwise rotation.  
24 Center of gravity continues to move in a straight line,  
25 and the vehicle ultimately starts to rotate to its rest

1 position.

2 Q. Moving to paragraph 10 of your opinions,  
3 there's indication that Mr. Belli was observed leaving  
4 his vehicle on fire and that his wife and infant child  
5 were unable to escape the burning Jeep?

6 A. That's correct.

7 Q. Do you have any opinion about whether  
8 Mrs. Belli and the child were physically able to effect  
9 an escape?

10 A. Well, I can't imagine the infant's able to  
11 do that of its own volition. So it would be Mrs. Belli  
12 who'd have to do that. I think she was sitting in the  
13 left rear seat and was unable, for some reason, to  
14 extricate herself. I think some of the witnesses  
15 indicate that she was alive for some time, and she may  
16 very well have been entrapped between the driver's side  
17 seatback, which deflected rearward, and her rear  
18 seating position. Her rear seating position was also  
19 moved somewhat as a result of the collision damage.

20 Q. Do you know how much the rear seat was  
21 moved in the area where she was sitting?

22 A. I can imagine that it was sufficient to  
23 entrap her. I'd have to -- I don't mean that casually.  
24 I mean it based on my observations of the damage. We  
25 could measure it from our -- we could determine it from

1 our measurements. I just don't have the numbers in  
2 front of me today.

3 Q. And when you examined the Cherokee  
4 vehicle, was the driver's seat back deflected from its  
5 normal position?

6 A. I observed that it was deflected somewhat  
7 from its normal position.

8 Q. How much?

9 A. Didn't measure it. Just an observation.

10 Q. If the driver's seat had remained -- I'm  
11 sorry.

12 If the passenger seat where she was seated  
13 had remained in its design location, would the  
14 deflection of the driver's seat have been sufficient to  
15 entrap her, in your opinion, as you observed the  
16 driver's seat?

17 A. I haven't made that specific  
18 determination.

19 Q. Regarding the design of this filler pipe  
20 and its attachment to both the upper end and to the  
21 tank, in 1991, were other manufacturers using a similar  
22 design?

23 A. Some were, some weren't.

24 Q. Can you tell me which ones were?

25 A. Not as I sit here at this moment.

1 Q. Can you tell me which ones weren't?

2 A. No.

3 Q. Do other manufacturers in this year, 2002,  
4 use a similar design?

5 A. I can't say with absolute certainty. I  
6 would be, frankly, surprised to see any rigid  
7 attachments to the outer body panel on new cars.

8 Q. Opinion 13 is that the location of the  
9 tank is in a known and predictable crush area which  
10 invites collision-induced damage and failures to the  
11 fuel system.

12 Did I read that correctly?

13 A. Yes.

14 Q. And what is the basis for that opinion?

15 A. There are a number of bases. First off,  
16 I've observed it many times myself, having examined  
17 maybe thousands of fire collisions.

18 Number two, the literature that I  
19 presented to you this morning -- I don't recall how we  
20 marked that --

21 Q. It's Exhibit 4, I believe.

22 A. -- has numerous citations relative to this  
23 very observation and conclusion.

24 And, third, if we look carefully at the  
25 various documents produced in the Butler -- Nelda Sue

1 Butler matter, you will observe that Chrysler was aware  
2 of this, was aware that the fuel tank should not be  
3 placed in a crush zone, and was actively considering  
4 moving it to a more safer location on a large number of  
5 their product lines.

6 Q. Can you point me to a specific document  
7 that you're referring to?

8 A. Well, let's begin with the literature.

9 Q. I'm sorry, sir. Let me change my  
10 question.

11 Is there a specific Chrysler document that  
12 you're referring to for the last part of your answer?

13 A. Oh, it will take a few minutes to find  
14 them.

15 Q. Are those the ones we have that are  
16 contained in the exhibits we previously marked?

17 A. Yes. And you will observe many red tabs.

18 Q. Yes, sir.

19 A. One of these red tabs -- probably several  
20 of these red tabs contain that information.

21 Q. I just want to make sure we've marked any  
22 Chrysler documents you intend to reference in support  
23 of any of your opinions.

24 Have we done that?

25 A. Yes.

1 Q. There's not any documents since the Butler  
2 file in your office that you haven't pulled out that  
3 you would intend to reference at time of trial, are  
4 there?

5 A. I'm referencing only the documents that  
6 are contained in the file.

7 Q. This file?

8 A. This file here.

9 Q. Okay.

10 A. Nothing else.

11 Q. And that you produced today?

12 A. That's absolutely correct.

13 Q. I have seen -- well, strike that.

14 Would you classify this collision as a  
15 severe collision?

16 A. From the standpoint of speeds and the  
17 resultant collision energies involved, yes.

18 Q. Do you believe that the speeds and  
19 resultant energies involved were such that any fuel  
20 tank that was behind the axle would fail in this  
21 accident?

22 A. In any vehicle?

23 Q. Yes, sir.

24 A. I can't say with certainty.

25 Q. Okay. What behind-the-axle vehicles for

1 the 1991 model year are you aware of?

2 A. I'm aware of what?

3 Q. What vehicles in 1991 that you know of had  
4 behind-the-axle fuel tank locations?

5 A. I couldn't give you a specific list, but a  
6 lot of them did.

7 Q. Okay. Do you believe that any of those  
8 vehicles that you are aware of that were 1991 model  
9 year vehicles and had a rear-mounted tank would have  
10 survived this accident?

11 A. Well, I don't know about all of them  
12 specifically. My inclination is that those that would  
13 promote underride probably wouldn't survive this  
14 accident, or there would be a high probability that  
15 they wouldn't.

16 Q. And which vehicles promote underride?

17 A. Well, any vehicle that doesn't -- that's  
18 relatively stiff and doesn't match the bumper of this  
19 particular vehicle, that is, a Thunderbird, very, very  
20 well.

21 Q. Would that include pickup trucks or  
22 certain pickup trucks?

23 A. Well, often pickup trucks are sold without  
24 bumpers, so possibly underride any light truck, if I  
25 can use that phrase.

1 Q. And your definition of "light truck" would  
2 include?

3 A. 201, what we would generally call a  
4 one-ton truck or a vehicle graded less than 10,000  
5 pounds gross vehicle rating.

6 Q. What about SUVs? Are they likely to  
7 promote underride?

8 A. I think a number of them would.

9 Q. Is it your opinion, Mr. Arndt, that any  
10 accident from the rear in which the occupants would  
11 otherwise survive there should be no fire?

12 A. I wouldn't state it precisely that way.

13 Q. How would you state it?

14 A. I would state it this way.

15 I would say that in order to minimize the  
16 possibility of fire, one needs to protect the fuel  
17 system as well as the occupants protected. Because  
18 only with that kind of design goal in mind do you have  
19 any possibility of not having a fire in an otherwise  
20 survivable accident.

21 And it gets to the same thing you asked in  
22 your question, but yet phrases it in terms of a design  
23 goal that is consistent with recognizing survivability  
24 of people.

25 Q. Do you hold the opinion, Mr. Arndt, that



1 if the occupants otherwise survive an impact that there  
2 should be no compromise of the fuel system?

3 A. I don't think that I could hold that as a  
4 blanket statement.

5 Q. Why do you believe in this severe accident  
6 the fuel system should have survived without  
7 compromise?

8 MR. FRYHOFER: Objection. Assumes facts  
9 not in evidence; misstates prior testimony.

10 THE WITNESS: Well, there are a couple of  
11 responses that I have to that question.

12 One of the things that is interesting  
13 about this accident is that all of the occupants did  
14 survive in the Cherokee, in spite of whatever severity  
15 it was.

16 Second, the occupants of the Thunderbird  
17 were not injured in any significant way. And it has me  
18 question the severity of the accident. I'm not clear  
19 it's as severe as any of our analysis is stating that  
20 it is.

21 And, third, it's my opinion that there  
22 were alternate design remedies for the Cherokee that  
23 would have mitigated these burn injuries.

24 Q. BY MS. OWENS: Well, let's talk about  
25 those, if we can.

1 I'm sorry, were you finished?

2 A. Sure.

3 Q. Let's talk about alternate designs. What  
4 opinions do you have about what alternate designs would  
5 have resulted in a different outcome from the primary  
6 collision which occurred in this case?

7 A. My opinions are that the fuel system  
8 should -- is best placed and should be placed in a  
9 better protected area of the vehicle, and that the best  
10 option available is for a midship location, given a  
11 transfer case on the right-hand side of this vehicle,  
12 and it would leave the left side of the vehicle some  
13 location there in front of the rear axle and on the  
14 left-hand side of the vehicle between the drive shaft  
15 and the inner frame or subframe.

16 Q. Just to make sure, the left side would  
17 be --

18 A. The driver's side.

19 Q. Thank you.

20 Okay. So that's one opinion about  
21 alternative designs?

22 A. And, further, in terms of implementation  
23 details, of course, the environment needs to be clean  
24 around the tank installation to minimize the impact of  
25 intrusion and metal edges or components that might

1     compromise the tank. Implementation details are  
2     important is another way of saying that.

3                     And the fuel filler neck still needs to be  
4     routed to the exterior of the vehicle. And some  
5     considerable attention has to be given to the details  
6     of that implementation.

7                     At a minimum, the filler needs to be  
8     attached to the outer body panel by a breakable upper  
9     fuel filler housing rather than the rigid attachment.  
10    A rigid fuel filler neck with convolutions where the  
11    neck is stabilized in the tank represents a secure  
12    method of designing and affixing the fuel filler  
13    system.

14                    The fuel filler system does need to anchor  
15    at the top of the tank, and the use of a one-way flow  
16    valve of the tank fuel filler at the tank inlay  
17    provides backup protection. Could even be primary  
18    protection for fuel surge, dynamic surge, if the filler  
19    neck failed or the cap is taken off.

20            Q.     Anything else?

21            A.     That's fundamentally it.

22            Q.     In the 1991 Cherokee, the filler pipe was  
23    in the top half of the tank, wasn't it?

24            A.     It was.

25            Q.     And you believe -- or first of all, let me

1 ask you: How far down into the fuel tank did the stub  
2 extend?

3 A. Be just a short distance. A matter of  
4 fractions of an inch.

5 Q. So if there was less than half a tank of  
6 gas or less than ten gallons in the fuel tank, would  
7 that be below the stub of the filler pipe?

8 A. In a static condition, yes.

9 Q. We've talked about several defects that  
10 you opine exist in the design of the Cherokee fuel  
11 system. Have we talked about all of the things that --  
12 about the design that you believe are defective?

13 A. I believe I've discussed all the elements  
14 of the defect.

15 Q. Let me turn with you, if we could, to  
16 paragraph 21 of Exhibit 1.

17 Do you have that before you?

18 A. I do.

19 Q. Okay. It references several things as  
20 indicating that they are necessary to establish  
21 adequate fuel system crash performance design  
22 requirements, correct?

23 A. That's correct.

24 Q. One of them is engineering analysis of  
25 developmental testing?

1           A.       Correct.

2           Q.       Have you reviewed development testing?

3           A.       Well, I'm thinking of development testing  
4 and compliance certification testing. I failed to put  
5 that in -- oh, I did.

6           Q.       Compliance testing is next?

7           A.       Yeah. I meant those as kind of a  
8 collective group. I've done -- I have looked at some  
9 of the testing results.

10          Q.       All right. And have you formed an  
11 analysis of those test results?

12          A.       Here's what I've concluded, looking at  
13 quite a range of those tests. Those tests, I think,  
14 without fail, always show the rear window coming out of  
15 the vehicle. In many instances, the side glass comes  
16 out. And there's upset of the rear door and its  
17 closure.

18          Q.       Does it become unlatched?

19          A.       I can't say with certainty that it comes  
20 unlatched or --

21          Q.       But the geometry --

22          A.       Changes sufficiently. There is some  
23 gapping, maybe is a better way to say it --

24          Q.       Okay.

25          A.       -- between the door and the body

1 receptacle side for the door.

2                   Further, what those tests indicate is that  
3 while the vehicle seems to be designed to handle the  
4 crush imposed on it during the compliance testing, and  
5 the development testing fundamentally mimics the  
6 compliance testing. It's just a different stage in the  
7 process of getting the vehicle ready for sale.

8                   The testing indicates that there is often  
9 substantial movement of the tank, even at -- in a  
10 30-mile-an-hour moving rear barrier impact which has  
11 delta V of 16, 17 miles an hour, and that it's clear  
12 that if the severity is much greater than that which is  
13 observed in the test, that there is a high probability  
14 of failure of the tank, I think if one takes a look at  
15 the -- I guess that's what I would say about the  
16 testing. I want to limit my answer to that.

17           Q.       What you would say is that -- it's clear  
18 that if there is slight greater energy there would be a  
19 fuel system failure?

20           A.       Yes. And if there is a fire, then we've  
21 got a lot of openings, consistently a lot of openings  
22 for the combustion and fire to find its way into the  
23 vehicle. That's the path for the hazard to travel  
24 through.

25           Q.       And we have marked -- or we have not

1 marked, but you have with you today three videotapes of  
2 crash tests indicating that of the vehicle crash tests,  
3 referenced by -- they are numbered 3597, 3790, 3860,  
4 3918, 3960, 5211, 5241, 5282, 5309, 5383, 5682, 6062  
5 and 6146, correct?

6 A. That's correct.

7 Q. And this has an exhibit label on it or a  
8 marking indicating in red that it's Exhibit 6 --

9 MS. LAWRENCE: Gilberg's.

10 Q. BY MS. OWENS: -- from Gilberg's  
11 deposition.

12 And then there's a videotape that's  
13 labeled AMC crash test, which is marked as Exhibit 4 to  
14 Mr. Gilberg's deposition. And there's an impact sled  
15 test video -- oh, boy, with a lot of numbers on there,  
16 which I'm going to suggest that we somehow put on a  
17 copy machine and attach as an exhibit so I don't have  
18 to read them all on the record.

19 A. That's a great idea.

20 MR. FRYHOFER: That's fine.

21 Q. BY MS. OWENS: Now, in addition to those,  
22 I'm putting these two videotapes, Mr. Arndt, back in  
23 your box 3 of 3.

24 In addition to those videos -- well, let  
25 me put it this way.

1                   To the extent that you have reviewed  
2 written reports of crash tests, would those correlate  
3 with the videos that you have reviewed, or is it a  
4 different subset of tests that are the written tests?

5           A.       I'd have to check again. I think I have  
6 some of those dynamic tests that were produced by  
7 Chrysler, not the earlier AMC tests.

8           Q.       Okay.

9           A.       But, actually, I think the videos are more  
10 probative than the test reports themselves --

11          Q.       Okay.

12          A.       -- because they show the dynamic  
13 situation, whereas on the test reports, unless there's  
14 some real obvious failure, are not going to provide a  
15 clear picture of what's happening in the crash event.

16          Q.       In any of the tests which you looked at  
17 involving the Cherokee, was there a failure of the fuel  
18 system?

19          A.       I did not observe a failure in any of the  
20 tests that -- if there was -- if there were any, they  
21 were small, I believe. I didn't see anything.

22          Q.       In paragraph 21, the next indication is  
23 that you need to look at real-world accidents to  
24 establish design performance criteria, correct?

25          A.       Yes.



1           Q.       And have you looked at any real-world  
2 accidents other than this one that would help you  
3 assess the performance of the Cherokee vehicle in a  
4 rear-end collision?

5           A.       I've looked at hundreds, if not thousands,  
6 of real-world crashes. Not thousands or hundreds of  
7 Cherokees. I think that all of these crashes, in one  
8 way or another, build a log of information about what  
9 goes on when fuel systems are in vulnerable locations,  
10 I think, and the fact that most real-world crashes are  
11 not configured like a rear rigid moving-barrier test.  
12 I think that's the point of looking at the real-world  
13 crashes, in my opinion, is that the rigid barrier  
14 development compliance tests have a very real limited  
15 application in terms of validating the ultimate  
16 performance of the vehicle on the road.

17          Q.       Mr. Arndt, have you looked at any other  
18 real-world accidents that you can recall as we sit here  
19 today that involve rear impacts and Cherokee vehicles?

20          A.       I believe I indicated earlier today that I  
21 didn't recall specifics.

22          Q.       Have you looked at any field performance  
23 data in any form relating to the Cherokee vehicle?

24          A.       I have not.

25          Q.       Have you looked at any statistics from

1 FARS for this case?

2 A. I have not looked at the FARS data.

3 Q. Or from NASS?

4 A. No.

5 Q. Does that sort of field performance data  
6 or statistical data form any basis for any opinion that  
7 you hold in this case?

8 A. No.

9 Q. Would you agree, field performance data is  
10 a legitimate tool to allow assessment of the design of  
11 a vehicle?

12 A. Can play a useful role in many respects.

13 Q. And then you also indicate that the  
14 scientific literature, which you've provided a list --  
15 a bibliography of which you have provided us today also  
16 contains information allowing proper design of a fuel  
17 system?

18 A. Well, what I said is that it's a rather  
19 robust dialogue about the issues of fuel system crash  
20 performance and failure mode technologies and all sorts  
21 of things.

22 Q. Do you believe, Mr. Arndt, that for model  
23 year 1991, Chrysler Corporation should have moved the  
24 fuel tank to a midship location?

25 A. I believe that that was an appropriate

1 action, yes.

2 Q. Do you believe it was negligent not to do  
3 so?

4 A. I think when one looks at the -- yes, I  
5 do.

6 Q. Do you have any basis to opine that the  
7 engineers who were making those decisions at the time  
8 were acting in bad faith?

9 A. All I can say is this: There was quite a  
10 high level of awareness within Chrysler around fuel  
11 system protection. There are numerous citations and  
12 quotes and dialogues in their various technical  
13 meetings that recognized that need for improved  
14 protection. There is a clear indication that there was  
15 a decision process going on around fuel tank  
16 protection. And whether or not the engineers made a  
17 yes or no decision about that is unclear from looking  
18 at the documents.

19 Q. You disagree with the decision that the  
20 Chrysler engineers made about where to locate a fuel  
21 tank in this vehicle, correct?

22 A. Well, you're misphrasing what I said. I  
23 disagree with the decision that Chrysler made.

24 Q. Okay.

25 A. I'm not suggesting that the engineers made

1 the decision. I think the engineers understood and had  
2 defined the problems and the issues and the solutions  
3 quite well.

4 Q. Is there anything that you have seen in  
5 your file that documents that someone other than the  
6 engineering community made the decision about location  
7 of the fuel system in the Cherokee?

8 A. There's no clear evidence that I can see  
9 about who made the decision.

10 Q. Is there anything in your -- the files  
11 that you have reviewed or the documents that you have  
12 reviewed that indicates it was someone other than the  
13 engineers?

14 A. I told you my opinions are based on the  
15 material that is presented in this file. I've answered  
16 the question.

17 Q. Respectfully, sir, I'd like a "yes" or  
18 "no" answer to that question.

19 A. There's no information in this file that  
20 allows that determination.

21 Q. So there's no information that tells you  
22 it wasn't the engineers, correct?

23 A. Nor is there information that tells that  
24 it was the engineers, either.

25 Q. Was --

1 A. That's correct.

2 Q. Thank you.

3 Have you ever owned a Cherokee vehicle?

4 A. No.

5 Q. Has anyone in your family ever owned or  
6 driven a Cherokee vehicle?

7 A. No.

8 Q. In paragraph 22, there is a discussion  
9 about technology which would remedy the defects that  
10 you believe existed in the 1991 Jeep Cherokee, correct?

11 A. Yes.

12 Q. Have we discussed those remedies?

13 A. Yes, we have.

14 Q. Is a fuel tank in the midship area more  
15 susceptible to a compromise in a side impact collision  
16 than in a frontal or rear collision?

17 A. Actually, my experience in that is  
18 limited, but that they tend to be more -- they are  
19 compromised more in severe frontal collisions.

20 Q. Would you agree that any fuel tank  
21 location provides advantages and has disadvantages in  
22 certain types of impacts?

23 A. I can see that as being a true statement.

24 Q. Regarding Mr. Stevens' animation, have you  
25 reviewed it -- I'm sorry, strike that.

1                   Regarding the animation that has been the  
2 result of input from various people in this case, have  
3 you reviewed that?

4           A.       I have.

5           Q.       Does it convey any of the opinions that  
6 you intend to express in this matter in pictorial form?

7           A.       It does.

8           Q.       Which opinions of yours does it convey?

9           A.       Conveys the nature of the fire, the  
10 initial fire when it occurred, and the overall  
11 transport of that fire from point of impact to point of  
12 rest for that relatively short time period of a few  
13 seconds.

14          Q.       And, as I recall, the content of  
15 Mr. Stevens' note of his conversation with you, which  
16 we've previously marked as an exhibit to his  
17 deposition, there is an indication that the flame ball  
18 extended 60 to 80 feet in the air?

19          A.       That's correct.

20          Q.       Is that based on any sort of calculation,  
21 or simply on the witness statements?

22          A.       It's based on the witness statements.

23          Q.       And does that animation accurately depict  
24 certain of your opinions in this matter?

25          A.       It does.

1           Q.       Did you have any input into the creation  
2 of that animation other than describing the shape and  
3 size of the flame ball for Mr. Stevens?

4           A.       Yes.

5           Q.       What other input did you provide?

6           A.       We have a -- when we prepare such an  
7 animation, we have an ongoing dialogue about what it is  
8 that we want to display. First, an accurate  
9 representation of the collision event itself, just the  
10 kinematics of it. That's the motion -- time/motion  
11 aspects of it. And we talk about how best to do that.

12                   I have had those conversations with  
13 Mr. Stevens, and Mr. Stevens is really the focal point  
14 for coordinating a lot of different inputs in this  
15 matter. I was just one of many.

16                   And, finally, I was more specifically  
17 involved in talking with Mr. Stevens, assimilating the  
18 witness statements about the fire, looking at whatever  
19 evidence we had, and then describing what I believe to  
20 be the nature of the fire.

21           Q.       Do you intend to offer any opinions,  
22 Mr. Arndt, about the conduct of DaimlerChrysler  
23 Corporation as warranting the position of punitive  
24 damages in this case?

25           A.       If you're asking am I going to tell you

1 what was in Chrysler's management's mind, no. All I  
2 can do is speak to what I see in the documents and what  
3 I perceive that I believe those documents to reflect.

4 Q. And --

5 A. That is what I will do.

6 Q. And do you believe from what you have seen  
7 in the documents evidence of any malice on the part of  
8 any employee of Chrysler or DaimlerChrysler  
9 Corporation?

10 A. Well, that's just another form of the same  
11 question. I think I've addressed that, and I think  
12 there's a large body of understanding and knowledge in  
13 Chrysler about what the key elements of -- key goals  
14 are of fuel system crash performance. All I can do is  
15 point that out, describe my interpretation of it.  
16 That's what I will do.

17 Q. What is your interpretation of it? Does  
18 your interpretation --

19 A. I've already told you.

20 Q. I'll ask another question.

21 Does your interpretation of what you have  
22 read lead you to the opinion that the employees of  
23 DaimlerChrysler Corporation or Chrysler Corporation  
24 acted with evil intent?

25 MR. FRYHOFER: Objection, seeks legal



1 conclusion.

2 THE WITNESS: I can't get in their minds.

3 Q. BY MS. OWENS: Okay.

4 A. That's a mind question. I'm not there.

5 Q. And I understand that your testimony is  
6 you think the design was defective, correct?

7 A. Correct.

8 Q. You think they were negligent in choosing  
9 this design?

10 A. That's correct.

11 Q. You disagree with their decision?

12 A. That's correct.

13 Q. You believe that the internal documents  
14 you have reviewed indicate that they had knowledge that  
15 there were dangers in placing a fuel tank in a  
16 behind-the-axle location?

17 A. It's more than that. That they knew the  
18 safer location, that they had moved a fair amount of  
19 their product line along that path, and they hadn't  
20 done it with this vehicle.

21 Q. Did you see anything in the documents  
22 you've reviewed or the deposition testimony you've  
23 reviewed that explains or attempts to explain why this  
24 Cherokee vehicle was not moved along that path?

25 A. I did not see any specific information

1 along that line.

2 Q. Okay. I believe you've indicated,  
3 Mr. Arndt, that the Belli accident involved energy that  
4 was 300 percent more than the energy absorbed by the  
5 vehicle in a FMVSS 301 rear-moving barrier test?

6 MR. FRYHOFER: Objection, misstates prior  
7 testimony.

8 Q. BY MS. OWENS: Does that misstate your  
9 prior testimony, sir?

10 A. Let me say what I said.

11 Q. Okay.

12 A. It's not completely correct.

13 What I said is that the energy absorbed by  
14 the Cherokee -- the Belli vehicle, in this accident, is  
15 on the order of 300 percent or more energy than was  
16 involved in a rear moving-barrier impact. I did not  
17 relate it to all of the energy in the collision,  
18 because some of it belongs to the Thunderbird.

19 Q. Yes, sir. If the energy absorbed by the  
20 Cherokee in an impact was on the order of 500 percent  
21 of the energy absorbed by a vehicle from a FMVSS 301  
22 rear impact occurred, would you believe that that  
23 vehicle should also have a fuel system which was not  
24 compromised in that level of severity outside?

25 MR. FRYHOFER: Objection, lack of

1 foundation; assumes facts not in evidence.

2 THE WITNESS: Well, if, indeed, the  
3 energy --

4 Q. BY MS. OWENS: It is a hypothetical.

5 A. I understand.

6 If, indeed, given -- this is a  
7 hypothetical -- but let's assume that if, indeed, it  
8 was 500 percent and it's -- I still believe that the  
9 fuel tank would have survived in an alternate location  
10 in this accident.

11 Q. And I guess -- let me ask you to assume  
12 for my hypothetical that it's a rear-mounted tank in a  
13 Cherokee vehicle and it had an accident where it  
14 absorbed energy 500 percent greater than a 301 rear  
15 test would cause it to absorb.

16 Are you with me?

17 A. I hear you.

18 Q. If the fuel system was compromised in that  
19 accident, would you believe that its design was  
20 defective and inadequate?

21 MR. FRYHOFER: Objection, lack of  
22 foundation; assumes facts not in evidence; incomplete  
23 hypothetical.

24 THE WITNESS: I don't know. I'm not sure  
25 that that's a survivable accident at all.

1           Q.       BY MS. OWENS:  And that's what I'm trying  
2  to understand, Mr. Arndt, is, you know, what your  
3  criteria is.  Is it that the accident is otherwise  
4  survivable?

5           A.       I thought I told you that very distinctly  
6  and very clearly in an earlier answer.  And what I said  
7  was that given the dire consequences -- I don't think I  
8  used those exact words -- but the dire consequences of  
9  fuel system failure where occupants survive, it's  
10 mandatory that the fuel system be protected as well as  
11 the occupants.

12                   MR. FRYHOFER:  Do y'all want to take a  
13 break?  The witness seems like he's kind of tired,  
14 needs to walk around or something.

15                   MS. OWENS:  I think I really have,  
16 literally, like one more question.

17                   MR. FRYHOFER:  Okay.

18                   THE WITNESS:  No, I'm just tired of  
19 sitting.  I'm not tired.

20                   But go ahead.

21                   MR. FRYHOFER:  Well, I'm tired if you're  
22 not.

23                   MS. OWENS:  You've caused me to forget  
24 what it is.

25                   MR. FRYHOFER:  Okay.  Well --

1 Q. BY MS. OWENS: Have you reviewed or do you  
2 know of any statistics, Mr. Arndt, that would tell us  
3 what the likelihood of survival of an occupant is at  
4 this level of severity of an accident?

5 A. Statistics that I recall would indicate  
6 that the survivability in this level of severity is  
7 high. Crash-induced injury of some sort is beginning  
8 to show up on the statistical scale.

9 Q. Meaning AIS 1's and 2's?

10 A. Yes. Maybe a few 3's. There's not a lot  
11 of data, frankly.

12 Q. Have we discussed all the opinions that  
13 you have in this matter, Mr. Arndt?

14 A. I believe so.

15 Q. Have we discussed the bases that you would  
16 utilize to support those opinions?

17 A. Yes.

18 MS. OWENS: I think that's all the  
19 questions I have. Thank you for your time, sir.

20 MR. FRYHOFER: How long are you going to  
21 have?

22 MR. FINE: Five minutes, ten minutes.

23 MR. FRYHOFER: Do you want to take a break  
24 before he starts?

25 I want to take a break.

1                   (A recess was taken from 4:07 p.m.  
2 to 4:23 p.m.)

3

4                   EXAMINATION

5 BY MR. FINE:

6           Q.       Mr. Arndt, my name is Sandy Fine. I  
7 represent Mr. Muleta, the driver of the Toyota Camry in  
8 this case.

9                   How you holding up over there?

10          A.       I'm doing great.

11          Q.       Okay. You graduated from USC in 1962; is  
12 that correct?

13          A.       No, not correct.

14          Q.       Please explain your educational background  
15 for me.

16          A.       I graduated in 1959 from North Dakota  
17 State University with a degree in mechanical  
18 engineering/aeronautical engineering. I did some  
19 graduate study at USC, but that did not lead to a  
20 degree. I stopped that graduate study in 1962.

21          Q.       All right. How old are you, sir?

22          A.       I'm 65.

23          Q.       I noticed in your CV you've got a lot of  
24 publications on here. It looks like the majority of  
25 your publications were -- looks like your last

1 publication was 1973. Then it appears there's two  
2 reports at the very end where it says "Summary Report  
3 of Ford ESV Tests," and then "Report on Low Speed and  
4 high Speed Crash Test of Ford ESV's (40-50 MPH)," the  
5 last two.

6 Do you know when those are from?

7 A. About the same time period.

8 Q. Have you published anything since 1973?

9 A. Nope.

10 Q. Okay. Exhibit No. 12 is your dictation, I  
11 believe, from when you visited the vehicles on what  
12 date? Was that in April or May? Do you recall when  
13 you made this?

14 A. It was September.

15 Q. Is this right, September 26, 2001? That  
16 is when you actually did this?

17 A. Yes.

18 Q. Okay. Did you make any other notes or  
19 dictations regarding any of the other vehicles?

20 A. No.

21 Q. You did not. Okay.

22 There is a couple of discs, I believe,  
23 marked as No. 8, which is Frederick E. Arndt, L.L.C. --  
24 I'm sorry, No. 18 is Fuel Tank Removal, and No. 19 is  
25 the inspection.

1                   Does one of these two tapes contain all  
2 your photographs, such as I'm looking at number 227  
3 here that you have labeled? Is this photograph on one  
4 of the discs somewhere?

5           A.       No.

6           Q.       It's on one of these discs that we got  
7 yesterday?

8                   MS. OWENS: No, we didn't get these  
9 yesterday. Those are today.

10                   THE WITNESS: Let me see those discs  
11 there.

12                   Oh, yeah. Right here it is.

13           Q.       BY MR. FINE: So these are the photographs  
14 of the disc -- I'm sorry.

15                   These are discs containing the photographs  
16 I have in my hand; is that correct?

17           A.       Correct.

18           Q.       And on those discs, are they numbered --  
19 are there numbers that correspond with these  
20 photographs?

21           A.       No.

22           Q.       There are not. Okay.

23                   Would you look at the photographs that are  
24 marked 282, 283 and 285.

25                   MS. OWENS: He can't. You've got them.



1 Q. BY MR. FINE: Would you look at these,  
2 please.  
3 Is that you in these photographs?  
4 A. That is me.  
5 Q. Can you tell me what you're doing in those  
6 photographs, please?  
7 A. I was -- looks like I was dictating.  
8 Q. Okay. And if you recall the date?  
9 A. Either April 30th or May 1st.  
10 Q. Is it on the back there, I believe?  
11 A. May 1st.  
12 Q. Those are from your May 1st investigation,  
13 you were walking around the Camry; is that correct?  
14 A. That's correct.  
15 Q. And it appears you are making dictation?  
16 A. I'm clear I'm making dictation.  
17 Q. And you do not have any notes from that  
18 dictation, do you?  
19 A. I don't.  
20 Q. Do you have the tapes from that dictation?  
21 A. I ought to.  
22 Q. Okay.  
23 A. I don't know where they are right now.  
24 Q. Okay. Is that something you would have  
25 back at your office, or you would have saved?

1           A.       I wouldn't destroy it as a normal course,  
2 if it's not transcribed.

3           Q.       Okay. So do you believe these tapes are  
4 still back at your office somewhere?

5           A.       I don't know. I'm surprised that I don't  
6 have it transcribed. I don't know where it is right  
7 now.

8           Q.       Is that something you could possibly look  
9 for?

10          A.       Of course I will, absolutely.

11          Q.       Okay. Do you think there might also be  
12 tapes regarding the Thunderbird?

13          A.       It's possible.

14          Q.       I didn't see any pictures of your  
15 dictating the Thunderbird. Just happened to be -- who  
16 took those photographs?

17          A.       Don Stevens was taking these.

18          Q.       Just happened to be that Mr. Stevens  
19 caught you at three lovely poses as you dictated around  
20 the camera?

21          A.       Correct.

22          Q.       Could you look at the front of those  
23 pictures again. I'm sorry, I'm still referring to  
24 those pictures.

25                    Do you know if the Camry, following its

1 collision with the Jeep Cherokee, struck anything  
2 during its subsequent movement, the front?

3 A. It has some front -- appears to have some  
4 front deformation. I'm not real clear. I'd have to  
5 look at some other photos to answer that with  
6 certainty.

7 Q. Okay. Would those other photos be the  
8 photos that we have contained here?

9 A. I don't know. I don't know if it hit  
10 anything else. I don't recall that it did at all.

11 Q. Do you have any idea of what the damage  
12 from that front end would be from?

13 A. This is fire damage here. The lights are  
14 released as a result of fire, something -- post  
15 accident handling or a combination of both.

16 Q. Are you able to say whether all of the  
17 damage to the front end of the Camry is fire damage?

18 A. Not with certainty. Certainly, lots of it  
19 is. Most of it, most likely.

20 Q. If I misstate what you say, please correct  
21 me. I thought you had said earlier that as part of  
22 your accident reconstruction, which you may have done  
23 in this case, that you, when you visited vehicles, you  
24 attempted to understand the nature of the damage to the  
25 vehicles.

1                   Is that correct?

2           A.       Yes.

3           Q.       Did you happen to undertake to determine  
4 what may have caused the damage to the front end of the  
5 Camry, either before or after the accident, during your  
6 investigation?

7           A.       Well, if, indeed, there is damage to this,  
8 it's insignificant and possibly not important. I just  
9 don't remember that there was any damage to the Camry  
10 that was accident related, at the front I should say.

11          Q.       You think also we can get a copy of the  
12 discs that were marked as No. 19 and No. 20? Can we  
13 get a copy of those?

14          A.       Yes.

15                   MR. FINE: That's all I have.

16                   MS. OWENS: Okay. Let's see if we can go  
17 through the exhibits.

18                   Have you got 12?

19                   THE WITNESS: Are we talking about Don  
20 Stevens' exhibits also?

21                   MR. FRYHOFER: Did you number the --

22                   MS. OWENS: The ones that were marked  
23 yesterday as Stevens, we just referred to them by the  
24 Stevens number.

25                   MR. FRYHOFER: Well, let's get the Stevens

1 ones straight.

2 MS. OWENS: That is part of Stevens right  
3 there.

4 THE WITNESS: Should we start with  
5 Stevens' first just to get those out of the way?

6 MR. FRYHOFER: I think we've gotten the  
7 Stevens stuff out of there, I believe, haven't we? I  
8 tried to look through it and pull it out if I saw it.

9 MS. OWENS: Okay. Well, I know those --

10 MR. FRYHOFER: We'll know.

11 MS. LAWRENCE: CV, No. 1, and 2 -- you  
12 kept 1 and 2 from yesterday, correct?

13 THE COURT REPORTER: Correct.

14 MS. OWENS: I know we marked that.

15 THE WITNESS: These are all Stevens here.  
16 Here's 4.

17 MS. LAWRENCE: Did you mark three pages  
18 collectively as 22?

19 Here it is.

20 MS. OWENS: Okay.

21 THE WITNESS: Are three marked?

22 MS. OWENS: Yes. 22.

23 MS. LAWRENCE: 20 and 21.

24 THE WITNESS: There's 21.

25 MS. OWENS: 20 was the disc.

1 MS. LAWRENCE: So we're up to 1 through 5.  
2 You have 1 and 2.  
3 MS. OWENS: And 4 was another folder.  
4 THE WITNESS: 4 is here.  
5 MS. LAWRENCE: 4 is the police report. 5  
6 is correspondence, so we need to find that. We need to  
7 figure out what No. 5 was. Is there anything right  
8 there? Hang on, I've got my notes. Was it  
9 photographs?  
10 MR. FRYHOFER: Are those still Don's  
11 exhibits?  
12 MS. LAWRENCE: Yes.  
13 MR. FRYHOFER: Was 5 the fire?  
14 MS. OWENS: Handwritten note. It was part  
15 of 4, and I think we did separately mark it. I'm  
16 sorry, it was part of that investigative file, which  
17 isn't 4. I keep thinking it was 4, but it wasn't.  
18 MS. OWENS: There's 4, there's 3.  
19 MR. FRYHOFER: Could it have been some  
20 other CD? I don't think so.  
21 MS. OWENS: I don't think so. I think he  
22 only brought the one.  
23 21 is correspondence.  
24 MS. LAWRENCE: You marked a 5, but then  
25 you never talked about it. So in my copy, if I find

1 something marked 5, that's something I can look at when  
2 I get it all back. Because I was writing them down as  
3 you were talking about them, and you never said 5.

4 MS. LAWRENCE: On to you, Mr. Arndt.

5 MS. OWENS: That's today. He brought  
6 that. That was 2.

7 All right. 1 is his notes, and I gave the  
8 court reporter a copy of those.

9 MS. LAWRENCE: And 2 is CV; 3 is going to  
10 be testimony list --

11 THE WITNESS: Which I'll e-mail to you  
12 tomorrow.

13 MS. OWENS: And, actually, I put a blank  
14 yellow sheet in here somewhere to say 3.

15 Yeah, there it is. So there's 3 so we'll  
16 know what that is.

17 MS. LAWRENCE: 5 was index of discovery.

18 MS. OWENS: 4 I've got.

19 MR. FRYHOFER: Could 5 have been the Ron  
20 Kirk file that Don had?

21 MS. OWENS: Might have been, don't know.

22 What was 4?

23 MS. LAWRENCE: 4 is this.

24 MS. OWENS: Here's 5.

25 MS. LAWRENCE: 6 is witness statements; 7,

1 I think, was the CD.

2 MS. OWENS: Well, I've got two -- I've got  
3 a CD 8 and hard copy 8. I've got 9; I've got 20, that  
4 is a CD. That's yesterday's 20. Was it just  
5 photographs? We're looking for your photographs.

6 What are these?

7 THE WITNESS: We marked those as a  
8 composite.

9 MS. OWENS: 7.

10 MS. LAWRENCE: So that's 7, all of them  
11 are 7?

12 MS. OWENS: Yeah, four sets of those.

13 If you've got them on CD --

14 MS. LAWRENCE: I'll make sure that he's  
15 given them all to me on CD.

16 MS. OWENS: Except I think his last  
17 photograph was 314, and I think this is 334.

18 THE WITNESS: Maybe I made a mistake.

19 MS. OWENS: Okay.

20 MS. LAWRENCE: Yeah, and this one says it  
21 goes up through --

22 MS. OWENS: That's 19 and 20.

23 MS. LAWRENCE: 7, 8, 9, 10.

24 MS. OWENS: 10 is another CD that says  
25 it's the deposition exhibits of Mr. Stevens.



1 MS. LAWRENCE: This is the same as  
2 yesterday's 20, but we'll keep it in here separately.

3 MS. OWENS: Okay. 11 is index. 12 is --  
4 this is, yeah, this is a copy that's -- she can have  
5 that copy.

6 12 is inspection notes. 13 is the Steven  
7 Lazarus deposition and exhibits -- I'm sorry, not  
8 Lazarus deposition, because here it jumped out at me.

9 MS. LAWRENCE: I think you marked the  
10 exhibits as 13 and deposition as 14.

11 MS. OWENS: Okay. 15, Andrew Foster  
12 deposition and exhibits. 16 is Leonard Baker  
13 deposition and exhibits. 17A through V are the CAD  
14 drawings, the CAD drawings he brought with him today.  
15 18 is the deposition of Mr. Perion with exhibits.

16 MS. LAWRENCE: You lost me at 19. All the  
17 photographs we believe --

18 MS. OWENS: And 20 is another index of  
19 materials in his file. We're done.

20 So as I understand it --

21 MS. LAWRENCE: Well, if this is it, I can  
22 put these in my briefcase and take them home. I don't  
23 need to FedEx them. I have room.

24 MR. FRYHOFER: Okay.

25 MS. LAWRENCE: So they will not leave my

1 possession.

2 MS. OWENS: Are you going to get Stevens,  
3 too?

4 MS. LAWRENCE: Yes, in either my briefcase  
5 or suitcase.

6 MR. FRYHOFER: That's just stuff that  
7 wasn't marked.

8 MS. LAWRENCE: Hand me that video. You  
9 didn't mark this, but you said you wanted a copy of  
10 that.

11 MS. OWENS: Yeah. Just copy the front.

12 MS. LAWRENCE: You want to mark it?

13 MS. OWENS: Sure. We'll make that  
14 Exhibit 22. Just copy the front sleeve that says what  
15 tests are on it.

16 (Exhibit No. 22 was marked for purposes of  
17 identification.)

18 MS. OWENS: All right. As I understand,  
19 the court reporter is taking with her today copies of  
20 Exhibits 1 and 12, and 1 and 2.

21 MS. LAWRENCE: Gary McDowell's  
22 photographs?

23 MS. OWENS: If they're on CD, I'd like to  
24 have them.

25 MS. LAWRENCE: He told us all he has is

1 negatives.

2 MS. OWENS: Then I would like to get a  
3 duplicate copy. If you want to scan them, put them on  
4 CD, if you want to send me the copies, that's fine.  
5 Whichever is easiest for you. Obviously, a CD is  
6 cheaper if we could do it that way.

7 MS. OWENS: Correct. So what we're  
8 putting on the record is that the court reporter has 1  
9 and 12 of Arndt and 1 and 2 of Stevens. Everything  
10 else is in the possession of the plaintiffs, and they  
11 are going to copy it -- plaintiffs' attorneys, and they  
12 are going to copy it and provide a copy to the court  
13 reporter and send the originals back to Mr. Arndt and  
14 copies to me. Mr. Fine has indicated he does not want  
15 copies of the exhibits.

16 (Signature was reserved.)

17 MS. OWENS: We'll stipulate he can do it  
18 before any Notary Public.

19 (The deposition was concluded at  
20 4:30 p.m.)

21

22

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FREDERICK E. ARNDT

23

24

25

1 STATE OF ARIZONA )  
 )ss.  
 2 COUNTY OF MARICOPA )

3 I HEREBY CERTIFY that the foregoing  
 4 deposition was taken by me pursuant to Notice; that I  
 5 was then and there a Notary Public and Certified Court  
 6 Reporter in the State of Arizona, and by virtue thereof  
 7 authorized to administer an oath; that the witness  
 8 before testifying was duly sworn by me to testify to  
 9 the whole truth and nothing but the truth; that the  
 10 questions propounded by counsel and the answers of the  
 11 witness thereto were taken down by me in shorthand and  
 12 thereafter transcribed through computer-aided  
 13 transcription under my direction, and the foregoing  
 14 typewritten pages contain a full, true, and accurate  
 15 transcript of all proceedings had upon the taking of  
 16 said deposition, all done to the best of my skill and  
 17 ability.

18 I FURTHER CERTIFY that I am in no way  
 19 related to nor employed by any of the parties hereto,  
 20 nor am I in any way interested in the outcome hereof.

21 DATED at Phoenix, Arizona, this 31st day of  
 22 October, 2002.

23 \_\_\_\_\_  
 24 AMY MERRIFIELD, RPR  
 AZ CCR #50097  
 IL CSR #84-4027

25 My commission expires: March 15, 2004



EA12-005- Chrysler -023967

SEP 25 2001



#347

EA12-005- Chrysler -023968

SEP 25 2001



EA12-005- Chrysler -023969

SEP 25 2001



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EA12-005- Chrysler -023970

SEP 25 2001





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EA12-005- Chrysler -023971

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EA12-005- Chrysler -023973

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EA12-005- Chrysler -023974

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SEP 25 2001

EA12-005- Chrysler -023975



# 347

1996

EA12-005- Chrysler -023976

SEP 25 2001



912-10  
#347

EA12-005- Chrysler -023977

SEP 25 2001



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EA12-005- Chrysler -023978

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EA12-005- Chrysler -023982

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EA12-005- Chrysler -023983

SEP 25 2001



Jeep

EA12-005- Chrysler -023984

SEP 25 2001



EA12-005- Chrysler -023985

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EA12-005- Chrysler -023986

SEP 25 2001





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