

EA02-025

FORD 10/27/03

APPENDIX N

BOOK 41

PART 1 OF 6

Page 158

- 1 corporations that are being sued happen to be members of the
 2 Society of Automotive Engineers?
 3 A. I think a number of them or a lot of people that
 4 are employed by the big three are members, too.
 5 Q. Correct.
 6 A. And they are on the boards.
 7 Q. So are you suggesting there is something wrong or
 8 improper about that?
 9 A. No.
 10 Q. Or the organization is biased or slandered?
 11 A. No, there is no problem with that.
 12 Q. Let's get back to my question. Isn't it true that
 13 all you have to do to become a member of the Society of
 14 Automotive Engineers is to write the check?
 15 A. If you put it in that way, I guess you do.
 16 Q. I mean, there is no education requirement.
 17 There's no testing requirement. There's no certification
 18 requirement. You can join the Society of Automotive
 19 Engineers by just writing the check, whatever the annual
 20 dues are, true?
 21 A. I believe you are right, yes.
 22 Q. Isn't it also true that you can do the same thing
 23 for the National Society of Fire Fighters?
 24 A. Yes.
 25 Q. And the same thing for the International Society

Page 159

- 1 of Arson Investigators?
 2 A. I believe so.
 3 Q. National Fire Protection Association?
 4 A. I don't know, I believe --
 5 Q. American Society for Testing Materials?
 6 A. Yes.
 7 Q. None of these organizations as far as you are
 8 aware have any certification requirements or eligibility
 9 requirements, all you need to do is get an application, fill
 10 it out and send in your money?
 11 A. I presume that's one way of doing it, yes.
 12 Q. Do you go to their meetings?
 13 A. I go to SAE.
 14 Q. Did you go to the annual meeting, the annual SAE
 15 meeting?
 16 A. Yes.
 17 Q. Do you go every year?
 18 A. I don't think I've been the last two years because
 19 there were conflicts at presenting papers at other
 20 conventions.
 21 Q. How about the other ones, do you go to those
 22 meetings?
 23 A. Which ones?
 24 Q. The National Association of Fire Investigators,
 25 The International Society of Arson Investigators?

Page 160

- 1 A. Yes.
 2 Q. The National Fire Protection Association?
 3 A. Yes.
 4 Q. Are you on any committees?
 5 A. No.
 6 Q. Have you been asked to be on any committees?
 7 A. Yes.
 8 Q. Turned them down?
 9 A. When you are on your own doing this kind of work
 10 it's hard to fit in that kind of thing.
 11 Q. What's the American Academy of Forensic Sciences?
 12 A. It's an organization that's made up of doctors,
 13 engineers, scientists, have meetings every year.
 14 Q. Any other professionals represented?
 15 A. I'm sure there is a lot.
 16 Q. Doctors, lawyers, scientists, I mean --
 17 A. No, no, no.
 18 Q. I said lawyers. I didn't mean to say lawyers.
 19 You didn't say lawyers and I didn't mean to say lawyers.
 20 You said doctors, scientists?
 21 A. Um-hum.
 22 Q. Okay. Do you go to their meetings?
 23 A. Yes.
 24 Q. Do they publish?
 25 A. Yes, they do.

Page 161

- 1 Q. What's the name of the journal?
 2 A. I don't know the name of the journal.
 3 Q. Have you ever published anything in any of these
 4 journals?
 5 A. Yes.
 6 Q. You've published these things in these journals.
 7 Are you sure that lawyers don't belong in the American
 8 Academy of Forensic Sciences?
 9 A. I don't know if they do or not.
 10 Q. Have you ever met a lawyer at one of those
 11 meetings?
 12 A. No. I'm sure there are.
 13 Q. I know the consequences of design material
 14 selection on restraint system failure, 52nd meeting of the
 15 American Academy of Forensic Science, who would have
 16 interest in that particular topic? Is it an automotive
 17 industry organization?
 18 A. I don't believe so, no. There are automotive
 19 representatives there, though.
 20 Q. Are they widely represented?
 21 A. I mean I have had a number of comments from people
 22 who have sat in on my presentations that work for Chrysler
 23 and Ford and that kind of thing.
 24 Q. Who are these people? Are they mainly experts
 25 that are being retained in litigation?

Page 162

- 1 A. No, they were — one of the — they were engineers
 2 of some sort working for the manufacturer.
 3 Q. No, I'm talking about the members of the
 4 organization like you. Are they mainly experts being
 5 retained by people to testify in lawsuits?
 6 A. I don't know the answer to that question.
 7 Q. Well, have you met other experts at these
 8 organizations?
 9 A. Yes.
 10 Q. Like yourself? I mean like in the business you
 11 are in?
 12 A. I met a lot of doctors, yes. That's the people
 13 who have been interested in litigating to me.
 14 Q. Medical doctors?
 15 A. Yeah.
 16 Q. Because of your work on seat belts and restraint
 17 systems?
 18 A. I would have thought so, yeah.
 19 Q. It makes sense?
 20 A. It would.
 21 Q. Okay. I want to go back now to — we have covered
 22 all those questions. I don't need to ask you anything more
 23 about that.
 24 Now I want to go back to the report. I'm
 25 happy to continue to plow ahead but if you want to take a

Page 163

- 1 short break we can do that.
 2 MR. MAYER: Let's take a break.
 3 (A short break was taken.)
 4 Q. Mr. Clarke, would you turn to page 5 in your
 5 report. I think we were on Figure 14. Would you find
 6 Figure 14 for me, and would you find the photograph, which
 7 is going to be Exhibit 14.
 8 A. (Witness complies).
 9 (Exhibit No. 14 was marked
 10 for identification.)
 11 Q. Okay. Your report says the right-hand coil pack
 12 can be seen in Figure 14. The arrow in this photograph
 13 highlights the remains of spark plug lead. What's a coil
 14 pack?
 15 A. It's a device that's mounted on the right front or
 16 the left front of the engine. It's controlled by the
 17 ignition system and supplies spark to the plug.
 18 Q. Let's see. Can you see it in Exhibit 7?
 19 A. Yes.
 20 Q. Point it out to me.
 21 A. (Indicating).
 22 Q. Okay. Was that the one you've got highlighted or
 23 is there more than one coil pack?
 24 A. There is one for the left bank and one for the
 25 right bank.

Page 164

- 1 Q. Which one are you showing in Exhibit 14?
 2 A. The right bank.
 3 Q. Is that shown in that photograph, Exhibit 7, that
 4 I gave you? And if it is just put a circle around it.
 5 A. (Witness complies).
 6 Q. Okay. And what is the significance of your
 7 pointing out in your report the presence of the right-hand
 8 coil pack and the remains of the spark plug lead?
 9 A. It shows that there is more remains on that pack
 10 than there is on the one on the left side.
 11 Q. Why don't you use this pen to circle the coil pack
 12 on the driver's side?
 13 A. (Witness complies).
 14 Q. Both of these are in the front section of the
 15 engine compartment; is that right?
 16 A. Correct.
 17 Q. And you are indicating that the coil pack on the
 18 driver's side is showing more consumption from the fire, if
 19 you will, than the coil pack on the passenger side?
 20 A. Correct.
 21 Q. Neither one of these is in the rear section of the
 22 engine compartment?
 23 A. That's correct.
 24 Q. Now Figure 15 you say is a view of the left-hand
 25 coil pack. Why don't we get that out.

Page 165

- 1 A. (Handing photograph to counsel).
 2 Q. And that's Exhibit 15.
 3 (Exhibit No. 15 was marked
 4 for identification.)
 5 Q. And all you are doing presumably is just
 6 indicating in a close-up manner the fact that there is more
 7 consumption of the left-hand coil pack than the right-hand
 8 coil pack?
 9 A. That's correct. It follows the pattern on the
 10 radiator.
 11 Q. Right. More damage on the driver's side than on
 12 the passenger's side?
 13 A. Right.
 14 Q. Do you know of anyone that has investigated this
 15 fire, either government official or an expert retained by
 16 any party, that contends that there is more damage, more
 17 fire damage on the passenger side of the engine compartment
 18 than the driver's side?
 19 A. Not that I know of, no.
 20 Q. Do you know of anyone that doesn't agree that
 21 there is extensive fire damage on the driver's side in the
 22 front section of the engine compartment?
 23 A. No. I think most of the people on the reports
 24 that I have read like Hoffman agree that there is more
 25 damage on the left side.

41 (Pages 162 to 165)

Page 166

1 Q. In fact, you, yourself, say that the most visible
 2 fire and heat damage is to the left front section of the
 3 engine compartment?

4 A. Yes.

5 Q. But you place the origin of the fire in the left
 6 side rear of the engine compartment?

7 A. Because the combustibles remaining are on the way
 8 out of the engine compartment. That's the way the fire went
 9 forward and tried to get out from under the grill through
 10 the headlights, so it's going to work its way through this
 11 way. It can't go through the bulkhead. It's steel. It's
 12 either going to go out the wheel arch or the front. It
 13 can't go out the top because it's got a steel hood.

14 Q. But you say that the area of the origin is the
 15 left side rear of the engine compartment, but the most
 16 visible damage is the left front section of the engine
 17 compartment.

18 MR. DUNFORD: Asked and answered. We have
 19 been through this.

20 Q. Right?

21 A. That's correct. Because the combustibles that are
 22 remaining show that pattern. There is no more combustibles
 23 left underneath where the speed control deactivation switch
 24 was.

25 Q. Oh, I see. Well, why wouldn't it be then that the

Page 167

1 most visible heat damage is in the rear section of the
 2 engine compartment?

3 MR. DUNFORD: Asked and answered. He's
 4 explained what he wrote in his report previously in his
 5 deposition.

6 A. Because this is the way that, when you look at the
 7 vehicle you see the way the radiator is mounted, the way the
 8 coil pack has lost some of its components on that side, the
 9 way the rim has got more damage on the hubboard side closest
 10 to the speed control deactivation switch. It's right in
 11 that area. So as it's going forward it's causing damage
 12 until it escapes out.

13 Q. Okay. Now let's go to Figure 16. In fact, why
 14 don't you just get out, if you can do it, Mr. Clarke, maybe
 15 you can get out 16, 17 and 18.

16 A. Here is No. 16 (indicating).

17 Q. Figure 16 is Exhibit 7?

18 A. Yes.

19 Q. And what's Figure 17?

20 A. Here is 17.

21 Q. Okay.

22 (Exhibit No. 16 was marked
 23 for identification.)

24 Q. You know, I'm not sure, Mr. Clarke, that Exhibit
 25 16 is Figure 17 because you say in your report Figure 17,

Page 168

1 the arrows in this photograph highlight the close-up damage
 2 to the alloy rim.

3 A. Right here (indicating).

4 Q. It's not on the photograph?

5 A. It's in the book, in the report.

6 Q. Okay. And Figure 18, did you get that?

7 (Exhibit No. 17 was marked
 8 for identification.)

9 Q. Let's take all three of these together because –
 10 now start with Exhibit 7 which is your Figure 16. Your
 11 report says this is a view from the front overhead and the
 12 arrow shows the most severe damage being to the left front
 13 alloy wheel. And I suppose you are comparing that to the
 14 right front alloy wheel?

15 A. Yes.

16 Q. At least in this Exhibit 7?

17 A. Yes.

18 Q. And I think it's pretty clear in the photograph
 19 where that wheel is, where both wheels are, so I don't think
 20 we need to circle those or mark those.

21 And you are saying there is more severe
 22 damage to the driver's side front wheel than there is to the
 23 passenger side front wheel, true?

24 A. True.

25 Q. Are there remnants of the steel bands from the

Page 169

1 tire wrapped around those wheels?

2 A. There is some steel or bands wrapped around the
 3 left front wheel. I don't know if it's the tire remnants or
 4 not. It could possibly be the bands that actually hold the
 5 wheel and the tire onto the rim rather than the cords of the
 6 tire.

7 Q. And is there any significance to the location of
 8 those bands as shown in Figure 7 or Exhibit 7, Figure 16?

9 A. Just goes to show that the whole tire was consumed
 10 on that side.

11 Q. But the manner in which they are wrapped around
 12 the wheel doesn't tell us anything at all about the burn
 13 pattern?

14 A. No, I mean they most likely have been dragged on
 15 the floor as it was pulled out of the garage.

16 Q. Have you looked at any of the photographs that
 17 were taken at the scene?

18 A. I looked at them this morning, some of them. And
 19 I think I looked at some of them when I was at the Schaefer
 20 Engineering.

21 Q. Did you note how the bands were laying around
 22 those wheels?

23 A. I don't remember.

24 Q. Is there something that one can tell from the way
 25 in which the bands are wrapped around the wheels in fire

Page 170

- 1 investigation, post fire?
- 2 A. If the band is falling out in my interpretation:
- 3 that means the heat was in the inside, and as it heats up
- 4 the fire went that way and it pushed everything to the
- 5 right side or the left side of the rim.
- 6 Q. So if the band is falling in, what does that mean?
- 7 A. It could indicate that the tire fell in as it
- 8 melted.
- 9 Q. So the fire was coming from the outside?
- 10 A. It could indicate that it fell in. Or it could
- 11 indicate that it was coming in from the outside.
- 12 Q. Well, wait a minute, you flipped. When you first
- 13 answered this question you said, well, your understanding is
- 14 that when the bands are laying out that means that the fire
- 15 came from the inside out.
- 16 So then I asked you, well, what happens if
- 17 the bands are laying in. And you said, well, it could mean
- 18 — why isn't the answer, well, that means that the fire
- 19 came from the outside?
- 20 A. Well, they could have been on the outside and
- 21 then when they put the fire hose on it, the high pressured
- 22 hose pushed them in all the way. And you don't know that
- 23 unless you saw it as if it burned and melted before they
- 24 put the water on it.
- 25 Q. Okay. So any time you get a vehicle fire if the

1 high pressure hose was used you can't make heads or tails

2 out of which way the bands are laying around the wheel. Is

3 that what you are telling me?

4 A. No. I'm not saying that.

5 Q. So they can be significant?

6 A. They can be.

7 Q. You understand that because you learned that in

8 some of these courses you took, didn't you?

9 A. Well, I understand that from those courses and I

10 understand it from preservation of evidence that we

11 specialize in.

12 Q. Didn't you hear [redacted] say that last week?

13 A. He may have.

14 Q. And didn't he say in the seminar last week, totally

15 unrelated to this case, that if the bands are laying in that

16 is an indicator that the fire came from the outside?

17 A. I don't know if he said it was an indicator or it

18 could possibly be that. But you have to take into

19 consideration what devices were used to extinguish the fire.

20 Q. Well, you also have to take into consideration in

21 fire investigations all the indicators, right? You just

22 don't lock on to one thing?

23 A. That's correct.

24 Q. So I'm just saying that would you agree with me

25 that if the bands are laying in is that an indicator that

Page 172

- 1 the fire came from the outside of the vehicle in?
- 2 A. It could be an indicator.
- 3 Q. Now which ways are the bands laying in Exhibit 7,
- 4 in or out?
- 5 A. Out.
- 6 Q. Circle the bands.
- 7 A. (Witness complies).
- 8 Q. Exhibit 17 is a close-up view of the wheel?
- 9 A. The right front wheel and the tire assembly, yes.
- 10 Q. Which way are the bands laying?
- 11 A. They appear to be neutral or evenly spaced on the
- 12 rim in that particular instance.
- 13 Q. Neutral or evenly spaced?
- 14 A. I mean they are either side of the portion of the
- 15 rim, so inwards.
- 16 Q. Exhibit 16, which way are the bands laying?
- 17 A. They are on the outside of the rim. In fact, the
- 18 outboard band is new enough over the top portion of the rim
- 19 and that's in the most area where the rim is damaged, too.
- 20 Q. So the bands in Exhibit 16 support your opinion?
- 21 A. Well, they support the opinion that the band is
- 22 over there and that's another indication that the heat was
- 23 travelling that way.
- 24 Q. Circle the bands in Exhibit 16 that you say
- 25 support your opinion in terms of your position?

Page 173

- 1 A. This being 16?
- 2 Q. I think so. You've got them. Yes, that's 16.
- 3 The one in your left hand is 16.
- 4 A. Okay. (Witness complies).
- 5 Q. Okay. Good. Thank you very much.
- 6 Now same thing with regard to that other one,
- 7 17. Which wheel are you looking at in 17?
- 8 A. Right front.
- 9 Q. Okay. Right front meaning?
- 10 A. The right front.
- 11 Q. Well, right is relative, driver or passenger?
- 12 A. Passenger.
- 13 Q. Okay. Is that the one you said the bands were
- 14 neutral?
- 15 A. They appear to be evenly spaced on the rim, yes.
- 16 Q. Let me see. I may need you to diagram those.
- 17 Okay. Exhibit 17 you are saying the bands are evenly spaced
- 18 on the rim; is that right?
- 19 A. Yes.
- 20 Q. Okay. Circle the bands.
- 21 A. (Witness complies).
- 22 Q. Now let's get back to Exhibit 16. How many bands
- 23 have you circled on Exhibit 16?
- 24 A. Two.
- 25 Q. And they are in the position they are shown? I

1 mean they're not —
 2 A. I'm not going to change them.
 3 Q. I know you are not. But I guess what I meant was
 4 they are two distinct bands. That's not just one band.
 5 That's two distinct bands?
 6 A. The inside and the outside.
 7 Q. The inside and outside band?
 8 A. (Witness nods head.)
 9 Q. On the tire?
 10 A. From the tire, yes.
 11 Q. From the tire. Now, do you know which of those is
 12 the inside band and which is the outside band?
 13 A. No, I don't.
 14 Q. Same question with respect to Exhibit 17?
 15 A. No, I don't.
 16 Q. Can you tell from Exhibit 7?
 17 A. On Exhibit 7, the way they are on the rim you
 18 could mostly say that the inboard is the inboard band, the
 19 closest to the brake caliper, and the outboard side is
 20 closest to the outside of the wheel.
 21 Q. Okay.
 22 A. Can't see exactly.
 23 Q. That would be your judgment based upon that
 24 exhibit?
 25 A. Yes.

1 Q. Now on July 30th did you look at the
 2 underside of the vehicle?
 3 A. No.
 4 Q. Have you ever looked at the underside of the
 5 vehicle?
 6 A. No, I haven't.
 7 Q. And specifically the underside of the vehicle in
 8 the area of the engine compartment?
 9 A. No, I haven't.
 10 Q. Did you want to look at the underside of the
 11 vehicle when you inspected the vehicle?
 12 A. It's always nice to be able to see the underside
 13 of the vehicle. But at certain times the vehicle may be in
 14 a position where it's hard to get at. It's not practical to
 15 move it at that time.
 16 Q. So is the answer yes, you did want to see the
 17 underside of the vehicle on July 30th?
 18 A. I never made the comment to look at it. But I
 19 would have liked to have if it was raised up.
 20 Q. Did you ask anybody to raise up the vehicle on
 21 July 30th?
 22 A. No.
 23 Q. Had you talked about that with Mr. Topinka or Mr.
 24 I don't know, Hamilton or Hoffmann or anyone else that was
 25 there?

1 A. I remember some of the guys talking about getting
 2 it raised up, but I don't know who it was.
 3 Q. And what is your understanding as to why the
 4 vehicle was not raised up?
 5 A. I don't know.
 6 Q. Was there something physically that was preventing
 7 it from being raised up?
 8 A. You'd have to take it all the way out of the
 9 garage or the storage space, hack it out or pull it out, and
 10 maybe they just don't want to keep dragging it and causing
 11 more damage to it. I don't know.
 12 Q. Well, did you come to some professional judgment
 13 that you couldn't raise it up because there would be too
 14 much damage done to the vehicle by taking it out of the
 15 garage?
 16 A. No.
 17 Q. Well, let me just get this straight. You
 18 definitely would have liked to have seen the underscarrige
 19 of the vehicle?
 20 A. I try to make a point of seeing all of them when
 21 we can, when it permits.
 22 Q. And the reason for that is that there may be vital
 23 important physical evidence that could be confirmatory of
 24 your opinions by looking at the underside of the vehicle?
 25 A. You can get a pretty good fire or flame pattern by

1 looking at the underside of the vehicle.
 2 Q. In an incident like this, if the fire starts in
 3 the engine compartment, does the fire travel up and over the
 4 engine basically as opposed to down and under?
 5 A. Normally —
 6 MR. DUNPORD: Object to the form.
 7 A. Normally the ones I have seen there are remains of
 8 all the electrical connections on the side of the
 9 transmission when you raise them up. Sometimes nearly all
 10 the body mounts are still intact. The underneath looks
 11 pretty much like new in some cases.
 12 Q. So what you are saying is that normally in your
 13 experience what you see is if you get a fire starting in the
 14 speed control deactivation switch the fire goes up and over
 15 the engine not down and under it?
 16 A. Yeah, with an alloy hood. Obviously with a steel
 17 hood it changes all the fire progression because it cannot
 18 escape out the top so it has to go back down and over.
 19 Q. What about front around the sides of the hood?
 20 A. Well, it's going to come out there but it's not
 21 going to be as easy as it would be with an alloy hood.
 22 Q. But you have not burned a vehicle with a steel
 23 hood?
 24 A. This is the first one I've seen with a steel hood.
 25 Q. And you have not burned one?

Page 178

1 MR. DUNFORD: Asked and answered.
 2 MR. FEENEY: He didn't respond.
 3 MR. DUNFORD: You asked him that earlier this
 4 morning.
 5 MR. FEENEY: He's burned three vehicles.
 6 I've never asked him whether he burned one with a steel
 7 hood.
 8 A. No, I haven't.
 9 Q. So when you talk about what happens with a steel
 10 hood with a fire you've never investigated a Lincoln Town
 11 Car where there was a steel hood and you've never burned a
 12 vehicle with a steel hood?
 13 A. This is the first one I have investigated, yes,
 14 sir.
 15 Q. All right. Well, have you seen videos of what
 16 happens with a vehicle fire with a steel hood?
 17 A. I've seen vehicle fires with steel hoods, yes.
 18 Q. Well, you are sitting here making statements about
 19 what happens with vehicle fires with steel hoods. You have
 20 never investigated a Town Car — you never burned one with a
 21 steel hood. This is the only one you have ever seen as far
 22 as I can tell with a Town Car, right?
 23 A. I think mostly one of the first things most people
 24 have seen with a steel hood —
 25 Q. As far as fires are concerned with steel hoods, I

Page 179

1 mean, I don't know how many you have investigated but I know
 2 of one case that you have given a deposition in involving a
 3 fire and that didn't involve an automobile. It involved
 4 some kind of heavy duty equipment. That's the paving
 5 company case, right?
 6 A. Yes.
 7 Q. Okay. So I know of no case in which you have ever
 8 given testimony where you had a fire with a vehicle with a
 9 steel hood. Am I right so far?
 10 A. That's correct.
 11 Q. And there isn't one incident report, I don't care
 12 for what you may have been involved in — there isn't one
 13 incident report in that six-inch book that involves some
 14 incident that you investigated at some point in time in your
 15 20 year career with a vehicle fire where you had a steel
 16 hood, is there?
 17 A. No. These are all Lincolns.
 18 Q. I don't care what they are. You went through your
 19 files. You told us that you put together all the relevant
 20 material. There isn't one incident in there involving a
 21 fire with a steel hood, right?
 22 A. That's correct.
 23 Q. But you are sitting here making comments about
 24 what would happen with a fire in an engine compartment when
 25 it has a steel hood?

Page 180

1 MR. DUNFORD: Object to the form. It's asked
 2 and answered as well.
 3 A. They are my observations.
 4 Q. It's your speculation is what it is?
 5 MR. DUNFORD: Move to strike.
 6 A. My observations.
 7 Q. Well, one man's observation might be another man's
 8 speculation?
 9 MR. DUNFORD: Move to strike.
 10 Q. Let's look at No. 19, positive and negative
 11 battery terminals can be seen in Figure 19. And the AC
 12 condenser as seen in Figure 20. Why don't you get both of
 13 those out, Figure 19 and 20.
 14 A. (Witness complies).
 15 Q. Okay. So that's Exhibit 18 and that's Exhibit 19.
 16 (Exhibit No. 18 was marked
 17 for identification.)
 18 Q. Okay. So we go back to the report and the report
 19 says Figure 18 shows the remains of the right front wheel
 20 and tire assembly. The positive and negative battery
 21 terminals can be seen in Figure 19. So you are pointing
 22 that out to us for what reason?
 23 A. That's just observation, seeing more damage to the
 24 left side of the battery than you can the right.
 25 Q. Is that battery up in the passenger's front

Page 181

1 corner? Where is the battery on this thing? I've
 2 forgotten.
 3 A. Do you want me to tell you where it is?
 4 Q. Yes.
 5 A. I believe it's right front.
 6 Q. Is it right front?
 7 A. Um-hmm.
 8 Q. Here is Exhibit 5. I can't see it on there.
 9 Well, I got it up — is this it (indicating)?
 10 A. Yes.
 11 Q. Well, that's the passenger side?
 12 A. Right front.
 13 Q. You keep flipping around on me constantly on right
 14 and left.
 15 MR. DUNFORD: Move to strike. You keep
 16 making gratuitous statements on the record and they are
 17 inappropriate.
 18 MR. FEENEY: I don't.
 19 Q. Okay. Well, didn't I say it was on the passenger
 20 side?
 21 A. You said you didn't know.
 22 Q. I thought I said it was on the passenger side.
 23 Anyway, what is the point of the photograph is what I want
 24 to know?
 25 MR. DUNFORD: Asked and answered. Go ahead.

<p style="text-align: right;">Page 182</p> <p>1 A. It shows the condition again of the battery and 2 the way that there is more damage on the left side, closest 3 to the left side of the vehicle than the right. 4 Q. Well, aren't there certain components on the 5 passenger side of the vehicle that show more heat damage and 6 more fire damage than components do on the driver's side of 7 the vehicle? 8 A. I think there is more damage on the driver's side 9 of the vehicle. 10 Q. That's not the question I asked you. Aren't there 11 components that, relatively speaking, nevertheless show more 12 damage on the passenger side than on the driver's side? 13 A. I don't believe so, no. 14 Q. There is no component on the passenger side that 15 is more damaged than any component on the driver's side, if 16 you drew a center line right down the engine? 17 A. Outside predominantly to the driver's side more 18 than to the passenger's side. 19 Q. Can you answer my question? I know you've said 20 predominantly. And I know you've said majority. And I've 21 heard all of that. What I'm asking you is are you saying 22 that there is no component in the engine compartment on the 23 passenger side of the vehicle that shows more damage than on 24 the driver's side? 25 A. From when I inspected it it appeared to be all on</p>	<p style="text-align: right;">Page 183</p> <p>1 the driver's side. 2 Q. Okay. Thank you. 3 Is that important to your assessment of the 4 thermal patterns in this case? 5 A. Yes. 6 Q. And let's see, No. 20, did you give me Figure 20? 7 A. Yes. 8 Q. I didn't mark it. Here we go. 9 (Exhibit No. 19 was marked 10 for identification.) 11 Q. Is that Figure 20? 12 A. That's right. 13 Q. That's Exhibit 19. Okay. What are we looking at 14 here? 15 A. You are looking at the AC matrix, the condenser. 16 Q. Where is that located? 17 A. Right front passenger side near the bulkhead. 18 Q. And what is this intending to show? 19 A. It just shows that it's made out of alloy and the 20 left top corner of it is melted off, as you are looking at 21 it from the inside of the vehicle, the left side. 22 Q. And this is an indication of what? 23 A. The heat was coming from the left side to the 24 right. 25 Q. From the driver's side to the passenger side?</p>
<p style="text-align: right;">Page 184</p> <p>1 A. Correct. 2 Q. So, generally speaking, would you say that all 3 these photographs that we have gone through in general show 4 that the burn pattern is from the driver's side towards the 5 passenger side? 6 A. Yes. 7 Q. Directing your attention to Exhibit 16, that is a 8 picture of the driver's side front wheel? 9 A. Yes. 10 Q. And what is the owner's position for that picture? 11 Are we looking at that from the front of the vehicle or the 12 back of the vehicle? 13 A. From the front of the vehicle. 14 Q. And is there stuff remaining on that wheel, 15 rubber? 16 A. I think there is some pieces, maybe little pieces, 17 little black stuff, could be considered to be burnt rubber. 18 Q. Can that wheel be moved? 19 A. I don't know. 20 Q. As we look at it from the front, where is the 21 greatest heat damage to the driver's side front wheel? 22 A. Inboard. 23 Q. The front of the wheel as we look at it or the 24 back of the wheel? 25 A. It's towards the front of the wheel.</p>	<p style="text-align: right;">Page 185</p> <p>1 Q. Now you say the fire moved from the bulkhead to 2 the front of the vehicle? 3 A. Yes. 4 Q. On the driver's side? 5 A. Yes. 6 Q. But if we look at Exhibit 16 there is more damage 7 to the front of this wheel than there is to the back of the 8 wheel? 9 A. Correct. 10 Q. So the fire skipped the back of the wheel, hopped 11 over it and damaged the front? 12 A. I would interpret that that was towards the back 13 of the wheel and the wheel moved forward or was turned 14 forward as the vehicle was dragged out. 15 Q. You would pretty much have to say that in order to 16 be right, wouldn't you? 17 A. It's my interpretation of what I have seen in 18 other vehicles, they do move. 19 Q. But if you are wrong about that then you are wrong 20 about the propagation path, aren't you? 21 A. No. I'm pretty sure that the wheel turned when it 22 was pulled out of the building. They raise it up in the 23 back and drag it out. 24 Q. But you took the time to make this picture and we 25 see what we see. And unless you can come up with some on</p>

Page 186

1 the spot explanation about the wheel turning and flipping
 2 and moving, this piece of evidence here, this Exhibit 16,
 3 casts serious doubt on your interpretation of the burn
 4 patterns, just the burn patterns, I'm not talking about the
 5 switch or any of that other stuff, just the burn patterns?

6 MR. DUNFORD: Object to the form.

7 A. My impression and interpretation to that, that it
 8 was mostly at twelve o'clock or a little bit before and it
 9 rolled when the vehicle was pulled out.

10 Q. That's pretty convenient, isn't it, that it rolled?

11 MR. DUNFORD: Object to the form.

12 A. It's not convenient, Mr. Feeney. I've seen it
 13 before.

14 Q. Did you note that in your report? Did you say,
 15 well, you know, I want everyone to look at Figure 16 but I
 16 want you to understand that actually what you are seeing is
 17 the back of the wheel as the fire progressed not the front
 18 of the wheel? Did you make that notation in your report,
 19 sir?

20 A. No, sir.

21 Q. The eye witnesses have the fire on the driver's
 22 side, let's start with this, on the driver's side of the
 23 garage, on the driver's side of the vehicle near the front,
 24 do they not?

25 A. Yes.

Page 187

1 Q. The burn patterns that we have gone through which
 2 have the fire moving from the driver's side to the passenger
 3 side are wholly consistent with those observations, are they
 4 not?

5 A. Yes.

6 Q. And if, let's just say for purposes of just a
 7 conversation between you and me, that wheel did not spin and
 8 move and flip and go from front to back or sideways, and we
 9 see it the way we see it in the position that it was in at
 10 the time of the fire, that wheel, the damage to the front of
 11 that wheel would also be entirely consistent with the
 12 observations of the eye witnesses who placed the fire in the
 13 front of the vehicle at the start not at the bulkhead,
 14 wouldn't that be true?

15 A. Hypothetically speaking?

16 Q. Yes, just hypothetically speaking.

17 A. If the man that's looking at it from across the
 18 street, full of smoke and all of that, can see the wheel or
 19 see the flame coming out of there, if he can.

20 Q. Okay. And hypothetically speaking, just strictly
 21 hypothetically, if hypothetically speaking the fire did
 22 originate in that northeast corner in front of the vehicle,
 23 then hypothetically speaking you would expect that the front
 24 of the wheel would be more extensively burned and damaged
 25 than the back of the wheel, wouldn't you?

Page 188

1 A. Hypothetically speaking I would like to say yes,
 2 if there was more damage to the exterior of the wheel. But
 3 the outside of the rim is nearly virtually completely
 4 intact, so there is hardly any of the outside of the rim
 5 missing, so there would have to have been more heat on the
 6 inside of the rim to start with. Hypothetically, it would
 7 be a pretty good theory if the rest of it matched up.

8 Q. I'm not going to get into that debate with you.
 9 I'll just save that.

10 A. And did you take note, to the extent you
 11 could observe it, of the extent to which there was fire
 12 damage to the vehicle down below in the front? I mean,
 13 like, you know, the bumpers and that sort of thing?

14 A. Yeah, I noticed that the bumper covers had melted
 15 off, the headlights that surrounds especially on the left
 16 and right was still intact.

17 Q. Okay. What is that condenser made of, the one
 18 that you show in that photograph?

19 A. Aluminum.

20 Q. What does that melt at?

21 A. I think about 1200 degrees.

22 Q. And just so we orient that, isn't that somewhere
 23 near the bulkhead on the passenger side?

24 A. Well, it's in that area. There is a box that it
 25 sits in.

Page 189

1 Q. Do you have any good picture - do you have an
 2 overhead picture that shows where that condenser is, Mr.
 3 Clarke? I mean I know we have got this picture that shows
 4 it more close up, but can you spot it?

5 A. (Indicating).

6 Q. It's right over there, correct?

7 A. Correct.

8 Q. I'm just going to put a blue circle around it.

9 Did I do that?

10 A. Yes.

11 Q. Okay. I'm not trying to trick you here. That's
 12 on Exhibit 7 I put a blue circle around the condenser.
 13 That's made of aluminum?

14 A. Yes.

15 Q. And that melts at 1200 degrees?

16 A. Approximately.

17 Q. And except for a little bit of melting on the top
 18 it's pretty much intact, is it not?

19 A. That's correct.

20 Q. Now don't you think that is an indicator that this
 21 fire attacked this vehicle in this engine compartment from
 22 outside the vehicle rather than starting inside the engine
 23 compartment?

24 A. No.

25 Q. What's the radiator made of? Is that steel or

Page 190

- 1 aluminum?
 2 A. Aluminum.
 3 Q. And that has, you know, a little bit of degradation
 4 but it's pretty much intact?
 5 A. Yeah, if the fire started outside the front like
 6 the witness said, it would come through and migrate
 7 through the radiator and have consumed the engine
 8 compartment but it didn't.
 9 Q. There you go again. You know, you just don't know
 10 how to stop speculating, will you? You just don't want to
 11 stop.
 12 MR. DUNFORD: Again, I object to the
 13 gratuitous comment.
 14 Q. Again, you are telling me — now you are telling
 15 me that if there had been let's say a natural gas leak from
 16 whatever source producing a blow torch like flame in the
 17 northeast corner of the garage in the vicinity of the right
 18 front corner of the vehicle, you are telling me, based upon
 19 your experience, no testing, that it would have consumed the
 20 radiator?
 21 A. You mean the driver's side front corner?
 22 Q. Right.
 23 A. Yeah, I would think it would take the radiator or
 24 the rim away.
 25 Q. Is there a textbook I can go to that just confirms

Page 191

- 1 that or is that just your point of view?
 2 A. It's my analysis of many, many vehicle fires
 3 predominantly in Lincoln Town Cars.
 4 Q. I think we know what the sum total of your
 5 experience is, sir. I'm not debating that at the moment.
 6 I'm simply wanting to confirm that there has
 7 been no test and no study and no forensic analysis that you
 8 have done other than just kind of throwing it out there that
 9 a natural gas driven blow flame of the type that [REDACTED]
 10 described would in all cases consume the radiator?
 11 A. I don't know if [REDACTED] is qualified to make
 12 that statement that it is natural gas unless he's a gas
 13 engineer and he's seen natural gas flames many, many times.
 14 I mean I don't know what a natural gas flame looks like
 15 underneath a car coming out of a wheel arch. I've seen many
 16 vehicle fires and I know what a blow torch looks like.
 17 Q. So I will ask you directly. Wouldn't you expect
 18 an AC condenser made of aluminum, as the type that we see in
 19 Exhibit 19, wouldn't you expect that condenser to be
 20 essentially consumed if the fire originated in the engine
 21 compartment and there was a steel hood trapping the fire so
 22 that the fire had no place to go for however long you claim
 23 that it existed, don't you think that a 1200 degree melting
 24 aluminum AC condenser would have melted in such a fire?
 25 A. It's probable. But again with that particular

Page 192

- 1 design of vehicles and with plastic fender wells it probably
 2 got out somewhere else.
 3 Q. Okay. But it is probable?
 4 A. Could be. I've seen them melt in other Lincoln
 5 Town Car fires and I've also seen them survive and the
 6 radiator.
 7 Q. Okay. By probable I gather you are saying that in
 8 fact you would expect it to melt?
 9 A. It depends on the circumstances surrounding the
 10 fire.
 11 Q. In this circumstance would you have expected that
 12 condenser to have been consumed in this fire given the fact
 13 that you believe that the fire started in the engine
 14 compartment?
 15 A. It all depends on the circumstances. I mean —
 16 Q. Well, we are talking about these circumstances,
 17 Mr. Clarke. You've already told me that it's a steel hood.
 18 The fire has got no place to go. It starts in the engine
 19 compartment. How far away is the condenser, 12 inches?
 20 A. From where?
 21 Q. From the speed control deactivation switch, 18
 22 inches?
 23 A. It's got to be at least the width of the engine
 24 and some more, so it could be as much as three feet, two and
 25 a half feet. I don't know.

Page 193

- 1 Q. Do you know what it is?
 2 A. No.
 3 Q. Okay. So you don't know how far the condenser is
 4 away from the speed control deactivation switch?
 5 A. Right.
 6 Q. In any event, regardless of how far it is,
 7 wouldn't you, sir, have expected that condenser to be
 8 essentially consumed under these circumstances?
 9 A. I don't think so.
 10 Q. Don't you find it odd that it wasn't consumed?
 11 A. I've seen them very similar with the alloy hoods.
 12 Q. So you don't find it odd that it wasn't consumed?
 13 A. Not really. I think every fire is slightly
 14 different. They always throw something at you when you're
 15 looking at them.
 16 Q. Every fire is slightly different so the burn
 17 patterns are unique from fire to fire?
 18 A. Well, a burn pattern is a burn pattern.
 19 Q. Well, you just said every fire is different. And
 20 you used that as an explanation for why it's not odd at all
 21 that the condenser didn't melt?
 22 A. Right.
 23 Q. It's not odd that the plastic directly above where
 24 the fire started didn't melt?
 25 A. Plastic?

Page 194

1 Q. Yes.
 2 A. I don't know what plastic.
 3 Q. Wasn't consumed - 70 percent of the plastic, the
 4 housing, the top half?
 5 A. Oh, on the cruise control switch?
 6 Q. Not odd at all that that didn't melt?
 7 A. Again, that is not unusual when you look at this
 8 scenario.
 9 Q. Not odd that the rubber grommet directly above
 10 where you say the fire started didn't melt?
 11 A. As we showed earlier they do exist.
 12 Q. Not odd at all that there is more fire damage to
 13 the wheel in front of the wheel than there is behind the
 14 wheel, that's not odd either?
 15 A. If it doesn't rotate -- I mean I would think it's
 16 going to turn when the vehicle is raised up.
 17 Q. Not odd that the aluminum radiator didn't melt?
 18 A. Portions of it did.
 19 Q. Yes, just the top portion of it. But not odd at
 20 all that it wasn't consumed by this fire that supposedly
 21 started in the engine compartment with a steel hood on top,
 22 no place to go? Do you know how long this fire burned
 23 before the fire department got there?
 24 A. I think it was about 10, 15 from when the fire
 25 started.

Page 195

1 Q. Well, we don't know exactly when the fire started.
 2 But do you know how long it burned that we know of for sure
 3 before the fire department got there?
 4 A. I don't know offhand. I'd have to go back through
 5 and see if it's in the fire report.
 6 Q. Have you come to an opinion as to what time the
 7 fire actually started?
 8 A. It had to have been after 8:15 I think, within two
 9 and a half hours the car had been sitting and it ignited.
 10 Q. Okay. So get back to the fire department. It
 11 burned pretty good for 15 minutes before the fire department
 12 got there?
 13 A. Quite possibly.
 14 Q. And then what did the fire department do when they
 15 got there? Did they haul the cars out of the garage and
 16 start dousing the fire in the garage?
 17 A. I don't know.
 18 Q. Well, according to the fire department report they
 19 took out a water canon and they blasted it at the house.
 20 A. Okay.
 21 Q. So how long do you think the fire went in the
 22 vehicle from the time it was first discovered until anybody
 23 put it out, 30 minutes?
 24 A. I don't know.
 25 Q. 40 minutes?

Page 196

1 A. (Witness shakes head.)
 2 Q. During this time with the steel hood in place this
 3 aluminum condenser a couple feet from where the fire started
 4 doesn't melt?
 5 MR. DUNFORD: Is that a question.
 6 Q. And you find that odd?
 7 A. No, I mean, it's not odd.
 8 MR. DUNFORD: It's also been asked and
 9 answered.
 10 MR. FEENEY: Well, not with all those
 11 additional facts it hasn't been asked, but it has been
 12 answered. I agree with that.
 13 I know we are not in Texas but they say there
 14 pass the witness so I'm going to pass the witness.
 15 THE WITNESS: I would like to take a bathroom
 16 break.
 17 EXAMINATION
 18 BY MR. MAYER:
 19 Q. Mr. Clarke, my name is Eric Mayer. I'm one of the
 20 lawyers representing Texas Instruments. I'll try not to ask
 21 you anything that was covered earlier and I'll try to move
 22 fairly quickly through the material.
 23 We know from the earlier testimony that the
 24 vehicle had a steel hood, right?
 25 A. Correct.

Page 197

1 Q. That's not original equipment on this '93 Town
 2 Car, is it?
 3 A. No.
 4 Q. What other things, Mr. Clarke, in your investigation
 5 did you notice were not original equipment to the vehicle?
 6 A. The only thing else I noticed is one additional
 7 wire on the right side, right front passenger side in the
 8 engine compartment.
 9 Q. An after-market wire?
 10 A. It's an additional wire I didn't recognize.
 11 Q. Did not appear to be standard factory wiring?
 12 A. Correct.
 13 Q. Did you inquire where the wiring came from?
 14 A. No, I didn't. I left that to Alan because he was
 15 going to go back and investigate that.
 16 Q. In your determination of placing the cause and
 17 origin of this fire, did you get an answer to what that
 18 after-market wiring was?
 19 A. Alan relayed to me that it mostly would have been
 20 connected to a positive feed and was cut off.
 21 Q. So the answer to my question is you relied on
 22 someone else to get that information for you?
 23 A. Yes.
 24 Q. And that someone else was Alan Topinka?
 25 A. That's correct.

49 (Pages 194 to 197)

Page 198

- 1 Q. And what analysis did you do of the wire itself?
 2 A. I wasn't present when the wire was inspected the
 3 last time I believe.
 4 Q. So the answer is none?
 5 A. No.
 6 Q. Am I right about that?
 7 A. That's correct.
 8 Q. Was there any other equipment in the engine
 9 compartment that was not original equipment other than this
 10 wire and the steel hood?
 11 A. Not that I could identify.
 12 Q. Did you look at the headlights?
 13 A. The remains of them had dropped down on some of
 14 the bumper guards.
 15 Q. Did you know that the vehicle had been involved in
 16 at least two accidents?
 17 A. Yes.
 18 Q. And how did you learn that?
 19 A. Per the depositions, I reviewed the depositions.
 20 Q. And did you know whether any equipment was
 21 replaced on the vehicle after those accidents other than the
 22 steel hood?
 23 A. I'm presuming if it was a frontal kind of an
 24 impact there is a possibility maybe a bumper, headlight,
 25 fender or hood.

Page 199

- 1 Q. Do you know the extent of the damage that was
 2 involved in any of those collisions?
 3 A. No, I don't.
 4 Q. Did you make any investigation to find out what
 5 the extent of the damage was in any of those collisions?
 6 A. I believe I'd asked about if we could get body
 7 repairs and that kind of stuff from the insurance company,
 8 if they'd gone through the insurance company, but I don't
 9 know if we ever got it.
 10 Q. Did you ask that of Mr. Topiaka or someone else?
 11 A. I think I mentioned it to Alan, if we could get it
 12 it would be helpful.
 13 Q. Did you ever get that information?
 14 A. No, not to my knowledge.
 15 Q. The time you spent at Yarmouth Technical College
 16 in England, did you receive some kind of degree from that
 17 institution?
 18 A. Yeah. I got a certificate when I left there, yes.
 19 Q. And in England what is that called? What's the
 20 name of that certificate?
 21 A. It's a diploma.
 22 Q. Did you put it on your wall at your shop in
 23 Georgia?
 24 A. No. Between moves I cannot find it to be honest.
 25 I've looked and looked and I haven't been able to locate it.

Page 200

- 1 Q. Don't have a copy anymore?
 2 A. No.
 3 Q. What were the courses that you took at Yarmouth
 4 Technical College to get the diploma?
 5 A. We took basic vehicle design, dynamometer testing,
 6 setting up dynos, electrical, principles of electrical
 7 circuitry, charging, physics, Newton's laws, and all this
 8 kind of stuff they went through.
 9 Q. Am I correct that you are not an engineer in any
 10 of the 50 states in the United States of America?
 11 A. No. I am not a PE in this country, that's
 12 correct.
 13 Q. You don't have a license to practice engineering
 14 in any of the United States; is that right?
 15 A. No, I don't.
 16 Q. And do you have a license to practice engineering
 17 in the United Kingdom?
 18 A. I don't think so.
 19 Q. I've heard something about chartered engineer. Am
 20 I correct you are not a chartered engineer in England?
 21 A. I'm not familiar with the term of chartered
 22 engineer. I'm not familiar with that term.
 23 Q. You are not an electrical engineer, are you?
 24 A. No, I'm not an electrical engineer.
 25 Q. And you are not a chemical engineer?

Page 201

- 1 A. That's correct.
 2 Q. Now you gave us a list of some cases that you
 3 testified in. This first one [REDACTED] versus General
 4 Motors Corporation, that's listed as a deposition. Were you,
 5 in fact, challenged? Was your qualifications challenged in
 6 that case as an expert?
 7 A. No, not the qualifications.
 8 Q. Was there any challenge made to your testimony in
 9 that case that you are aware of?
 10 A. There was a challenge against the amount of
 11 testing that we did not do.
 12 Q. And did that challenge result in you being in some
 13 way restricted in what testimony you could present?
 14 A. Yeah. We weren't allowed in some of the areas if
 15 I remember correctly.
 16 Q. Now you also testified that you — you've
 17 testified twice in courts of law in this country; is that
 18 right?
 19 A. Correct.
 20 Q. And am I correct in neither of those cases were
 21 you ever qualified as a fire cause and origin expert?
 22 A. That's correct.
 23 Q. So if the court certifies you in this case this
 24 would be the very first time that you have been certified as
 25 a fire cause and origin expert, am I right?

50 (Pages 198 to 201)

Page 203

- 1 A. That's correct.
 2 Q. And in the case, the [REDACTED], did that case,
 3 in fact, go to a jury verdict?
 4 A. Yes, it did.
 5 Q. Did the jury find in favor of General Motors?
 6 A. I believe they did.
 7 Q. Did the Lindsey case go to a jury verdict?
 8 A. Yes, it did.
 9 Q. And what was the jury's finding in that case?
 10 A. I believe they split the blame between the two
 11 parties that were involved. I'm not 100 percent sure on
 12 that.
 13 Q. Now as I understand your testimony that this
 14 document Ford OSI's which we marked as Exhibit 4, those are
 15 cases that you have been involved in that you believe
 16 involved the brake pressure switch issue; is that right?
 17 A. Correct.
 18 Q. I don't want to go over the various categories
 19 that you went over with Mr. Feeney, but there are some tabs
 20 that I need to ask you about. Look at Tab 4 if you would.
 21 It has, 41 says Frank Borris. Do you see that?
 22 A. Yes.
 23 Q. Can you tell me what this tab represents?
 24 A. It represents - Frank works for NHTSA, and he was
 25 at my facility where we done a series I think it was a day

Page 203

- 1 or two days of investigational work on switches that are
 2 outside the recall population.
 3 Q. Did you contact Mr. Borris or did he contact you?
 4 A. I don't remember. I don't remember whether we
 5 contacted him or somebody told him about us. I don't
 6 remember the ins and outs.
 7 Q. And when was it that Mr. Borris came to your
 8 facility in Georgia?
 9 A. Somewhere around 7-17, I think, '02.
 10 Q. And you are dating that from the date of the
 11 pictures?
 12 A. Yes. It was either 7-17 or 7-18.
 13 Q. Who else was present besides yourself and Mr.
 14 Borris?
 15 A. Charlie Miller.
 16 Q. Anyone else?
 17 A. I don't believe anybody else was there.
 18 Q. And how long did the session last with Mr. Borris?
 19 A. I think it lasted at least one whole day. He may
 20 have got there the afternoon before. I'm a little bit
 21 cloudy exactly when he arrived.
 22 Q. And was anyone present besides you and Mr. Miller
 23 during the time he spent at your facility?
 24 A. I think my wife was out there some of the time.
 25 Q. Other than your wife was anyone else present?

Page 204

- 1 A. There may have been another guy that works for me
 2 in the warehouse was there.
 3 Q. And what would that person's name be?
 4 A. Michael Hunter.
 5 Q. Is Mr. Hunter a technician of some type?
 6 A. Yeah, he's what we class as called an evidence
 7 collection specialist.
 8 Q. Okay. And did you know Mr. Borris before he came
 9 to your facility?
 10 A. No.
 11 Q. Had you ever spoken to him before?
 12 A. I don't believe so.
 13 Q. Do you have any correspondence with him?
 14 A. Do we?
 15 Q. Yes.
 16 A. Yes, we do.
 17 Q. Has that been produced?
 18 A. My correspondence with him?
 19 Q. Yes.
 20 A. No.
 21 Q. I didn't see any in this tab and that's why I'm
 22 asking.
 23 A. No.
 24 MR. MAYER: Well, we would request that that
 25 be produced.

Page 204

- 1 A. Well, all the latest stuff that's in this book has
 2 been produced to you and that's what's been produced to him.
 3 Q. Had you spoken with Mr. Borris before he visited
 4 your facility?
 5 A. Yes.
 6 Q. Did you give Mr. Borris a copy of this book, for
 7 example?
 8 A. No, he doesn't have a copy of this book.
 9 Q. How did you speak to him before he came to your
 10 facility? Did you contact him?
 11 A. It may have been by phone or e-mail or something
 12 like that.
 13 Q. Did you contact him?
 14 MR. DUNFORD: It's asked and answered.
 15 A. As I said before I don't remember. I don't
 16 recollect. It may have been - just don't remember.
 17 Q. Let's go through these pictures that you have here
 18 under his tab. Tell me why you included them in this tab?
 19 A. This is a on what I would consider a continued
 20 investigation analysis to this phenomenon of the firm that
 21 are happening on the Ford products that have the speed
 22 control deactivation switch that has full-time voltage to
 23 it.
 24 Q. And the first pictures - by the way, did you take
 25 more pictures than are contained in this tab when he was

51 (Pages 202 to 205)

Page 206

- 1 present?
 2 A. I believe we did, yes.
 3 Q. And why is it that you put some in and excluded
 4 others?
 5 A. Just the ones that I thought would be interesting,
 6 just shows where the problem is, where the cracks are, this
 7 kind of stuff.
 8 Q. On this first picture, slide 4794, negative one,
 9 what is interesting about that first picture?
 10 A. You have got fluid between the layers of Capton.
 11 And it's hard to see but there is cracking around the
 12 outside of that.
 13 Q. There is an arrow that's on the photo that I have.
 14 Is that something that you put on?
 15 A. Yes. That's what I did when I was under the
 16 microscope.
 17 Q. Is this a brake pressure switch that you removed
 18 from a vehicle?
 19 A. It was one that was sent to NHTSA by an individual
 20 that was complaining of the problem. And then Frank, when
 21 he was in contact with me, I told him what we were doing and
 22 he said: Well, I've got some we can bring out and
 23 investigate, so that's what happened.
 24 Q. Did he say who had sent it to NHTSA?
 25 A. He did tell me the name and he had a serial number

Page 207

- 1 and everything there. I think it's on the rest of the
 2 photographs.
 3 Q. I didn't see it.
 4 A. They are on the other ones. I didn't put it on
 5 here.
 6 Q. Well, do you know what kind of vehicle it came out
 7 of?
 8 A. Yeah, it's a 1994 Town Car.
 9 Q. Okay. And you know that because you are looking
 10 at the first page of the exhibit here?
 11 A. That's correct. And that's what the label
 12 identified it as when he brought it in.
 13 Q. And do you know how many miles were on this
 14 vehicle?
 15 A. I saw the mileage but I don't have it with me, I
 16 don't remember.
 17 Q. Would that be something that's at your shop?
 18 A. Yes.
 19 Q. Because you made a practice of recording the
 20 mileage on the switches that you looked at, didn't you?
 21 A. Well, the ones where the mileage was available and
 22 was on the paperwork, yes.
 23 Q. Do you know if this switch had more than a hundred
 24 thousand miles on it?
 25 A. I don't remember.

Page 208

- 1 Q. Is there anything more you can tell me about what
 2 vehicle it came from or how many miles it had experienced
 3 other than a 1994 Lincoln Town Car?
 4 A. That's it.
 5 Q. Okay. And did you do the photographs here in your
 6 facility in Georgia?
 7 A. Yes, we did.
 8 Q. Okay. And the negative one and negative four,
 9 those are pictures of the fluid that you say is between the
 10 Capton layers?
 11 A. Yes; that's correct.
 12 Q. And you mentioned something about some kind of
 13 cracking. Is there a picture in this group that depicts
 14 that better?
 15 A. I don't know if it's copied that well. It's kind
 16 of like an alligatoring or like a saw-tooth affect around
 17 one of the sides here (indicating).
 18 Q. You have to tell me what negative.
 19 A. Well, this is negative 11 but it's not really --
 20 you can't really see it.
 21 Q. So is the answer in at least the pictures that you
 22 have here we really don't have a good picture of the
 23 cracking?
 24 A. You are not going to see it that well in these I
 25 don't think.

Page 209

- 1 Q. Okay. What's significant about the negatives five
 2 and seven?
 3 A. They are just taken around the radius of the
 4 teardrop area, that's how we take them. We start at 12
 5 o'clock and go around clockwise.
 6 Q. You used the term "teardrop". What does that mean?
 7 A. It's a terminology that we read in some discovery
 8 documents that relates to the swelling of the Capton when
 9 it's activated in the switch.
 10 Q. Most of the switches that you have looked at have
 11 teardrops in them?
 12 A. Some of them have. Some of them have the similar
 13 damage to what we see in this particular vehicle where they
 14 are brown and crispy.
 15 Q. Does the presence of a teardrop to you have any
 16 significance?
 17 A. In some of them it's more visible than in some of
 18 the other ones. It may be that they are loose when they are
 19 crimped together. There is more slop in the seal. I don't
 20 know why it's -- it's there from operational.
 21 Q. You have also seen switches where there is
 22 teardrops and there is no anomaly, correct?
 23 A. Yeah, I have seen teardrops where there is no
 24 anomaly. I've seen teardrops where one layer is cracked and
 25 the other one hasn't. Different sorts.

52 (Pages 206 to 209)

Page 210

1 Q. What I'm getting at is you really can't conclude
 2 anything with the presence of a teardrop one way or the
 3 other. Fair statement?
 4 A. It's hard if you don't have all the seal there as
 5 a whole, yes.
 6 Q. Okay. When Mr. Morris was present in your
 7 facility did you do anything other than photograph this
 8 switch that's identified here in this tape?
 9 A. We looked at about I would say 10 or 15 switches
 10 that day.
 11 Q. All these switches brought by him?
 12 A. No.
 13 Q. Some of them supplied by you?
 14 A. Some by me and some by Mr. Miller that he has
 15 collected from his end.
 16 Q. And do you know how many switches you supplied?
 17 A. I don't remember.
 18 Q. More than five?
 19 A. I just don't remember. Because we have been, you
 20 know, trying to work this out and get as much data between
 21 us as we can and relaying it back to Mr. Morris so.
 22 Q. You are still in communication with Mr. Morris?
 23 A. Oh, yeah.
 24 Q. And is NHTSA, are you being compensated for your
 25 work by NHTSA?

Page 212

1 retainer on those?
 2 A. Yes.
 3 Q. And did you disclose that to Mr. Morris?
 4 A. Oh, yes.
 5 Q. Did you have a specific discussion with him about
 6 how much money you had earned in this consulting field?
 7 A. I don't know if he asked me how much I earned.
 8 That's kind of a personal kind of thing, you know.
 9 Q. Okay. You mentioned that you may be compensated
 10 by NHTSA. But at least the work that's depicted in tab 41,
 11 is it fair to say that you have not been compensated by
 12 NHTSA?
 13 A. It's true to say that I done that on my own, sort
 14 of spare time.
 15 Q. Did you ask to be compensated for this and were
 16 turned down? Or did you just decide not to ask for it?
 17 A. No, I just made a point of trying to get things
 18 together so that we could at least get an outside party
 19 looking at it, and then maybe put another PA out or whatever
 20 they went to do.
 21 Q. Has Mr. Morris been to your facility other than
 22 July 17th, 2002?
 23 A. I don't know. I think he may have been down but I
 24 was on the road. I think he popped in to see me when he was
 25 in Clark County looking at some other vehicles.

Page 211

1 A. They have asked us to possibly do some research
 2 for them that would be compensated if we decided to take on
 3 that testing.
 4 Q. And did you explain to Mr. Morris that you had
 5 been engaged as a consultant by people citing Ford and Texas
 6 Instruments?
 7 A. Oh, yeah, he was aware of our position and what we
 8 do.
 9 Q. By the way, each one of these cases that are
 10 identified in here as a tab where we have a named case,
 11 would it be fair to say that you were retained on those
 12 cases by someone, some attorney?
 13 A. Not all the ones that have tabs I was retained on.
 14 Q. Yes, I know that. But the ones that have names on
 15 it, [redacted]
 16 A. The majority of them, yes.
 17 Q. And did you have some minimum retainer that you
 18 required during this time period?
 19 A. I usually work on a base retainer. It's in my CV,
 20 I think.
 21 Q. How much is that?
 22 A. It's \$4,000.
 23 Q. So we have 48 tabs but we know they are not all
 24 cases. But on the ones that do have names, would it be fair
 25 to say that you received at least \$4,000, your minimum

Page 213

1 Q. Do you know when that was?
 2 A. I don't remember.
 3 Q. Do you know if he has met with Charlie Miller?
 4 A. Charlie Miller?
 5 Q. Yes.
 6 A. Yeah, he met Mr. Miller.
 7 Q. At Mr. Miller's facility?
 8 A. No.
 9 Q. At your facility?
 10 A. Yes.
 11 Q. Other than the date you gave me of July 17th?
 12 A. I don't know if he's -- I haven't asked Mr. Miller
 13 if he has met with him since that day.
 14 Q. All right. Take a look at the negatives 12 and 14
 15 and tell me why you included those in here.
 16 A. They show the internal heating of the base of the
 17 switch where the connectors are.
 18 Q. Now is this all the same switch?
 19 A. Yes.
 20 Q. So this is the Captain on the switch, and then as
 21 we progress this is a different view of the switch,
 22 different parts of the switch?
 23 A. Yeah, we actually disassembled the switch. Mr.
 24 Morris photographed it heavily and then we dissected it
 25 piece by piece. And I think the later pictures in there

53 (Pages 210 to 213)

Page 214

- 1 will show you that there were cracks in the seals.
 2 Q. Okay. Look at negative 2 and just tell me what
 3 that is again. Negative 12, I'm sorry.
 4 A. That's the internal view of the base of the
 5 switch.
 6 Q. On your schematics show me where that's taken?
 7 A. Well, if you take the top of this off, it's
 8 looking up inside the contacts.
 9 Q. So it's looking on the electrical side?
 10 A. Yes, it's looking up into the electrical cavity
 11 from the base, from the hexport.
 12 Q. From right there (indicating)?
 13 A. No. It's looking from where the transfer pin
 14 touches the moveable contact.
 15 Q. And what about that picture do you find
 16 remarkable?
 17 A. It just shows that there has been a heavy
 18 electrical activity inside the switch it's outside the
 19 recore campaign, it's that green substance in there that we
 20 have seen and that's been seen in the other documentation
 21 through research from TI and Ford.
 22 Q. What is that green substance?
 23 A. It's a sort of a zinc, mixture of zinc, copper,
 24 brake fluid. It's like a green vaseline is what it looks
 25 like.

Page 215

- 1 Q. Okay. This is the switch that Mr. Morris brought,
 2 correct?
 3 A. Yes.
 4 Q. Negative 14, what does this depict?
 5 A. It shows a close-up of the moveable - the portion
 6 of the moveable contact and the transfer pin.
 7 Q. Which of the two contacts, moveable or stationary
 8 is the one that's energized?
 9 A. The stationary one.
 10 Q. Okay. Negative 19 and 20, what are those?
 11 A. They are just different views of the base of the
 12 switch.
 13 Q. Okay. Same thing trying to depict some of the
 14 electrical activity?
 15 A. That's correct.
 16 Q. All right. And your negative 24 and 23?
 17 A. They just show the pressure side of the seal, of
 18 the first seal closest to the pressure board, and it just
 19 shows the three little cracks in it.
 20 Q. Show me where those cracks are?
 21 A. On negative 24 there are three of them. And I
 22 think they are the same as negative 23. It's just a closer
 23 view of it.
 24 Q. I've heard a reference to a shape like an anchor.
 25 Have you ever used that terminology?

Page 216

- 1 A. No.
 2 Q. Is there some particular pattern that you have
 3 seen in the cracking that you described?
 4 A. I guess you could consider it to be an anchor or
 5 sort of like a quarter moon or a sawtooth. I've seen the
 6 sawtooth around the outside, too.
 7 Q. Why don't you take out the negative 24 and let's
 8 mark that as an exhibit, and I'll let you circle the anchor
 9 or sawtooth that you are referring to so we have that clear.
 10 A. (Witness consents).
 11 (Exhibit No. 20 was marked
 12 for identification.)
 13 Q. Now was this switch, did this switch burn?
 14 A. Yes.
 15 Q. Did it have some type of heating anomaly on it
 16 before you dissected it?
 17 A. Yes.
 18 Q. Describe where the heating anomaly was on this
 19 switch?
 20 A. I believe it was on the outside, discoloration,
 21 and there may have been one or two blow holes to the outside
 22 of it.
 23 Q. And is that depicted in the pictures that you
 24 brought us in tab 41?
 25 A. I don't think we put those ones in here.

Page 217

- 1 Q. Why not?
 2 A. I was just really looking at the internal portion
 3 of the switch and the seals.
 4 Q. Well, the internal portion of the switch that we
 5 have in this case, according to you, has blow holes in it,
 6 doesn't it?
 7 A. I believe it does.
 8 Q. But you didn't think it was important to put the
 9 blow holes from this out in your binder?
 10 A. It doesn't have anywhere near the damage of what's
 11 in this case. And I was using this purely as an indication
 12 of our ongoing analysis.
 13 Q. What about these anchors? Did you see the anchor
 14 pattern on the Capton in the case, on the switch involved in
 15 this case?
 16 A. No, because it was breaking up as we disassembled
 17 it.
 18 Q. Do you have pictures with you of the Capton that
 19 you saw when you disassembled the switch in the [redacted]
 20 case?
 21 A. Yes.
 22 Q. Why don't you leave that out because that's been
 23 marked as an exhibit.
 24 Why don't you take out the photographs that
 25 you believe best depict the Capton in the state you found it

54 (Pages 214 to 217)

Page 218

- 1 when you disassembled the switch in the [REDACTED] case and
 2 let's mark it.
 3 A. (Witness handing photograph to counsel).
 4 Q. Any others?
 5 A. (Witness handing photograph to counsel).
 6 Q. That's a picture that Mr. Topinka took?
 7 A. Yes,
 8 (Exhibit Nos. 21-23 marked
 9 for identification.)
 10 Q. Let's work with your pictures first. On Exhibits
 11 21 and 22, were you able to determine the presence of any
 12 type of cracks that you believe existed prior to the event?
 13 A. The cracks that you see, the webbing out from the
 14 sides, very similar to the ones that we have seen in other
 15 switches that we have disassembled where they have been the
 16 source of the fire and they have fallen down and sort of
 17 reseated on the floor under the vehicle during the sequence
 18 of events.
 19 Q. I'm going to go back to my original question.
 20 Is there any evidence in Exhibits 22 and 23
 21 that you believe indicates that the Capton in the [REDACTED]
 22 case was cracked before the fire, or can you simply not tell
 23 because it's burned beyond the ability to tell anything?
 24 A. These cracks here would be a good indication, I
 25 think (indicating).

Page 219

- 1 Q. Why don't you circle those?
 2 A. (Witness complies).
 3 Q. And what about those two shapes that you have
 4 drawn on each one of these exhibits, what about those
 5 indicate to you that the break, tear existed in the Capton
 6 seal prior to going through the thermal event?
 7 A. The ones we have reviewed prior to this switch
 8 being disassembled, this is a close resemblance to other
 9 cracks that we have seen. And this one here is going around
 10 in a radius that is consistent to where that teardrop area
 11 forms.
 12 Q. Are you saying that you have -- well, obviously in
 13 this switch you never saw it before the fire, right?
 14 A. Correct.
 15 Q. So you don't know exactly what state it was in
 16 from first-hand knowledge, am I right?
 17 A. What part of the switch?
 18 Q. The Capton seal because nobody opened it up before
 19 the fire?
 20 A. Correct.
 21 Q. So, as I understand your testimony, you are saying
 22 that the shapes that you see on these two exhibits are
 23 similar to shapes you have seen in other switches?
 24 A. Correct.
 25 Q. Okay. In those other switches, switches that also

Page 220

- 1 went through a fire?
 2 A. Yes.
 3 Q. And did you look at those switches both before and
 4 after the fire?
 5 A. We don't get to see them before the fire.
 6 Q. This one you clearly saw before the fire, Exhibit
 7 --
 8 A. Well, that's an investigation that's going on with
 9 NHTSA. There has been no loss of the vehicle I don't
 10 believe. It's just a heating of the switch.
 11 Q. What training have you had in materials that
 12 allows you to opine that the shapes you see in this material
 13 existed prior to the fire? Have you had any formal
 14 education in materials related to Capton, for example?
 15 A. No.
 16 Q. Do you have a chemistry degree?
 17 A. No.
 18 Q. Have you ever been qualified as an expert as a
 19 chemist?
 20 A. No.
 21 Q. Have you ever been qualified as an automotive
 22 materials expert?
 23 A. I don't think so.
 24 Q. What is it about the shape of this crack that you
 25 believe indicates that there was some cracking prior to the

Page 221

- 1 fire?
 2 A. The vehicles that we have removed switches from
 3 have not burned and there has been cracks in there and there
 4 has been damage to the switches, are in very similar
 5 locations. Apart from this one cracking up as we took it
 6 apart, most of that cracking took place when we separated
 7 it.
 8 Q. So when you look at a switch that's leaking and
 9 you examined it similar to the one we have marked here as
 10 Exhibit 20 you've seen cracks that form in an area around
 11 the center of the Capton?
 12 A. Yes, around the radius there or some that are
 13 spiralling out.
 14 Q. But none of the switches that are depicted, for
 15 example, Exhibit 20 have burned completely, right?
 16 A. I don't know how far they have burned. We have
 17 got them logged in this book.
 18 Q. Well, the one you looked at with Mr. Morris didn't
 19 burn completely. You said there was one blow hole.
 20 A. I believe there was one or two blow holes, yes.
 21 Q. And the Capton looks different than the Capton
 22 does in the [REDACTED] case?
 23 A. Yes.
 24 Q. And there is also another layer of Capton in these
 25 switches, isn't there?

55 (Pages 218 to 221)

Page 222

- 1 A. Yes.
 2 Q. When you disassembled this switch you did not look
 3 at that layer of Capton, did you?
 4 A. Everybody agreed that they didn't want to disturb
 5 it anymore.
 6 Q. You didn't look at it, right?
 7 A. No. Nobody wanted to disturb it any further;
 8 that's correct.
 9 Q. So you can't compare that level of Capton with the
 10 pictures that we have here in Exhibit 22 and 23 to determine
 11 whether the Capton looks the same, can you?
 12 A. Not as I sit here today, sir.
 13 Q. Okay. Tell me what this picture is, the one that
 14 Mr. Topinka took? Is this a picture of the Capton?
 15 A. It's a picture of the Capton. There's a
 16 spiderwebbing again leading out to one of the starbursts.
 17 Q. It looks kind of like shattered glass. Would you
 18 say that that's a fair description?
 19 A. In some respects they do, yes.
 20 Q. And would you say that's a fair description for
 21 these photographs 22 and 23, it looks like shattered glass?
 22 A. Could be, yes.
 23 Q. And you've made no study to see what effect heat
 24 has on Capton, have you?
 25 A. I've burnt some Capton.

Page 223

- 1 Q. But you haven't done a study to determine the
 2 chemical effects on Capton when it's exposed to heat; am I
 3 right about that?
 4 A. Not the chemical side.
 5 Q. And you are not qualified to do that, are you,
 6 sir?
 7 A. No, sir.
 8 Q. You have a tab in here, [REDACTED], Tab 4. It says
 9 [REDACTED] 1, RC 11. Does that mean that was the first case that
 10 [REDACTED] contacted you on?
 11 A. No, that's the 11th case.
 12 Q. Okay. I didn't understand your terminology.
 13 A. It's [REDACTED]. If we had another Jolly it would be
 14 [REDACTED] 2 in the old system.
 15 Q. So the [REDACTED] case was a case where Mr. Jolly who
 16 is a plaintiff's counsel in Texas retained you on?
 17 A. Correct.
 18 Q. Tell me a little bit about this vehicle. Why did
 19 you include it in here?
 20 A. It's a Town Car that had gone through a thermal
 21 incident where we were retained but I don't know how far we
 22 got with this case. I don't know whether it settled prior
 23 to us tearing the switch down or not. I don't remember.
 24 Q. The reason why I asked you is you have some
 25 pictures obviously of the vehicle and the engine

Page 224

- 1 compartment. But you also have some close-ups, negatives 25
 2 and 14, and I want to get an understanding of what is
 3 significant of those pictures why you put them in the book?
 4 A. It's just documentation really when we were
 5 looking at the vehicle out there in Texas on 3-16-00.
 6 Q. What is picture, negative 14? What does that
 7 show?
 8 A. It shows the speed control deactivation switch
 9 screwed into the prop valve.
 10 Q. And what about negative 25?
 11 A. It's a view further away of the same area but just
 12 a farther distance away.
 13 Q. Did you examine the switch in this incident?
 14 A. I don't remember if we did or not. We had a
 15 number of these switches where we were involved in, and we
 16 had done the basic analysis of the vehicle and
 17 documentation, and then I believe they settled.
 18 Q. You don't know what the Capton looked like in that
 19 case, am I right?
 20 A. I don't know if we had torn it down -- tore it
 21 down or not unless it's just on our shelf. If it was
 22 removed and we haven't torn it down it's just on our shelf
 23 as evidence.
 24 Q. I would like to pick another one. How about this
 25 one, Tab 10, R 121, R.E. [REDACTED] versus Ford [REDACTED]

Page 225

- 1 (phonetic). Who is [REDACTED]
 2 A. That's [REDACTED] of Texas.
 3 Q. And tell me what is it about this vehicle that you
 4 wanted to include in this book?
 5 A. This is just another vehicle that we looked at,
 6 another Town Car.
 7 Q. Speed control deactivation switch fire?
 8 A. Yes.
 9 Q. Am I right you established with Mr. Feeney
 10 everything in this book is a speed control deactivation
 11 switch fire?
 12 A. Yes, that's correct.
 13 Q. And, again, you had some closeups I wanted to ask
 14 you about. Look at negatives 15 and 21 and tell me what
 15 those are and why those are significant if they are.
 16 A. They are close-ups. One of them is a bracket that
 17 holds the prop valves. And the other one is just a portion
 18 of the wiring harness and connectors with some of the
 19 insulation wrapped around it.
 20 Q. Your comment about the wiring harness got me
 21 focused on something else. I want you to take me through
 22 your theory on how the fire in this [REDACTED] car began and
 23 propagated. Okay. So start off, tell me where in the
 24 switch do we have a problem, and take me from that point to
 25 the complete consumption of the vehicle, everything, the way

1 you see it happening.

2 A. The way I see it happening, you have a seal
3 failure within the switch.

4 Q. Okay. Stop there. I want you to show me where on
5 this document the seal failure occurred. And I'm talking
6 about Exhibit 13.

7 A. Right here (indicating).

8 Q. Why don't you put a big X - no, no, on the seal
9 where you think it failed.

10 A. I don't know where it failed inside the seal.

11 Q. So put an X up here. And just put, you know, seal
12 failed. When do you believe the seal failed?

13 A. Prior to the fire.

14 Q. When prior to the fire?

15 A. I don't know that.

16 Q. Well, can you give me a -- I mean is it days, weeks,
17 months, hours?

18 A. From the research that I have seen from the
19 analysis of the vehicles that haven't totally burned and
20 where the owners have actually communicated with me, for
21 instance, you can leave in the morning get back in the
22 afternoon and two hours later the vehicle is on fire. So I
23 mean it could be between ten hours and two hours. It just
24 depends on the fire starting in there and how long the fluid
25 was leaking causing the corrosion of the connectors.

1 Q. Let me try and shortcut this. Have you done any
2 scientific study to determine how long corrosion takes in
3 your opinion?

4 A. Of actual switches?

5 Q. Yes, sir.

6 A. We have got some that are on a corrosion test.

7 Q. Back to my question. Have you done some testing
8 to determine how long corrosion takes?

9 A. Yes.

10 Q. You have. Okay. What is your conclusion based
11 on?

12 A. We haven't finished the test.

13 Q. How many hours do you have to go on it?

14 A. 15 to 20.

15 Q. And that's testing that's being done currently at
16 your facility in Georgia?

17 A. Yes.

18 Q. And on whose behalf are you doing the testing?

19 A. On mine and Mr. Miller's.

20 Q. We'll get to that in a moment.

21 Okay. So you believe that the Captain seal
22 failed at some point. You don't know exactly when because
23 you haven't done the testing to determine how long it may
24 take for fluid to corrode, am I correct?

25 A. Correct.

1 Q. All right. Now assume the fluid gets into the
2 electrical side. Tell me what happened next on the
3 Mejkmian case in your opinion.

4 A. Fluid got into the electrical side and started an
5 electrolysis or corrosion in this area where the terminal
6 starts to erode and eventually, whether or not you get that
7 buildup of what I would call that green vaseline, that is
8 conductive onto the positive side where it overheats so you
9 get resistance heating. Eventually that gets so hot in
10 there that the outside, the plastic starts to degrade and
11 discolor. And if it gets to a point where a blow hole
12 appears oxygen gets in.

13 Q. I heard earlier in the testimony that there was a
14 moving or stationary contact you believe corrodes off, is
15 that right?

16 A. Yeah.

17 Q. Circle the one that you think is the [redacted]
18 case corroded?

19 A. I think it's that one (indicating).

20 Q. And where did it fail?

21 A. I don't know exactly on this picture. But it fell
22 down because we haven't disassembled or taken this apart.

23 Q. In your experience if it would create a fire where
24 would it have fallen?

25 A. Fallen off the side of the transfer pin and come

1 in contact with the base and still made some continuity.
2 Q. With an arrow tell me where you believe after it
3 corroded it fell.

4 A. Has to fall on this side (indicating).

5 Q. You told me it's the moveable contact that fails?

6 A. Yes.

7 Q. The moveable contact falls and you believe it
8 falls in the position that you have marked with an arrow
9 there?

10 A. Right.

11 Q. And then tell me what happens next?

12 A. Once this resistance heating starts to build up,
13 if the fuse doesn't pop -

14 Q. Did you look at the fuse in the [redacted] case to
15 see if it popped?

16 A. I don't know if we even got the door opened in the
17 [redacted] case.

18 Q. Do you think that was important to look and see
19 what the fuses did in this case?

20 A. If they were available. But in 99 percent of them
21 they're not. They melt out and drop on the floor.

22 Q. Did you look to see what the fuse situation was on
23 this vehicle?

24 A. No.

25 Q. Do you know whether the fuse is a 12 or 15 or 20

Page 230

- 1 amp fuse?
- 2 A. I don't know, I didn't see it.
- 3 Q. What should it be?
- 4 A. 15 amp.
- 5 Q. All right. So the moveable contact falls in the area you have indicated there. You said there is some heating. Does the fuse need to blow in order to have a fire the way you saw it in the [redacted] case?
- 6 A. I think the fuse needs to have continuity through the ground and shorting with 12 volts to it for it to build up enough heat.
- 7 Q. So the answer to the question is the fuse does need to blow?
- 8 A. No, it doesn't need to blow.
- 9 Q. It does not?
- 10 A. No, it does not.
- 11 Q. Is there then going to be some arcing event that creates the heat source to burn a hole through that plastic?
- 12 A. Yeah.
- 13 Q. Okay.
- 14 A. In this particular case I saw some arcing on the terminals.
- 15 Q. Great. I want you to mark that in yellow. Show me where you saw arcing on the terminals. Use the yellow pen.

Page 231

- 1 A. It's in about this area up here (indicating).
- 2 Q. Now in your experience if the stationary or the moveable contact falls here, isn't it grounded through the hexport?
- 3 A. Yes.
- 4 Q. And wouldn't you expect to see arcing on the base of the hexport?
- 5 A. It depends on how much of that, well, I would say conductive jelly is there on the surface of this.
- 6 Q. So is the answer you don't expect to see arcing on the hexport?
- 7 A. I have seen arcing on the hexport.
- 8 Q. In fact, most of the fires you think were caused by speed control deactivation switches you've seen clear evidence of arcing on the hexport, haven't you, Mr. Clarke?
- 9 A. I have seen in some cases arcing, yes.
- 10 Q. But in this case, the vehicle in the [redacted] case, there is no arcing on the hexport, is there, sir?
- 11 A. I think what happened - no, you are right, there isn't.
- 12 Q. Now you have a different theory but you answered my question there is no arcing on the hexport in this vehicle?
- 13 A. Not in this particular one.
- 14 Q. And you looked for it, didn't you?

Page 232

- 1 A. Yes, we did.
- 2 Q. Now you drew a highlighted portion up here where the terminals are, and you indicated that you saw some evidence of arcing there, right?
- 3 A. Yes.
- 4 Q. I want you to look in your book, your OSI's, and I want you to show me of all the vehicles you brought me which ones had arcing in this area that you believe were a speed control deactivation switch fire and no mark on the hexport?
- 5 A. I haven't brought any of the x-rays with me.
- 6 Q. Can you look at the names of the cases and tell me if any of those cases in your opinion you have only arc evidence up here on the terminals, none on the hexport, and you concluded that it was a speed control deactivation switch?
- 7 A. I believe this is one of the first ones that we saw with arcing up here.
- 8 Q. Okay.
- 9 A. Sometimes we just get two little nubs with the female and male is connected, just the two wires. Sometimes you just get the male portion and the stationary contact with a portion of it melted off.
- 10 Q. So truth in fact this is one that's kind of unusual. We have got a steel hood. It's the first time we've ever seen a steel hood; is that right?

Page 233

- 1 A. That's correct.
- 2 Q. We don't have arcing on the hexport, right?
- 3 A. It's not evident.
- 4 Q. And you looked for it?
- 5 A. I don't know how far we did clean it off but we didn't - I don't know how far we did clean it off.
- 6 Q. And this is the first time you have seen arcing up there on the terminals?
- 7 A. Yes, it is.
- 8 Q. Let me ask you something. You know, I represent Texas Instruments, right?
- 9 A. Right.
- 10 Q. And you understand Texas Instruments manufactured one component that went in the speed control deactivation switch system?
- 11 A. I don't know how much you actually produced or manufactured.
- 12 Q. Well, we manufactured the part that's in this schematic here in Exhibit 13, right?
- 13 A. Which part?
- 14 Q. The speed control deactivation switch.
- 15 A. The whole thing?
- 16 Q. This switch. We didn't make the connector, you understand?
- 17 A. Right.

58 (Pages 230 to 233)

Page 234

- 1 Q. It's undisputed in this case that this switch was
 2 manufactured I believe sometime in 1992, towards the end of
 3 1992, right?
 4 A. November, I think.
 5 Q. And the fire in this case was when?
 6 A. I've got it here somewhere, 1-20-2001.
 7 Q. So at least nine years from when the switch was
 8 manufactured, right?
 9 A. Yes.
 10 Q. And you know that the vehicle has over 280,000
 11 miles on it?
 12 A. Yes.
 13 Q. You are not suggesting to anyone on the jury that
 14 the switch is defective, are you?
 15 A. I'm coming in here showing you or telling them
 16 that this was the source of the fire.
 17 Q. You believed it was the source of the fire.
 18 Back to my question. This switch that lasted
 19 eight, nine plus years and 280,000 miles, you are not
 20 suggesting to this jury that there is anything defective
 21 about that switch when it left our facility back in 1992,
 22 are you, sir?
 23 A. No, sir.
 24 Q. Look at [REDACTED] Tab 10. You have pictures 26 and
 25 29. Can you tell me what those pictures are?

Page 235

- 1 A. They are of molten aluminum.
 2 Q. And where is this molten aluminum coming from?
 3 A. It was from the frame rail directly below where
 4 the switch is located.
 5 Q. And it melted, right?
 6 A. It was melted, yes.
 7 Q. And what was the temperature you said you believe
 8 aluminum melts at?
 9 A. At 1200 degrees.
 10 Q. That's Centigrade or Fahrenheit.
 11 A. Centigrade.
 12 Q. Look at the next pictures. You have a series of
 13 artifacts, it looks to me like they had fallen off and
 14 someone had lined them up for a photograph. Is that a fair
 15 depiction?
 16 A. Yes.
 17 Q. Okay. What about these artifacts did you believe
 18 were significant in this [REDACTED] case?
 19 A. It was documentation of the components and
 20 artifacts that we found during our inspection.
 21 Q. Are any of the components here that are depicted
 22 in negatives 33 or 34 components that were recovered at the
 23 [REDACTED] fire?
 24 A. At this fire, in this case?
 25 Q. Yes, sir.

Page 236

- 1 A. No, sir.
 2 Q. Look at negatives 36 and 6, the next two pages.
 3 A. Right.
 4 Q. What is the item depicted in the top picture?
 5 A. It's another piece of melted alloy. I think it
 6 could be a crimp ring.
 7 Q. That would be this portion here (indicating)?
 8 A. That's correct.
 9 Q. And in this case that you believe was a brake
 10 pressure switch fire that crimp ring is completely deformed
 11 and melted, correct?
 12 A. Correct.
 13 Q. In the [REDACTED] case that wasn't the fact, was
 14 it?
 15 A. It was partially melted, I think.
 16 Q. But it wasn't deformed anywhere near to the degree
 17 of that, was it?
 18 A. No.
 19 Q. Turn the page, if you will. Look at negative 10.
 20 Is that a picture of the hexport?
 21 A. No.
 22 Q. What is that?
 23 A. It may be one of the valves at the ABS system.
 24 Q. And why did you think that was significant?
 25 A. It was just stuff that was recovered from the

Page 237

- 1 vehicle.
 2 Q. All right. In the [REDACTED] case did you recover
 3 this component?
 4 A. I don't think it was available. I think it was
 5 still intact.
 6 Q. Let's go to this Tab 26 where it says Exemplar
 7 Switches, Lincoln Town Car, Ford Fire. Do you see that?
 8 A. What number, sir?
 9 Q. That's Tab 26. I'm going to it because it's one
 10 that we don't have a name of a case. Okay. Tell me why you
 11 included this tab in your book?
 12 A. This is one of the switches that was removed off
 13 one of our prior cases where we didn't disassemble it.
 14 Q. Which case does this relate to?
 15 A. I would have to go back and check the VIN numbers.
 16 It's obviously a 1992 vehicle.
 17 Q. By the way, you mentioned that the very first
 18 Lincoln Town Car you ever looked at [REDACTED] retained you
 19 on; is that right?
 20 A. Yes.
 21 Q. Is that in this book?
 22 A. No, sir.
 23 Q. Why not?
 24 A. Because it wasn't a speed control deactivation
 25 switch fire.

Page 238

- 1 Q. What kind of fire was it?
 2 A. It was a block heater by a cat that had shorted
 3 inside the connector.
 4 Q. What model and year was it?
 5 A. I believe it was a '92. Gentleman had plugged his
 6 block heater in and a few minutes later it started on fire
 7 in Fargo, I think, North Dakota.
 8 Q. Did you look at the speed control deactivation
 9 switch?
 10 A. That wasn't the source. The block heater was
 11 wired into around the front of the vehicle.
 12 Q. Have you looked at cars that are Lincoln Town
 13 Cars, 1992 to 1993 Lincoln Town Car cars that never burned?
 14 A. Yes.
 15 Q. Have you looked at cars that had over 100,000
 16 miles on them that are still operating properly, Lincoln
 17 Town Cars 1992, 1993?
 18 A. I have seen some, yes.
 19 Q. Do you have some view that this vehicle has to
 20 last so many miles?
 21 A. Well, I think you asked me earlier do I think the
 22 switch is defective when it left your facility. If you have
 23 got a switch that you're installing in a vehicle that's part
 24 of a safety style switch, you know, you've got to have some
 25 perceived vehicle. If it's a safety switch and it's wired up

- 1 to 12 volts, and it's a potential for something to happen to
 2 it or it can happen to it, it should be designed or wired in
 3 a fail-safe scenario where if it does fail like this it
 4 doesn't leave it lying and smoldering.
 5 Q. Now that's a different answer than you gave me
 6 before.
 7 MR. FEEHAN: I think the record should
 8 reflect that since the first time he admitted that he
 9 wasn't saying the switch was defective he and counsel for
 10 the plaintiff have had two whispering conversations in front
 11 of all of us and now he has volunteered this. I just want
 12 the record to reflect that.
 13 A. I just didn't want to get put into a yes or no
 14 answer situation.
 15 Q. Well, back to my question now, and your answer is
 16 what it is. It's in the record.
 17 A. Yes.
 18 Q. I'm asking you now this vehicle in the [REDACTED]
 19 case has 280,000 miles on it which you conveniently left off
 20 your report?
 21 A. I didn't conveniently leave it off.
 22 Q. Well, do you think the mileage is available to you
 23 in your own Exhibit 3?
 24 A. I don't put the mileage from a service record on a
 25 report. I only put mileages on there when I document on the

Page 240

- 1 vehicle.
 2 Q. You would agree with me that the mileage is very
 3 important in doing a fire analysis on this vehicle, would
 4 you not?
 5 A. Mileage?
 6 Q. Yes, sir, how many miles this car has seen.
 7 A. Well, I mean, I've got vehicles that are two years
 8 old and roughly have got 200,000 on them and they are not
 9 burning.
 10 Q. Well, you have the mileage right in this document?
 11 A. Right.
 12 Q. Okay. And you don't dispute that it's in excess
 13 of 280,000 miles, do you?
 14 A. I don't dispute that. They are designed to be
 15 driven, are they not? Is there a mileage limitation?
 16 Q. Yes. That's what I'm asking you. When do you
 17 think - I mean, well, you sold Lotus. What was the
 18 warranty on the Lotus? You said you monitored warranty.
 19 How many miles do you all warranty on the vehicles?
 20 A. 36,000 miles.
 21 Q. If someone comes in with a problem and they have
 22 280,000 miles on it and the part is worn out is that a
 23 defective product?
 24 A. If it's worn out, depends on the failure mode. My
 25 area of expertise when I worked for Lotus and General

Page 241

- 1 Motors, failure analysis was a prime part of that. We used
 2 to have to look at that and we interpreted that in all the
 3 ways when we looked at a component that has failed. If it
 4 was a foreseeable problem that, A, whoever it was that made
 5 it, whether it be Delco, the clutch people, or whatever, if
 6 that problem is a record that we have seen before, yes, I'd
 7 like to get away with not paying for it and stick it with
 8 the customer. But, you know, when you are dealing with a
 9 small company like that we used to goodwill that stuff.
 10 Q. Did you ever look at a vehicle that had 280,000
 11 miles on it and say that a part that had worn out was a
 12 warranty item?
 13 A. Not mileage, mileage wasn't a consideration with
 14 Lotus. It's usually time because they don't get driven as
 15 much. So you look at a vehicle that's ten years old and
 16 only has got 5,000 miles on it and you have a major problem
 17 with it, should it have failed at 5,000?
 18 Q. You said one of the things you do is you look at
 19 failure mode. Do you remember that?
 20 A. Yes.
 21 Q. In this switch when it wears out, what's the
 22 failure mode, Mr. Clarke?
 23 A. The failure mode is the seal has failed.
 24 Q. There is nothing defective about that, is there,
 25 sir? They are going to fail?

60 (Pages 238 to 241)

Page 242

- 1 A. They could fail.
 2 Q. They are going to fail at end of life, aren't
 3 they, sir?
 4 A. I don't know what the end of life is.
 5 Q. Because you've never tested to see?
 6 A. I mean, does the owner know the end of life so he
 7 knows when to have it changed?
 8 Q. Have you ever tested the switch to its end of
 9 life?
 10 A. No.
 11 Q. You believe that if the switch wears out that one
 12 of the failure modes is that the seals would fail, right?
 13 A. Correct.
 14 Q. If that part wears out, you are not here
 15 suggesting that it's defective, are you, sir? Because you
 16 know all parts will eventually wear out, correct, sir?
 17 A. They are going to wear out eventually. But if
 18 they wear out and they are in a safety situation they
 19 should have failed safe.
 20 Q. Now Texas Instruments sells the parts, don't they?
 21 A. Yes.
 22 Q. Do you know who they sold it to in this instance?
 23 A. I'm presuming they sold it to Ford Motor Company
 24 or a supplier to Ford Motor Company.
 25 Q. Do you know?

Page 243

- 1 A. No, sir.
 2 Q. Do you know what testing is done on the switch by
 3 Texas Instruments prior to its leaving its facility?
 4 A. I've read the documentation that you've done on
 5 testing the switch in the early days, the cycle tests.
 6 Q. Do you have any knowledge of what tests were done
 7 on production line switches that were released in 1992?
 8 A. I've read all the documentation that's been
 9 supplied to us but I don't recollect it.
 10 Q. You don't have any knowledge one way or the other?
 11 A. No, sir.
 12 Q. Do you know what testing was done when the switch
 13 went to a tier one supplier after it left Texas Instruments?
 14 A. No, sir.
 15 Q. Do you know what testing was done at Ford on the
 16 switch when it received it from the tier one supplier and
 17 installed it in the vehicle?
 18 A. I'm presuming they installed it on the vehicle and
 19 test to see if it's functioning properly and then it goes
 20 on.
 21 Q. But the answer to my question is you don't know,
 22 you haven't investigated it, have you, sir?
 23 A. No, sir.
 24 Q. Did you have the mileage on the vehicles that you
 25 have examined that are contained in this book?

Page 244

- 1 A. If the speedos were available we would have had it
 2 documented in the file.
 3 Q. Okay. Back to this binder, 26 exemplar switches
 4 on Lincoln Town Cars. The first two pictures negative 1 and
 5 negative 2, you said you believe they are switches from some
 6 other case but you could not recall what other case; is that
 7 correct?
 8 A. I don't recollect the case number right now, no.
 9 Q. What is that NX [REDACTED] What is that?
 10 A. They have the VIN number of that vehicle where it
 11 came from. So yes, I can get that number and I can get the
 12 information but I don't have it with me today.
 13 Q. And tell me what's depicted in negatives 1 and 2.
 14 A. It's a picture of the prop valves from an ABS
 15 vehicle from 1992 showing the portions of the brake pipes
 16 where they were cut and the remainder of the base of the
 17 switch.
 18 Q. How do you know it's 1992 because the tab only
 19 says Lincoln Town Car, Ford Fires?
 20 A. The end of the date is 1992 from the VIN number.
 21 Q. And why did you include these pictures of the ABS
 22 system?
 23 A. The ABS system, that's how it was removed from the
 24 vehicle.
 25 Q. Did this vehicle the [REDACTED] vehicle have ABS?

Page 245

- 1 A. Yes.
 2 Q. Negatives 5 and 6, can you tell me what this is?
 3 A. Same portion of the switch but removed from the
 4 prop valve.
 5 Q. And negatives 9 and 10?
 6 A. That's when we took the top of the - or the base
 7 of the switch away from the hexport portion and separated it
 8 and got the little beads out.
 9 Q. What are those beads?
 10 A. They are the remains of the removable contacts.
 11 Q. You are not a metallurgist, am I correct?
 12 A. No, sir.
 13 Q. You have had no formal training in the
 14 thermodynamics of valves, am I correct?
 15 A. That's correct.
 16 Q. You are not offering any opinions on that, sir?
 17 A. I can identify heading of brass or copper. I'm
 18 not offering an opinion as a specialist.
 19 Q. Because you are not qualified to determine the
 20 properties of molten metals, are you, sir?
 21 A. That's correct.
 22 Q. Tell me what's depicted in pictures 21 and 30 in
 23 this binder.
 24 A. It's the hexport. Once the switch has been
 25 disassembled shows the seal is stuck down to the hexport,

61 (Pages 242 to 245)

Page 246

- 1 the base of the hexport.
 2 Q. This is a switch that went through a fire?
 3 A. Yes, it did. But it didn't fall out and go on the
 4 floor. It stayed connected to the prop valve.
 5 Q. Is it your testimony that the fact that this
 6 switch failed and went on the floor is what explains the
 7 condition of the Capton in Exhibits 22 and 23?
 8 A. Yes.
 9 Q. 21 and 22. I'm sorry.
 10 A. If it's those pictures that you have got right
 11 there, yes.
 12 Q. And had it not fallen on the floor you believe the
 13 Capton would look like it looks in Exhibit 30?
 14 A. I think it could have been very similar.
 15 Q. Have you done some testing where you have burned
 16 Capton and then dropped it on the floor to see if, in fact, it
 17 looks like that?
 18 A. I've done the testing where you burn it and see if
 19 it self extinguishes.
 20 Q. Back to my question. Have you burned a switch,
 21 dropped it on the floor, and then opened it to see whether,
 22 in fact, it looks like shattered glass?
 23 A. Not yet we haven't, no.
 24 Q. So the testimony you are giving me that you think
 25 dropping caused that cracking, that's really speculation?

Page 247

- 1 That's based on your hunch?
 2 A. Dropping caused the cracking?
 3 Q. No. Caused the shattering of the Capton?
 4 A. I don't think the dropping caused the shattering.
 5 Q. What do you think caused it?
 6 A. I think it's the super heating of it laying under
 7 the vehicle being consumed in the fire.
 8 Q. I'm sorry, I misunderstood you. I thought you
 9 meant when it drops to the floor it shatters the Capton?
 10 A. No.
 11 Q. You are not saying that?
 12 A. No.
 13 Q. You are saying that the heating, when the Capton
 14 is exposed to extensive heat shatters the Capton?
 15 A. Yeah. Or we couldn't get into the switch without
 16 taking it apart. There were cracks in the Capton when we
 17 looked into it. We looked at the other vehicles that we
 18 dissected and the switch had cracked, and when we take them
 19 apart the seals break up too.
 20 Q. What is it about the cracking that you conclude is
 21 the cause and not the effect of the heating? Anything?
 22 A. The cracking, the way — the cracks that I see in
 23 the spidering, this is consistent with — not the cracking
 24 but the split tear around the circumference here is
 25 consistent with other switch failures we have seen.

Page 248

- 1 Q. Well, there is plenty of tear down here
 2 (indicating), isn't there?
 3 A. Not that stuff. That's stuff that's fallen down.
 4 This line that's around the seal right here (indicating)
 5 that's consistent with seal failure in other
 6 switches that haven't gone through that sort of a thermal
 7 incident.
 8 Q. Is that the only thing that you can point to which
 9 you believe distinguishes the cause versus the effect from
 10 the heat?
 11 A. I believe that is.
 12 Q. Okay. Nothing else?
 13 A. That's right.
 14 Q. And we have already established you have no
 15 experience working with Capton as a chemist or a materials
 16 person; am I right?
 17 A. I'm not a material analysis person.
 18 Q. And you are not offering any opinions on that, are
 19 you, sir?
 20 A. No, sir.
 21 Q. What is depicted in if you go two pictures down,
 22 negative 5 and 9 there?
 23 A. They are the reverse side of the — that's where
 24 the plunger goes through into the base of the switch.
 25 Q. Okay. And what's significant —

Page 249

- 1 A. That's the spacer. And that's where the other
 2 portion of the Capton is usually located (indicating).
 3 Q. This is the other portion of the Capton in the
 4 [redacted] case that you did not open up and examine?
 5 A. That's correct.
 6 Q. Now in this picture, Exhibit 9, it looks pretty
 7 shattered to me, doesn't it?
 8 A. It does. That's right.
 9 Q. It looks just like this, doesn't it, Exhibit 22
 10 (indicating)?
 11 A. It's very similar.
 12 Q. Is it your testimony there were cracks in that
 13 prior to the thermal event?
 14 A. No. I think that that was heated up during the
 15 thermal event.
 16 MR. MAYER: Let's go ahead and mark this one
 17 separately. Would you take that out and I'll stamp it.
 18 (Exhibit No. 24 was marked
 19 for identification.)
 20 Q. What I have marked as Exhibit 24 are two photos
 21 from Exhibit 3. And the bottom photo depicts another Capton
 22 piece that's contained within the brake pressure switch. Is
 23 that a fair statement?
 24 A. That's correct.
 25 Q. And we have just been talking about it?

62 (Pages 246 to 249)

Page 250

1 MR. DUNFORD: I think you misstated it. It's
2 not from Exhibit 3.

3 MR. MAYER: I'm sorry. Exhibit 4. Thank
4 you.

5 Q. And your testimony is that the bottom picture on
6 Exhibit 24 you do not believe was cracked prior to the fire?

7 A. No, sir.

8 Q. Okay. Although its appearance, would you agree
9 with me, is shattered and fragmented?

10 A. I think the shattering and fragment is caused by
11 the disassembly of it. In the early protocols by Ford Motor
12 Company and I guess by you guys you were trying to put them
13 on a lathe. And the ones we tried to dissect that way just
14 spun them around and just twisted them into nothing. So
15 that's when we came up with the protocol to use the dental
16 (phonetic).

17 Q. What is it about Exhibit 24 that tells you you
18 know how you disassembled it?

19 A. Just by the cutting around the outside here
20 (indicating). That's where we just usually hold the heatport
21 and cut around the circumference in the area of the crimp
22 ring.

23 Q. And you agree that if you expose Capton to heat it
24 will break and fragment as depicted in Exhibits 21 and 22;
25 there is no question about that?

Page 251

1 A. It can do that.

2 Q. You have seen that many times?

3 A. I have seen it in other vehicle fires where the
4 switch is the cause of the fire and the Capton looks very
5 similar to that, yes.

6 Q. Have you opened up any switches that you knew were
7 not the cause of the fire and looked at the Capton to see
8 what condition it's in after the car experienced a fire?

9 A. Yes.

10 Q. And when did you do that?

11 A. Between sort of 2000 and I don't know exactly what
12 date we looked at them. I believe Mr. Miller has got those
13 if you want.

14 Q. That's in the book?

15 A. No.

16 Q. Why not?

17 A. Because they weren't a part of a switch fire.

18 Q. What does the Capton look like in those?

19 A. It was a dark orange color purplish.

20 Q. Have you produced those in this case?

21 A. No.

22 Q. I'd make a request that we see the results of the
23 materials that you have just described when you and Mr.
24 Miller burned switches that were burned in a car that you
25 know is not a brake pressure switch and then you

Page 252

Page 253

1 disassembled it.

2 A. Okay.

3 Q. I want to get back to the propagation and how you
4 believe this fire began in this vehicle, the [redacted] case.
5 Where we last left off I think you pointed to where the
6 moveable contact would have fallen and you believe there
7 would have been some electrical incident.

8 Could you explain to me what exactly has to
9 happen to create enough heat so that you have some type of a
10 fire?

11 A. You have to have a resistance heating and that
12 means that the current is going through it to ground causing
13 a resistance and building up of temperature inside that
14 cavity.

15 Q. Now you are not an electrician or electrical
16 engineer, right?

17 A. That's correct.

18 Q. Do you know what Ohm's law is?

19 A. Yes.

20 Q. Can you tell me what it is?

21 A. I forgot the actual -- let me think.

22 Q. I'll tell you what, we'll move on. If you think
23 of it you tell me.

24 Now corrosion, have you taken any formal
25 courses in the chemistry of corrosion?

1 A. No.

2 Q. You do not hold yourself out to be an expert in
3 corrosion?

4 A. No, I don't.

5 Q. Nor are you offering any opinions on corrosion, am
6 I correct?

7 A. Only the corrosion that's on to the vehicle body
8 that shows a pattern.

9 Q. But you don't know the chemistry of corrosion
10 formation because you have never been trained about that?

11 A. Correct.

12 Q. And you are not offering any opinions on that?

13 A. Correct.

14 Q. Now you mentioned that there would be some, did
15 you use the term electrolysis for the portion that you
16 circled with the yellow highlighter?

17 A. I saw some electrical activity or erosion. But
18 during the x-rays you can see one side has withered away,
19 something was eating it.

20 Q. You think it's electrolysis?

21 A. I don't know that for sure.

22 Q. Would it be fair to say that because you are not
23 an electrical engineer this is an area that you are not
24 trained in nor are you offering an opinion on exactly what
25 happened on that part that you have circled in yellow?

63 (Pages 250 to 253)

Page 254

- 1 A. I don't know what happened.
 2 Q. Because you don't have the background and training
 3 to opine on that, do you, sir?
 4 A. I can tell you it's not standard and it shouldn't
 5 happen.
 6 Q. Right. Beyond that you can't really say?
 7 A. Unless you are pulling it apart and can see it a
 8 bit more.
 9 Q. If the vehicle was consumed in a fire, if the
 10 vehicle was burning from some other source, can you
 11 completely rule out the fact some anomaly in the spots that
 12 you circled or could it be a result of the fire attacking
 13 the car?
 14 A. I don't think it's a result. I think it's a
 15 by-product of the failure of the components inside the
 16 switch.
 17 Q. What is it that you believe makes it clearly
 18 something that is not a result of fire attacking the car?
 19 A. What makes it --
 20 Q. What's your basis for that?
 21 A. Well, in the switches - and all I can testify to
 22 is all the other switches we have ever disassembled and I've
 23 seen activity on the edge of this, and this one has some
 24 more up here (indicating).
 25 Q. You pointed to a specific area down by the

Page 255

- 1 heatport?
 2 A. That's correct.
 3 Q. I'm asking you a different question. We have that
 4 the electrical anomaly that you have noticed in this case
 5 that we are here on today isn't a part that you've never
 6 seen it before. We have established that.
 7 And what I'm trying to get at is what is your
 8 scientific basis for saying that anomaly in your opinion is
 9 as a result of this switch failing and not something
 10 happening to the car that's engulfed in a fire?
 11 A. I think you'll find that there is enough material
 12 around this to protect it from the outside fire. One
 13 explanation is that something flowed down from above, brake
 14 fluid or something was in there causing maybe some
 15 resistance heating.
 16 Q. What if the battery was consumed in a fire and
 17 shorted, could that explain the anomaly that you have
 18 circled there?
 19 A. No, I don't think so because they are not
 20 connected.
 21 Q. So the scientific basis for your conclusion that
 22 the anomaly that you observed had to be something other than
 23 fire consuming the car is that there is sheets of protection
 24 around this portion that you believe is still intact?
 25 A. Yes, from the x-rays at least.

Page 256

- 1 Q. Okay. And did you do some - well, I would be
 2 correct, would I not, that you have never taken a vehicle with
 3 the switch in it and exposed that vehicle to a fire, and
 4 then opened up the brake pressure switch to see what
 5 happened to that switch after the vehicle was engulfed in a
 6 fire? Am I correct about that? You have never done that
 7 test?
 8 A. I haven't personally tested it. But I've
 9 disassembled vehicles where they have been in fires,
 10 Lincolns, where the switch isn't a cause of it and we have
 11 taken the switches apart.
 12 Q. But back to what I was asking before. Have you
 13 ever taken a vehicle, subjected it to a fire, then gone and
 14 examined the brake pressure switch to see what electrical
 15 anomalies may or may not have resulted from that incident?
 16 A. No.
 17 Q. You have never done that?
 18 A. No.
 19 Q. Let's go back. I want to understand. So there is
 20 an electrical anomaly on the area in Exhibit 13 that is
 21 circled in yellow. Does this anomaly create enough heat in
 22 this case under your theory to create a fire?
 23 A. It could do.
 24 Q. Did it in this case?
 25 A. I don't think it did. No, I think the anomaly

Page 257

- 1 started in here because that's where the blow holes are
 2 (indicating).
 3 Q. So the anomalies -- I want you to go ahead and put
 4 in blue pen where you believe the electrical anomaly that
 5 led to the blow holes -- well, where is the heat source?
 6 Point on this switch where the heat source was?
 7 A. The heat source?
 8 Q. Yes.
 9 A. In this area (indicating).
 10 Q. Okay. Can you be any more specific than that?
 11 A. No.
 12 Q. And you believe that the electrical anomaly here
 13 that you have circled in yellow caused the heat source in
 14 this area that's circled in blue; is that right?
 15 A. Correct.
 16 Q. And what is it that happened up here that caused
 17 that heat source?
 18 A. What happened?
 19 Q. Yes. Tell me what happened here that caused that
 20 heat source that you believe occurred?
 21 A. I think the heat source here was caused by the
 22 seal failure and corrosion taking place within this cavity.
 23 Whether or not fluid was pushed up through here, it's quite
 24 probable. I've seen that in a number of switches where
 25 fluid can get up to this electric point where the connector

1 is.
 2 Q. And you believe that heating occurred in the area
 3 circled in blue but you have also admitted there is no arc
 4 evidence down at the hexpert?
 5 A. Not that was visible.
 6 Q. So there is some heating that occurs in this area
 7 here (indicating). What happens next? What actually –
 8 where does the flame come out and what does it do?
 9 A. From my testing, you're going to get a blow hole
 10 on either side or on one side or the other. And then you
 11 get a flame that comes out the side.
 12 Q. Okay. Draw the flame like you've just done.
 13 A. (Witness complies).
 14 Q. So you believe in the [REDACTED] case that there
 15 was some heating incident that occurred here which is a
 16 result of some type of corrosion, right?
 17 A. Correct.
 18 Q. But you can't be any more specific than that?
 19 A. That's what I said.
 20 Q. And a blow hole was created on this side and you
 21 have drawn that. And a flame exited the switch?
 22 A. Correct.
 23 Q. Okay. Now what is the fuel that is going to
 24 supply this flame?
 25 A. There is various wiring harnesses and combustible

1 plastic. If it's flaming long enough it can get up to the
 2 reservoir for the brake fluid and that can carry on from
 3 there.
 4 Q. Now I know you produced some video tapes in this
 5 case, right?
 6 A. Yes.
 7 Q. I think Mr. Feeney talked briefly about them. I
 8 quickly glanced at them. But they appear to me to be a
 9 switch that is outside of a vehicle mounted in some form or
 10 fashion. Is that a fair statement?
 11 A. Yes.
 12 Q. Okay. In order for this flame that you have drawn
 13 here – because it burns like a little candle, doesn't it?
 14 A. I think the one in ours came out more like a blow
 15 torch actually in the video that we documented.
 16 Q. But there is not a whole lot of fuel in the switch
 17 itself to propel this, is there?
 18 A. Well, there is going to be a certain amount of
 19 fluid, brake fluid. And I don't know how much residual
 20 pressure there is in the system once you got this opening,
 21 how much fluid is continually fed up through the port.
 22 Q. Because you have not done the testing with the
 23 switch in the vehicle, am I right about that?
 24 A. We tried to do the test similar to the one I
 25 believe you guys did in your videos.

1 Q. Back to my question. Did you do the testing with
 2 a switch in the vehicle to see, for example, whether your
 3 theory about brake fluid coming into the switch is, in fact,
 4 valid?
 5 A. No.
 6 Q. You have never done that test, am I right about
 7 that?
 8 MR. DUNFORD: Asked and answered.
 9 A. I haven't done the test in the vehicle but I know
 10 brake fluid can get in there.
 11 Q. We are talking about the flame propagating, right?
 12 A. Yea.
 13 Q. And you mentioned that you thought a possible
 14 source was brake fluid coming through, right?
 15 A. It can add fuel to it, yes.
 16 Q. There are other sources you mentioned. You said
 17 that there is some wiring in the vicinity?
 18 A. There is wiring. There is plastic.
 19 Q. In this fire, in this case, based on what you have
 20 seen, I want you to take me from that flame exiting the blow
 21 hole to the next step where it propagates. Tell me what
 22 happens.
 23 A. It's going to contact some combustible material in
 24 the engine compartment, and that's going to propagate to the
 25 rest of the engine compartment and spread.

1 Q. In the book that you have brought us, do you have
 2 a picture of a 1992 engine compartment as an exemplar that
 3 you can show me, for example, where the switch is, how it's
 4 oriented, what you think the sources of flame were and fire
 5 in this case we are on here today?
 6 A. I don't have an exemplary picture, no, I don't.
 7 Q. Okay. So in the [REDACTED] case there is a flame
 8 that's exiting this blow hole. What next catches on fire?
 9 A. Some combustibles in the engine compartment in
 10 close proximity to the switch.
 11 Q. Would it be some combustibles that are above the
 12 flame as you have depicted since we know fire burns up?
 13 A. It's possibly going to be above the flame. It
 14 could be a wiring harness. There is a harness from the
 15 brake level device, in the reservoir – there is a number of
 16 combustibles in the area.
 17 Q. Would it be correct to say that you have not done
 18 any actual testing of a Lincoln to see what combustibles
 19 will catch fire and how long they will burn?
 20 A. That's true, we have not.
 21 Q. Okay.
 22 A. As I sit here today one hasn't been done.
 23 Q. So you don't know exactly what combustible will
 24 burn first and how long that combustible will burn. Is that
 25 a fair statement?

Page 262

1 A. That's a fair statement.
 2 Q. Okay. And obviously in the [REDACTED] case that we
 3 are here on today, we know what the vehicle looked like from
 4 the pictures that you brought in here, and there is fire
 5 damage to the vehicle, right?

6 A. Right.

7 Q. Would it be fair to say that you cannot take me
 8 beyond that flame coming out of the blow hole to how the
 9 rest of that vehicle became engaged in that fire?

10 A. I can't tell you definitively how it happened.

11 Q. Do you have a theory on how it happened, Mr.
 12 Clarke?

13 A. Yes.

14 Q. Okay. Take me through the next step. The blow
 15 hole flame ignites. What burns next?

16 MR. DUNFORD: Asked and answered.

17 A. Combustibles in close proximity, the wiring
 18 harness that comes out of the top depending on which it's
 19 looped over. Then there is the main harness that that goes
 20 into it, that's directly above it.

21 Q. And what are those made out of?

22 A. Plastic, they do burn.

23 Q. Easily.

24 A. And then it can get to the reservoir where there
 25 is six or eight ounces of brake fluid in there and it's

Page 263

1 going to go up, too.
 2 Q. And so you believe in the [REDACTED] case those are
 3 the things that happened next after the blow hole flame
 4 exited that blow hole?

5 A. Right.

6 Q. We have wiring harness, main harness and we have
 7 the brake fluid reservoir?

8 A. Correct.

9 Q. Anything else?

10 A. If there is any soundproofing under the engine
 11 compartment, hood compartment there, that's going to start
 12 to heat up and smolder.

13 Q. Well, is it standard on a steel hood?

14 A. A steel hood isn't standard.

15 Q. Is the sound deadening material standard on a
 16 steel hood or you do not know?

17 A. I don't know what was on it from a standard.

18 Q. Okay. In the [REDACTED] case then we have those
 19 harnesses catching fire. You say they are made of plastics,
 20 correct?

21 A. The outside covering, the sheaths are made of
 22 plastic, like the corrugated.

23 Q. Step back. You are not an expert in plastics nor
 24 have you had any studies in the chemical makeup and the
 25 flammability of plastics. Am I correct on that?

Page 264

1 A. Correct.

2 Q. And the fact that you see a plastic that has been
 3 burned or melted to you, you don't have the expertise to
 4 tell me what temperature that plastic melted at; is that
 5 correct?

6 A. Not without testing it, po.

7 Q. And you haven't done that testing?

8 A. No, we haven't.

9 Q. So if we see melted plastic we don't know what
 10 temperature that plastic melted at. Fair enough?

11 A. I would say it would depend on the makeup of the
 12 plastic. I'm sure they have all different ranges.

13 Q. Did you do any analysis of what the makeup of the
 14 plastics were that you believe were consumed in the next
 15 step in this fire propagation that you believe happened in
 16 the [REDACTED] case?

17 A. No.

18 Q. And would it also be fair to say that you are not
 19 here offering opinions on the fire properties of plastics?

20 A. That's correct.

21 Q. You don't have that training nor are you capable
 22 of opining on plastic thermal properties. Am I right on
 23 that?

24 A. That's correct.

25 Q. And the fact that you see plastics that has been

Page 265

1 burned or melted, you don't have the ability to tell me what
 2 part of that plastic was hotter and what part of that
 3 plastic was cooler, do you?

4 A. It depends on how black it is. I mean you can
 5 tell from the finishing. I can't say how long or what
 6 temperature but you can visually observe melted plastic.

7 Q. I can visually observe melted plastic, too. I'm
 8 asking you a different question. You are not here as an
 9 expert in the thermal dynamics of plastics to look at melted
 10 plastic and say to the jury, ladies and gentlemen of the
 11 jury, I have the experience and training in plastics, I can
 12 tell you that the right corner of this portion melted at
 13 1650, the left 1250, therefore, it's cooler on the left-hand
 14 side. That's not your specialty and you are not offering
 15 opinions on that, are you?

16 A. That's right.

17 Q. So these portions of the harnesses then ignite at
 18 some temperature and they begin to burn. And you think that
 19 the brake pressure reservoir is affected and it begins to
 20 burn as well?

21 A. Correct.

22 Q. Then where does the flame go? We have got a steel
 23 hood on top of it, right?

24 A. Right.

25 Q. And I assume that those combustibles would burn

Page 266

- 1 for some amount of time, but you don't know how much?
 2 A. No.
 3 Q. What happens next?
 4 A. The plastic wheel arch line area, that can be
 5 consumed and once that gets going.
 6 Q. How does the flame get down to that plastic wheel
 7 arch; do you know?
 8 A. I don't know how it got to that part of the
 9 vehicle but it obviously got there.
 10 Q. It got there because you've seen evidence there of
 11 burning on it, right?
 12 A. Of the switch?
 13 Q. Yes. And you have seen evidence of burning on the
 14 wheel well?
 15 A. Well, there is evidence of burning on the rim.
 16 The wheel well, the plastic liner is gone.
 17 Q. How does the flame get from engaged in the wiring
 18 harness and the brake reservoir, how does it get beyond
 19 that? Is there some other fuel that permits it to expand so
 20 it would engulf an entire vehicle, house and garage?
 21 A. There is a lot of combustibles in the engine
 22 compartment that can be taken into consideration.
 23 Q. In this case, I want you to tell me what you think
 24 burned first and give me the sequence of the fuels that then
 25 fed this fire to make the damage that you see?

Page 267

- 1 A. Well, you've got power steering lines, oil cooler
 2 lines, other electrical connectors on the side of the
 3 engine.
 4 Q. On the side where the brake pressure switch is?
 5 A. Yes.
 6 Q. Are they below or above it?
 7 A. I think they're below and above. There is a
 8 number of connectors in there and a number of harnesses
 9 running down the side.
 10 Q. Which ones do you think burned after the wiring
 11 harnesses and the brake pressure reservoir? What is the
 12 next thing you think burned?
 13 A. I'm just - all I can say is they consumed various
 14 combustibles in the area and it propagates through the
 15 engine bay.
 16 Q. I'm not trying to bound you. What I'm trying to
 17 establish is you're really guessing these things burned next
 18 because you have not done the testing to actually film and
 19 watch the way a flame propagates. Is that a fair statement?
 20 A. That's correct.
 21 Q. So it's clear, these are things you think are
 22 going to happen next but you don't have any scientific basis
 23 for that because you've not done the testing?
 24 A. That's correct.
 25 Q. Okay. So there is some fuel lines in the

Page 268

- 1 vicinity?
 2 A. Yes.
 3 Q. And you said there is a power steering line.
 4 Where is that in relation to the brake pressure switch?
 5 A. There is a reservoir in there, it's forward of the
 6 brake pressure switch.
 7 Q. Is brake fluid flammable?
 8 A. It is at the right temperature.
 9 Q. What temperature does it need to ignite, Mr.
 10 Clarke?
 11 A. I would say about 650 maybe degrees.
 12 Q. Centigrade, Fahrenheit?
 13 A. Centigrade.
 14 Q. And what is the basis of that? What testing have
 15 you done to determine that?
 16 A. We have done a number of fluid tests in our
 17 facility where we have done hot surfaces and tried to ignite
 18 fluids and sprayed them on hot surfaces, too.
 19 Q. Power steering fluid, what temperature will that
 20 ignite at?
 21 A. It's going to be about the same depending on its
 22 age and what properties it has in it. Some of the fluids
 23 are older, newer seem to change a bit, so they may smoke
 24 longer before they will ignite. It just depends.
 25 Q. Do you have any explanation for the next step or

Page 269

- 1 stage in the fire that you are guessing propagated from the
 2 switch to engage the entire vehicle?
 3 MR. DUNFORD: Object to the form.
 4 A. I mean the guess is, the assumption is once it
 5 starts to get into that main harness that has 12 volts to it
 6 and there is also a power distribution block on that side
 7 that's live with relays in it, can also start to get heat
 8 into them and start to short.
 9 Q. Stop there. Explain to me what you mean. The
 10 main harness you say has 12 volts in it running from where
 11 to where?
 12 A. The main harness is going to have 12 volts
 13 supplied directly from the battery to the power distribution
 14 block.
 15 Q. Which is where on this vehicle?
 16 A. It's on the left side fender wheel.
 17 Q. Left meaning driver's side?
 18 A. Driver's side, yes.
 19 Q. Is it in front of the speed control deactivation
 20 switch, behind it, above it or below it?
 21 A. It's in front of it.
 22 Q. How far in front of it?
 23 A. I haven't measured it. But I would say
 24 approximately 10 inches maybe. It's just above the wheel
 25 well or the wheel arch.

67 (Pages 266 to 269)

Page 270

- 1 Q. So it's 10 inches in front but is it above or —
 2 A. Right.
 3 Q. Is it above the speed control deactivation switch
 4 or below it?
 5 A. It's above it and in front of it.
 6 Q. How much above it is it?
 7 A. I don't know. I haven't measured it. I'd
 8 estimate two to three inches high.
 9 Q. Is the entire harness, is that made of a
 10 combustible material?
 11 A. It will burn, yes.
 12 Q. At what temperature?
 13 A. I haven't researched that.
 14 Q. It's plastic?
 15 A. Yes.
 16 Q. And we talked about your qualifications on
 17 plastic?
 18 A. Right.
 19 Q. You mentioned that there would be some shorting
 20 when the fire, you believe when the fire got into the
 21 harness. Explain to me how that would happen.
 22 A. Well, you've got various wires in that harness.
 23 Some are live. Some are not. There is grounding wires in
 24 there. And once those wires start to touch together they
 25 are going to start to short and therefore heat, more

Page 271

- 1 resistance heat.
 2 Q. When you examined the vehicle did you find those
 3 wires in different parts of the vehicle that had shorted?
 4 A. They don't normally survive when you have a major
 5 fire like this. They are very brittle and they fall off
 6 especially if somebody hits it with a water canon like was
 7 done in this case.
 8 Q. So the answer to my question is you did not find
 9 that evidence?
 10 A. The evidence was not there.
 11 Q. And you believe it's because those wires burned
 12 off?
 13 A. They're very brittle, yes.
 14 Q. At what temperature does the wires ignite and
 15 burn?
 16 A. I'm not sure of the temperature.
 17 Q. And you have done no testing to determine at what
 18 temperature they vaporize or disappear, am I right?
 19 A. No, I haven't.
 20 Q. All right. But we know one thing. We know when
 21 you went into the car and looked at it moments after the
 22 fire, you were not able to find evidence of these shorts in
 23 different parts of the vehicle that were caused by fire
 24 getting into the wiring harness. Am I right on that?
 25 A. I didn't see evidence on that.

Page 272

- 1 Q. Do you know if Mr. Topinka did?
 2 A. I believe the harnesses are gone. They have been
 3 destroyed or fallen off.
 4 Q. You did not see any. What about that, over on the
 5 battery? There was some additional wiring in the battery
 6 area. Did you notice that?
 7 A. Yes.
 8 Q. Did that have evidence of shorting?
 9 A. I didn't see any evidence on it. It was at the
 10 very end of our inspection. I spoke to Alan about it and he
 11 said what we are going to do is we'll get it pulled out and
 12 we'll have another inspection done on it. So I left that to
 13 him.
 14 Q. Why wouldn't that have shorted when this fire got
 15 into the wiring harness like other relays?
 16 A. It may have done it if the battery was still
 17 energized. But we don't know what time the battery was
 18 de-energized due to the fire. Once it loses its energy the
 19 12 volts are no longer —
 20 Q. How do we know the battery was de-energized at
 21 some point?
 22 A. It had to have been de-energized at some point. I
 23 mean, I have found vehicles that have gone through fires
 24 that weren't as severe as this one and there is still some
 25 residual voltage in the battery and the tops have burned

Page 273

- 1 off.
 2 Q. Was there any testing done here to determine when
 3 the battery became de-energized, to your knowledge?
 4 A. Not to my knowledge.
 5 Q. So anything you say on that would be speculation?
 6 A. Correct.
 7 Q. So the fire gets into this wiring harness. You
 8 believe that that would create some electrical shorting in
 9 other parts of the vehicle evidence of which we do not have.
 10 Then what happens next so that the fire consumes the
 11 vehicle, the house and the garage?
 12 A. Once it's gone into the wheel arches, the back of
 13 the headlights and the flammable materials that are around
 14 there, and then you've got the radiator shroud that's
 15 plastic, gets on the front of the engine, the tires are
 16 there. And once the tires start to go there is a tremendous
 17 amount of heat it's going to get out.
 18 Q. It's going to get out into the garage?
 19 A. Yes.
 20 Q. And do you believe at that point there is enough
 21 fuel source for this flame, for this heat to ignite more
 22 than just the vehicle?
 23 A. Yes.
 24 Q. And am I correct that you have not done any
 25 testing of a vehicle inside a garage to determine at what

1 point the heat needs to be in order to ignite the
2 surroundings?
3 A. Correct.
4 Q. Is there anything else that you want to add that
5 relates to how you believe the fire began in the [redacted]
6 vehicle that you have not already put on the record for us?
7 A. I brought some exemplary switches from Inter
8 products, one of them started to have a thermal incident, I
9 was just going to bring to show, and its x-ray does shows
10 the corrosion inside.
11 Q. Let's take them out.
12 A. (Witness complies).
13 (Exhibit No. 25 was marked
14 for identification.)
15 Q. You brought 25, and there are really two parts to
16 25; am I right?
17 A. Correct.
18 Q. There is 25 which is a sheet of paper and then
19 there is 25 which is a switch and we need to mark both of
20 them. Do you have some kind of label that we can stick on
21 here?
22 A. It's got a serial number on the side of it.
23 Q. Okay. Tell me what it is about Exhibit 25 that
24 you believe relates to the [redacted] fire that we are here
25 on today?

1 A. Oh, you can see on the side of this one where the
2 short obviously has taken place inside, and the terminal is
3 missing, and you've got a hollow place sticking out the side
4 where it started to heat up (indicating).

5 Q. What vehicle did this switch you brought me come
6 off it?

7 A. It came off of a 1995 F-150 pickup truck.

8 Q. Okay. Do you mind if I write that on here? 1995
9 F-150 pickup truck.

10 And do you have the part number for the part
11 that's involved in this vehicle?

12 A. The part number on this?

13 Q. On the [redacted] case.

14 A. It's in my notes somewhere. Well, I don't know
15 the actual part number from the crimp ring but I've got the
16 year and the date.

17 Q. Do you know that this is a different switch?

18 A. Yea. It's got a different prefix at the
19 beginning. It's for an F-series truck.

20 Q. It's a truck switch as opposed to a car switch?

21 A. That's correct.

22 Q. And you are aware that there are differences in
23 the two switches, aren't there?

24 A. Yes, there are some differences.

25 Q. Have you done any analysis to see what the

1 differences are in the two switches?

2 A. We have just started getting exemplary switches

3 that are like this to carry out with our analysis.

4 Q. So the answer is to date you have not?

5 A. Not to date, no.

6 Q. How many miles did this F-150 truck have on it?

7 A. I didn't bring all of that, the VIN number. I

8 just brought it to show you of our continuing analysis on

9 the switch.

10 Q. Do you have that information?

11 A. I believe we can get it. I'm not sure if I have

12 it in the office or it's in Mississippi.

13 Q. Is this a switch that you got or is this from Mr.

14 Miller?

15 A. It came from Mr. Miller that we are going to use

16 for testing.

17 Q. So you don't know the pedigree of this switch

18 because really Mr. Miller is the one that knows that?

19 A. It came out of the Ford dealership, fluid leak and

20 I believe the fuse is blown.

21 Q. Okay. Now in this case we have a switch that you

22 say has a fluid in it, and you say had some thermal event,

23 right?

24 A. Correct.

25 Q. But the vehicle didn't burn, did it?

1 A. They don't all burn.
2 Q. Well, there was a fire out of this blow hole but
3 the vehicle didn't burn, did it, Mr. Clarke?
4 A. I don't think that's an actual fire more than
5 maybe the heat of the elements has pushed through the
6 plastic.
7 Q. The vehicle didn't burn in this case, did it, Mr.
8 Clarke?
9 A. No.
10 Q. Whatever flame occurred from this part didn't
11 propagate and burn this vehicle?
12 A. I don't believe the flame came out of it, sir.
13 Q. But you don't know?
14 A. We haven't fully documented it yet. That's one of
15 the ones that NHTSA is going to be looking at.
16 Q. But you don't know whether there was flame from
17 this part because you weren't present. Am I right about
18 that?
19 A. I was not present, no, sir.
20 Q. Okay. And we know this vehicle that was brought
21 in and the switch was removed didn't go through a fire?
22 A. No, sir, it didn't.
23 Q. All right. And you believe this relates to the
24 [REDACTED] switch why?
25 A. Well, it just shows the failure mode within this

<p style="text-align: right;">Page 278</p> <p>1 switch. And I believe this is the sequence of events of 2 what took place within the McJulum switch but 3 unfortunately to that degree it got out and carried on 4 burning. Some of them, you know, are less -- there is less 5 damage to some of the vehicles and there is more damage. 6 Q. What got out and carried on burning? 7 A. Once the oxygen is admitted into the cavity then 8 it increases. 9 Q. And what does the x-ray depict in your view? 10 A. It shows the stationary contact and a portion of 11 the movable contact melted and beaded up inside there. 12 Q. Do you know if the contacts are the same in the 13 truck part as they are in the Lincoln? 14 A. I believe they are the same contacts. But I don't 15 know that from that particular one you have in your hand. 16 Q. Do you believe they are the same shape? 17 A. They are very similar in shape, yes. 18 Q. But you don't know exactly if they are the same? 19 A. They resemble each other. 20 Q. And what is it in this x-ray that you believe 21 indicates that the failure mode was similar to what you 22 think happened in the [redacted] case? Just that there is 23 some corrosion? 24 A. Obviously this fluid has got in here and started 25 up a corrosion and a short in there and the high resistance</p>	<p style="text-align: right;">Page 279</p> <p>1 heating, and that is the sequence of events that happened in 2 the [redacted] case due to a failed switch. 3 Q. And you diagrammed it for me? 4 A. Correct. 5 Q. You are not trying to back away from that are you? 6 A. Right. 7 Q. And you have brought another one. 8 A. Yes. It's just an example. 9 Q. We are going to have to mark this as an exhibit. 10 A. You can mark the box. 11 Q. We need to mark the switch. 12 A. You can if you want. 13 Q. Now you brought another one do you have also 14 another x-ray? 15 A. Yes. 16 Q. Okay. Let's take that and mark it. 17 (Exhibit No. 26 was marked 18 for identification.) 19 Q. And then we have a part that corresponds with 20 Exhibit 26? 21 A. It's in the box. 22 Q. And what kind of vehicle did this come off? 23 A. It came off a 2001 F-series truck. 24 Q. Do you know what series? 25 A. No, I don't know.</p>
<p style="text-align: right;">Page 280</p> <p>1 Q. F-series truck? 2 A. Okay. 3 Q. And do you know the model? 4 A. I offhand don't know. 5 Q. Again, is this a switch that came from Mr. Miller? 6 A. It came from the Ford dealership in Mississippi. 7 Q. You obtained it through Mr. Miller? 8 A. Yes. 9 Q. The pedigree Mr. Miller knows that? 10 A. It will be documented. 11 Q. In your files? 12 A. Yes, it will be eventually. 13 Q. So we would request the documentation of both of 14 these parts that are contained in your file. 15 What is it about this switch that you believe 16 is similar? Why did you bring it? 17 A. I just x-rayed a known good switch to compare them 18 to the style of this one. And it shows that kind of 19 substance on the metal portion of the switch that I feel 20 could be that green sort of jelly stuff that's in there. 21 Q. So is Exhibit 26 is this a switch that you believe 22 has already undergone some type of corrosion? 23 A. No, it's not gone through any corrosion. 24 Q. You believe it's a switch that is working properly 25 and there is no fluid?</p>	<p style="text-align: right;">Page 281</p> <p>1 A. It was a functioning switch that was removed from 2 my understanding. 3 Q. By the way, have you ever heard of fluid entering 4 the switch cavity through this end? 5 A. I've read about it from testing from the 6 environmental seal failing. 7 Q. Based on your work at Lotus do you think it's 8 possible? 9 A. If the brake fluid is allowed, fluid can get down 10 the wires. 11 Q. And it's fluid that drives the corrosion inside 12 that electrical switch, right? 13 A. Yes, it is. 14 Q. What testing did you do to determine that the 15 fluid you believe existed in the [redacted] switch was in 16 fact brake fluid? 17 A. I don't think we have done a chemical analysis. 18 Q. So you don't know whether it was water in that 19 switch or brake fluid if in fact fluid was in it, am I 20 correct? 21 A. The white crystalline stuff I have seen in other 22 switches that we have disassembled that caused the fires. 23 Q. Back to my question. You have done no testing on 24 the [redacted] switch to determine whether whatever fluid is 25 in that electric cavity was in fact brake fluid, am I</p>

1 correct, sir?
 2 A. I don't think you can do that test.
 3 Q. You haven't done that?
 4 A. No.
 5 Q. You don't know how to do it?
 6 A. I would send it to a lab.
 7 Q. And is there some reason why you haven't done it?
 8 A. It's not really in my control. It's in Alaska's
 9 control if he chooses to do it.
 10 Q. You are not offering any opinions that what was in
 11 fact in the electrical side of the [redacted] switch was
 12 brake fluid because you don't know; am I correct?
 13 A. The seal failed.
 14 Q. You have done no testing as to what fluid was in
 15 that electric side, correct, sir?
 16 MR. DUNFORD: Asked and answered.
 17 A. I haven't done any testing, no.
 18 Q. Anything else about Exhibit 26 other than what you
 19 have told me which is that it is a switch that appears to be
 20 in good working order?
 21 A. That's it.
 22 Q. For comparison purposes, fair enough?
 23 A. Fair enough.
 24 Q. Again, it's a truck part?
 25 A. Yes.

1 Q. If you look at Tab 48 in your binder, it has no
 2 title page on 48 but I'm looking at the index and it says
 3 Protocol SCDS?
 4 A. Yes.
 5 Q. What is that?
 6 A. It was going to be the Ford protocol and my
 7 protocol that we used when we did the disassembly of these
 8 switches.
 9 Q. Is this something that you prepared at Clarke
 10 Automotive?
 11 A. Yes.
 12 Q. And at the top of this it says, fire loss protocol
 13 and then blank versus Ford Motor Company. Did I read that
 14 right?
 15 A. Yes.
 16 Q. Okay. And is this a document that you drafted,
 17 you or somebody in your office?
 18 A. I did.
 19 Q. You did, okay. And what was the purpose of this
 20 protocol?
 21 A. It's a disassembly protocol of the cruise control
 22 deactivation switch.
 23 Q. Okay. And was this in fact a protocol that you
 24 used?
 25 A. I've used it a number of times, yes.

1 Q. Have you used it on any of the files that you
 2 brought us here in the book?
 3 A. Yes.
 4 Q. Can you identify which ones?
 5 A. Any switch that we have torn down with Ford
 6 counsel and your counsel present or experts that protocol
 7 was used.
 8 Q. You're positive about that?
 9 A. If I have done the tear down. Except for the
 10 Campbell case I believe that Charlie Miller done his own
 11 protocol.
 12 Q. Where is the suspension leveling pump? Where is
 13 that?
 14 A. On?
 15 Q. On a 1992 Lincoln Town Car.
 16 A. It's in the front left area, in the wheel arch
 17 area.
 18 Q. How far is it from the speed control deactivation
 19 switch?
 20 A. It's mostly about I would think 20, 24 inches
 21 away.
 22 Q. Do you also have a protocol for that?
 23 A. For a suspension leveling pump?
 24 Q. Yes.
 25 A. In the [redacted] vehicle, no.

1 Q. Do you have it for any vehicle?
 2 A. I have, yes.
 3 Q. Take a look at what you have marked as Tab 48 and
 4 let's go through it.
 5 A. I don't have a copy in my book. It was taken out.
 6 Q. It was taken out?
 7 A. Yeah, because I was going to put the Ford one in
 8 there and I forgot to do it.
 9 Q. We'll take ours out. What's the one we have
 10 marked? Have we marked that as an exhibit?
 11 A. This is Exhibit 4.
 12 Q. And turn to Tab 48.
 13 A. I have a Tab 48, but like I said earlier I took it
 14 out.
 15 Q. Why did you take it out for some reason?
 16 A. The girls were copying it in the office and they
 17 asked me to get them a copy of my Hoffman's protocol and I
 18 didn't have time to do that.
 19 (Exhibit No. 27 was marked
 20 for identification.)
 21 Q. I think this is Exhibit 27. That was what was in
 22 my book under Tab 48?
 23 A. Right.
 24 Q. Okay. It appears to me to be talking about a
 25 suspension leveling pump.

Page 286

- 1 A. Somebody has put the wrong protocol in there.
 2 Q. So this is not the speed control deactivation
 3 switch protocol but it is another protocol that you and your
 4 company use?
 5 A. It should have been the speed control deactivation
 6 switch protocol that was sent to you.
 7 Q. This is a protocol you use?
 8 A. It's another protocol, yes.
 9 Q. And you use it for vehicle fires?
 10 A. Yes.
 11 Q. What is the very first thing you say should be
 12 done, Item A?
 13 A. This one was written for a vehicle that's in our
 14 facility that we have transported and it says a place the
 15 subject vehicle on vehicle hoist in our inspection bay.
 16 Q. So the very first thing in your protocol says put
 17 it up on a hoist so you can look at the bottom of it; is
 18 that right?
 19 A. Of that particular vehicle that was made for
 20 because it's in our custody.
 21 Q. But the very first thing in your protocol says to
 22 put it up on a hoist so that you can look at the bottom of
 23 it, am I right?
 24 A. That's to give defendant's experts a chance to
 25 document the as-is condition as well.

Page 287

- 1 Q. You also have in here the name of the person who
 2 is using Ford Motor Company and then fire loss protocol,
 3 then black Lincoln Town Car. So I take it you just plug in
 4 the year that the Lincoln Town Car is, right?
 5 A. Right.
 6 Q. You have a spot for a VIN number. And this one
 7 you have says manufactured 1993 which happens to be the same
 8 as the [REDACTED] vehicle?
 9 A. That's true.
 10 Q. And you have odometer, N/A miles, and you have
 11 trip N/A miles?
 12 A. Yeah. Usually it's N/A. I can supply you with a
 13 number of protocols where the vehicles have burned out you
 14 have to put non-applicable because you can't read it out.
 15 Q. It says, "A. Place the subject vehicle on a
 16 vehicle hoist in the inspection bay; B. Photodocument the
 17 subject vehicle from top and underside of subject vehicle;
 18 C. Photodocument suspension leveling pump and document by
 19 videography." What does that mean?
 20 A. We usually videotape our inspection.
 21 Q. "D. Perform x-ray of suspension leveling pump;
 22 E. Disassemble suspension leveling pump to reveal internal
 23 components and photodocument."
 24 Did you inspect the suspension leveling pump
 25 in the [REDACTED] vehicle?

Page 288

- 1 A. It wasn't there. Once that wheel arch melts that
 2 whole system drops down.
 3 Q. When you saw the vehicle was a suspension leveling
 4 pump present?
 5 MR. DUNFORD: Asked and answered.
 6 A. I didn't notice it.
 7 Q. Do you think it burned out of the vehicle?
 8 A. It most probably was dragged out or ripped out
 9 during removal.
 10 Q. And I don't want to get into what you were doing
 11 with Mr. Feeney, but that air suspension leveling pump is in
 12 the front of the engine compartment on the driver's side,
 13 isn't it?
 14 A. Oh, yeah.
 15 Q. And in an area where there was a lot of heat on
 16 this vehicle, right?
 17 A. It's a form — it's one of the forms that could be
 18 an ignition form, yes.
 19 Q. And we know at least from what you say when you
 20 got to the vehicle it had burned away, right?
 21 A. Well, the pump wasn't there. I don't know whether
 22 it burned away. I didn't detect that the pump was there.
 23 Q. When you say it wasn't there, you don't know
 24 whether it burned away because you weren't present at the
 25 fire scene?

Page 289

- 1 A. That's correct.
 2 Q. And that would be true about every statement that
 3 you've given in this deposition when you say you think
 4 something happened you can only speak as to what you saw
 5 when you got there?
 6 A. When I inspected the vehicle?
 7 Q. Correct, sir.
 8 A. Correct.
 9 Q. So we have established that there is a mistake.
 10 Exhibit 27 really should be your protocol for the speed
 11 control deactivation switch not the air suspension leveling
 12 pump, right?
 13 A. Right.
 14 Q. Okay. So can we get a copy of the correct one?
 15 A. Yes.
 16 Q. Did you rule out the air suspension leveling pump
 17 as a source of this fire?
 18 A. I couldn't rule it out because I couldn't find it.
 19 Q. Undetermined, right?
 20 A. Undetermined, yes.
 21 Q. Okay. Now, Mr. Clarke, you have also seen cases,
 22 have you not, where you believe the fire may have occurred
 23 in the speed control deactivation switch where there is no
 24 vehicle left, correct?
 25 A. I don't know. Offhand I don't remember.

72 (Pages 286 to 289)

Page 294

1 Q. Well, have you ever taken the position that you
 2 can determine where that fire originated simply by reading
 3 the records, the service records of a car?

4 A. I may have reviewed the vehicle service records
 5 where there had been statements of fuses blowing and
 6 difficulties getting the vehicle out of park, this kind of
 7 stuff, that would lead us to believe that there is an area
 8 of concern with that particular component, yes.

9 Q. Let's make sure we are clear. When the car is not
 10 available and the switch is not available for your
 11 inspection, for whatever reason, it's impossible to
 12 determine whether or not that fire originated in the speed
 13 control deactivation switch, isn't it, sir?

14 A. I would think it would be highly unlikely to be
 15 able to identify that.

16 Q. Now let's talk about those symptoms because you
 17 said, you know, fuses blown, you can't get the car out of
 18 park. Sometimes there are some symptoms that have been
 19 associated with failed brake activation switches, right?

20 A. In some cases, yes.

21 Q. Okay. And those are, one of them is you have
 22 trouble with the car getting it out of park?

23 A. Correct.

24 Q. What is that caused by?

25 A. The fuse for the brake system, the park lock fuse

Page 291

1 feed is de-energized and you can't get it out.

2 Q. Why does the fuse de-energize?

3 A. Because there is a resistance short in that switch
 4 and it's enough to pop the fuse.

5 Q. And that resistance short would be what you
 6 described to me in this diagram Exhibit 13 where the
 7 moveable contact falls off and corrosion begins?

8 A. Yes.

9 Q. Okay. Now in the [redacted] case you are aware,
 10 are you not, there are no reported brake pressure symptoms?

11 A. I didn't read anything about them having any
 12 difficulty.

13 Q. You are not aware of any?

14 A. That's correct.

15 Q. Mr. Clarke, I want to spend the last few minutes
 16 talking about these tapes that you brought that you have
 17 delivered to us. First of all, there are two tapes and they
 18 say on them, they are Exhibit 1 and 2. If you open it up it
 19 says Clarke Automotive Consultants, the date is January
 20 12th, the year 2000, Ford Test 1. And then there is another
 21 one that says the same thing, same date and it says Ford
 22 Test 2.

23 A. Right.

24 Q. First question, are test one and two the same
 25 test?

Page 292

1 A. Yes.

2 Q. Okay. What was the power supply that you used in
 3 this test?

4 A. A 12-volt Motorcraft battery.

5 Q. Did you have a fuse in place?

6 A. Yes.

7 Q. All right. What was the fuse circuitry that you
 8 set up?

9 A. It was a 15 amp fuse from a Lincoln Town Car.

10 Q. So you had a 12 volt battery, right?

11 A. Yes.

12 Q. And take me from the 12 volt battery to the
 13 switch?

14 A. We had a 12 volt battery, and we had a power
 15 supply leading from the positive side of the battery going
 16 to the positive portion of the switch with a 15 amp fuse in
 17 it. And then the other side, the negative side of the
 18 battery was grounded to the test apparatus.

19 Q. Okay. Did the 15 amp fuse blow?

20 A. I believe it blew in the first test, yes. And the
 21 wire came loose, if I remember correctly. It got
 22 overheated. We used crocodile clips that were like a Radio
 23 Shack deal and they were a lot thinner gauge wire so on the
 24 other side that insulation started to heat.

25 Q. How much current flowed?

Page 293

1 A. Well, it had to have 15 amps.

2 Q. How about when the fuse blew?

3 A. Well, then it went up over 15 amps because it
 4 popped the fuse.

5 Q. What was the voltage?

6 A. It was 12 point something, 12.1 volts maybe 12.2.

7 Q. I haven't watched these tapes in a while. My
 8 recollection is there is no measuring device to determine
 9 the current or the voltage, am I right?

10 A. We had a volt meter on it.

11 Q. You did?

12 A. Yeah.

13 Q. Was it on continuously?

14 A. It was on the battery on the floor next to the
 15 test.

16 Q. Why do you have two tapes that shows the same
 17 test?

18 A. It shows two different views from one side to the
 19 other.

20 Q. In other words, you had two cameras set up?

21 A. Yeah. We didn't know what was going to happen
 22 with the volts coming out. We presumed from our
 23 observations of Ford's testing and your testing of the
 24 switch and the way you guys set it up, you know, when you
 25 were injecting that stuff down there in the cavity, that it

Page 294

1 quite possibly could combust. So we had two regular video
 2 cameras located either side of the switch. And then the
 3 switch was mounted to a prop valve as it was installed in
 4 the vehicle.

5 Q. How long was the test running before the camera
 6 was turned on?

7 A. Well, the test wasn't run until the camera was
 8 switched on.

9 Q. Are there any gaps in the tape where you shut the
 10 camera off?

11 A. I think we switched the cameras off while we remade
 12 the wire connection.

13 Q. Why did you need to remake the wire connection?

14 A. As I said earlier it was a cheap, you know, like
 15 Radio Shack wire with the crocodile clips on it, and the
 16 heating in the wire got to a point where it drooped and came
 17 off.

18 Q. It was different wiring than would be in the
 19 Lincoln Town Car?

20 A. We used about four or five inches of connector
 21 wire and the plug that's factory on the switch and then we
 22 connected our wires from it. In hindsight we should have
 23 just used factory wire. But we didn't know what was going
 24 to happen with the switch.

25 Q. So one thing we know about the testing is that the

Page 295

1 wiring is different than you would find in a natural
 2 Lincoln?

3 A. It's smaller, yes.

4 Q. Tell me the pedigree of the switch.

5 A. The pedigree of the switch came from a dealership
 6 in Mississippi and it came from a recalled vehicle.

7 Q. What's the name of that dealership?

8 A. I don't know.

9 Q. What city is it in?

10 A. I would say it may be in Cleveland maybe but I'm
 11 not sure.

12 Q. Do you know how many miles the switch had on it?

13 A. I don't remember.

14 Q. What, if anything, did you do to prep the switch?

15 A. We didn't do any manipulation with the switch as
 16 in the test that you guys did with the syringe like or
 17 stuff. We just put a connector on it, 12 volts to it and
 18 let it go.

19 Q. What about brake fluid, did you pressurize it?

20 A. No, no. We thought about that afterwards that may
 21 have assisted in burning but.

22 Q. So it was dry, if you will? There was no active
 23 source of brake fluid?

24 A. The switch had been removed and we put a bore
 25 scope down there I think to check inside it.

Page 296

1 Q. So you did some preparation?

2 A. We looked down inside just to check to see what
 3 was in it.

4 Q. Had the switch already had some fluid in the
 5 cavity?

6 A. Yes.

7 Q. Okay. Did you do some type of chemical analysis
 8 to determine what it was?

9 A. Yeah. I believe we took some of the fluid out.
 10 We sent that to the lab in Norcross that done the chemical
 11 analysis. And then after the test we disassembled the
 12 switch and gave it to him in pieces in the box with that
 13 green jelly.

14 Q. Is that testing result in the binder that you
 15 brought?

16 A. Yeah, there is an analysis sheet in there from
 17 those guys.

18 Q. Tell me which one it is, which tab that is?

19 A. It's Tab 47.

20 Q. 47 Chemical Analysis Report. This is the analysis
 21 of the materials that were tested in the videotape?

22 A. Yes.

23 Q. And had the switch, had there been a thermal event
 24 on that switch before you tested it?

25 A. The outside of the switch had slight discoloration

Page 297

1 in one area but that's all there was.

2 Q. Similar to one of the ones we saw?

3 A. No. If it was just light brown, it was a darker
 4 shade like a dark brown right in one area like you could
 5 anticipate that there was some heating from the inside.

6 Q. That would have come, that testing would have come
 7 from a 1992 or '93 Lincoln, which one?

8 A. 1992.

9 Q. So when you tested it, you tested it in the year
 10 2000 the switch you were testing was at least eight years
 11 old, correct?

12 A. Correct.

13 Q. And in fact did you get a Julian date off that
 14 switch to tell when it was in fact manufactured by TT?

15 A. Yeah, it was manufactured in late '91.

16 Q. So it was at least nine years, almost ten years
 17 from date of manufacture?

18 A. I believe so.

19 Q. And you hooked it up to this power source. And in
 20 one of the - I remember seeing that the wires had to be
 21 jiggled or shaken. Why did you all do that?

22 A. That is where we were either - we were either
 23 taking the connectors off to remake the connector and
 24 that's when the video is on and you are reconnecting the
 25 battery. That's what you are seeing.

Page 298

- 1 Q. And that was because you didn't use the --
 2 A. We used too thin gauge of wire.
 3 Q. Okay. All right. And did you have to do any type
 4 of manipulation other than rewire the stuff before you
 5 completed your test?
 6 A. I think what we ended up doing was putting in a 15
 7 amp thermal circuit breaker in there that will reset after
 8 a certain amount of time.
 9 Q. Say that again. What did you put back in there?
 10 A. One of those little Ford, I think it's a fuel pump
 11 relay maybe, it's a little 15 amp relay.
 12 Q. And it resets?
 13 A. It resets itself.
 14 Q. Why did you use that?
 15 A. We didn't have another 15 amp fuse like the one we
 16 were using and I had that one laying there.
 17 Q. Does the 15 amp fuse in a Lincoln Town Car reset?
 18 A. No.
 19 Q. You are not suggesting to us that the testing you
 20 did in those tapes is related to what happened in the
 21 [REDACTED] car, are you?
 22 A. I think the video as you see heating it up and the
 23 flame coming out is exactly what happened in the [REDACTED]
 24 vehicle.
 25 Q. Okay. But the mechanisms to get the switch in the

Page 299

- 1 place it was, obviously you are not suggesting it's similar
 2 to the Meijlumian switch because you don't know?
 3 A. I don't know what the switch looked like prior to
 4 the fire.
 5 Q. You don't know how many miles it had on it?
 6 A. On which one?
 7 Q. Either one?
 8 A. Well, we know that the [REDACTED] switch had over
 9 200 and some odd miles.
 10 Q. Over 280,000 miles. But you don't know what the
 11 mileage is on the switches, correct?
 12 A. I don't remember it, no.
 13 Q. And we know that there is no propagation in this
 14 video that you brought us, is there?
 15 A. Propagation?
 16 Q. Fire didn't propagate?
 17 A. Well, it -- actually once that circuit breaker
 18 opened and started continuity and we got that flame we
 19 stopped the test, and then we decided to document the switch
 20 and take it apart.
 21 Q. But you believe that the flame in there is similar
 22 to the flame that would have happened in the [REDACTED] case,
 23 right?
 24 A. Yes, I do.
 25 Q. About the same size?

Page 300

- 1 A. Quite probably, yes.
 2 Q. Is this all the data that you have from that test?
 3 Is this it?
 4 A. Yeah, we sent that to the chemical analysis of
 5 what we found in there that green paste.
 6 Q. But I mean do you keep a little lab book like I'm
 7 holding here when you did the test?
 8 A. Yeah, we did. I've got a lab book I think it's
 9 back at the shop.
 10 Q. Has that been produced?
 11 A. To?
 12 Q. Anyone?
 13 A. It may have been produced in Mr. Miller's last
 14 deposition, but I don't know.
 15 Q. I don't believe it was. So we'd request whatever
 16 lab book you have or any documentation that you have that
 17 relates to Exhibit 2 we'd make a request for that.
 18 How many switches did you in fact test?
 19 A. When?
 20 Q. When you were doing Exhibit 2?
 21 A. There is just one switch.
 22 Q. Only one switch?
 23 A. Yes, sir.
 24 Q. Have you run that test again?
 25 A. No, not like you see it there.

Page 301

- 1 Q. Have you run a similar test?
 2 A. We are in the middle of conducting one.
 3 Q. Tell me what's the power source is what you are
 4 doing now?
 5 A. It's going to be 12 volt supply.
 6 Q. Is it set up or its not set up?
 7 A. It depends on how you define set up. Is the
 8 vehicle ready to go? Not exactly. Is the components ready?
 9 Yes, we have got most of whatever we need.
 10 Q. You are going to test it in a vehicle this time?
 11 A. Yes.
 12 Q. What kind of vehicle?
 13 A. It's a Ford product.
 14 Q. What kind?
 15 A. It's going to be an F-150.
 16 Q. Where did you get it?
 17 A. The truck?
 18 Q. Yes, sir.
 19 A. I own an F-150.
 20 Q. What other vehicles do you drive?
 21 A. I've got a 2001 Excursion.
 22 Q. Does that have a brake pressure switch in it?
 23 A. Yes, it does.
 24 Q. Does your Ford F-150 have a brake pressure switch
 25 in it?

Page 302

- 1 A. Both of them have the -- both of the F-150s have
 2 brake pressure switches in them.
 3 Q. What other vehicle do you drive?
 4 A. That's it. My Excursion is my sole form of
 5 transportation.
 6 Q. Okay. You are going to test a F-150 and what are
 7 you going to do? What switch are you going to use?
 8 A. A F-150 switch.
 9 Q. The switch that's in the vehicle from the
 10 manufacturer?
 11 A. A switch that was supplied on a F-150 from the
 12 manufacturer, yes.
 13 Q. But it's not the original switch that's in the
 14 vehicle?
 15 A. No, I don't think so.
 16 Q. Okay. When are you going to conduct this test?
 17 A. I don't know.
 18 Q. And did I understand you earlier you are doing it
 19 on behalf of NHTSA?
 20 A. Quite possibly, yes.
 21 Q. And you are working on the financial arrangements?
 22 A. Not really, no. We are going to do the test
 23 regardless. But I believe that they may want to be present
 24 for that test.
 25 Q. Quickly. Did you x-ray the switch depicted in

Page 303

- 1 1 Exhibit 2 either before or after the test?
 2 A. No, we did not.
 3 Q. Did you open up the switch after the test?
 4 A. Yes.
 5 Q. And what did you find?
 6 A. We found the seals were cracked and there was
 7 electrical, heavy electrical activity into the base of the
 8 switch.
 9 Q. Heavy what? I didn't understand you.
 10 A. Electrical activity in the base of the switch,
 11 arcing.
 12 Q. Do you have pictures of that?
 13 A. Yes, I do. They are in here.
 14 Q. They are in this book?
 15 A. I think so.
 16 Q. Show me which binder, which tab.
 17 A. Tab 45.
 18 Q. Is there every picture or did you bury pick?
 19 MR. DUNFORD: Object to the form.
 20 A. This would be a fair assessment of the switches,
 21 the photos that we took, yes.
 22 Q. Do you have some back at the ranch that you didn't
 23 put in here?
 24 A. I may have.
 25 Q. We'd request all of the photos that you took.

Page 304

- 1 A. Okay.
 2 Q. And the Captain is depicted in the last picture, am
 3 I right?
 4 A. It's in the last.
 5 Q. This is?
 6 A. From a localized switch fire above it, but
 7 obviously we didn't go all the way around and take out the
 8 crimp rings so there was a lot less heat.
 9 Q. What do you believe my client Texas Instruments
 10 did wrong, if anything?
 11 A. I think the defect is in the fact that you allowed
 12 the switch to be produced and installed in a non-failsafe
 13 condition, if you had prevented it --
 14 Q. Anything else?
 15 A. You could have put a smaller amp fuse in line
 16 like there are now on a number of vehicles, so if this
 17 resistance starts it pops the fuse prior to giving you too
 18 much heat down there.
 19 Q. Did Texas Instruments install the fuse, Mr.
 20 Clarke?
 21 A. No.
 22 Q. Anything else you believe my client did wrong?
 23 A. I think the fact that the switch can fail and when
 24 it fails it fails in a dangerous situation where fires can
 25 arise. That was the main situation is a failure - I think

Page 305

- 1 is a failure to warn the people that own the vehicles. You
 2 could have warned these guys.
 3 Q. Did you have any involvement at all with Texas
 4 Instruments, in its manufacturing process during the time
 5 the switch was made in the _____ case?
 6 A. No, sir.
 7 Q. You don't know what information was or was not
 8 provided to anyone, do you?
 9 A. I have read all the documents that's been supplied
 10 to me under discovery.
 11 Q. But you don't know what conversations were had
 12 between TI and Ford?
 13 A. Some of them obviously are pertinent they have
 14 been released to us, as well as your videos that you both
 15 have done and the testing that you have done.
 16 Q. Did Texas Instruments design the system in this
 17 vehicle, the system, the speed control system?
 18 A. I would think Ford designed the vehicle but under
 19 direction from you guys or conferring with each other.
 20 Q. You think, right? You don't know because you
 21 weren't involved at the time; is that correct, Mr. Clarke?
 22 A. I think the documents that I read said that the
 23 specification was so many cycles and the switch was
 24 designed to that specification.
 25 Q. And you are not giving an opinion that the

<p style="text-align: right;">Page 306</p> <p>1 specification was improper, are you, sir?</p> <p>2 A. I don't know how many cycles the switch had.</p> <p>3 Q. You are not qualified to give that opinion, are you,</p> <p>4 sir?</p> <p>5 A. Not qualified?</p> <p>6 Q. Right.</p> <p>7 A. Well, I mean I can look at a switch and tell you</p> <p>8 what's failed in it. So I think that I'm qualified to</p> <p>9 determine what's failed in it.</p> <p>10 Q. You are not qualified to tell us whether the</p> <p>11 specification that was provided to Texas Instruments was in</p> <p>12 fact correct or not? That's not your area of expertise, is</p> <p>13 it, Mr. Clarke?</p> <p>14 A. Not really.</p> <p>15 Q. And you are not offering any opinions in this case</p> <p>16 on that, are you?</p> <p>17 A. Only what I just said.</p> <p>18 Q. And you know that eventually a switch is going to</p> <p>19 fail, Mr. Clarke?</p> <p>20 A. I think eventually it can fail but if it's known</p> <p>21 to be in a failure situation where it's produced and it can</p> <p>22 cause a fire, it should be installed or designed or wired so</p> <p>23 it's not full time 12 volts. So it's only voltage when the</p> <p>24 key is on. And I don't believe I found a vehicle yet that</p> <p>25 has had a fire once the key is on. It's only once the key</p>	<p style="text-align: right;">Page 307</p> <p>1 is off and it's parked.</p> <p>2 MR. MAYER: Object, nonresponsive.</p> <p>3 A. If the voltage is removed when the key is off like</p> <p>4 on the later vehicles that Ford is building this problem</p> <p>5 shouldn't be an issue.</p> <p>6 Q. Anything else?</p> <p>7 A. I think that's it.</p> <p>8 MR. MAYER: Pass the witness.</p> <p>9 FURTHER EXAMINATION</p> <p>10 BY MR. FEENEY:</p> <p>11 Q. On the Ford 150 test that you talked about, Mr.</p> <p>12 Clarke, do you intend to terminate that test after you get a</p> <p>13 flame if you get a flame?</p> <p>14 A. I think I'm going to — depending on the</p> <p>15 parameters that we decide to do it or I'm just going to let</p> <p>16 it keep going just like we did on the Excursion.</p> <p>17 Q. So your intention is to burn your vehicle to the</p> <p>18 greatest extent that it will burn?</p> <p>19 A. And just let it burn, yes, sir.</p> <p>20 Q. You haven't done that test and you don't know when</p> <p>21 you are going to do it?</p> <p>22 A. It's in the works.</p> <p>23 Q. On the test that we have that's Exhibit 2 you</p> <p>24 terminated that test as soon as you got a flame, didn't you?</p> <p>25 A. As soon as the second, the actual resettable</p>
<p style="text-align: right;">Page 308</p> <p>1 breaker broke we ended up stopping the test at that point,</p> <p>2 yes.</p> <p>3 Q. So that was an opportunity for you to actually see</p> <p>4 what and in what way a fire would propagate at least in</p> <p>5 consuming a switch but you chose to terminate the test?</p> <p>6 A. We chose to terminate it because we didn't know</p> <p>7 what was going on internally and we couldn't get it open and</p> <p>8 get it put back together again. In hindsight we should have</p> <p>9 just let it keep burning or reset the fuse and let it reset.</p> <p>10 But we decided that it will be just time to investigate it</p> <p>11 and look at it.</p> <p>12 Q. And you haven't tried to do that test again or</p> <p>13 allow it to go to completion since January of 2000?</p> <p>14 A. We just disassembled that switch directly after</p> <p>15 that test and sent it out for investigation.</p> <p>16 Q. You haven't done another test, you haven't done</p> <p>17 that?</p> <p>18 A. No, we haven't done it since January.</p> <p>19 MR. FEENEY: Okay. Thank you.</p> <p>20 MR. MAYER: One question.</p> <p>21 FURTHER EXAMINATION</p> <p>22 BY MR. MAYER:</p> <p>23 Q. A car battery, component part to a vehicle?</p> <p>24 A. Is a car battery a component part?</p> <p>25 Q. Yes.</p>	<p style="text-align: right;">Page 309</p> <p>1 A. Yes.</p> <p>2 Q. If it fails what's going to happen? Is it going</p> <p>3 to catch on fire? Can it?</p> <p>4 A. If it fails?</p> <p>5 Q. Yes, sir.</p> <p>6 A. I haven't seen one fail and catch on fire. I've</p> <p>7 seen one go flat or I've seen somebody try and charge one.</p> <p>8 Q. Never seen one go on fire?</p> <p>9 A. No, I haven't seen one. I've heard of it but I</p> <p>10 haven't seen one.</p> <p>11 MR. MAYER: That's all the questions I have.</p> <p>12 (The deposition concluded at</p> <p>13 6:20 p.m.)</p> <p>14 (By agreement between counsel</p> <p>15 and the witness, signature</p> <p>16 was reserved.)</p>

A	303:7,10 actual 38:6 218:23 265:1 able 6:1 8:9 74:25 124:9 175:12 199:25 218:11 271:22 290:15 ABS 236:23 244:14,21 244:23,25 absolutely 95:4 114:16 AC 180:11 183:15 191:18,24 Academy 160:11 161:8,15 saccelarant 38:3 accept 42:12 accident 7:3 111:14 accidents 198:16,21 account 53:7 53:8 accurate 79:6 95:4 107:24 314:7 acknowledge 40:24 activated 209:9 activation 290:19 active 23:4 140:22 141:7,11,15 141:20,20 153:21 295:22 activity 91:5 91:16 128:3 214:18 215:14 253:17 254:23	149:10 197:9,18 73:5 82:11 117:22 140:3,22 153:15 227:4 252:21 261:18 275:15 277:4 307:25 ██████████ 133:9 adapting 140:14 adaptment 145:10 add 3:20 45:2 51:14 126:20 260:15 274:4 added 129:1 additional 196:11 197:6,10 272:5 address 135:5 adjacent 39:6 39:14 70:25 79:16 95:16 96:11 administra... 101:25 admitted 73:21,24 75:3 102:1 239:8 258:3 278:7 advertise 136:17 aerosol 59:11 59:15 affect 208:16 afternoon 13:16 203:20 226:22 afternoons 137:17 after-market 24:12 149:5	74:21 108:19 308:13 142:14 ago 266:22 ago 152:23 agrem 39:10 39:19,22 40:1,13,19 40:21 42:2 42:5 59:19 60:7 70:16 81:13 82:21 86:1,4,13 95:2 105:10 117:18 165:20,24 171:24 196:12 240:2 250:8 250:23 agreed 113:23 222:4 agreement 309:14 agrees 57:9 agricultural 141:14 ahead 26:6 61:1 162:25 181:25 249:16 257:3 air 44:13 45:2 132:11 288:11 289:11,16 ██████████ 36:9 38:5,15 43:15 50:1 197:14,19 197:24 199:11 272:10 ██████████ 30:11 282:8 ██████████ 150:8 allegation 23:19 81:3 alligatoring 208:16 allow 13:10	273:17 298:8 amp 230:1,4 292:9,16,19 298:7,11,15 298:17 304:15 ample 75:2 amps 293:1,3 analysis 19:6 25:19 52:7 72:24 76:11 100:23 126:2 142:11 143:22 146:7,17 191:2,7 198:1 205:20 217:12 224:16 226:19 240:3 241:1 248:17 264:13 275:25 276:3,8 281:17 296:7,11,16 296:20,20 300:4 analyzed 103:11 analysing 127:6 143:7 anchor 215:24 216:4,8 217:13 anchors 217:13 and/or 117:18 314:8 angle 119:20 annoyance 151:22 annual 158:19 159:14,14 anomalies 256:15 257:3 anomaly
---	---	--	--	--

ROUGH & ASSOCIATES, INC.

(206) 682-1427

ER82-823-A 9453

209:22,24	288:5	43:21 71:21-	area 2:22	267:14
216:15,18	answering	105:20	4:18 5:16	272:6
254:11	86:21,24	228:12	5:20,25	284:16,17
255:4,8,17	anticipate	282:19	39:6 40:2,3	288:15
255:22	297:5	285:24	40:5,12	290:7 297:1
256:20,21	anticipation	applicable	43:10 47:15	297:4
256:25	74:5	80:2,3	48:21,24	306:12
257:4,12	anti-corro...	application	72:1,21	area 4:18
answer 11:4	103:16	12:9 34:10	73:3,5,6,9	6:2 29:5
16:7 23:20	anybody 12:1	159:9	73:11 75:20	46:25 47:21
36:21 50:17	16:16 18:12	applications	76:9 79:8	49:23 71:20
56:9,9	42:14 71:13	7:23	90:21 91:20	104:23,25
86:23 87:6	111:17,18	applied 32:18	94:9,20	105:1,19
87:9 88:7	175:20	104:18	95:16,25	107:20
88:10 113:5	195:22	apply 28:16	96:10 100:4	140:1,2
113:8	203:17	appreciate	101:13	201:14
117:23	anymore 150:6	38:22	102:23	argue 86:19
156:2 162:6	200:1 222:5	apprentice	103:1,3,6	arm 122:24
170:18	Anyway 46:5	137:5,19	104:5,9,11	area 150:12
175:16	181:23	approach	105:4 108:3	arrangements
182:19	AP 141:15	37:20	108:6,10	302:21
197:17,21	apart 91:8	appropriate	121:14,16	arrive 57:14
198:4	147:1 221:5	79:6	122:6 124:1	arrived 3:1
208:21	221:6	approximately	125:7,9,15	68:12,16
230:12	228:22	189:16	125:15,16	203:21
231:10	247:16,19	269:24	126:5,14,20	arriving
239:5,14,15	254:7	April 142:7	127:14	37:24 57:4
243:21	256:11	arc 232:12	138:6 140:3	arrow 99:15
271:8 276:4	299:20	258:3	140:23	100:3,6,15
answered 26:5	apologize	arch 44:12,17	147:6 148:3	101:4 112:5
32:22,23	75:9 94:23	44:19,20	156:11	113:19
33:12,19	96:5	45:11 58:17	157:21	114:4
36:14,19,20	apostrophe	101:10	166:14	115:13
37:5 58:9	17:1	166:12	167:11	119:23
86:3,5,12	apparatus	191:15	172:19	163:12
86:16 87:9	292:18	266:4,7	175:8	168:12
87:18 88:6	Apparently	269:25	188:24	206:13
123:18,19	101:24	284:16	209:4	229:2,8
124:6 127:3	appear 25:24	288:1	219:10	arrows
128:9	63:1 172:11	arches 41:7	221:10	115:10
138:25	173:15	47:1 51:11	224:11	arrows 99:17
166:18	197:11	58:12	228:5 230:6	100:1 168:1
167:3	259:8	273:12	231:1 232:8	arson 70:1,5
170:13	appearance	arcing 49:19	240:25	70:13 159:1
178:1 180:2	44:23 58:25	230:17,21	250:21	159:25
181:25	250:8	230:24	253:23	arsons 70:9
196:9,12	appeared	231:6,10,12	254:25	artifacts
205:14	44:16	231:15,16	256:20	235:13,17
231:21	182:25	231:18,22	257:9,14	235:20
260:8	appearing	232:4,8,17	258:2,6	aside 126:10
262:16	49:22	233:2,7	261:16	asked 2:20
282:16	appears 4:5	303:11	266:4	12:7 14:2

ROUGE & ASSOCIATES, INC.

(206) 682-1427

EAS2-025-A 9454

24:21,23,25	8:12 57:6	attack 33:16..	283:10	187:8,25
25:9,18	149:3	34:1	291:19	195:4,10
26:5,10	assemble	attacked	automotively	197:15
31:12 32:22	140:25,25	189:21	76:7	210:21
33:19 36:18	assembly	attacking	available	218:19
37:5 44:4	111:1,2	254:12,18	207:21	226:21
58:9 60:4	172:9	attain 8:21	229:20	227:7
72:13,15	180:20	8:24	237:4	234:18,21
79:14 86:2	assessment	attend 4:19	239:22	237:15
86:5,11	31:25 57:13	9:14 12:10	244:1	239:15
87:4 88:6	83:8 183:3	13:2	290:10,10	244:3
94:2 95:22	303:20	attended	Avenue 310:17..	246:20
114:14	assist 145:8	12:20,25	311:4,7,11	252:3
123:18	assisted	13:24 14:11	311:18	256:12,19
124:6 127:3	295:21	15:13,18	137:6	260:1
128:9 132:4	associated	attention	aware 52:21	263:23
160:6	82:19 83:9	184:7	83:5 84:10	273:12
166:18	83:11 84:16	attorney 74:4	144:14	279:5
167:3	107:3	74:10	159:8 201:9	281:23
170:16	290:19	211:12	211:7	298:9 300:9
178:1,3,6	association	August 68:1,4	275:22	303:22
180:1	136:7,18	68:7,7	291:9,13	308:8
181:25	159:3,24	authorised	A.M 2:2	background
182:10	160:2	148:24		4:2,6,12
196:8,11	assume 11:13	automated		254:2
199:6	21:20,22	154:19	B 287:16	backtrack
205:14	34:23 40:10	automatic	back 10:2	18:19
211:1 212:7	50:19,20	154:14	15:15 23:3	backwards
213:12	53:1,1,21	automobile	25:22 30:12	143:6
223:24	61:5 91:24	6:9,10 7:23	31:22 45:19	bad 29:4
238:21	92:13	8:3,5 77:24	48:14,16	84:18
260:8	109:14	119:16,19	60:18 62:5	147:14,15
262:16	110:14	127:7	62:6 71:14	bag 132:11
282:16	111:13	132:21	73:16 77:12	band 170:2,6
285:17	228:1	140:8 152:1	83:9 87:3	172:18,21
288:5	265:25	154:7,9,15	87:10,13	174:4,7,12
asking 2:14	assumed 51:20	154:22	89:18 90:11	174:12,18
33:14,15	51:21 52:4	155:3 179:3	97:7,8,10	bands 168:25
36:24 40:25	assuming 43:5	automobiles	97:12,21	169:2,4,8
52:4 93:9	50:18,21	8:19 149:15	114:24	169:21,25
116:14	51:15,16	automotive	116:12	170:14,17
126:11	52:3,11	5:12,16,18	139:7 143:8	171:2,15,25
137:13	56:8 57:21	18:10,14	158:12	172:3,6,10
157:4,19	84:4 132:10	47:24 132:8	162:21,24	172:16,20
182:21	151:5	134:11	173:22	172:24
204:22	assumption	139:24	176:9	173:13,17
239:18	54:21 79:9	142:11	177:18	173:20,22
240:16	269:4	156:14	180:18	174:4,5
255:3	as-is 286:25	157:5,10,18	184:12,24	banjo 147:21
256:12	attach 87:21	158:2,14,18	185:7,10,12	bank 163:24
265:8	attached 92:1	161:16,18	185:23	163:25
aspects 5:18	129:17	220:21	186:17	164:2

ROUGH & ASSOCIATES, INC.
(206) 682-1427

682-825-8455

bankers	65:11	196:15	134:19,21	109:8,9,13		
bare	100:25	battery	134:23	155:19		
base	25:5	180:11,20	belts	48:21		
29:10	80:25	180:24,25	129:11	265:4		
85:6	91:5	181:1 182:1	133:6	blame	202:10	
121:9,14		255:16	162:16	blank	283:13	
122:10,24		269:13	bench	141:3		
123:3		272:5,5,16	benefit	149:13		
125:12,12		272:17,20	Benz	137:23		
211:19		272:25	block	137:23		
213:16		273:3 292:4	139:15	238:2,6		
214:4,11		292:10,12	best	121:4		
215:11		292:14,15	217:25	blew	292:20	
229:1	231:6	292:18	better	112:1		
244:16		293:14	115:7	block	238:2,6	
245:6	246:1	297:25	208:14	238:10	35:6	
248:24		308:23,24	beyond	218:23	book	16:20
303:7,10		hay	254:6 262:8	238:10	17:12,13	
based	4:17	53:17,18	266:18	269:6,14	19:3,19	
8:18	89:16	267:15	biased	158:10	21:10 27:7	
143:15		286:15	big	97:3	28:4 113:18	
145:4		287:16	149:5 158:4	blow	43:12	
174:23		beaded	226:8	44:16,23	113:22	
190:18		278:11	bigger	141:14	114:4,15	
227:10		beading	227:5,9	123:1,3	129:25	
247:1		245:17	biggest	139:6	155:20,23	
260:19		beads	254:6 262:8	190:16	155:25	
281:7		34:5	bill	18:3	191:16	
bases	126:7	bearing	21:3	228:11	168:5	
basic	37:15	31:18	billed	230:7,13,14	179:13	
200:5		bears	20:22	257:1,5	205:1,6,8	
224:16		11:15	22:13,14	258:9,20	221:17	
basically	6:1	becoming	billing	88:11	224:3 225:4	
26:7	48:11	8:14	88:17	231:8	225:10	
56:8	78:20	began	bills	260:20	232:6	
100:2		225:22	binder	261:8 262:8	237:11,21	
105:21		252:4 274:5	billed	262:14	243:25	
127:15		beginning	20:22	263:3,4	251:14	
139:16		36:4 146:11	bills	264:17	261:1 284:2	
143:11		275:19	binder	265:17	285:5,22	
145:24		begins	217:9	266:17	300:6,8,16	
146:21		265:19	began	267:17	303:14	
177:4		291:7	225:23	268:17	boostar	49:5
basin	89:7	behalf	303:16	277:2	77:4 78:20	
basin	14:20	227:18	bit	292:19	100:12	
84:5,8	91:3	302:19	25:23	blowing	16:12	
151:23		believed	78:7 93:2	44:14 83:6	112:4 115:5	
254:20		23:9	124:21	290:5	115:24	
255:8,21		bell	186:8	blown	82:23	
267:22		27:4	189:17	276:20	116:1,21	
268:14		belong	190:3	290:17	bore	295:24
bathroom		136:7	203:20	blows	85:5	
		157:9 161:7	223:18	blue	42:4	
		belt	254:8	44:23 54:19	born	4:9
		129:12	268:23	56:2 59:12	Borris	18:3
		132:15,17	black	85:17 189:8	202:21	
		133:3,14,16	15:5,10	189:12	203:3,7,14	
		133:18,21	93:3 101:3	191:9 257:4	203:18	
		133:24	103:9	257:14	204:8 205:3	
		134:1,8,17	107:10	258:3	205:6 210:6	
			108:11	bluish	211:4 212:3	
					212:21	

ROUGH & ASSOCIATES, INC.
(206) 682-1427

EMR2-625-A 9450

213:24	281:25	275:5 276:8-	119:21	80:4 170:23
215:1	282:12	277:20	166:11	177:22,25
221:18	290:19,25	279:7,13	183:17	178:5,6,11
Boto 130:11	291:10	284:2	185:1	178:20
bottom 120:6	295:19,23	291:16	187:13	187:24
120:7,8	301:22,24	296:15	188:23	194:22
127:9	302:2	299:14	bulletin	195:2,11
249:21	brakes 14:15	brown 209:14	145:4,6,25	218:23
250:5	branch 4:21	297:3,4	bumper 188:14	221:3,15,16
286:17,22	4:22,23	bubble 32:25	198:14,24	226:19
bought 82:7,8	brass 124:11	bubbled 32:7	bumpers	238:13
bound 129:22	127:20,22	bubbling	188:13	246:15,20
boundaries	128:1,5,8	33:14	bunch 83:9	251:24,24
110:14	245:17	buckle 133:14	burn 43:22	264:3 265:1
boundary	breaches	133:18,24	45:1,13	266:24
101:8	101:10	134:1,5,8	47:11 78:12	267:10,12
box 188:24	break 13:12	134:17,19	91:19 92:21	267:17
279:10,21	31:20 60:15	134:21,23	93:18 94:12	271:11
296:12	60:17,22	buckles 134:2	94:14 95:11	272:25
boxes 65:11	74:4 118:13	bug 128:19,21	98:11,16	287:13
bracket	118:14	Bugatas	99:14	288:7,20,22
149:18	163:1,2,3	142:22,23	102:11	288:24
225:16	196:16	Buick 142:2	106:2	burning 43:22
bracketry	219:5	build 108:19	108:14,15	44:15 45:7
140:24	247:19	229:12	110:6	45:10 46:8
brake 15:4	250:24	230:10	111:20	46:11,23
77:4 78:20	breaker 298:7	building 26:9	127:6	48:16 50:13
84:1,2,10	299:17	32:20 35:6	169:12	56:1,16
100:12	308:1	36:11 43:15	184:4 186:3	58:10 59:17
111:25	breaking	106:1	186:4,5	71:13 108:3
112:4 115:5	217:16	135:22	187:1	125:11
116:21	briefly 259:7	185:22	193:16,18	126:20
174:19	bring 19:12	252:13	193:18	143:24
202:16	24:8 102:3	307:4	216:13	240:9
206:17	206:22	builds 85:5	221:19	254:10
214:24	274:9 276:7	126:18	230:18	266:11,13
236:9	280:16	Buildup 228:7	246:18	266:15
244:15	brittle 271:5	bulkhead 39:7	261:19,24	278:4,6
249:22	271:13	39:20 40:22	261:24	295:21
251:25	broke 308:1	41:14 71:19	262:22	308:9
255:13	brought 3:6	73:16 77:4	265:18,20	burns 29:17
256:4,14	21:21 25:21	77:12 78:14	265:25	32:9 45:6,7
259:2,19	113:18	78:16,22,24	270:11	259:13
260:3,10,14	134:14	79:5,16	271:15	261:12
261:15	147:3	94:1,9	276:25	262:15
262:25	207:12	95:17,19,25	277:1,3,7	burnt 184:17
263:7	210:11	96:1 97:8	277:11	222:25
265:19	215:1	98:17,18	307:17,18	Bush 311:7
266:18	216:24	99:7,15,17	307:19	business
267:4,11	232:7,10	102:16	burned 27:19	86:24
268:4,6,7	261:1 262:4	108:15,20	45:12,14,20	136:25
281:9,16,19	274:7,15	110:17	46:3 49:10	137:2

ROUGH & ASSOCIATES, INC.
(206) 682-1427

162:10	20:14,19	251:4,7,18	carries 123:4	202:18
buy 97:1	21:1,6,14	304:2	carry 138:10	Caterpillar
by-product	22:6,7,12	car 16:18	259:2 276:3	131:22
254:15	22:12,14,17	20:24 23:18	carries 45:24	Catholic
B.A 5:8	24:16 25:13	23:25 27:8	56:17	94:24 95:3
B.S 5:7	25:15,16	38:1 39:6	142:11	
	284:10	42:16 53:4	150:25	224:25
C	campus 11:22	53:21 57:11	152:20	225:1,2
C 131:9	135:22	58:22 64:6	191:3	caught 71:4
287:18	candle 259:13	65:5 71:22	195:15	71:10 106:1
311:1	canister	73:11 76:7	238:12,13	cause 3:2 7:3
caliper	112:15	81:2 87:22	238:13,15	15:16 16:4
174:19	camon 195:19	89:5 95:21	238:17	16:16 23:9
call 7:18	271:6	96:8 106:1	244:4	31:19 32:1
13:22 37:21	capable 77:10	119:8 137:2	Car's 106:22	32:21 35:23
62:6,14,25	264:21	139:2 150:7	cases 17:4,16	36:6,17
69:4 75:18	capacity	150:22	17:16,19	37:3,16,17
78:1 95:5	138:12	153:16,18	18:19,22	37:22,25
107:3	140:5	155:19	19:5,24	38:6 45:4
121:14	Caption 27:23	178:11,20	20:23,24	45:16 57:4
124:17	28:21,22	178:22	21:1,2	59:8,11
126:18	84:9,18,24	191:15	23:21 25:24	68:13,16
131:9	91:8,17	192:5 195:9	26:13,19,21	69:10,19
135:23	120:19,21	197:2 207:8	28:25 47:8	70:17 72:20
137:24	121:3,4,11	208:3	48:9 56:23	72:25 73:5
141:3 148:5	121:12,24	223:20	123:12	75:14 76:4
150:4	122:2	225:6,22	129:16	76:17 77:21
155:21	127:15,20	237:7,18	130:6 131:2	78:1,8
228:7	127:23	238:13	131:8 132:9	85:24 86:8
called 5:14	206:10	240:6	132:11	118:8 124:1
15:5 16:21	208:10	244:19	144:1	126:8
21:15 32:10	209:8	251:8,24	177:11	131:14,16
54:9 66:6	213:20	254:13,18	191:10	155:24
75:14 76:10	217:14,18	255:10,23	201:2,20	156:4,11
120:7	217:25	271:21	202:15	197:16
138:25	218:21	275:20	211:9,12,24	201:21,25
141:4,15	219:5,18	284:15	231:16	247:21
148:7	220:14	287:3,4	232:11,12	248:9 251:4
199:19	221:11,21	290:3,9,17	237:13	251:7
204:6	221:21,24	290:22	289:21	256:10
calling 70:2	222:3,9,11	292:9	290:20	306:22
cam 49:13	222:14,15	294:19		caused 24:2
camera 184:10	222:24,25	298:17,21	211:15	24:24 25:8
294:5,7,10	223:2	308:23,24	casts 186:3	25:13 56:19
294:11	224:18	care 69:4	cat 238:2	57:2,10
cameras	227:21	151:6	catch 261:19	81:4 113:24
293:20	246:7,13,16	179:11,18	309:3,6	117:19
294:2	247:3,9,13	career 179:15	catches 85:6	131:25
campaign	247:14,16	Carolina	261:8	132:1
214:19	248:15	145:21	catching	231:13
Campbell 20:1	249:2,3,21	carried 278:3	263:19	246:25
20:2,5,6,13	250:23	278:6	categories	247:2,3,4,5

ROUGH & ASSOCIATES, INC.

(206) 582-1427

250:10	certificates	chemical 19:6	247:24	class 11:22
257:13,16	8:6,10,21	200:25	250:21	204:6
257:19,21	8:24	.223:2,4	circumstance	clean 233:5,6
271:23	certification	263:24	24:11	clear 23:16
281:22	158:17	281:17	192:11	75:13 142:6
290:24	159:8	296:7,10,20	circumstances	168:18
causes 32:24	certified 7:5	300:4	38:9 69:12	216:9
57:22	9:9 150:15	chemist	69:18 70:1	231:14
122:25	201:24	220:19	70:14 85:3	267:21
causing 25:6	certifies	248:15	192:9,15,16	290:9
167:11	201:23	chemistry	193:8	clearly 88:22
176:10	CPEI 10:5	220:16	Citiron	220:6
226:25	challenge	252:25	141:19	254:17
252:12	201:8,10,12	253:9	citizen 75:11	Cleveland
255:14	challenged	cherish 151:3	city 295:9	295:10
caved 106:10	201:5,5	choices 44:7	claim 17:18	client 130:15
106:14,23	chance 286:24	86:22	22:9,9	304:9,22
107:1	change 136:2	chooses 282:9	191:22	clients 69:5
cavity 214:10	174:2	choosing	[REDACTED] 12:25	clips 292:22
252:14	268:23	26:25	[REDACTED] 2:4	294:15
257:22	changed 111:6	chose 27:6	4:1 18:9,13	clock 8:12
278:7 281:4	145:12	308:5,6	18:17,17	clockwise
281:25	242:7	Chrysler	21:13 30:8	209:5
293:25	changes	140:19	36:15 38:25	close 11:1
296:5	111:16	157:24	49:16 55:4	76:10 80:16
CD 30:12,16	177:17	161:22	59:19 60:15	104:3,4
90:6	314:8	chunks 32:15	60:21 62:7	105:3
center 96:16	charge 137:25	[REDACTED] 310:22	67:22 86:20	127:22
96:23	309:7	circle 102:23	90:12 100:3	189:4 219:8
101:19	charging	109:11,13	110:13	261:10
107:22	200:7	116:10	124:22	262:17
182:16	[REDACTED] 22:6	164:4,11	142:8 163:4	closed 26:7
221:11	20:17	168:20	167:14,24	26:13,20
Cantigrade	20:18 22:13	172:6,24	189:3	27:10 28:4
235:10,11	203:15	173:20	192:17	46:22 47:18
268:12,13	213:3,4	189:8,12	196:19	69:16
certain 6:22	284:10	216:8 219:1	197:4	108:16
7:11 8:12	charred 49:1	228:17	231:15	closer 76:11
26:21 45:4	chartered	circled	241:22	78:7 215:22
49:23 87:25	200:19,20	232:23	262:12	closest 55:8
175:13	200:21	253:16,25	268:10	167:9
182:4	chassis	254:12	277:3,8	174:19,20
259:18	149:22	255:18	283:9	182:2
298:8	cheap 294:14	256:21	289:21	215:18
certainly	check 12:6	257:13,14	291:15,19	closeups
29:16 103:5	140:24	258:3	304:20	21:15
certainty	146:3	circuit 298:7	305:21	225:13
44:2,3,5,8	156:17,20	299:17	306:13,19	close-up
certificate	158:14,19	circuity	307:12	165:6 168:1
6:18 7:8,16	237:15	83:6 200:7	310:15	172:8 215:5
8:8,17,18	295:25	292:7	312:1	close-ups
199:18,20	296:2	circumference	314:12	224:1

ROUGH & ASSOCIATES, INC.
(206) 682-1427

E982-879-A 8459

225:16	270:10	comment 66:6	282:22	211:2 212:9
cloudy 203:21	combustibles	175:10	compartment	212:11,15
clutch 241:5	48:17	190:13	competed	150:17
CNO 12:18	166:21,22	225:20	compiled	19:17
coating	261:9,11,16	comments 50:8	complaining	155:25
103:15	261:18	73:23 74:9	complete 3:4	206:20
107:10,11	262:17	161:21	3:12 156:7	3:12 156:7
107:11,16	265:25	179:23	225:25	10:23,24
107:18	266:21	commissioner	completed	298:5
codes 64:21	267:14	52:17	completely	54:16
comes 12:10	combusting	committed	111:16	113:1 188:3
coil 49:14	48:20	70:10	221:15,19	221:15,19
163:11,13	come 7:21	committees	236:10	254:11
163:23	22:13 24:20	160:4,6	completion	308:13
164:8,11,17	32:14 34:7	common 32:3,8	complies	90:13 98:24
164:19,25	35:3 48:14	144:13	102:25	109:16
165:7,8	56:18 60:10	communicated	114:11	115:15
167:8	62:5,6,22	226:20	116:3 163:8	164:5,13
cold 15:12	65:20 69:11	communication	165:17,22	172:7 173:4
collected	77:15,17	54:14	173:21	180:14
210:15	89:11 138:8	210:22	216:10	219:2
collection	141:10	companies	258:13	274:12
19:16 71:14	145:23	137:2	component	127:7,22
204:7	176:12	company 5:22	128:1,5	129:1
college 4:13	177:20	12:15,19	191:21	131:17,18
4:17,22,23	185:25	17:17,23	192:14,19	131:21,25
5:1 11:20	190:6 195:6	56:23	194:21	149:2
11:21,22	228:25	117:18	197:8 198:9	182:14,15
134:25	258:8 275:5	132:8	202:22	233:14
135:13,14	277:12	134:11	237:3 241:3	290:8
135:25	279:22	138:15,16	compensated	308:23,24
136:4	297:6,6	143:12	comparison	
137:18	comes 33:24	153:4,9		
199:15	41:6 105:7	154:22		
200:4	138:4	155:3 179:5		
collision	240:21	199:7,8		
144:3,4	258:11	241:9		
collisions	262:18	242:23,24		
199:2,5	coming 44:12	250:12		
color 107:18	45:2,2,7	283:13		
251:19	51:11 79:9	286:4 287:2		
colors 103:2	100:6,8	310:5,6,9		
combat 16:10	170:9,11	311:6		
combust 294:1	183:23	compare 28:9		
combustible	187:19	29:6,21		
39:13 41:17	191:15	47:20 222:9		
59:21,22	234:15	280:17		
79:8 85:8	235:2 260:3	compared		
111:4	260:14	49:15		
258:25	262:8	comparing		
260:23	293:22	168:13		
261:23,24	298:23	comparison		

ROUGH & ASSOCIATES, INC.

(206) 682-1427

E902-829-A 9468

components	conclusions	155:8	226:25	154:9 212:6
15:3,4	87:19	confirm 191:6	267:2,8	consumable
18:25 31:13	concrete	confirmatory	297:23	44:25 46:17
31:14 36:12	31:16,17,21	176:23	consequences	96:2
57:25 77:16	32:6,7,9,13	confirming	161:13	consumables
77:18 79:8	32:15,18,21	11:19	Consequently	166:7
96:2 112:25	32:24 33:11	confirms	149:3	consume
113:11	33:14,16,16	190:25	consider	191:10
132:21	33:20,22,23	conflicts	31:16,22,24	consumed
140:24,25	34:1,4,6,8	159:19	31:25 38:25	42:25 46:18
140:25	34:12,12,13	conform 116:5	123:25	95:12 113:2
145:11	34:14 35:5	confused	126:3	113:4,14
146:22	35:18 36:7	25:23 96:4	205:19	127:17,18
153:24,25	36:16,24	96:5,8	216:4	169:9 190:7
167:8 182:4	38:3,11,16	confusing	consideration	190:19
182:6,11	condenser	93:2	171:19,20	191:20
235:19,21	180:12	confusion	241:13	192:12
235:22	183:15	69:7 87:1,2	266:22	193:8,10,12
254:15	188:17	connected	considered	194:3,20
287:23	189:2,12	141:4	52:13,16	247:7 254:9
301:8	191:18,19	197:20	102:13	255:16
compromise	191:24	232:20	126:12	264:14
19:25	192:12,19	246:4	137:16,21	266:5
concepts	193:3,7,21	255:20	194:17	267:13
141:8	196:3	294:22	considering	consumes
concern 290:8	condition	connection	153:8	273:10
concerned	31:16,17	14:25 15:14	consisted	consuming
53:25	32:5 83:25	15:25	153:20	255:23
178:25	84:2 102:13	135:18,21	consistent	308:5
concerning	105:22	140:17	126:7,16,22	consumption
36:6 37:3	111:6 152:8	141:7	127:1,4	164:18
68:13 118:8	182:1 246:7	144:18	146:23	165:7
129:10	251:8	154:21	187:3,11	225:25
conclude	286:25	294:12,13	219:10	contact 10:19
69:10	304:13	connections	247:23,25	69:8 121:1
155:23	conditioning	145:17	248:5	121:2
210:1	44:13	147:24	constant 42:4	122:23
247:20	conditions	177:8	44:23	142:15
concluded	151:25	connector	constantly	203:3,3
32:2 70:13	conduct 7:5	48:7 49:5	181:13	205:10,13
232:14	302:16	146:2	construction	206:21
309:12	conducting	233:23	139:25	214:14
concluding	301:2	238:3	140:11	215:6
73:9	conductive	257:25	141:15	228:14
conclusion	228:8 231:9	294:20	constructing	229:1,5,7
24:20 37:24	conferring	295:17	50:12	230:5 231:3
56:19 58:21	305:19	297:23	consultant	232:21
70:17 71:18	confident	connectors	14:6 211:5	252:6
91:20	59:7	29:5 144:17	Consultants	260:23
102:19	configuration	147:14	18:10,14	278:10,11
227:10	121:10	213:17	291:19	291:7
255:21	confined	225:18	consulting	contacted

ROUGE & ASSOCIATES, INC.

(206) 682-1427

FEB 2 1982 8461

203:5	78:19 81:3	305:11	102:1	223:16
223:10	81:18 82:1	conviction	corrections	239:9 284:6
contacts	82:5,17,20	70:7	314:8,9	284:6
120:22,24	85:18 97:16	cooler	correctly	309:14
121:5 122:6	103:20	265:13	7:17 90:23	counting 54:1
122:6 125:6	106:20	267:1	91:1 98:2,5	country 6:25
125:8,10,15	108:2,11,17	copied	201:15	142:24
125:16,17	112:17	208:15	292:21	200:11
125:19	113:15,23	copies	correspond...	201:17
126:4,4	117:19	61:15	62:8,9	County 212:25
127:1 214:8	132:21	copper	204:13,18	314:4
215:7	152:11,16	124:13	corresponds	couple 24:9
245:10	152:19	147:20	279:19	37:9,13
278:12,14	153:12	214:23	corrode	78:18 82:12
contained	155:7,8,23	245:17	227:24	96:6 111:15
205:25	156:3	copy	228:24	123:24
243:25	166:23	21:21,25	corroded	196:3
249:22	167:10	26:15 61:6	128:3	course 7:19
280:14	177:14	61:11,13,17	228:18	8:17 9:9,10
contends	192:21	68:1,22	229:3	9:12,17
165:16	193:4 194:5	69:2 89:17	corrodes	10:23,24
contents	205:22	200:1 205:6	122:24	11:8,11,12
17:13	224:8 225:7	205:8 285:5	228:14	11:23 12:1
continually	225:10	285:17	corrosion	12:4 13:14
259:21	231:14	289:14	25:6 100:17	14:12,14,18
continue	232:9,14	copying	100:19	courses 6:1,3
162:25	233:14,21	285:16	102:20	8:19 10:3
continued	237:24	cord	103:7	15:15 56:15
18:25	238:8	141:4	107:19	171:8,9
205:19	269:19	cords	226:25	200:3
313:1	270:3 282:8	44:18	227:2,6,8	252:25
continuing	282:9	corner	228:5	court 61:11
12:18 276:8	283:21	44:18	252:24,25	74:21
continuity	284:18	78:11,13,16	253:3,5,7,9	201:23
229:1 230:9	286:2,5	79:1,5,15	257:22	310:1
299:18	289:11,23	102:21	258:16	courtesy
continuously	290:13	103:4,23	274:10	74:16
293:13	305:17	108:4,4,20	278:23,25	courts 201:17
control 16:24	controlled	109:1,2	280:22,23	court's 74:6
17:5,18	163:16	111:4 181:1	281:11	cover 49:13
21:16 22:10	controls	183:20	291:7	80:25
23:18 24:1	148:5	187:22	corrugated	covered 15:17
40:3,23	convenient	190:17,18	263:22	142:12
46:1,16	186:10,12	190:21	Corvette	162:21
47:15 48:18	conveniently	265:12	142:2	196:21
48:22,25	239:19,21	corporate	cottage	covering
49:6 58:22	conventions	14:24	155:11	140:10
60:4 62:20	159:20	Corporation	counsel	263:21
63:18 65:5	conversation	201:4 310:5	20:11	covers 188:14
71:23 72:16	187:7	310:6,10,11	30:7 93:10	311:3
75:15,20	conversations	corporations	101:23	crack 84:18
77:1,3	38:5 239:10	158:1	110:23	220:24
		corrected	165:1 218:3	
			218:5	

ROUGH & ASSOCIATES, INC.
(206) 682-1427

E982-825-A 9462

27:9 84:4,9	26:18	151:24	103:2	day-to-day
127:19	crocodile	Dakota 238:7	108:11	138:10
209:24	292:22	■ 39:1	116:20	deactivation
218:22	294:15	54:7 58:2	251:19	16:24 17:5
247:18	cruise 23:18	damage 29:17	297:4	17:19 21:16
250:6 303:6	82:1 194:5	43:3 47:15	darkened	22:10 24:2
cracking	283:21	49:14 90:15	101:13	40:3,23
206:11	cry 66:7 67:1	91:4,14,19	darker 99:8	46:1,17
208:13,23	crystallly	92:18 93:11	101:18,20	47:15 48:18
216:3	281:21	94:6,16	107:14,19	48:22,25
220:25	curiosity	98:3 106:15	297:3	49:7 58:23
221:5,6	117:16	106:17	darkness	60:5 62:20
246:25	current 19:24	111:23	116:22	63:18 71:23
247:2,20,22	252:12	114:20	dark 105:3	72:16 75:16
247:23	292:25	123:5 125:5	data 36:3	75:21 77:1
cracks 84:14	293:9	125:7,9,14	210:20	77:3 78:19
84:16 91:7	currently	126:3,22,25	300:2	81:4,18
91:17 206:6	23:4 227:15	127:8,13	database	82:5,17,20
214:1	custody	165:11,16	88:22	85:18 97:16
215:19,20	286:20	165:17,21	data 22:2	103:20
218:12,13	customer	165:25	80:15 82:11	106:20
218:24	151:23	166:2,16	88:17 156:8	108:2,11,17
219:9 221:3	241:8	167:1,9,11	203:10	112:17
221:10	customers	168:1,12,22	213:11	113:15,23
247:16,22	150:9	176:11,14	244:20	117:19
249:12	151:10	180:23	251:12	152:12,16
Craft 8:6,10	152:2	182:2,5,6,8	275:16	152:20
crashes 147:8	cut 17:21	182:12,23	276:4,5	153:13
create 228:23	24:21	184:21	291:19,21	155:7,8,24
252:9	197:20	185:6	297:13,17	156:3
256:21,22	244:16	187:10	310:21	166:23
273:8	250:21	188:2,12	dated 26:14	167:10
created 11:13	cutting 25:10	194:12	data 67:12	177:14
19:15	250:19	199:1,5	dating 203:10	192:21
258:20	cut-away	209:13	day 10:20	193:4
creates	63:20	217:10	14:16,17	205:22
230:18	CV 4:5,12	221:4 262:5	22:12 31:4	224:8 225:7
creating	129:17	266:25	68:24	225:10
105:22	211:19	278:5,5	202:25	231:14
credentials	cycle 148:5	damaged 49:15	203:19	232:9,14
11:15 12:3	243:5	98:15 99:3	210:10	233:14,21
77:20	cycles 305:23	126:13	213:13	237:24
crimp 236:6	306:2	127:18	314:17	238:8
236:10	cylinder	172:19	days 9:13	269:19
250:21	58:18	182:15	10:3 68:17	270:3
275:15	C01-1416L	185:11	69:1 80:17	283:22
304:8	310:8	187:24	80:21 83:9	284:18
crimped		dangerous	111:15	286:2,5
209:19	D	152:8	130:15	289:11,23
crispy 49:11	D 287:21	304:24	151:4 203:1	290:13
209:14	314:1	dark 101:18	226:16	deafening
criteria	daily 151:22	101:19	243:5	263:15

ROUGH & ASSOCIATES, INC.

(206) 682-1427

E982-025-A 9483

deal 97:3	241:24	291:17	208:13	305:16
145:19	242:15	depart 126:21	249:21	designed
149:3	defects 7:2	department	deposition	132:23
292:23	142:12,13	6:18 67:23	3:16 4:1	150:14,19
dealer 137:6	143:7	69:9 70:6	12:8 16:20	150:21,23
143:5	defendant	71:17 79:21	38:22 54:8	151:21,24
dealers	132:9	79:24 85:25	74:20 75:4	154:8 155:1
145:14	157:16	86:17 87:8	132:5 167:5	239:2
dealership	311:6,13	87:19	179:2 201:4	240:14
137:23	defendants	140:23	289:3	305:18,24
138:11,17	157:11,22	194:23	300:14	306:22
138:21	310:12	195:3,10,11	309:12	designing
139:8,16	defendants...	195:14,18	310:13	153:23
142:23	157:7	department's	312:1 314:6	154:23
146:5	defendant's	68:18	depositions	destroyed
276:19	286:24	depend 264:11	4:3 39:2	272:3
280:6 295:5	defer 35:21	depending	71:1 129:17	detect 288:22
295:7	define 301:7	45:9 130:16	130:7 132:9	determination
dealerships	definitely	147:6	198:19,19	69:14 70:11
139:6	105:11	151:15	describe	77:15
142:16,16	176:18	262:18	76:25 78:10	197:16
147:18	definition	268:21	95:15	determine
dealing 15:2	32:12 99:22	307:14	216:18	16:16 24:23
72:3 147:20	definitively	depends 85:3	described	55:6 80:5
151:16	262:10	149:18	27:13 39:9	108:1
241:8	deflect 46:25	192:9,15	41:22,24	142:12,17
Dearborn 14:1	47:4	226:24	43:11 128:2	148:22
15:8	deformed	231:8	139:16	218:11
debate 188:8	236:10,16	240:24	191:10	222:10
debating	degradation	265:4	216:3	223:1 227:2
191:5	190:3	268:24	251:23	227:8,23
decide 212:16	degrade	301:7	291:6	245:19
307:15	228:10	depict 215:4	describing	268:15
decided 131:5	degree 5:6,10	215:13	8:25 39:22	271:17
131:9 211:2	5:12,17	217:25	39:23 40:1	273:2,25
299:19	11:23	278:9	41:1 42:3	281:14,24
308:10	135:24	depicted	52:8,9	290:2,12
deciding 21:9	191:23	212:10	77:10 79:4	293:8 296:8
dedicated	199:16	216:23	description	306:9
26:8	220:16	221:14	41:19 79:6	determined
deep 30:4	236:16	235:21	222:18,20	24:2 75:19
defect 129:1	278:3	236:4	design 128:19	developed
129:3	degrees	244:13	128:25	150:16
131:24	188:21	245:22	129:3,5	development
133:3	189:15	248:21	131:23	139:21,22
304:11	235:9	250:24	139:25	139:25
defective	268:11	261:12	140:11,23	140:11
132:17,22	Delaware	302:25	153:16,18	device 149:10
234:14,20	310:9,10	304:2	153:25	163:15
238:22	DeLoe 241:5	depiction	154:5,16	261:15
239:9	deleted 66:11	235:15	161:13	293:8
240:23	delivered	depicts	192:1 200:5	devices

ROUGH & ASSOCIATES, INC.

(206) 682-1427

2822-825-A 9454

171:19	275:17,18	296:11	distribution	22:15 38:6
de-energize	293:18	308:14	269:6,13	48:15 92:8
291:2	294:18	disassembly	DISTRICT	107:8 131:1
de-energized	295:1	17:20 20:10	310:1,2	139:17
272:18,20	difficulties	22:15 27:14	disturb	140:12
272:22	290:6	250:11	222:7	143:17
273:3 291:1	difficulty	283:7,21	doctors	144:22,24
diagnose	291:12	disclose	160:12,16	159:11
149:12	diploma	212:3	160:20	160:9 165:5
diagnosing	199:21	discolor	162:12,14	206:21
138:3	200:4	228:11	document	227:18
diagnostic	directing	discoloration	24:22 29:14	240:3
8:13 138:7	113:19	101:20	64:19,25	288:10
diagram	184:7	216:20	65:10,16,18	298:6
64:2	direction	296:25	65:19,20,21	300:20
119:6,12	305:19	discolored	66:2,4 67:9	301:4
120:3 121:1	directly	127:19	67:19	302:18
173:16	93:15 94:20	discovered	202:14	
291:6	103:20	195:22	226:5	152:24
diagrammed	104:25	discovery	239:25	door
279:3	105:6	209:7	50:3	54:5 72:8
difference	108:10,17	305:10	240:10	154:14,18
97:2	125:16,18	discuss	283:16	229:16
differences	47:21	74:3	286:25	doubt
47:21	142:15	92:7	287:18	186:3
275:22,24	191:17	discussion	299:19	dousing
276:1	193:23	90:10 212:5	documentation	195:16
different	194:9 235:3	dispose	23:7 69:6	drafted
5:3,24	262:20	dispute	110:4	283:16
13:25 21:12	269:13	240:12,14	123:23	drag
21:18 33:14	308:14	disputed	214:20	185:23
40:12 41:2	disagreement	106:21	224:4,17	dragged
41:4,8	75:23	disputing	235:19	169:14
47:17,21	disappear	21:5	243:4,8	185:14
64:20 72:1	66:18	disregard	280:13	288:8
73:11 89:24	271:18	53:12	300:16	dragging
96:6 100:25	disassemble	dissect	documented	176:10
103:2	3:21 237:13	250:13	draw	96:16,22
107:18	287:22	dissected	17:19,22,22	96:24
134:4	disassembled	213:24	17:25 27:17	258:12
139:11	27:9,16,22	216:16	documents	drawings
140:1	28:21	247:18	17:25 27:17	140:24
193:14,16	213:23	distance	277:14	drawn
193:19	217:16,19	224:12	280:10	109:7
209:25	218:1,15	distinct	documenting	219:4
213:21,22	219:8 222:2	42:5	18:24 111:3	258:21
215:11	228:22	174:4,5	draws	259:12
221:21	245:25	distinctive	97:5	drannel
231:21	250:18	99:16,20	209:8 305:9	250:15
239:5 255:3	252:1	100:4,10	305:22	drew
264:12	254:22	distinguishes	119:23	108:12
265:8 271:3	256:9	248:9	14:2,14	182:16
271:23	281:22	distinguis...	15:1 16:11	232:2
		56:1	18:5 19:16	drive
				141:6

ROUGH & ASSOCIATES, INC.

(206) 682-1427

E262-525-A 3485

301:20	due 32:7	282:16	edge 101:5,9	120:23,24
302:3	66:17 87:11	288:5	103:25	121:2 128:3
driven 35:11	104:14,15	303:19	125:12	132:21
150:25	133:10	311:3	254:23	144:13,17
191:9	272:18		edges 128:23	151:14,19
240:15	279:2	67:24	education 9:6	153:24,25
241:14	dues 158:20	duplicate	11:14 12:7	154:6,8,23
driver 81:25	duly 2:5	118:25	15:15 136:4	155:1,6
93:15,22,23	██████████ 33:17	duty 148:5	137:11	177:8 200:6
93:25 94:21	██████████ 2:19	179:4	158:16	200:6,23,24
173:11	21:25 26:5	dynamics	220:14	214:9,10,18
driver's 39:6	29:25 32:22	265:9	educational	215:14
39:21 40:3	33:18 36:18	dynamometer	4:12 5:8	228:2,4
56:12 71:18	37:5,11	6:4 200:5	13:9 15:20	252:7,15
95:12 96:17	38:12,19,24	dynos 200:6	effect 107:2	253:17,23
98:17,18	39:12 42:8		222:23	255:4
99:15,17	52:20 53:5	E	247:21	256:14,20
102:17	57:19,23	██████████ 2:9 118:22	248:9	257:4,12
164:12,18	58:8 59:3	118:22	effects 223:2	267:2 273:8
165:11,18	61:7,18	196:17	effort 140:21	281:12
165:21	62:11 73:19	287:22	EFN 130:13	282:11
168:22	74:2,5,15	307:9,9	eight 80:17	303:7,7,10
182:6,8,12	74:18 75:1	308:21,21	80:21	electricals
182:15,17	75:8 77:13	311:1,1	234:19	14:22
182:24	84:20 85:20	earlier 10:13	262:25	electrician
183:1,25	86:2,5,11	42:2 46:21	297:10	252:15
184:4,8,21	86:14,16	47:17 60:25	either 23:6	electricies
185:4	87:2,7,17	178:3	29:2 35:3	147:5
186:21,22	88:6,9 89:9	194:11	37:16 39:25	electrolysis
186:23	89:14 90:8	196:21,23	51:25 52:5	228:5
187:2	95:1 97:5	228:13	54:4 59:24	253:15,20
190:21	102:2	238:21	elements	
269:17,18	113:10	285:13	118:7	277:5
288:12	118:13,16	294:14	129:14	eligibility
drives 281:11	123:18	302:18	165:15	159:8
driving 83:15	124:6,20	early 10:15	166:12	else's 30:9
drooped	127:3 128:9	87:25	172:14	emanating
294:16	130:3 153:2	130:15	194:14	126:23
drop 35:3	155:21	147:2 243:5	203:12	127:1
229:21	166:18	250:11	258:10	embarrassed
dropped 111:8	167:3 177:6	earned 212:6	294:2	124:22
198:13	178:1,3	212:7	297:22,22	125:2
246:16,21	180:1,5,9	Easily 262:23	299:7 303:1	employed 14:9
dropping 35:8	181:15,25	Eastern 9:8	electric 48:7	14:10 158:4
106:25	186:6,11	easy 29:20	49:5 257:25	employee
246:25	190:12	89:9 110:19	281:25	18:13
247:2,4	196:5,8	155:20	282:15	employment
drops 122:24	205:14	177:21	electrical	15:14
247:9 288:2	237:18	eating 253:19	7:25 15:3	encapsulated
drowned	250:1 260:8	Econoline	29:4 48:6	121:24
133:22	262:16	64:4,9	49:18,19	encountered
dry 295:22	269:3	██████████ 311:17	91:4,16	83:19

ROUGE & ASSOCIATES, INC.
(206) 692-1427

124:17	256:5	270:8	271:9,10,22	28:9,17
ended 298:6	enter 33:22	evaluation	271:25	31:15 205:7
308:1	34:1,8	14:14 25:10	272:8,9	220:14
energized	entered 34:11	133:4	273:9	221:15
215:8	entering	153:20	evidencing	260:2 261:3
272:17	281:3	evaporate	102:10	exceeded
energy 272:18	entire 3:6	32:14	evident 233:3	152:3,4
engage 269:2	9:14 19:12	evenings	exact 78:8	Excellent
engaged 211:5	266:20	137:17	128:11	117:11
262:9	269:2 270:9	evenly 172:11	exactly 11:5	excess 240:12
266:17	entirely	172:13	14:19 25:23	excluded
engagement	187:11	173:15,17	29:22 39:24	206:3
129:14	entrainment	event 83:20	40:9 69:11	Excursion
engineer	133:20	87:20	103:22	301:21
138:15	environment	144:16,19	107:25	302:4
139:22	150:13	193:6	108:1,8	307:16
140:9	environmental	218:12	109:11,12	Excuse 114:1
191:13	281:6	219:6	122:19	exemplar
200:9,19,20	equipment	230:17	140:12	20:14 237:6
200:22,23	179:4 197:1	249:13,15	144:9	244:3 261:2
200:24,25	197:5 198:8	276:22	174:22	279:8
252:16	198:9,20	296:23	195:1	exemplars
253:23	equivalent	events 144:15	203:21	18:23
engineering	5:7	146:2	219:15	exemplary
5:12,17 6:9	Exie 101:25	218:18	227:22	261:6 274:7
6:11 37:6	116:6	278:1 279:1	228:21	276:2
68:22	196:19	eventually	251:11	exhibitor
139:22	311:13	123:1 141:1	252:8	136:20
147:4	erode 228:6	228:6,9	253:24	exhibits
169:20	erosion	242:16,17	261:23	61:15,20
200:13,16	253:17	280:12	278:18	218:10,20
engineers	escape 101:11	306:18,20	298:23	219:4,22
6:12 157:5	177:18	everybody	301:8	246:7
157:10,18	escapes 59:9	57:9 113:23	exam 6:25 7:4	250:24
158:2,14,19	167:12	222:4	examination	312:10
160:13	escaping	evidence	49:17 92:3	313:2
162:1	58:11 100:7	49:19 53:9	310:13	exist 194:11
engines	especially	53:13,14,16	312:2,3	existed
149:23	188:15	54:3 91:13	examinations	191:23
150:12	271:6	91:19	6:13	218:12
England 4:10	essentially	100:21	examina	219:5
4:14,20,24	191:20	107:9	224:13	220:13
5:8 6:13	193:8	171:10	249:4	281:15
9:5 136:11	establish	176:23	examined 2:6	existing
137:6 143:7	110:14	186:2 204:6	120:11	146:1
143:8	267:17	218:20	221:9	exited 72:7
156:21	established	224:23	243:25	258:21
199:16,19	52:6 225:9	231:15	256:14	263:4
200:20	248:14	232:4,13	271:2	exiting
engulf 266:20	255:6 289:9	258:4	examiner	260:20
engulfed	estimate	266:10,13	12:24	261:8
255:10	124:9,10	266:15	example 25:7	expand 266:19

ROUGH & ASSOCIATES, INC.

(206) 682-1427

ER02-025-A 9457

expect 34:19	explained	extraneous	232:23	133:13
46:17 47:14	167:4	70:14	236:13	142:11,17
187:23	explains	eye 42:3	246:5,16,22	161:14
191:17,19	26:17 35:14	51:12 52:12	254:11	226:3,5
192:8 231:6	43:25 94:15	53:15 54:14	260:3 264:2	240:24
231:10	246:6	72:3,10	264:25	241:1,19,22
expected	explanation	186:21	281:16,19	241:23
192:11	35:16 41:15	187:12	281:25	242:12
193:7	56:10 58:2	e-mail 205:11	282:11	248:5
expense	58:6 59:20	E.P 311:20	283:23	254:15
148:25	60:11		297:13,14	257:22
experience	107:14	F	300:18	277:25
11:14 15:20	113:13	W 92:4,17	304:11,23	278:21
15:21 26:11	186:1	118:22	306:12	304:25
77:23 146:7	193:20	307:9	factory 139:8	305:1
151:6	255:13	308:21	197:11	306:21
177:13	268:25	314:1,1	294:21,23	failures
190:19	explanatory	face 53:12	facts 196:11	247:25
191:5	130:20	facilities	Fahrenheit	fair 18:16
228:23	Explorer	6:25	235:10	36:5 153:6
231:2	64:10,13	facility	268:12	210:3
248:15	explosion 9:9	24:22	fail 152:5,14	211:11,24
265:11	explosives	136:23	152:14,16	212:11
experienced	16:11	137:25	239:3	222:18,20
208:2 251:8	expose 250:23	202:25	241:25	235:14
expert 19:21	exposed	203:8,23	242:1,2,12	249:23
20:11 124:1	100:25	204:9 205:4	304:23	253:22
128:25	223:2	205:10	306:19,20	259:10
129:10	247:14	208:6 210:7	309:6	261:25
133:6	256:3	212:21	failed 25:4	262:1,7
165:15	extensive	213:7,9	226:9,10,12	264:10,18
201:6,21,25	43:2 165:21	227:16	226:12	267:19
220:18,22	247:14	234:21	227:22	282:22,23
253:2	extensively	238:22	241:3,17,23	303:20
263:23	107:24	243:3	242:19	fairly 119:11
265:9	extent 188:10	268:17	246:6 279:2	196:22
expertise	188:11	286:14	282:13	fall 106:1
240:25	199:1,5	fact 21:5	290:19	228:20
264:3	307:18	28:3 40:21	306:8,9	229:4 246:3
306:12	exterior 37:9	52:16 65:16	failing 27:17	271:5
experts	188:2	83:15 87:21	28:6 142:18	fallen 71:3
157:25	external	95:19 98:9	255:9 281:6	218:16
161:24	32:17 34:10	98:19	fail 151:23	228:24,25
162:4,7	105:8,21	124:22	152:6,8	235:13
284:6	externally	125:2,22	304:24,24	246:12
286:24	34:9 104:18	126:3,13	309:2,4	248:3 252:6
explain 35:12	105:21	165:6 166:1	failsafe	272:3
44:1 86:23	extinguish	167:13	152:14	falling
211:4 252:8	171:19	172:17	239:3	105:25
255:17	extinguishes	192:8,12	failure 19:11	106:8 107:4
269:9	246:19	201:5 202:3	28:22 29:2	170:2,6
270:21	extra 44:15	231:13	131:16	falls 229:5,7

ROUGE & ASSOCIATES, INC.

(206) 682-1427

EMR2-025-A 9468

229:8 230:5	feeding 151:6	fenders 100:7	179:19	231:13
231:3 291:7	feel 132:13	field 5:19	280:11	244:19
false 129:15	280:19	7:12 146:12	284:1	251:3 256:9
familiar	feels 54:18	151:9 212:6	filling 130:13	272:23
81:21	Feeley 2:10	fifth 10:20	fill 159:9	281:22
119:10,11	2:13 22:23	Fighter 15:21	film 267:18	286:9
149:14	30:3 38:13	Fighters	finally 8:15	304:24
153:15,17	38:21 60:14	158:23	financial	first 2:5
153:17	60:18 61:4	figure 70:6	302:21	9:24 10:19
155:13	61:10,19	92:10,10,12	find 48:14	11:12 16:15
200:21,22	74:13,16,24	92:21 93:5	62:4 65:22	26:4 28:17
familiarity	75:6,10	93:17,18	67:19	28:18 35:20
48:8	76:14 86:15	94:11 95:8	112:12	35:25 42:17
family 65:24	86:19 87:5	98:7,8,15	163:5,6	43:2 47:19
fancy 90:4	87:11 88:7	98:17,21,23	193:10,12	51:9 54:5
far 49:6	89:10,15	99:14	196:6 199:4	61:22 63:1
53:25 55:12	95:2 114:24	109:17,19	199:24	90:20 93:2
78:15,24	116:5	110:18,19	202:5	102:9
79:1 95:19	118:14,23	110:22,24	214:15	105:15
112:16,19	130:1 178:2	110:25	255:11	130:17
122:18	178:5	112:3	271:2,8,22	138:15
159:7	181:18	116:24,24	289:18	145:24
178:21,25	186:12	117:6,10,12	295:1 303:5	148:7
179:9	196:10	128:11	finding 202:9	152:22
192:19	202:19	163:5,6,12	findings 91:2	153:1,1,5,6
193:3,6	225:9 239:7	164:24	118:2	155:6
221:16	259:7	167:13,17	fine 4:8	170:12
223:21	288:11	167:19,25	22:16 57:16	177:24
233:5,6	307:10	167:25	92:5 114:7	178:13,23
269:22	308:19	168:6,10	117:1	195:22
284:18	311:6,6	169:8,8	fingerprints	201:3,24
238:7	312:4,6	180:11,12	130:1	205:24
farther 113:1	feet 54:19	180:13,19	finished	206:8,9
113:12	55:1,6,7,9	180:21	146:12	207:10
fashion	55:14 58:4	183:6,11	227:12	215:18
259:10	78:18 79:2	186:15	finishing	218:10
fast 136:3	192:24,25	Figures 98:19	265:5	223:9
150:14	196:3	figuring	fires 14:1,22	232:16,24
fatality	fall 71:8,8	154:2	15:17 16:1	233:7
132:2	106:5,9	file 3:6,8	16:4,7 22:9	237:17
favor 202:5	107:9 170:7	19:12,13	32:3 77:21	239:8 244:4
fed 259:21	170:10	26:7,13	77:24 106:7	286:11,16
266:25	228:21	28:19 60:23	106:20	286:21
Federal 67:23	229:3	63:25 65:14	130:8 144:2	291:17,24
69:9 71:16	felt 87:8	69:3,17	144:3	292:20
75:14,24	female 232:20	116:12	147:25	first-hand
76:2 77:9	fence 50:16	225:11	148:17,20	219:16
77:20,25	fender 44:20	244:2	178:17,19	fit 154:2
79:11 85:25	59:9 101:6	280:14	178:25	160:10
87:19	101:7 192:1	filed 25:25	191:2,16	fitting
feed 197:20	198:25	62:1 80:1	192:5	147:21
291:1	269:16	filed 26:20	205:20	five 9:13

ROUGH & ASSOCIATES, INC.

(206) 682-1427

E982-025-A 8489

10:3 24:10	50:10 52:8	263:7 268:7	224:25	259:9 269:3
152:23	52:9,15	268:16,19	237:7	288:17,18
209:1	54:6 191:13	276:19,22	242:23,24	302:4
210:18	flaming 259:1	278:24	243:15	303:19
294:20	flammability	280:25	244:19	formal 11:7,9
fix 145:9	263:25	281:3,9,9	14:11,18	
fixed 146:12	flammable	281:11,15	15:15,20	
152:7	77:18	281:16,19	280:6 283:6	220:13
fixing 142:20	108:18	281:19,24	283:13	245:13
145:25	268:7	281:25	284:5 285:7	252:24
fixtures	273:13	282:12,14	287:2	formation
140:24	flat 309:7	295:19,23	291:20,21	253:10
flame 39:9,11	flip 187:8	296:4,9	298:10	formed 19:10
39:20,23,25	flipped	fluids 32:8	301:13,24	35:23 36:1
40:2,7,11	170:12	32:13 35:3	305:12,18	36:5,16
40:14,22,25	flipping	35:8 84:1	307:4,11	37:2 68:25
41:1,3,10	181:13	268:18,22	310:9 311:5	forming 101:1
41:15,20,25	186:1	flyleaf 314:9	Ford's 293:23	forms 219:11
42:4,5	floor 31:16	focus 49:18	foreman	288:17
43:11,13,25	31:17 32:6	49:23	137:25	Formula 150:5
44:6,23	35:18 36:8	focused	160:11	150:6
45:7,16	36:16	225:21	161:6,15	forth 3:14
48:15 54:19	169:15	foe 12:17	191:7	Fortunately
55:6,22	218:17	folders 30:11	101:11	56:21
56:2 58:3	229:21	30:19	foresee	forward 96:1
58:24 59:12	246:4,6,12	follow 94:25	103:8 166:9	103:8
60:9,10	246:16,21	following	167:11	166:9
125:24	247:9	91:10 93:21	241:4	185:13,14
176:25	293:14	97:6	forever	268:5
187:19	floors 31:21	follows 2:7	151:12,13	forwarded
190:16	Florida 27:1	165:9	forget 107:2	67:24,25
191:9,14	27:3 143:16	Ford 2:13	135:17	forwards
258:8,11,12	flowed 255:13	12:14,19,23	152:23	143:7
258:21,24	292:25	16:22 17:17	252:21	found 24:11
259:12	Floyd 211:15	17:23 22:2	forgetting	27:9 66:4
260:11,20	fluid 25:5	22:3 26:8	118:6	70:13
261:4,7,12	34:4,11	26:22 56:23	forgot 285:8	148:14,14
261:13	58:18 84:1	61:2 63:17	forgotten	217:25
262:8,15	84:2,10,16	64:3,3,10	161:2	235:20
263:3	84:17	64:13,19	form 2:21,25	272:23
265:22	206:10	65:16,17	26:10 29:25	300:5 303:6
266:6,17	208:9	83:8 117:18	31:14 33:18	306:24
267:19	214:24	118:7	33:25 36:23	four 9:13
273:21	226:24	140:19	37:11 39:12	10:3 13:5
277:10,12	227:24	153:8	42:8 52:20	24:10 82:14
277:16	228:1,4	155:20	53:5 57:19	85:10
298:23	255:14	157:23	57:23 58:8	150:16
299:18,21	257:23,25	161:23	59:3 77:13	152:23,23
299:22	259:2,19,19	202:14	85:20 91:3	156:7 208:8
307:13,13	259:21	205:21	177:6 180:1	294:20
307:24	260:3,10,14	211:5	186:6,11	four-year 5:4
flames 50:4	262:25	214:21	221:10	5:10

ROUGH & ASSOCIATES, INC.

(206) 682-1427

682-625-A 9478

fragment	43:23	186:23	gist	148:25
250:10,24.	further	190:17	give	36:22
fragmented	103:8 113:3	195:15,16	45:17 57:18	110:18
250:9	136:4 222:7	266:20	58:5 60:11	112:11
frame	224:11,12	273:11,18	100:5	115:6,19
72:9 235:3	fuse	273:25	129:10	116:9 117:6
frames	229:14,22	garden	132:5,16	130:3 131:5
18:3	229:25	gas	141:3	132:13
202:21,24	230:1,7,9	41:25 42:4	151:19	135:17
206:20	230:12	42:4 43:12	183:6 205:6	136:15
223:8	276:20	43:12 54:20	226:16	142:19
223:15	290:25,25	54:23 55:1	266:24	150:14
free	291:2,4	58:5 190:15	286:24	152:7
13:2	292:5,7,9	191:9,12,12	306:3	156:25
54:21,25	292:16,19	191:13,14	given	159:12,13
74:7	293:2,4	gather	3:19	159:14,17
frequency	298:15,17	16:6	4:3 7:23	159:21
148:5	304:15,17	87:20 192:7	8:12 9:16	160:22
fresh	304:19	gauge	13:14 16:20	162:21,24
Friday	308:9	292:23	298:2	166:11,12
13:18	fuse	298:2	39:4 73:4	166:13
friend	302:23	gal	75:2 80:7,9	167:13
12:17	83:6 229:19	126:19	80:20 179:2	177:18
frontal	290:5,17	general	179:8	180:18
198:23	future	5:21	14:1,4,9	181:25
fuel	15:3	7:14 8:4,18	192:12	183:8 187:8
35:1	F-Series	87:20 192:7	289:3	190:9,25
147:5,7,8,9	18:23	192:7	given	191:22
147:9,11,25	275:19	141:21,24	9:25	192:18
148:3,6,8,9	279:23	157:23	29:6 117:6	194:22
258:23	280:1	184:3 201:3	246:24	195:4
259:16	F-150	202:5	giving	197:15
260:15	275:7,9	240:25	94:18	202:3,7,18
266:19	276:6	generally	100:8	205:17
267:25	301:15,19	184:2	144:18	209:5
273:21	301:24	25:21 59:18	246:22	218:19
298:10	302:6,8,11	238:5	gentleman	222:21
fuels	F-150s	gentlemen	304:17	227:13
266:24	302:1	265:10	25:20 7:10	237:6,15
full	G	George	7:20 13:4,7	246:3
14:13	311:17	12:2	208:6	248:21
65:12	Gainesville	143:20	227:16	249:16
154:19	12:17	199:23	getting	256:19
187:18	Galveston	203:8 208:6	3:17	257:3 263:1
306:23	133:1	227:16	21:9 25:17	265:22
fully	gaps	gaps	26:5 29:20	273:16
277:14	294:9	11:2 15:14	27:2 53:15	277:21
full-time	garage	23:3 27:20	47:2 53:15	285:4
137:9,14	35:18	46:24 97:18	59:11 60:18	295:18
205:22	37:7 38:4	176:1 210:1	61:1 87:25	301:8 304:7
fun	41:3 43:10	271:24	87:25 88:1	308:13
13:8,11	45:10 56:16	276:2 290:6	90:8,11,12	309:7,8
16:9	58:1 70:25	290:22	90:14,19	goal
function	72:8 73:11	girls	285:16	5:21
112:13	85:16 111:7	285:16	92:2,3,11	16:9 141:16
138:18	169:15	134:18	92:24 96:7	98:14 99:14
functioning	176:9,15			
243:19				
281:1				
furnace				
43:14				

ROUGH & ASSOCIATES, INC.
(206) 682-1427

E922-825-A 8471

	214:19,22	269:4	handwriting	162:25
311:13,17	214:24	guessing	62:19	hard 68:1
goes 31:6	228:7	267:17	handwritten	75:11 131:4
101:15	280:20	269:1	63:1	160:10
135:1 169:9	296:13	guideline	hanging 29:11	175:14
177:14	300:5	29:6	happen 107:5	206:11
243:19	grew 4:9	guy 12:18	141:17	210:4
248:24	grill 166:9	52:14 66:6	158:1	hardware
262:19	grommet 49:4	83:19	179:24	142:11
good 2:11,12	112:5,13,16	138:25	239:1,2	harness
13:9 60:14	113:14,20	143:13,14	252:9 254:5	148:18,20
66:10 86:23	113:22,25	145:7,21	267:22	148:23
88:21 99:13	114:2,15,20	155:14,17	270:21	149:9
99:13	115:5	204:1	293:21	225:18,20
113:21	116:10,15	guys 12:23	294:24	261:14,14
115:14	116:19	13:9 65:8	309:2	262:18,19
173:5	117:3,7	117:16,21	happened	263:6,6
176:25	194:9	145:7 176:1	77:12	266:18
188:7 189:1	ground 48:16	250:12	153:11	269:5,10,12
195:11	71:11,12	259:25	206:23	270:9,21,22
208:22	230:10	293:24	228:2	271:24
218:24	252:12	295:16	231:19	272:15
280:17	grounded	296:17	253:25	279:7
282:20	231:3	305:2,19	254:1 256:5	harnesses
goodwill	292:18		257:16,18	258:25
241:9	grounding	H	257:19	263:19
government	270:23	H 307:9	262:10,11	265:17
9:1 70:16	ground 14:19	308:21	263:3	267:8,11
72:19	15:9	hairsty 303:18	264:15	272:2
165:15	group 13:9	half 14:16	278:22	harness-re...
go-to 155:14	138:2 157:7	67:7,7	279:1 289:4	148:17
155:17	208:13	74:19 122:9	298:20,23	hat 121:17
grant 29:18	growing 136:3	138:12	299:22	hatched
granted 74:6	guard 128:20	192:25	happening	121:14,16
74:8	128:21,21	194:4 195:9	48:11,17	haul 113:21
gratuitous	128:22	18:3	86:25	195:15
181:16	guards 198:14	175:24	152:10	hazard 147:10
190:13	guess 6:7	311:20	205:21	head 3:18
gray 129:21	9:25 13:21	hand 64:1	226:1,2	33:7 111:1
Great 135:13	25:25 29:19	173:3	255:10	174:8 196:1
135:16	44:4,9	278:15	happens 26:24	headlamp
136:4	50:15 51:24	handing 30:7	48:9 70:5	111:1
230:23	54:22 61:5	93:10	76:9 89:16	headlight
Greater	61:15 89:11	101:23	170:16	198:24
135:14	136:16	110:23	178:9,16,19	headlights
greatest	137:5,16	165:1 218:3	229:11	47:2 59:10
184:21	142:5	218:5	258:7	166:10
307:18	153:20	handle 12:9	260:22	188:15
green 34:12	157:2,3	29:24 139:6	266:3	198:12
34:14,19,21	158:15	handles 12:8	273:10	273:13
34:23	174:3 216:4	handling 5:25	287:7	heads 171:1
126:18	250:12	hands 149:6	happy 118:2	heat 74:1

ROUGH & ASSOCIATES, INC.
(206) 582-1427

582-525-8472

171:12	292:24	231:12,15	hoist 286:15	106:22
heard 182:21	304:8,18	231:18,22	286:17,22	107:12,25
200:19	heated 32:13	232:9,13	287:16	108:1,5,15
215:24	33:25	233:2	hold 10:5	108:18,20
228:13	249:14	236:20	57:17 169:4	108:22,24
281:3 309:9	heater 238:2	245:7,24,25	250:20	109:13
heat 29:17	238:6,10	246:1	253:2	166:13
32:7,17,24	heating	250:20	holding 37:10	177:16,17
33:1,2,4	122:25	255:1 258:4	300:7	177:19,21
34:10 44:15	144:19	high 5:23	holds 56:9	177:23,24
46:23 47:11	213:16	11:23 81:6	112:14	178:7,10,11
48:13 49:14	216:15,18	88:3 144:19	225:17	178:12,16
79:7 85:4	220:10	151:1,6,8	hole 46:23	178:21,24
92:18 93:11	228:9	170:21	47:11 85:5	179:9,16,21
94:6,18	229:12	171:1 270:8	115:24	179:25
98:3 100:16	230:7 247:6	278:25	116:21	191:21
100:17,24	247:13,21	higher 128:12	123:1	192:17
102:15	252:11	128:14	221:19	194:21
103:5	255:15	highlight	228:11	196:2,24
104:14,18	258:2,6,15	168:1	230:18	198:10,22
104:20,21	279:1	highlighted	258:9,20	198:25
105:8,13,20	294:16	71:20	260:21	232:24,25
106:2,23	297:5	163:22	261:8 262:8	263:11,13
107:5,21,22	298:22	232:2	262:15	263:14,16
108:4,16,19	heatm 33:24	highlighter	263:3,4	265:23
125:24	170:3	253:16	277:2	hoods 42:20
127:8 166:2	heavier 103:7	highlights	holes 123:3	103:17
167:1 170:3	heavily	99:16	216:21	178:17,19
172:22	213:24	163:13	217:5,9	178:25
182:5	heavy 179:4	highly 53:16	221:20	193:11
183:23	214:17	290:14	257:1,5	hooked 297:19
184:21	303:7,9	Hills 311:8	hollow 275:3	hope 30:3
188:5	Hegelson	hindsight	honest 199:24	hopped 185:10
222:23	133:23	294:22	honestly	horn 82:24
223:2	help 129:23	308:8	81:16 88:9	hose 70:24
230:11,18	138:5	bizard 2:15,18	honking 82:24	71:2,6,11
247:14	helpful 66:20	10:18 16:16	hood 42:18,25	71:13
248:10	199:12	53:3 152:21	43:3,5	170:21,22
250:23	helping 138:3	153:8	46:22,23	171:1
252:9	helps 8:13	history 69:5	47:3,5,6,12	hot 99:16,20
256:21	64:22	79:19 80:9	47:16,18,19	100:4 107:4
257:5,6,7	[REDACTED]	80:14	47:25 48:12	108:24,25
257:13,17	145:18,20	hitm 271:6	51:12 58:12	109:13,15
257:20,21	hereof 314:9	hoc 73:21	78:13	228:9
263:12	hexport 120:7	75:3 101:25	101:22	268:17,18
269:7	120:10	[REDACTED]	102:7,10,14	hotel 61:5
270:25	121:23	13:6 17:24	102:21	hottar 265:2
271:1	122:1	18:3 165:24	103:6,7,19	hottest 46:14
273:17,21	125:13	175:24	103:21,23	46:19
274:1 275:4	126:21	[REDACTED]	104:16,19	hound 267:16
277:5	214:11	38:20	105:22	hour 114:8
288:15	231:4,7,11	285:17	106:2,10,12	138:8

ROUGH & ASSOCIATES, INC.

(206) 682-1427

ER82-825-A 9473

hours	12:22	97:20	99:2	III 311:20	27:1,7,22	independently
	19:3 195:9	102:5		Illinois	27:25 28:9	139:10
	226:17,22	109:23		310:5	28:10 56:3	index 21:13
	226:23,23	110:21		immediate	58:7 80:22	21:14 283:2
	227:13	118:21		79:8	81:3,8	312:2,9
house	34:15	163:10		immediately	87:23	313:1
	37:4,6	165:4		93:25	111:11	indicate
	57:10,10	167:23		111:14	119:8	78:13
	72:6,6,7	168:8		impact 198:24	146:20	104:13
	195:19	180:17		impertinent	177:2	170:7,10,11
	266:20	183:10		124:16	179:11,13	219:5
	273:11	216:12		implications	179:14,20	indicated 9:7
houses	106:7	218:9		31:17	223:21	38:8 230:6
	107:6,8	249:19		imply 157:20	224:13	232:3 314:8
housing		274:14		157:21	248:7 252:7	indicates
	121:22,25	279:18		implying	256:15	4:13 6:17
	122:1,3,18	285:20		157:17	258:15	90:15
	123:8,10,14	312:10		important	274:8	218:21
	123:16	313:2		107:16	incidents	220:25
	127:20	identified	18:12 19:21	176:23	28:17 42:16	278:21
	194:4			183:3 217:8	81:12,14	indicating
Houston		117:17		229:18	143:25	21:18 37:10
	311:15	119:12		240:3	144:11	94:14 95:11
huge	15:10	128:16		impossible	147:4	97:15 99:21
hull	104:1,4	129:16		290:11	148:15	99:23 100:3
hunch	247:1	130:7		impression	155:9	100:9 101:8
hundred	54:19	207:12		186:7	incinerated	101:13
	55:1,5,7,14	210:8		improper	148:23	106:16
	58:4 144:8	211:10		147:24	include 19:19	109:1,4
	207:23	identify	54:19 80:12	158:8 306:1	25:15 27:7	115:9,25
	204:4		91:2 198:11	inappropriate	27:21	116:25
hydraulic	8:1	245:17		73:23 74:8	223:19	119:22,25
	25:5	284:4		181:17	225:4	121:15
hypothetical		290:15		inboard 167:9	244:21	163:21
	84:21	identifying		174:18,18	included	164:17
hypothetic...		18:6 98:13		184:22	27:21	165:6
	187:15,16	ignite	265:17	incapable	205:18	167:16
	187:20,21	268:9,17,20		56:1	213:15	168:3 181:9
	187:21,23	268:24		inch 127:24	237:11	189:5
	188:1,6	271:14		inches 49:8,8	incompetant	208:17
<hr/>						
I						
idea	19:6	ignited	85:8	105:5,6	incomplete	214:12
	55:12 82:25	195:9		112:18	84:20	218:25
	141:10	ignites		192:19,22	incorporate	226:7
ideas	153:11	262:15		269:24	141:23	228:19
identical		ignition		270:1,8	incorporated	229:4 231:1
	29:12	163:17		284:20	141:12	236:7 248:2
identifica...		288:18		294:20	increase 45:3	248:4 249:2
	23:2 60:20	ignore	56:20	incidences	278:8	249:10
	61:9 95:7	57:1,3		23:8,13,17	increases	250:20
					incident	254:24
					independent	257:2,9
					14:6	258:7 275:4

ROUGH & ASSOCIATES, INC.
(206) 682-1427

E982-825-A 9474

indication	inoperative	90:2,6	242:20	158:25
83:19	83:23,25	235:20	243:3,13	159:25
104:18	inquire	272:10,12	304:9,19	interpret
108:25	197:13	286:15	305:4,16	42:15 67:1
172:22	ins 203:6	287:16,20	306:11	96:3 185:12
183:22	inside 17:11	290:11	310:10	interpreta...
217:11	24:12,14	inspections	311:13	85:23 90:21
218:24	46:3,8,10	107:8	insulation	92:6 170:2
indicator	46:11,13	install	49:2 225:19	185:17
171:16,17	47:8 50:13	304:19	292:24	186:3,7
171:25	50:16,22	installation	insurance	interpreted
172:2	51:1,3,3,4	132:20	52:17 153:3	34:3 76:5
189:20	51:18 58:11	installed	153:9	101:20
indicators	59:14	132:23	155:15	241:2
171:21	104:22	154:6,9	199:7,8	interpreting
individual	111:10,12	243:17,18	310:5,6	50:7
19:4 206:19	112:11	294:3	intact 177:10	interrupt
industry 7:7	122:2 151:4	304:12	188:4,16	73:20 74:12
140:8	170:3,15	306:22	189:18	investigate
155:11	174:6,7,12	installing	190:4 237:5	60:2 77:14
161:17	183:21	238:23	255:24	77:21 81:17
Inertia 148:7	188:6	instance	intend 307:12	152:21
inertial	189:22	49:20	intending	155:18
129:13	214:8,18	145:24	183:18	197:15
inexpensive	226:10	172:12	intensity	206:23
149:14,16	238:3	226:21	33:3	308:10
inexperienced	252:13	242:22	intent 75:4,8	investigated
78:1	254:15	instances	intention	17:2,16,18
infinite	273:25	17:2,4 19:5	307:17	18:21 19:19
152:12,13	274:10	19:18	intentionally	23:8,25
information	275:2	126:10	16:7	24:10 47:24
64:23 65:3	278:11	155:22	interest 6:2	56:5 70:10
80:7,20	281:11	instinct	52:22 65:22	70:17 81:2
81:1 197:22	295:25	105:15	67:19	81:6,9
199:13	296:2 297:5	Institute	114:21	106:20
244:12	inspect 7:1	135:16	161:16	144:5
276:10	25:21 31:12	institution	interested	148:16,20
305:7	287:24	199:17	5:24 162:13	165:14
informational	inspected	instruct 10:1	interesting	178:10,13
15:2,13	23:7 43:17	instruction	13:8 52:25	178:20
initial 69:8	68:10,14	11:7,7,9	89:22 206:5	179:1,14
Initially	111:12	instructor	206:9	243:22
47:10	112:10	8:10	interests	investigating
initials	175:11	instructor's	18:8	16:4 18:25
16:22	182:25	9:25	internal 66:4	77:24 147:1
130:18	198:2 289:6	Instruments	213:16	investigation
injecting	inspection	61:17	214:4 217:2	11:7 13:23
293:25	22:12,12,14	117:18	217:4	14:12,13
injection	23:5,6,14	118:8	287:22	15:16 18:25
148:6	30:13 35:22	196:20	internally	19:25 22:11
injury 131:25	36:10 63:2	211:6	308:7	30:6 37:14
inner 111:23	68:24 80:6	233:11,13	International	37:15 38:6

ROUGE & ASSOCIATES, INC.
(206) 682-1427

E802-825-A 8475

43:8	50:18	199:2	139:19	307:16	280:18
60:24	67:13	202:11,15	140:10,20	308:9	290:6
145:1		202:16	142:13	[REDACTED] 311:6	301:12,14
156:12,14		217:14	143:3,18	[REDACTED]	kinds 134:4
170:1	197:4	224:15	145:16	130:22	[REDACTED] 314:4
199:4		275:11	146:21	9:10	Kingdom 6:21
205:20		305:21	147:4 150:2	Kentucky 9:8	200:17
220:8		involvement	150:3	9:8	knew 153:7
308:15		305:3	[REDACTED]	kept 144:7	251:6
investigat...		involves	133:15	key 306:24,25	knowing 39:24
203:1		81:14	join 158:18	113:7	
investigat...		179:13	joint 135:5	307:3	knowledge
155:9		involving	135:24	kind 3:17	33:9 199:14
171:21		16:17 17:4	[REDACTED] 223:9	4:20 6:11	219:16
investigative		81:3 179:2	223:10,13	12:9 13:10	243:6,10
68:18	75:24	179:20	223:13,14	13:12,20	273:3,4
76:3		inwards	223:15	14:3 16:11	known 114:5
investigator		172:15	journal 161:1	24:13 28:20	280:17
9:9	42:12	[REDACTED] 94:23	161:2	30:22 36:11	306:20
53:6	78:1	95:3	journals	46:21 54:2	knows 242:7
investigators		issue 24:1	161:4,6	59:14,20,22	276:18
73:8	75:14	202:16	judge 102:2	69:6 70:14	280:9
77:9,20		307:5	judgment	72:24 75:6	
79:12		item 19:5	174:23	75:11 83:25	L
111:19		61:22 90:15	176:12	89:22 90:3	lab 282:6
124:17,18		115:8 236:4	[REDACTED] 130:11	99:4 101:16	296:10
159:1,24,25		241:12	130:24	119:20	300:6,8,16
investigat...		286:12	131:11	121:9	labeled 21:23
37:20		items 43:14	[REDACTED] 297:13	131:18	207:11
invited	10:2	iterations	July 30:25	138:18	274:20
involve	130:8	139:11	31:3 63:2	141:2 143:3	labeled 21:23
144:3,4			68:13 69:1	145:15,18	120:2 121:1
179:3		J	175:1,17,21	146:19	ladies 265:10
involved	5:24	J 311:13	212:22	150:25	laid 25:19
17:17	18:20	[REDACTED] 311:6	213:11	151:3,23,25	[REDACTED] 15:5,10
20:23,25		January 63:14	jurisdiction	154:2	Lap 133:16
21:1,2		80:15,16	73:25 77:22	155:14	large 138:17
28:10	38:18	85:17	jury 28:5	157:18	larger 65:10
42:17	119:8	291:19	202:3,5,7	160:9,10	65:18,19
129:20		308:13,18	234:13,20	161:23	[REDACTED] 13:6
131:11		jelly 231:9	265:10,11	179:4 191:8	lasted 203:19
138:6	140:1	280:20	jury's 202:9	198:23	234:18
144:25		296:13		199:7,16	lasts 151:12
145:24		Jersey 143:19	K	200:8 206:7	151:13
146:16		jiggled	2310:22	207:6	latch 129:15
147:5	148:1	297:21	keep 26:8	208:12,15	late 88:1
149:25		[REDACTED] 30:2	101:10	212:8,8	297:15
151:6		74:18 86:14	119:3 131:4	222:17	latest 205:1
152:22,24		87:17	151:4	232:23	lathe 250:13
153:7	179:3	job 77:20	176:10	238:1	law 73:25
179:12		137:8,9,14	181:13,15	274:20	74:11
198:15		137:14	300:6	279:22	201:17

ROUGH & ASSOCIATES, INC.
(206) 682-1427

EA82-825-A 0476

252:18	217:22	183:20,21	level 7:11	179:17
Lawrenceville	226:21	183:23	11:22 81:14	256:10
143:20	239:4,21	188:15	222:9	
laws 200:7	leaving 36:11	197:14	261:15	128:17
lawsuit 74:19	56:6 243:3	199:18	leveling	202:7
154:22	led 131:25	234:21	284:12,23	line 8:14
157:16	132:1	238:22	285:25	73:20 80:2
lawsuits	144:14	239:19	287:18,21	96:16,22,23
25:25 162:5	148:11,12	243:13	287:22,24	100:6,8
lawyer 153:3	149:13	252:5	288:3,11	104:2
161:10	257:5	265:13	289:11,16	119:23
lawyers 20:25	left 3:18	269:16,17	133:19	138:7 139:5
136:17	43:14,24	272:12	Lexus 141:19	150:14
137:1	44:18 48:21	284:16	liaison	182:16
155:15	48:24 49:13	289:24	138:20,24	243:7 248:4
160:16,18	49:22 50:2	left-hand	139:8	266:4 268:3
160:18,39	56:12 65:14	164:24	license	304:15
160:19	71:21 73:13	165:7	200:13,16	lined 235:14
161:7	75:22 76:6	265:13	life 152:3,4	liner 266:16
196:20	76:23 77:1	let's 25:22	152:11	lines 110:11
layer 209:24	77:5 78:11	26:4,21	242:2,4,6,9	267:1,2,25
221:24	78:13,16	31:22 34:14	light 297:3	liquid 33:22
222:3	79:1,5,15	34:23 39:15	liked 175:19	33:25 34:8
layers 206:10	79:16 87:13	45:19 50:24	176:18	liquids 32:24
208:10	90:16,22	51:7 53:1,1	limitation	33:10,13
laying 126:10	91:21,22	54:7 79:18	240:15	44:25
169:21	92:18 93:12	87:20 98:14	Lincoln 16:17	97:4
170:14,17	93:13,16,20	110:18	20:24 23:18	201:3
171:2,15,25	93:23 94:2	115:19	23:25 27:8	list 5:2,12
172:3,10	94:3,7,16	132:13	38:1 39:5	23:3 25:22
247:6	94:18 95:23	142:25	58:22 64:6	128:15
298:16	96:12,17,17	147:7	81:2 89:5	132:14
lays 126:19	96:19,21	158:12	119:7	134:10
lead 163:13	97:12,21,24	163:2,18	152:20	156:16
164:8 290:7	98:4 99:7	167:13	153:2,5	201:2
leading 86:25	102:20	168:9	178:10	listed 4:13
222:16	103:4 104:4	173:22	191:3 192:4	9:6 11:18
292:15	109:3 110:1	180:10	208:3 237:7	115:19
leak 33:23	110:25	183:6	237:18	201:4
84:1 147:25	111:1,4,23	186:22	238:12,13	Listen 86:19
190:15	152:9	187:6	238:16	listening
276:19	163:16,24	190:15	244:4,19	162:13
leaking 58:19	164:10	205:17	261:18	literally
84:1,3,10	165:25	216:7 218:2	278:13	106:22
147:9,11	166:2,5,15	218:10	284:15	litigation
221:8	166:16,23	237:6	287:3,4	157:21
226:25	168:12	249:16	292:9	161:25
leaks 84:25	169:3 170:5	256:19	294:19	litigation...
147:8	173:3	274:11	295:2 297:7	157:13,15
learn 198:18	180:24	279:16	298:17	157:18
learned 171:7	181:14	285:4 290:9	Lincolns	little 25:23
leave 87:7	182:2,3	290:16	23:22	78:7 93:2

ROUGH & ASSOCIATES, INC.

(206) 682-1427

ENR2-025-A 9477

105:19	194:22	246:13	183:13,15	123:10
115:8	195:2,21	251:18	183:20	126:17
124:21	203:18	265:9 283:1	184:11	140:1,11
184:16,17	226:24	285:3	187:17	141:14
186:8	227:2,8,23	286:17,22	193:15	149:11
189:17	259:1	306:7	207:9	152:1
190:3	261:19,24	308:11	212:19,25	157:11
203:20	265:5 294:5	locked 23:4	214:8,9,10	158:3
215:19	longer 152:18	29:6 31:9	214:13	160:15
223:18	268:24	32:2 35:13	217:2 224:5	162:12
232:19	272:19	35:18 38:13	277:15	259:16
245:8	look 30:23	44:15 50:3	283:2	266:21
259:13	31:12 38:7	52:14 56:11	looks 10:19	288:15
298:10,11	42:15 45:3	57:25	45:8 49:4	292:23
300:6	45:16 50:6	120:16	67:4 68:1,5	304:8
lives 154:4	53:14 57:10	123:12	121:16	lots 29:13
269:7	57:10,12	153:1,2	177:10	59:16 103:1
270:23	60:4 62:22	169:16,18	191:14,16	Lotus 14:5,9
lives 151:12	76:7 89:22	169:19	214:24	138:20,22
LLP 311:13,17	89:23 114:7	175:4	221:21	138:25
localized	120:18	199:25,25	222:11,17	139:2,6,9
304:6	127:6	207:20	222:21	139:10,15
locate 199:25	129:18,19	209:10	235:13	139:19
located	130:16,17	210:9	246:13,17	140:15
127:14	130:20	221:18	246:22	141:21
143:17	135:24	224:18	249:6,9	142:11,21
183:16	138:9	225:5	251:4	142:22
235:4 249:2	142:19	231:25	looped 262:19	143:9,24
294:2	146:5 149:8	233:4	loose 144:18	144:13,21
location	167:6 175:1	237:18	144:18	146:1
76:25 86:7	175:10,18	238:12,15	209:18	148:18,24
169:7	180:10	241:3	292:21	149:14,22
locations	184:20,23	247:17,17	134:9	149:22
221:5	185:6	251:7,12	134:16	150:4,10,19
lock 43:17	186:15	262:3	loses 272:18	150:21,23
154:14	194:7	271:21	loss 84:16,17	151:6
171:22	198:12	296:2 299:3	153:9 220:9	153:19,24
290:25	202:20	looking 3:16	283:12	240:17,18
looks 154:18	213:14	21:13 26:12	287:2	240:25
logged 221:17	214:2 220:3	27:5 29:7	losses 155:16	241:14
London 4:14	221:8 222:2	36:6 69:12	155:18	281:7
4:18,22	222:6	72:4 76:8	lost 75:6	Lotus-related
135:9,10	225:14	79:7 96:1	167:8	148:24
long 9:12	229:14,18	99:5 100:5	lot 14:20	Louisiana
32:4 56:9	229:22	100:10	15:3 16:22	311:14
74:20 82:10	232:6,11	108:14	19:4 22:19	null 13:12
84:18	234:24	109:17	29:17 56:22	lunch 118:15
134:13	235:12	110:1 113:7	77:17 81:25	luncheon
150:22	236:2,19	129:24	85:12 103:5	118:17
151:17	238:8 241:2	149:1 173:7	106:7	lying 172:16
153:12	241:10,15	176:24	108:18	239:4
191:22	241:18	177:1	116:22	

ROUGH & ASSOCIATES, INC.
(206) 682-1427

EA62-825-A 9478

M	manner	165:6	183:9	60:6	72:12	160:19
M2:9	196:17	169:11	202:14	72:15,18	161:13,21	
307:9		manual	154:18	74:1,3,16	162:10	
308:21		manufacture	216:11	75:3	116:7	169:14
311:3		297:17	218:8	221:9	130:10	170:6,17
machinery		manufactured	229:8		154:12	172:14
131:19		233:13,17	249:18,20		163:2	174:1
Magazine		233:18	274:13		196:18,19	179:1
136:18		234:2,8	279:17		204:24	188:12
magically		287:7	285:3,10,10		249:16	189:3
85:17		297:14,15	285:19		250:3	307:2
mailings		manufacturer	marks	110:13	307:8	190:21
136:9		139:2	162:2	132:19	308:20,22	191:14
main	4:18	302:10,12		154:12	309:11	192:15
27:15	99:22	manufacturers	Maryland		223:9	194:15
116:12		26:8	140:15	311:13		196:7
262:19		manufatur...	156:9	312:5,7	226:16,23	209:6
263:6	269:5	98:7	142:13	match	58:18	240:7,17
269:10,12		manufacturing	11:10,11,13	59:6	6:6	242:6
304:25		129:3,4	142:18	9:23	265:4	269:4,9
maintain	7:11	149:2	305:4	11:10,11,13		272:23
major	6:5,6,7	man'■	24:8	34:24	30:6	287:19
6:8,9		180:7,7	44:14	40:21	306:7	
241:16		mark	60:23	41:1	meaning	3:1
271:4		12:14	62:5	17:1	50:8,24	
majored	6:10	13:6	17:24	18:1		104:21
majority		18:3	22:23	19:1	130:12	
18:22	29:1	38:19	61:1	49:11	52:14	135:15
46:20		61:13	67:22	50:15	54:21	156:1
182:20		93:4	98:12	53:11	56:21	173:9
211:16		98:12,25	108:19	56:14	69:24	269:17
makeup	263:24	110:8	161:13	74:24	80:3	means
264:11,13		168:20	179:20	80:20	89:25	51:3,18
making	73:23	183:8	216:8	92:5,17	80:4	68:20
73:24		218:2	255:11	93:21	107:21	70:20
178:18		230:23	260:23	95:24	118:4,4	
179:23		232:9	263:15	97:1	170:3,14,18	
181:16		249:16	270:10	98:11		252:12
male	232:20	274:19	materials	106:25		meant
232:21		279:9,10,11	39:13	107:1,15	13:17	79:14
malfunction		279:16	46:18	108:7	109:4	17:8
83:10		marked	48:24	111:4	111:7	157:19,22
malfunctio...		23:1	124:19	120:2		174:3
82:20		60:19,21	159:5	121:25	247:9	
man	187:17	61:8,15	220:11,14	124:16		measure
manager	138:1	95:6	220:22	134:13		140:25
138:19,20		97:19	248:15	135:21		measured
143:15		99:1	102:4	138:24		112:22
mandated	7:5	103:24	251:23	139:1	140:5	269:23
manipulation		109:22	273:13	144:7		270:7
295:15		110:20	296:21	148:25		measurements
298:4		118:20	matrix	149:6		107:25
		163:9	165:3	155:17,19		293:8
		167:22	165:4	157:21,25		mechanic
		168:7	114:13	158:16		137:20,22
		180:16	matter	16:17		mechanical
			17:3	152:12		
				158:16		
				160:16,18		

ROUGH & ASSOCIATES, INC.
(206) 682-1427

682-825-4 9479

· 6:10,10	melt 122:14	137:23	85:10,15	211:17,25
mechanism	122:16	139:15	87:22,25	Ministry 6:21
28:6 142:17	188:20	missed 13:20	88:2,3,5	156:20
mechanisms	192:4,8	mat 145:13	150:20,24	Minnesota
19:11 27:18	193:21,24	161:10	151:1,19	310:6
298:25	194:6,10,17	162:7,12	207:13,24	minute 3:8
medical 12:24	196:4	213:3,6,13	208:2	39:15 52:2
162:14	229:21	metal 100:25	234:11,19	78:15,15
meeting 14:24	molten 117:3	104:16	238:16,20	96:4,4
17:23 36:9	170:8,23	125:17	239:19	147:7
159:14,15	183:20	280:19	240:6,13,19	170:12
161:14	188:14	metallurgist	240:20,22	minutes 19:3
meetings 65:4	191:24	245:11	241:11,16	46:24 60:16
159:12,22	232:22	metals 245:20	276:6	72:9 195:11
160:13,22	235:5,6	meter 293:10	287:10,11	195:23,25
161:11	236:11,15	method 26:17	295:12	238:6
[REDACTED]	264:3,4,9	methodology	299:5,9,10	291:15
29:4 50:22	264:10	26:11 29:15	[REDACTED] 15:6	missed 69:7
52:16 53:25	265:1,6,7,9	[REDACTED] 311:10	15:9,11	missing 188:5
217:19	265:12	[REDACTED] 156:6	military	275:3
218:1,21	278:11	204:4	15:23 16:1	Mississippi
221:22	melting 46:14	Michigan	16:3,8,10	20:8 24:17
225:22	124:4	311:8	[REDACTED] 18:4	276:12
228:3,17	189:17	microscope	20:11,17,18	280:6 295:6
229:14,17	191:23	90:4,5	22:6 130:17	misstated
230:8	molten 47:6	206:16	130:17,19	250:1
231:17	123:17	middle 100:2	203:15,22	mistake
235:23	124:11,13	106:23	210:14	101:25
236:13	124:19,23	146:11	213:3,4,6	289:9
237:2	125:3 128:8	301:2	213:12	misunderstood
239:18	128:12	midst 67:13	251:12,24	247:8
244:25	189:15	migrate 190:6	276:14,15	mixture
249:4 252:4	235:8 288:1	mileage 80:12	276:18	214:23
258:14	members 17:25	91:4,6,14	280:5,7,9	mobile 7:20
261:7 262:2	156:18,22	87:25 88:3	284:10	mode 131:16
263:2,18	156:23	151:1,7,8	[REDACTED] 131:3	240:24
264:16	157:2	207:15,20	[REDACTED]	241:19,22
274:5,24	158:13	207:21	213:7	241:23
275:13	members 158:1	239:22,24	227:19	277:25
277:24	158:4 162:3	240:2,5,10	300:13	278:21
278:2,22	memberships	240:15	[REDACTED] 311:10	model 67:7
279:2	156:16	241:13,13	[REDACTED] 133:12	89:4,4
281:15,24	mentioned	243:24	mind 25:11	238:4 280:3
282:11	15:8 38:15	299:11	30:1 62:22	modes 242:12
284:25	199:11	mileage 80:1:7	87:14,15	moisture 34:4
287:8,25	208:12	239:25	93:13	35:10
291:9	212:9	miles 80:2,5	102:22	molted 236:5
298:21,23	237:17	80:8,10,11	275:8	molten 235:1
299:2,8,22	253:14	80:21 81:5	mind'm 42:3	235:2
305:5	260:13,16	81:12 82:8	mine 227:19	245:20
[REDACTED]	270:19	82:15,16	285:9	moment 150:8
28:12	Marcades	83:16 84:23	minimum	191:5

ROUGH & ASSOCIATES, INC.

(206) 682-1427

ERB2-625-A 0486

97:4	141:21	118:22,22	127:22	244:13
	157:23	118:22	nearly 9:13	245:2,5
133:15	201:4 202:5	196:17,17	177:9 188:3	neither 26:2
money 136:13	241:1	307:9,9	necessary	164:21
137:11	Motor's	308:21,21	32:17 33:15	201:20
159:10	141:24	311:1	33:25 34:8	neutral
212:6	mounted	name 2:13	necessitating	172:11,13
monikars	163:15	18:4 20:6	25:6	173:14
130:14	167:7 259:9	21:12 27:4	need 11:23	never 4:1
monitored	294:3	58:20	13:7 19:2	31:6 34:16
240:18	mounts 125:12	130:10	33:11 44:4	37:7 54:14
month 10:12	125:12	134:25	55:16 57:8	57:15 70:10
10:20 36:4	177:10	135:4,13	57:13 61:14	78:10 82:2
68:9 88:16	mouth 91:1	136:2	61:19 74:10	82:4,17,18
140:10	move 28:15	155:20	138:9 159:9	82:25 83:1
156:10	76:14 87:20	161:1,2	162:22	106:12
months 53:2	95:1 113:10	196:19	168:20	107:5
144:24	124:20	199:20	173:16	136:12
146:14	127:8	204:3	202:20	144:7
226:17	175:15	206:25	230:7,13,14	156:20
271:21	180:5,9	237:10	268:9	175:18
moon 216:5	181:15	287:1 295:7	274:19	178:6,10,11
	185:18	named 132:9	279:11	178:20,20
130:11	187:8	211:10	294:13	219:13
130:24	196:21	names 25:24	301:9	238:13
morning 2:11	252:22	26:1 131:4	needed 64:1	242:5
2:12 35:20	moveable	211:14,24	65:14	253:10
36:9 37:8	122:23	232:11	needs 151:24	255:5 256:2
38:14	214:14	Nasco 145:22	230:9 274:1	256:6,17
169:18	215:5,6,7	National 8:6	negative 97:2	260:6 309:8
178:4	229:5,7	8:9 158:23	115:3,4,6	nevertheless
226:21	230:5 231:3	159:3,24	115:22	40:7 182:11
motion 73:21	252:6	160:2	116:9	new 30:22
74:5,8,22	278:11	natural 39:10	180:10,20	89:1 143:19
motor 8:15	291:7	41:25 42:3	206:8 208:8	145:10
12:15,19	moved 59:20	43:12	208:8,18,19	146:23
17:17,23	87:10 125:8	108:20	214:2,3	177:11
56:23	184:18	190:15	215:4,10,16	12:14
117:18	185:1,13	191:9,12,13	215:21,22	12:16
137:5,19	move 199:24	191:14	216:7 224:6	171:12
138:14,15	moving 101:12	295:1	224:10	never 268:23
138:16	105:13	near 39:6,20	236:19	132:25
153:9	122:5	40:22 43:9	244:4,5	202:2
242:23,24	126:23	71:19	248:22	
250:11	186:2 187:2	150:22	292:17	200:7
283:13	228:14	172:18	negatives	METSA 17:25
287:2 310:9	mystically	183:17	209:1	18:4 25:21
311:6	85:17	186:23	213:14	88:23
Motorcraft	M&S 121:1,2,5	188:23	224:1	202:24
292:4		217:10	225:14	206:19,24
Motors 5:21	N	236:16	235:22	210:24,25
14:1,5,9	N2:9,9	nearest	236:2	212:10,12

ROUGH & ASSOCIATES, INC.
(206) 682-1427

E982-825-A 0481

220:9	110:20	268:16	observations	odd 193:10,12
277:15	218:8	274:22	43:23 53:21	193:20,23
302:19	312:12,16	275:10,12	55:19 56:12	194:6,9,12
nice 99:4	312:20	275:15	58:7 69:25	194:14,17
175:12	313:7	276:7	72:3 180:3	194:19
night 56:2	NOTARY 314:19	283:25	180:6 187:3	196:6,7
58:7 61:4	notation	287:6,13	187:12	299:9
nine 7:19	186:18	304:16	293:23	ODO 80:2
234:7,19	note 80:24	numbers 64:20	observe	odometer 80:8
297:16	169:21	237:15	188:11	287:10
nodes 33:7	186:14	numerous	265:6,7	offer 60:5
174:8	188:10	148:17	observed	offering
noise 45:18	notebook	N/A 244:9	43:11 51:9	59:20
nominated	16:21 25:16	N/A 287:10,11	255:22	245:16,18
157:3,5	60:22,22	287:12	observes	248:18
nonfunctio...	61:1,2,12	<u>o</u>	72:10	253:5,12,24
83:11	61:22 90:12	02:9 118:22	obtained 64:3	264:19
nonresponsive	118:25	118:22,22	280:7	265:14
60:6 72:12	notes 62:16	196:17	obviously	282:10
76:15 307:2	62:17,19,20	307:9	31:7 69:17	306:15
non-applic...	63:1,2,9,11	308:21	74:6 100:7	offhand
287:14	275:14	oath 2:5	101:2 103:7	122:15
non-failsafe	notice 197:5	54:17	104:16	195:4 280:4
304:12	272:6 288:6	object 29:25	177:16	289:25
[REDACTED]	noticiable	33:18 36:18	219:12	official 12:8
296:10	98:16	37:11 39:12	223:25	62:11 67:24
Norfolk 137:6	noticed	42:8 52:20	237:16	68:19
138:15,16	188:14	53:5 57:19	262:2 266:9	116:12
[REDACTED] 152:24	197:6 255:4	57:23 58:8	275:2	276:12
normal 34:3	Notwithstanding	59:3 60:6	278:24	283:17
79:9	83:15	72:12 76:14	299:1 304:7	285:16
normally	November	77:13 84:20	305:13	official
32:19 35:3	142:7 234:4	85:20 177:6	occasion	68:17 72:19
80:12 107:2	nubs 232:19	180:1 186:6	85:19	73:8 75:24
125:24	number 22:8	186:11	occupant	79:21
138:6 177:5	45:16 49:23	190:12	133:21	165:15
177:7,12	51:12 54:12	269:3	occur 32:16	officially
271:4	59:7 65:13	303:19	34:2,9	5:14
north 70:25	66:3 99:22	307:2	82:19,19	officials
143:1,9	115:3,4	objection	occurred 3:18	70:16
145:15,21	131:5	86:2,11	126:14,15	oftentimes
150:2,3	155:18	objections	226:5	83:10
238:7	158:3	73:24	258:2,15	Oh 53:11
northeast	161:21	objective	277:10	100:10
187:22	206:25	30:1	289:22	115:8
190:17	224:15	observable	occurring	117:11
NORTHLAND	237:8 244:8	35:17	129:23	129:23
310:6	244:10,11	observation	144:3	133:2
[REDACTED]	244:20	35:15 54:1	occurs 34:24	141:25
143:19	257:24	118:5 180:7	70:7 258:6	166:25
Mos 23:1	261:15	180:23	October 2:1	194:5
102:4	267:8,8		310:21	210:23

ROUGH & ASSOCIATES, INC.

(206) 682-1427

E982-825-A 0482

211:7	212:4	277:15	253:24	32:1	35:23	52:1,8
275:1		284:4	297:2	36:6,17		53:17
288:14		ongoing	19:16	37:3	38:7	59:17,22
oil 3:21		19:20	22:10	47:10	49:21	104:15,22
33:23,23		217:12		49:24	72:2	105:13
35:9	267:1	open	17:22	72:21,25		109:9
old 223:14		24:21	25:10	73:9,12		111:10
240:8		61:22	72:8	75:18,19		140:15
241:15		249:4		76:21	77:10	170:9,11,19
297:11		291:18		77:21	78:1	170:20
		303:3	308:7	78:5,10		171:16
252:18		opened	12:22	86:8	87:8	172:1,17
older 268:23		54:4	219:18	90:21	91:21	174:6,7,12
omissions		229:16		124:1		174:20
19:23		246:21		131:15,16		182:17
oncom 7:15		251:6	256:4	156:12		188:3,4
41:6	55:21	299:18		166:5,14		189:22
91:8	131:2	opening		197:17		190:5
141:2,4		259:20		201:21,25		203:2
147:3		operating		original		206:12
229:12		4:18	238:16	212:18		
245:24		operational		order	214:18	
259:20		209:20		12:4	216:6,20,21	
266:5	269:4	operations		197:5	198:9	
270:24		77:16		218:19		228:10
272:18		opine	220:12	orange	250:19	
273:12,16		254:3		56:2	251:19	
278:7	288:1	opining		orangeish	255:12	
299:17		264:22		302:13		
306:25,25		opinion	2:21	originally	259:9	
onas 19:20,24		2:25	3:1	143:19		
27:18	30:11	19:10	24:25	originate	263:21	
30:19	42:20	25:1,3,4		187:22		296:25
46:20	47:22	26:10	31:14	originated	overhead	99:5
85:2,2	88:4	35:23	36:1	39:5	50:8	168:11
89:18	107:6	36:5,17,23		71:18	90:16	189:2
117:17,20		37:2	44:11	103:3		overheat
130:8		57:4,14,16		191:20		123:1
145:13,14		57:18	60:5	290:2,12		overheated
152:18		68:12,16		OSI	292:22	
159:21,23		69:1	75:23	17:1		overheats
177:7	206:5	76:4,17,21		29:14	61:2	228:8
207:4,21		89:7	91:3	61:12		overseeing
209:18		118:7		113:18,21		143:5
211:13,14		131:23		OSI's	16:22	owned
211:24		132:16,22		202:14	82:10	82:10
216:25		172:20,21		232:6		139:10
218:14		172:25		ounces	140:18	
219:7	232:8	195:6	227:3	262:25		
232:16		228:3		outboard		owner
250:13		232:12		15:17	24:2	24:6
267:10		245:18		16:16	25:1	25:1
				24:13	31:19	26:1
				24:22,23		27:1
				34:5	36:12	28:1
				43:22,23		29:1
				51:23,24		30:1

ROUGH & ASSOCIATES, INC.

(206) 682-1427

ERB2-825-A 9483

105:20	paper 274:18	308:23,24	pass 6:22 8:9	253:8
110:12,15	papers 159:19	partial	9:21 10:5	patterns 91:4
oxygen 45:2	paperwork	129:14	156:25	91:14,19,20
47:12 123:3	207:22	partially	196:14,14	98:11
228:12	paragraph	236:15	307:8	102:11
278:7	90:20,20	participate	passed 10:8	111:20
o'clock 186:8	92:4 98:14	14:3 74:7	141:2	127:6 183:4
209:5	parameters	75:4 150:4	passenger	186:4,4,5
O'Connor	307:15	150:6	95:13	187:1
311:3	paraphrasing	participated	109:18	193:17
300:2:3	37:16	18:7	110:1	paving 179:4
313:13	park 290:6,18	particular	164:19	pay 13:2
02 130:19	290:22,25	5:16 7:12	165:17	137:11
P	parked 307:1	7:22 13:11	168:23	149:18
P 311:1,1,6	parking 85:16	26:12 27:7	173:11,12	157:3,7
PA 212:19	part 7:13	49:20 56:21	181:11,19	paying 241:7
████████ 49:14	8:11 9:24	60:23 65:21	181:22	WDI's 139:7
163:11,14	10:15 14:4	67:18 72:9	182:5,12,14	PE 200:11
163:23	19:13 22:10	89:2 93:8	182:23	pedigree
164:8,9,11	28:1 31:25	110:6	183:17,25	276:17
164:17,19	34:6 37:19	113:20	184:5 187:2	280:9 295:4
164:25	40:18 43:10	117:2 123:2	188:23	295:5
165:7,8	46:19 48:14	127:7	197:7	pen 96:22
167:8	49:4 56:6	131:24	passenger's	102:22
package 69:4	59:6 60:3	132:1,17	165:12	110:8
Packaging	65:2,18	139:7	180:25	164:11
154:1	79:4,21	161:16	182:18	230:25
page 63:1,1,8	92:2 103:7	172:12	past 300:5	257:4
63:18 64:18	103:15,19	191:25	Pat 9:10	pending 74:19
65:10 66:2	109:14	209:13	patents 14:22	74:23
90:14,19	121:8 122:2	216:2	path 185:20	penetrating
92:5,12	132:20	230:21	pattern 43:22	33:10,13
115:6,22	135:9	231:24	78:12 81:17	people 6:7
117:6,10	137:16	278:15	81:19 90:15	12:14 13:7
163:4	150:2,3	286:19	92:21 93:18	14:20 18:6
207:10	151:12,13	290:8	94:12,14	18:12 56:23
236:19	219:17	parties 18:9	95:11 98:17	72:5 76:10
283:2 312:3	233:18,20	202:11	99:15	131:4,7
312:10	238:23	parts 72:24	100:10,14	139:4 149:3
313:2 314:9	240:22	119:10	105:12	149:13
pages 236:2	241:1,11	151:11	108:14,15	150:9 151:3
paid 20:21	242:14	213:22	108:22	157:9,11
88:19 118:5	251:17	242:16,20	110:6	158:3
138:8	253:25	271:3,23	126:22	161:21,24
154:21	255:5 265:2	273:9	165:9	162:5,12
155:2	265:2 266:8	274:15	166:22	165:23
paint 59:11	275:10,10	280:14	169:13	178:23
103:12,13	275:12,15	party 157:16	176:25	211:5 241:5
114:21	277:10,17	165:16	184:4	305:1
panther 27:8	278:13	212:18	193:18,18	people's 16:9
45:25	279:19	part-time	216:2	56:25
	282:24	137:8,14	217:14	perceived

ROUGH & ASSOCIATES, INC.
(206) 682-1427

ER62-029-A 8484

238:25	petrol 54:20	31:10,18	224:6	pipes 44:13
percent 44:2	phenomenon	35:17 36:3	228:21	244:15
44:3,5,8	205:20	36:7,15	236:4,20	place 15:10
76:9 123:15	phone 11:2	37:4 49:17	244:14	35:7 43:5
123:16	54:8,12	89:11,13,16	249:6 250:5	73:12,13,15
139:14	138:25	89:20,23,24	261:2,6	73:16
194:3	142:18	90:3 91:24	303:18	103:21
202:11	155:20	93:4,6	304:2	107:25
229:20	205:11	96:24	pictures 20:4	108:7 136:9
Perform	phonetic 66:7	169:16	29:1 32:2,5	144:20
287:21	130:11	184:3 207:2	35:13 37:6	166:5
performance	133:15,23	208:5	38:13	191:22
5:23 139:24	134:18	217:24	101:21	192:18
performed	142:22	222:21	111:17	194:22
13:25	145:18	photos 249:20	112:1	196:2 221:6
performing	150:8	303:21,25	114:14,17	257:22
138:18	152:25	physical 53:9	116:13	275:2 278:2
period 74:20	225:1	53:12,14,16	203:11	286:14
140:10,13	250:16	54:3 57:6	205:17,24	287:15
142:8 143:1	photo 206:13	148:12	205:25	292:5 299:1
144:6,14,22	249:21	176:23	208:9,21	placed 38:3,8
149:22	photodocument	physically	213:25	49:21,24
211:18	287:16,18	176:6	216:23	72:1,21
periodically	287:23	physics 200:7	217:18	187:12
7:10	photograph	pick 6:1	218:10	placing
permission	27:21 28:14	224:24	222:10	197:16
74:7	93:8 95:10	303:18	223:25	plaintiff
permits	99:16 100:1	picked 26:15	224:3	2:16 154:22
176:21	100:2	54:8	234:24,25	155:2
266:19	102:15,19	pickup 18:23	235:12	239:10
permitted	110:7,13,15	275:7,9	244:4,21	Plaintiffs
28:8	110:23	picture 93:3	245:22	310:7 311:3
person 13:24	113:20	93:10 97:15	246:10	plaintiff's
18:9 248:16	114:9 163:6	97:21,24	248:21	20:11
248:17	163:12	101:23	262:4	223:16
287:1	164:3 165:1	102:10	303:12	plastic 121:8
personal	168:1,4,18	109:7	piece 131:18	121:9,17
212:8	181:23	114:20	149:20	122:7,11,14
personally	188:18	115:11	186:2	122:16,18
18:20	210:7 218:3	116:11,14	213:25,25	123:1,8,10
142:19	218:5	116:17,19	236:5	123:16,17
256:8	235:14	116:22	249:22	124:5,23
person's	photographed	117:2 164:8	275:3	125:1,3,18
204:3	213:24	184:10	pieces 112:12	128:13
pertain 63:11	photographic	185:24	127:16	192:1
pertained	28:25	189:1,2,3	184:16,16	193:23,25
64:21	photographs	206:8,9	296:12	194:2,3
pertaining	25:15 26:16	208:13,22	pin 127:25	228:10
85:3	27:5,22	214:15	214:13	230:18
pertinent	28:9 29:16	218:6	215:6	263:22
11:14	29:21,21	222:13,14	228:25	264:2,4,9
305:13	30:5,8,20	222:15	pinpoint 78:7	264:10,12

ROUGE & ASSOCIATES, INC.
(206) 682-1427

ERR2-625-A 9485

265:2,3,6,7	114:25	128:5	82:13	preliminary
265:10	116:1-131:1	172:14,18	104:14	141:13
266:4,6,16	142:6	194:19	105:9,11	premises 31:7
270:14,17	152:17	215:5 217:2	136:3	31:11,13
273:15	163:20	217:4	152:18	prep 295:14
277:6	176:20	225:17	169:4	preparation
plastics	179:14	232:2,21,22	171:18	296:1
44:25 58:17	181:23	236:7 245:3	195:13	prepared 3:10
125:17	191:1	245:7 249:2	211:1	283:9
259:1	212:17	249:3	261:13	preparing
260:18	225:24	253:15	294:1	3:16
262:22	227:22	255:24	302:20	preproduction
263:19,23	228:11	265:12	post 170:1	140:15
263:25	248:8 257:6	278:10	post-colli...	presence 91:7
264:14,19	257:25	280:19	144:2	164:7
264:25	272:21,22	292:16	potential	209:15
265:9,11	273:20	portions	22:9 60:8	210:2
platform 27:8	274:1 293:6	46:13 49:13	147:10	218:11
45:25	294:16	194:18	239:1	present 17:23
Plating	308:1	244:15	potentially	18:7 45:14
130:11	pointed	265:17	146:2	74:10 198:2
played 132:20	104:17	position	147:24	201:13
please 35:19	117:20	57:18 73:22	power 58:16	203:13,22
36:22	252:5	74:1,7	267:1 268:3	203:25
102:18	254:25	142:14	268:19	206:1 210:6
118:3	painting	152:6	269:6,13	277:17,19
plenty 248:1	100:4 112:8	172:25	292:2,14	284:6 288:4
plow 162:25	121:4,164:7	173:25	297:19	288:24
plug 163:13	180:21	175:14	301:3	302:23
163:17	police 67:23	184:10	practical	311:20
164:8 287:3	70:6	187:9 211:7	175:14	presentations
294:21	polish 151:4	229:8 290:1	practice	161:22
plugged 238:5	pop 229:13	positive	73:25 74:11	presenting
plumb 108:12	291:4	180:10,20	200:13,16	159:19
plunger	popped 212:24	197:20	207:19	preservation
248:24	229:15	228:8 284:8	practices	171:10
plural 17:6,8	293:4	292:15,16	8:19	president
plus 87:22	popa 304:17	possessive	prattling	143:11
234:19	population	17:7	86:24	Presley
point 13:12	203:2	possibilities	preceding	133:25
19:21,25	porous 33:16	56:18,20	94:15	pressure 3:22
26:1 38:12	33:20 34:1	57:14	precipitated	44:13 45:17
46:14 49:2	34:6	possibility	38:4	119:5,7
55:18 65:17	port 259:21	38:2 198:24	precise	171:1
69:13 70:11	Porter 132:19	possible	108:12	202:16
70:21 72:10	portion 45:25	105:23	109:12	206:17
75:25 76:12	93:15	152:9	precisely	215:17,18
76:16,20	111:23	260:13	108:7	236:10
87:17 97:13	120:10,23	281:8	predominantly	249:22
108:12	120:25	possibly	182:17,20	251:25
111:21	121:2,19	37:22 51:19	191:3	256:4,14
113:19	122:11,13	66:17,20	prefix 275:18	259:20

ROUGH & ASSOCIATES, INC.

(206) 682-1427

FEB 2-825-A 9485

265:19	219:6,7	produced	phone 143:25	protocol
267:4,11	220:13,25	64:25 65:16	proofing	250:15
268:4,6	223:22	.204:17,25	14:19 15:9	283:3,6,7
291:10	226:13,14	205:2,2	prop 224:9	283:12,20
301:22,24	237:13	233:16	225:17	283:21,23
302:2	243:3	251:20	244:14	284:6,11,22
pressured	249:13	259:4	245:4 246:4	285:17
170:21	250:6 299:3	300:10,13	294:3	286:1,3,3,6
pressurize	304:17	304:12	propagate	286:7,8,16
295:19	pro 73:21	306:21	47:13	286:21
presumably	75:3 101:25	producing	260:24	287:2
165:5	probable	190:16	277:11	289:10
presume 137:3	191:25	product 19:10	299:16	protocols
159:11	192:3,7	94:24 95:3	308:4	250:11
presumed	257:24	140:3	propagated	287:13
293:22	probably	147:16	225:23	provided 141:5
presuming	27:10 61:6	240:23	269:1	provided 61:5
198:23	67:9 83:19	301:13	propagates	128:15
242:23	89:12	production	260:21	305:8
243:18	105:11	139:5	267:14,19	306:11
pretty 59:7	113:21	140:14	propagating	proximity
80:16 105:3	192:1 288:8	141:12,15	260:11	261:10
132:10	300:1	141:16,24	propagation	262:17
168:18	problem 7:2	145:11,12	185:20	prudent 37:19
176:25	82:18 83:18	145:12	252:3	public 94:24
177:11	83:20	146:23	264:15	95:3 314:19
185:15,21	133:14	148:13	299:13,15	publications
186:10	138:7	149:2 150:7	propane 39:11	156:7,8
188:7	142:17,20	243:7	42:4 43:12	publish
189:18	144:13,16	products	54:20	160:24
190:4	146:4,11	140:19	propel 259:17	published
195:11	147:16,17	205:21	properly	156:11
249:6	148:24	274:8	77:10	161:3,6
prevented	152:6	professional	147:23	Pugh 130:19
304:13	158:11	4:10 6:12	238:16	130:20,20
preventing	206:6,20	176:12	243:19	130:21,22
176:6	225:24	professionals	280:24	224:25
previously	240:21	160:14	properties	234:24
167:4	241:4,6,16	program 5:4	245:20	235:18
prime 241:1	307:4	progress	264:19,22	pull 193:5
principals	problems 7:2	77:16	268:22	176:9
37:15	66:17 83:5	213:21	propulsion	pulled 28:19
126:13	83:10 84:11	progressed	119:21	89:2 169:15
principles	84:14 139:7	41:6 72:5	prorated	185:22
200:6	144:17	186:17	20:23 21:3	186:9
printed 30:17	148:13,18	progresses	protect	272:11
prints 89:14	150:12	58:23	255:12	pulling 254:7
98:19	proceedings	progressing	protected	pump 284:12
prior 11:7	75:5	127:9	104:15	284:23
17:20 36:23	process 19:1	progression	protection	285:25
43:16 90:2	305:4	108:21	159:3 160:2	287:18,21
218:12	produce 44:22	177:17	255:23	287:22,24

ROOCH & ASSOCIATES, INC.
(206) 682-1427

E902-025-R 9487

288:4,11,21	207:4	37:12 41:8-	140:1	ran 12:23
288:22	212:19	42:9 43:9	195:13	130:15
289:12,16	216:25	43:20 51:5	257:23	ranch 303:22
298:10	217:8 224:3	85:21 86:16	294:1 300:1	range 84:23
pure 60:3	226:8,11,11	86:24 87:18	302:20	ranges 264:12
purely 155:25	239:13,24	89:25	R	
217:11	239:25	106:19		311:10
purlaceous	250:12	113:5,8,9	R 118:22	RC 130:18,19
251:19	257:3 274:6	114:6,18	130:9,13,24	223:9
purpose	285:7 286:1	117:23	131:5,10	reached 37:25
283:19	286:16,22	130:5,6	224:25	reaction 74:2
purposes 52:7	287:14	137:13	307:9,9	reactive
187:6	295:17,24	158:12	308:21,21	141:20
282:22	298:9	162:6	311:1	read 4:3 30:1
pursue 13:10	303:23	170:13	race 149:23	38:20 43:24
70:1	304:15	174:14	150:10	54:7 65:3
pursued 70:2	308:8	182:10,19	racetrack	66:22,23
push 32:15	putting 15:25	196:5	150:15	68:22,25
pushed 45:17	16:2 76:8	197:21	racing 150:5	87:15 90:22
170:4,22	114:3 298:6	218:19	150:17	98:5 123:24
257:23	p.m 118:18,19	227:7	radiator	165:24
277:5	309:13	230:12	92:22,24	209:7 243:4
put 11:14	Q	231:22	93:18 94:12	243:8 281:5
12:20 16:6	qualification	234:18	94:15,17	283:13
17:9,10,10	7:11 11:16	239:15	95:11,12,12	287:14
28:4 38:17	77:19 201:5	243:21	95:15 96:11	291:11
42:23 56:11	201:7	246:20	165:10	305:9,22
63:25 69:16	270:16	250:25	167:7	314:6
71:21 76:10	qualified 8:9	255:3 260:1	189:25	readable
76:11 82:14	54:19 76:7	265:8 271:8	190:7,20,23	80:13
85:10 90:25	77:14 133:6	281:23	191:10	reading 71:1
92:13	77:14 133:6	291:24	194:17	71:15 91:1
103:17	191:11	308:20	273:14	98:2 290:2
107:25	201:21	questioning	radiators	ready 301:8,8
110:13	220:18,21	73:20 77:19	192:6	real 13:8
114:12	223:5	87:12	Radio 292:22	29:20
115:13	245:19	questions	294:15	realize 83:8
119:23	306:3,5,8	2:14 3:9	radium 109:6	realized 69:3
123:1 141:1	306:10	4:6 10:4	209:3	really 4:4
148:8 149:5	qualifies	62:3 86:21	219:10	5:20,24
149:7	10:5	87:3,9	221:12	8:11 19:14
150:12	quarter	162:22	rail 235:3	25:18 26:18
154:18	127:24	309:11	raise 175:20	36:14 53:19
156:9	216:5	quickly	176:13	57:8,17
158:15	quarters	129:18	177:9	65:15,17
164:4	14:17	196:22	185:22	66:21 77:11
170:21,24	question 11:4	259:8	raised 175:19	106:21
179:19	15:15 23:20	302:25	176:2,4,7	117:23
189:8,12	30:1 31:22	quit 131:1	194:16	144:7
195:23	32:23 33:12	quite 42:5	12:14	157:19
199:22	33:15,19	79:9 104:14	12:16 13:6	193:13
206:3,14	36:14,21	130:20	171:12	208:19,20

ROUGH & ASSOCIATES, INC.

(206) 682-1427

ENR2-625-A 9488

208:22	199:16	20:23 95:10	relayed	36:22 67:11
210:1 217:2	received 11:6	references	197:19	67:12 69:11
224:4	21:3 68:5,7	14:23 29:5	relaying	69:14 71:15
246:25	68:19 69:4	55:16 58:5	210:21	72:13 75:11
254:6	211:25	96:6	relays 269:7	81:8,11,16
267:17	243:16	referring	272:15	82:11,22
274:15	recass 118:17	23:17 66:14	release	122:15
276:18	recognize	66:15 216:9	129:12	124:7,12,24
282:8	26:1 151:11	reflect 239:8	released	124:25
289:10	197:10	239:12	145:4 243:7	125:3 129:6
302:22	recollect	regard 52:13	305:14	135:6,7,9
306:14	88:3 123:21	57:17 69:10	relevant	146:18
rear 79:16	205:16	140:20	11:14 26:16	169:23
90:16,22	243:9 244:8	173:6	65:13	176:1
91:21,22	recollection	regarding	179:19	201:15
102:21	117:21	91:14	relied 197:21	203:4,4,6
103:4 109:3	293:8	regardless	relocated	205:15,16
164:21	reconnecting	80:19 146:3	143:20	207:16,25
166:6,15	297:24	155:18	reluctant	210:17,19
167:1	record 28:25	193:6	74:22 75:1	213:2
reasking 87:3	60:18 73:24	302:23	relying 8:20	223:23
reason 54:13	74:9 75:13	regular	54:2 56:24	224:14
55:25 66:16	90:8,10	151:23	71:17 76:3	241:19
92:13	114:23,24	294:1	remade 294:11	289:25
176:22	181:16	reheated	remainder	292:21
180:22	239:7,12,16	218:17	244:16	295:13
223:24	239:24	reinforcement	remaining	297:20
282:7	241:6 274:6	104:15	125:21,22	299:12
285:15	recording	reinforcem...	166:7,22	remnants
290:11	207:19	106:4	184:14	168:25
reasonable	records 290:3	relate 7:2	remains 49:1	169:3
151:18,21	290:3,4	237:14	49:11 53:9	removable
reasonably	recore 214:19	related	111:1 112:4	245:10
37:21 40:10	recover 153:9	144:16	removal 288:9	remove 120:16
reasoning	155:15	149:9	113:22	removed 31:13
28:16	237:2	220:14	115:5 117:4	43:15 58:1
reasons 27:15	recovered	298:20	126:5	62:12 107:9
85:18	235:22	relates 73:3	127:16	111:7
144:10	236:25	209:8 274:5	128:6	120:12
recall 67:16	red 95:22	274:24	163:13	147:22
81:7 83:9	102:22	277:23	164:8,9	206:17
88:10,10	103:2 104:2	300:17	177:7	221:2
144:21,25	110:11,13	relation	180:19	224:22
145:3 203:2	redo 148:14	108:2 268:4	198:13	245:10
244:6	refer 119:4	relationship	245:10	237:12
recalled 67:5	reference	14:10 29:23	remake 294:13	244:23
67:6,8	16:24 55:5	relative	297:23	245:3
295:6	55:15 63:10	173:11	remarkable	277:21
recalls 89:2	64:22 65:23	relatively	214:16	281:1
144:24	80:1 155:25	182:11	remember 7:17	295:24
receipt 63:5	215:24	relay 298:11	10:12 12:24	307:3
receive	referenced	298:11	25:17 27:3	removing

ROUGH & ASSOCIATES, INC.

(206) 682-1427

EMB-625-A 8450

18:24	180:18,18	requirements	respect 29:3	retained
render 24:25	186:14,18	146:23	60:8 87:11	10:24 18:20
rendering	195:5,18	159:8,9	102:14	20:10 23:14
131:23	239:20,25	research 24:8	127:12	38:7 157:25
132:22	296:20	211:1	174:14	161:25
repair 7:14	reported	214:21	respects	162:5
137:25	83:10	226:18	222:19	165:15
148:24	291:10	researched	respond 178:2	211:11,13
150:20	310:22	270:13	response	223:16,21
repairs 8:13	reporter	resemblance	43:20	237:18
199:7	61:11	219:8	responsibi...	retainer
repeat 7:15	reports 67:23	resemble	16:3	211:17,19
rephrasing 9:1	70:12,15	278:19	responsibi...	212:1
147:16	80:11,25	reserved	153:23	retractor
replace	165:23	309:15	154:5,23	133:10
146:22	represent	reservoir	rest 12:23	retractors
replaced	2:13 18:8	259:2	39:16 62:4	133:11
147:21	233:10	261:15	107:14	retrofitting
148:7	represents...	262:24	157:2 188:7	145:25
198:21	18:13	263:7	207:1	reveal 27:23
replacement	154:21	265:19	260:25	287:22
150:20	155:2	266:18	262:9	revealed 32:5
replacing	represents...	267:11	resting 32:9	reverse
147:23	65:4 118:8	268:5	restraint	248:23
report 3:10	161:19	reset 298:7	132:11	review 66:5
3:12,14,17	represented	298:17	133:5,10	113:16
3:19 19:6	147:10	308:9,9	161:14	reviewed 39:2
38:20 61:23	157:23	resets 298:12	162:16	47:23 70:12
61:25 62:3	160:14	298:13	restraints	126:8
62:5,6	161:20	resettable	13:10	198:19
67:21 68:18	representing	307:25	restricted	219:7 290:4
68:19,25	153:3	residing	201:13	reviewing
69:2,5	196:20	314:20	result 34:10	36:2
70:15 71:17	represents	residual	105:13,20	revolved
72:19 75:24	19:15	259:19	148:23	23:17
76:3,16,21	202:23,24	272:25	201:12	rewire 298:4
79:22,24	reproduced	residue	254:12,14	reworking
80:1,9,24	61:18	126:17	254:18	146:14
87:8,13	request	resistance	255:9	[REDACTED] 2:4
90:12,14,19	204:24	85:4,5	258:16	38:20
91:1 92:1,3	251:22	122:25	296:14	130:25
92:6,12	280:13	144:19	resulted 28:6	131:7
95:8,23	300:15,17	228:9	142:17	310:15
98:3 102:9	303:25	229:12	256:15	312:1
117:25	requests	252:11,13	results	314:12
129:21	155:18	255:15	251:22	Richmond 9:8
162:24	required 7:1	271:1	resume 6:17	[REDACTED] 145:18
163:5,11	211:18	278:25	9:7 11:13	145:20
164:7 167:4	requirement	291:3,5	60:15	[REDACTED] 134:22
167:25	156:18	304:17	134:24	right-hand
168:5,11	158:16,17	resolve	retail 151:9	112:6
179:11,13	158:18	142:18	retain 61:16	163:11

ROUGH & ASSOCIATES, INC.
(206) 682-1427

5902-825-A 9488

164:7	165:7	112:25	sales 139:9 ..	288:3	289:4	202:21
rim 46:13		113:12,14	143:13,15	297:2		223:8
167:9	168:2	113:20,22	saloon 150:7	sawtooth		237:6
169:5	170:5	114:20	salvage 56:24	216:5,6,9		244:19
172:12,15		115:5 116:2	107:8	saw-tooth		283:2,12
172:17,18		116:10,15		208:16		286:14,16
172:19		116:18	101:24	saying 14:11		286:21
173:15,18		184:18,17	311:17	27:21	31:6	287:7,15
174:17		194:9	sat 161:22	40:21	41:10	291:19,21
188:3,4,6		rule 24:13	satisfied	45:6	46:5	291:21
190:24		37:20,21	54:16	47:3	50:10	SCDS 16:22
266:15		57:7,21	Saturday	51:16,16		283:3
zims 46:11		69:22,24	13:17	52:3,18		scenario
zing 236:6,10		70:20,21	Saturn 154:17	54:16	65:5	47:18
250:22		105:24	154:18	73:15	75:22	194:8
275:15		254:11	save 188:9	77:23,25		239:3
xings 27:4		289:16,18	314:7	82:22	92:17	scene 38:6
304:8		ruled 38:2	saw 31:6	94:1	100:14	43:16
xipped 288:8		58:6 69:17	34:16	105:7		76:8
xises 47:11		rules 38:23	35:25	37:3,6,7,9		288:25
xising 46:23		xuling 6:22	37:13	39:17	107:13	37:6
48:13		xun 22:11	39:19	40:7	110:15	68:22
road 6:23	7:7	88:22	40:11,24,25	119:24		169:19
35:9,10		294:7	41:10,16	131:24		scheduled
212:24		300:24	42:6,10,11	146:25		74:20
road-going		301:1	42:11,13	168:21		146:5
150:11		xunning 90:5	43:21,25	171:4,24		schematic
roaring 45:17		267:9	44:9,11	173:17		233:19
Rodriguez		269:10	50:10,13,14	177:12		214:6
134:20		294:5	50:22	182:21		schematics
role 131:14		xuna 136:25	51:8	192:7		school 4:25
133:2		xrupted	51:10,17,18	219:12,21		11:23
148:22		44:14	52:7,14,15	239:9		134:25
206:8		xust 100:22	54:5,5	247:11,13		135:14,19
xelled 186:9		109:10	55:21,23,23	255:8		136:15
186:10		111:13,15	56:4,4	says 8:15	9:9	137:5,9,10
xollover		xusted 111:17	57:15	10:10	19:6	137:15
129:7	148:8	xusting	59:18	137:16,17		schools 94:24
148:9		102:20	60:9	22:2,3		95:3
Rom 30:12,16		R.E 224:25	71:13	39:16,17		143:6
90:6			73:20	43:10	61:23	science
roof 106:13		8	106:12,12	66:7,10		126:12
106:13,22		817:1	107:15	67:21	70:19	161:15
xoom 26:7,9		118:22,22	126:16	70:23	73:4	Sciences
28:19		311:1,10	130:3	80:15		160:11
xotate 194:15		SAE 159:13,14	146:18,19	135:24		161:8
xotor 111:25		safe 152:6	146:21	137:4	138:4	scientific
roughly 240:8		242:19	170:23	138:14		126:12
RTIB 7:9	8:11	safety 7:1,2	207:15	139:24		227:2
xubber 48:24		238:24,25	217:19	142:7,11		255:21
49:4	112:5	242:18	219:13	143:21		267:22
112:13,16		66:7	230:21,24	163:11		scientists
		66:12	232:3,17	168:11		160:13,16
			253:17	180:19		

ROUGH & ASSOCIATES, INC.

(206) 682-1427

EPBZ-925-A 9491

160:20	second 73:19	186:12	69:7 77:25	setting 200:6
scope 112:12	90:9,20	191:13,15	79:23 145:7	settled 17:17
295:25	130:18	192:4,5	206:19,24	17:20,21
scraper	307:25	193:11	286:6	23:21 27:11
131:22	311:11	209:21,23	296:10	27:16
screw 149:9	secondary	209:24	300:4	117:21
screwed	54:2	214:20,20	308:15	118:3,4
119:21	seconds	216:3,5	sentence	123:22
224:9	114:13	218:14	94:11,15	224:17
screws 149:6	section 92:19	219:9,23	separate 91:2	set-ups 6:4
se 25:20	93:12,13,23	221:10	106:4 147:1	seven 7:18
seal 28:22	94:3,7	226:18	separated	209:2
84:16	95:23 96:12	231:12,14	221:6 245:7	seven-inch
101:15	96:18 97:13	231:16	separately	114:4
112:14	97:21,25	232:25	131:4	severe 29:3
127:15	98:4 101:19	233:7	249:17	111:23
210:4	121:23	238:18	September	168:12,21
215:17,18	164:14,21	240:6 241:6	88:14	272:24
219:6,18	165:22	247:25	sequence	severely
226:2,5,8	166:2,16	251:2,3	92:14	49:15
226:10,11	167:1	254:23	218:17	Shack 292:23
226:12	seeing 36:23	255:6	266:24	294:15
227:21	39:9 40:14	257:24	278:1 279:1	shade 16:6
241:23	43:16 44:10	260:20	sequences	297:4
245:25	100:6	266:10,13	152:9	shadiness
248:4,5	176:20	281:21	serial 64:20	99:7
257:22	180:23	289:21	206:25	shaken 297:21
281:6	186:16	309:6,7,7,8	274:22	shakes 196:1
282:13	297:20,25	309:9,10	series 146:1	Shane 225:2
seals 25:4	seen 17:2	select 26:18	150:17	shape 215:24
27:10,17,18	25:20 31:20	26:21	202:25	220:24
27:23,23	32:3,19	selected 26:3	235:12	278:16,17
29:2 84:2,4	36:10 46:20	26:21	279:24	shapes 219:3
84:9 112:25	47:19 51:21	selection	serious 186:3	219:22,23
209:19	57:7 84:22	161:14	serve 15:23	220:12
214:1 217:3	85:23 89:23	self 130:20	service 69:6	share 87:12
242:12	89:23 98:15	246:19	138:1,19,20	114:10
247:19	98:16 106:7	sells 242:20	145:6,25	sharp 128:22
303:6	106:10,24	semester 7:18	147:17,22	128:23
seat 129:11	107:5,6,7	seminar 12:10	151:20	shattered
129:12	116:18	12:13,20,22	239:24	222:17,21
132:15,17	123:23	12:25 13:2	290:3,4	246:22
133:3,6,13	126:11,17	13:15,23,23	session	249:7 250:9
133:18,24	129:21	14:12	203:18	shattering
134:1,8,17	163:12	171:14	sessions	247:3,4
134:19,21	176:18	seminars 10:2	15:13	250:10
134:23	177:7,24	15:15	set 11:3 16:7	shatters
162:16	178:15,17	send 159:10	85:18 89:13	247:9,14
Seattle 2:1	178:21,24	282:6	292:8	sheathes
2:22 30:23	180:11,12	senior 75:11	293:20,24	263:21
310:3,18	180:21	sense 162:19	301:6,6,7	sheat 274:18
311:5,12,19	185:17	sent 39:3	sets 3:14	296:16

ROUGH & ASSOCIATES, INC.
(206) 682-1427

sheets	255:23	230:23	187:8	102:9	situated
shelf	224:21	232:7 261:3	sign 12:1	mir 38:24	44:21 125:6
224:22	274:9 276:8	signature	58:15	situation	5:9
shelves	59:10	303:16	309:15	178:14	16:11 32:8
shop	20:12,15	showed 80:7	signed 73:22	186:19,20	38:18 82:6
22:5 63:15	194:11	significance	191:5 193:7	126:9	
199:22	showing 28:21	29:9 53:22	223:6,7	152:15	
207:17	36:16 49:14	87:21 98:8	227:5	229:22	
300:9	98:9 99:22	108:13	231:18	239:14	
short	60:17	110:3,7	234:22,23	242:18	
149:8 163:1	100:16	111:2 164:6	235:25	304:24,25	
163:3 269:8	101:5	169:7	236:1 237:8	306:21	
270:25	109:24	209:16	237:22	situations	
275:2	110:4 112:9	significant	240:6	70:5	
278:25	164:1,18	28:24 99:11	241:25	six 7:18 53:2	
291:3,5	234:15	107:24	242:3,15,16	78:25 79:4	
shortcut	244:15	171:5 209:1	243:1,11,14	262:25	
227:1	shown 93:17	224:3	243:22,23	six-inch	
shorted	100:15	225:15	245:12,16	179:13	
238:2	110:15	235:18	245:20	size 299:25	
255:17	164:3 169:8	236:24	248:19,20	skin 106:3	
271:3	173:25	shows 26:11	248:25	skipped	
272:14	27:14,14,18	silhouette	277:12,19	185:10	
shorting	230:10	27:23 64:20	116:20	slandered	
270:19	65:23 80:9	similar 17:2	277:22	158:10	
272:8 273:8	92:21 93:18	17:4 27:17	282:1,15	sleeves 30:19	
shortly	94:11,16	27:24 28:5	290:13	slight 296:25	
shorts	122:24	29:13 43:12	300:23	slightly	
271:22	98:7 99:3,4	138:18	301:18	47:21 115:7	
shot	99:5	99:7 100:24	193:11	193:13,16	
shots	112:3,5	209:12	305:6 306:1	slop 209:19	
show	37:9	117:7 164:9	209:14	small 139:2	
28:4,8	168:12	218:14	307:19	241:9	
29:2,2,2,4	180:19	219:23	309:5	smaller 295:3	
29:14 46:13	182:1,23	221:4,9	316:12,25	304:15	
92:10 95:10	183:19	246:14	10:4 14:15	small 54:20	
97:12-102:6	189:2,3	249:11	65:15	smelled 54:23	
105:12	206:6	251:5	123:21	smelling 58:5	
114:15,17	214:17	259:24	124:8,12	smells 55:1	
114:19	215:5,19	278:17,21	127:20	Smiths 131:3	
118:24	224:8	280:16	222:12	smoke 50:10	
119:18	245:25	297:2 299:1	261:22	54:5,6 72:6	
121:13	253:8 274:9	299:21	sit 119:16	187:18	
166:22	277:25	301:1	119:18,24	smolder	
169:9 182:5	278:10	similarities	120:4,8,18	268:23	
182:11	280:18	29:3	121:25	smolder	
183:18	293:16,18	simple 36:22	122:1	263:12	
184:3	shroud 273:14	simply 11:19	188:25	smoldering	
188:18	shut 294:9	34:9 131:24	sitting 14:3	239:4	
213:16	sides 177:19	191:6	118:12	soak 32:8	
214:1,6	208:17	218:22	178:18	35:4	
215:17,20	219:14	290:2	179:23	soake 35:9	
224:7 226:4	sideways	single 81:8	195:9	society 157:5	

ROUGH & ASSOCIATES, INC.
(206) 682-1427

EMR2-625-A 9483

157:10,12	155:11	35:6,12,17	speculation	290:12
157:17	162:2	36:16,23	44:8 59:5	305:17
158:2,13,18	188:13	38:10,16	59:25 60:3	speedometer
158:23,25	212:13	sparre 212:14	60:12 180:4	80:4,8
159:5,25	214:23	spark 163:13	180:8	speedos 244:1
sold 150:10	216:5	163:17	246:25	spend 19:3
240:17	218:16	164:8	273:5	22:19
242:22,23	248:6	speak 101:8	speed 16:24	291:15
sole 302:4	251:11	141:14	17:5,18	spent 4:9
somebody	280:20	205:9 289:4	21:15 22:9	14:16
25:10 49:20	sorts 45:1	speakers	24:1 40:3	137:17
64:1 70:2	209:25	149:5	40:22 46:1	146:14
70:11 118:1	sound 263:15	speaking	46:16 47:15	149:11
118:5 203:5	soundproofing	182:11	48:18,21,25	199:15
271:6	263:10	184:2	49:6 58:22	203:23
283:17	sounds 14:24	187:15,16	60:4 62:20	spiderwing
286:1 309:7	39:10	187:20,21	63:17 71:23	247:23
someplace	146:10	187:23	72:16 75:15	spiderwebbing
41:4,8	sources 32:17	188:1	75:20 76:25	222:16
soon 101:9	34:10 47:12	specialist	77:3 78:19	spin 187:7
307:24,25	57:11	204:7	81:3,18	spiralling
soot 103:9,10	102:14	245:18	82:5,17,20	221:13
107:16,17	104:20,21	specialize	85:18 97:16	spits 58:24
scooting	105:8,21	171:11	103:20	split 202:10
101:20	127:2	specialized	106:20	247:24
worry 73:20	190:16	5:20,22	108:2,11,17	spoke 272:10
74:12	218:16	specialty	112:16	spoken 204:11
106:13,17	230:18	265:14	113:15,23	205:3
112:4 117:9	234:16,17	specific 8:3	117:19	sports 139:2
129:25	238:10	10:2 15:16	152:11,16	spot 72:15,17
132:19	254:10	19:15 27:12	152:19	92:9 99:16
134:12	257:5,6,7	54:1 76:16	153:12	99:20 100:4
136:10	257:13,17	76:20 140:9	155:7,8,23	108:24,25
214:3 246:9	257:20,21	212:5	156:3	109:13,15
247:8 250:3	260:14	254:25	166:23	186:1 189:4
sort 13:5	273:21	257:10	167:10	287:6
14:24 19:15	289:17	258:18	177:14	spots 254:11
28:15 32:17	295:23	specifically	192:21	sprayed
39:10 42:4	297:19	62:18 80:20	193:4	268:18
83:18	301:3	88:10	205:21	spread 260:25
100:12	sources 57:22	109:11	224:8 225:7	spun 250:14
101:24	60:8 260:16	127:13	225:10	ss 314:4
103:16,16	261:4	140:20	231:14	stable 141:5
104:9	space 176:9	175:7	232:8,14	staff 17:9
106:22	spaced 172:11	specification	233:14,21	26:15
117:7	172:13	305:23,24	237:24	stage 269:1
121:16	173:15,17	306:1,11	238:8	stake 139:14
139:9	spacex 249:1	speculate	269:19	stamp 98:8
141:11	spalling	44:6	270:3	249:17
143:4,13	32:10,12,16	speculating	284:18	stand 130:24
144:13	32:21 34:2	59:2 60:8	286:2,5	standard 7:9
146:11	34:9,24,25	190:10	289:10,23	65:5 197:11

ROUGH & ASSOCIATES, INC.
(206) 682-1427

254:4	292:24	215:7,9	241:7	stuck 245:25
263:13,14	299:18	228:14	274:20	studied 5:18
263:15,17	starters	231:2	sticking	studies 263:24
standing 40:6	91:12	232:21	275:3	study 191:7
standpoint 5:19	starting	278:10	stint 146:18	stuff 5:23
starbursts 222:16	46:24	stayed 246:4	Stone 128:21	12:9 14:3
start 32:14	177:13	stays 85:4	stop 73:19	222:23
32:14 53:24	189:22	steel 42:18	190:10,11	223:1 227:2
84:24 92:4	226:24	46:22 47:16	226:4 269:9	17:11 19:5
92:17	starts 58:21	47:18,19,25	stopped 85:9	24:13 32:9
122:21	73:4 85:15	48:12	145:12	35:6 36:11
168:10	85:19	101:17	299:19	43:17 45:1
186:22	100:14	105:22	stopping 308:1	51:14 56:16
187:13	177:2	121:20,23	steps 85:16	69:6 94:25
188:6	192:18	122:2,3	storage 30:23	103:9
195:16	228:6,10	166:11,13	stored 111:10	105:25
209:4	229:12	168:25	straight 3:17	107:10
225:23	269:5	169:2	176:9	106:8 107:7
263:11	304:17	177:16,22	strategy 178:24	109:13
269:7,8	state 27:3	177:24	street 135:7	111:7
270:24,25	217:25	178:6,9,11	187:12	138:10
273:16	219:15	178:12,16	199:25	140:12
started 40:11	314:3,20	178:17,19	150:14	141:13
40:12,19	statement	178:21,24	176:17	184:14,17
41:2,5,9,12	74:11 84:6	178:25	strategy 186:5 199:7	200:8 205:1
41:14 42:24	84:8 91:14	189:25	street 187:18	206:7
46:9,12,16	191:12	191:21	311:14	236:25
48:2,12,19	210:3	192:17	strict 6:21	241:9 248:3
51:5 52:18	249:23	194:21	strictly 34:9	248:3
53:3,20	259:10	196:2,24	187:20	280:20
56:10 71:9	261:25	198:10,22	strike 28:15	281:21
71:21 72:4	262:1	232:24,25	76:15 95:1	290:7
73:5,10	267:19	263:13,14	106:18	293:25
75:15 85:9	statements	263:16	113:10	295:17
92:8 104:24	39:1 42:14	265:22	123:6	298:4
105:4	53:15	steaming	124:20	stupid 89:25
113:14	178:18	58:18 267:1	151:17	style 28:5
122:20	181:16	268:3,19	180:5,9	238:24
123:7 126:5	290:5	step 260:21	181:15	280:18
139:7 190:5	states 6:13	262:14	strikes 93:25	subject 5:17
192:13	136:15	263:23	structure 15:16	
193:24	142:3,5,8	264:15	31:15 32:20	286:15
194:10,21	142:10	268:25	34:1 35:22	287:15,17
194:25	143:1	stepped 13:20	36:7,12	287:17
195:1,7	145:23	stereo-plex	37:4,7	subjected
196:3 228:4	147:19	149:5	43:15 46:3	256:13
238:6 257:1	200:10,10	[REDACTED]	56:22 57:1	subjects 91:2
274:8 275:4	200:14	132:14	57:7	submit 12:3,5
276:2	310:1	201:3	structures 106:25	Subparagraph
278:24	stationary	stick 38:23		92:17

ROUGH & ASSOCIATES, INC.
(206) 682-1427

SUBSCRIBED	258:24	surroundings	207:20	244:22,23
314:16	287:12	surrounds	209:10,21	259:20
substance	292:2,15	surrounds	210:9,11,16	288:2
214:19,22	301:5	100:12	218:15	290:25
280:19	support 58:21	188:15	219:23,25	305:16,17
substantially	76:3 172:20	survive 49:9	219:25	305:17
27:24	172:21,25	122:12	220:3 221:2	systems 7:22
127:17	supportive	123:14	221:4,14,25	141:8 147:9
sued 158:1	53:16	192:5 271:4	224:15	147:11
suggest 3:1	supports	49:10,13	227:4	148:9
102:16	76:17,21	123:10	231:14	162:17
suggesting	91:13,20	survives	237:7,12	
77:8 158:7	102:19	123:16	243:7 244:3	T
234:13,20	suppose 42:23	244:5 248:6	T2:9 118:22	
242:15	137:24	Susman 311:13	251:6,24	196:17
298:19	168:13	311:17	254:21,22	307:9,9
299:1	supposed 17:6	suspension	256:11	308:21,21
suggests	17:6	5:25 7:25	257:24	314:1
102:14	supposedly	133:13	274:7	tab 62:7,15
157:16,17	194:20	140:14,22	275:23	67:21
swing 137:2	sure 11:5	141:8,11,21	276:1,2	114:25
153:8	21:12 29:16	153:21	281:22	115:1,21,22
154:22	44:9 53:11	284:12,23	283:8	116:9,24
155:2 211:5	89:22 90:7	285:25	290:19	202:20,23
287:2	110:10	287:18,21	299:11	204:21
Suite 310:17	111:18	287:22,24	300:18	205:18,18
311:4,11,14	118:16	288:3,11	302:2	205:25
311:18	139:14	289:11,16	303:20	211:10
suits 14:21	160:15	suspicious	sworn 2:5	212:10
sum 191:4	161:7,12	24:11 38:9	38:25	216:24
sunny 151:4	167:24	38:17 69:12	314:16	223:8,8
super 247:6	185:21	69:17 70:1	symptoms	224:25
supervisors	195:2	SV 98:8,16	290:16,18	234:24
142:16	202:11	swartling	291:10	237:6,9,11
supplement	253:21	311:10	syringe	244:18
3:20	264:12	swear 38:22	295:16	283:1 285:3
supplemental	271:16	swelling	system 5:8	285:12,13
70:15	276:11	209:8	7:20,25 8:1	285:22
supplied	290:9	switched	15:4 66:11	296:18,19
64:19 66:5	295:11	49:21 294:8	130:13	303:16,17
210:13,16	surely 114:5	294:11	132:24	table 10:4
243:9	114:9	switches	133:5,21	tabs 17:12
269:13	surface 31:20	19:12 20:5	140:14	202:19
302:11	32:15 33:10	23:23 29:17	141:5,11,18	211:13,23
305:9	33:13,16	64:20 84:24	148:3,6	Taffe 26:22
supplier	231:9	148:9	153:16,21	27:2,2 28:9
242:24	surfaces	150:19	154:8,14,19	tag 11:2
243:13,16	268:17,18	151:14	161:14	taillights
supplies	surprised	152:1,16,20	163:17	83:3
112:14	124:21	155:6,7,8	223:14	tails 171:1
163:17	surrounding	155:16	233:15	take 6:3 9:19
supply 149:22	192:9	203:1	236:23	9:24 11:23

ROUGH & ASSOCIATES, INC.

(206) 682-1427

ER62-025-A 2405

12:1,4	275:2 285:5	teacher 8:14-	174:16	264:4,10
13:19 26:22	285:6 290:1	team 149:23	178:22	265:6,18
38:21 53:6	310:17,21	tear 24:16,21	181:3	268:8,9,19
53:8 60:15	taken 35:6	219:5	202:23	270:12
62:22 66:9	94:24 227:2	247:24	205:18	271:14,16
84:18 90:1	227:8	248:1 284:9	206:25	271:18
90:3 93:8	talk 34:14	teardrop	208:1,18	temperatures
96:22	39:15 91:12	209:4,6,15	213:15	101:1
107:24	91:13,18	210:2	214:2	124:18
111:17	147:7 178:9	219:10	218:22,23	tan 34:19
114:8	290:16	teardrops	222:13	65:11 144:8
116:12	talked 60:25	209:11,22	223:18	226:23
118:13,14	63:12 66:12	209:23,24	225:3,14,23	241:15
144:20	79:11 89:19	tearing	228:2 229:2	297:16
155:7	92:7 105:15	223:23	229:11	ten-year
162:25	175:23	tech 145:4	232:11	144:6
163:2 168:9	259:7	technical	234:25	term 155:13
171:18,20	270:16	4:13,23	237:10	157:16
176:8	307:11	5:19 134:25	244:13	200:21,22
188:10	talking 14:21	135:13,14	245:2,22	209:6
190:23	15:6,9 18:2	135:16,25	252:20,22	253:15
196:15	22:25 24:7	143:3,14	252:23	terminal
205:24	32:4 48:5	145:6,24	254:4	228:5 275:2
209:4 211:2	59:13,14	199:15	257:19	terminals
213:14	79:15 81:15	200:4	260:21	120:2
214:7 216:7	96:8,10,12	technician	262:10	180:11,21
217:24	102:23	137:6,19	264:4 265:1	230:22,24
225:21,24	115:8 125:1	138:7,15	265:5,12	232:3,13
227:24	146:7 147:8	142:20	266:23	233:8
247:18	147:8	204:5	274:23	terminate
249:17	149:14	technicians	295:4	307:12
260:20	162:3 176:1	138:2	296:18	308:5,6
262:7,14	186:4	147:15,18	297:14	terminated
274:11	192:16	Technology	301:3 306:7	307:24
279:16	226:5	8:15	306:10	terminology
285:3,9,15	249:25	telephone	telling 59:21	209:7
287:3	260:11	10:19 24:12	93:13	215:25
292:12	285:24	tall 2:20	154:10	223:12
299:20	291:16	26:3,18	171:3	team 9:6
304:7	tan 103:2	27:6 29:22	190:14,14	34:24 82:18
taken 4:1	tank 35:1	35:19 58:2	190:18	172:25
11:12 17:21	tape 210:8	58:4,4,5	234:15	test 6:23,23
31:10 56:15	294:9	60:1 68:12	team 10:1	7:1,4,5,9
60:17 91:3	tapes 63:10	86:20 89:15	70:21 103:3	7:15,21 9:1
118:18	295:4	91:16,17	250:17	9:16,19,21
163:3	291:16,17	98:2 102:18	temperature	9:23,25
169:17	293:7,16	107:18	123:17	13:16,19
209:3 214:6	298:20	109:12	124:4,23	20:12,13,15
228:22	taught 9:10	118:11	125:3 128:8	21:3,16,18
252:24	11:22 12:13	129:18,20	128:12	22:2,3,5,8
256:2,11,13	12:21	142:13	235:7	22:16,18,20
266:22	teach 10:1,2	169:12,24	252:13	22:21 58:20

ROUGH & ASSOCIATES, INC.
(206) 682-1427

E982-625-A 9497

63:11	141:1	129:10	13:14	22:24	thermodyna...	263:3
141:2,3,5		132:16	243:5,6	245:14		267:17,21
148:14		179:8	268:16	they'd	thinking	116:17
191:7	227:6	196:23	Texas	61:16	thicker	thinner
227:12		201:8,13	65:12	104:16	292:23	third
243:19		202:13	117:18	thickness	115:22	117
256:7		219:21	118:8	127:24	310:17	311:3
259:24		228:13	196:13,20	thin	311:4,18	311:3
260:6,9		246:5,24	211:5	thing	thought	23:16
282:2		249:12	223:16	3:22		
291:20,22		250:5	224:5	4:20	6:11	
291:24,25	testing	6:4	225:2	9:6	11:18	
292:3,18,20		14:2,15	233:11,13	13:11	16:11	27:2
293:15,17		15:3,11	242:20	21:17	61:6	65:13
294:5,7		45:12	243:3,13	65:18	70:14	75:7
295:16		126:19	304:9,19	79:9	88:11	87:14
296:11		133:4,4	305:3,16	111:22		130:3
298:5		139:25	306:11	115:10		162:18
299:19		140:10	310:10	120:2,6		181:22
300:2,7,18		153:20	311:13,15	138:19		206:5
300:24		155:5,7	textbook	151:24,25	247:8	247:8
301:1,10		158:17	190:25	158:22,25	thoughts	25:10
302:6,16,22		159:5	Thank	160:10		thousand
302:24		190:19	60:15	161:23		207:24
303:1,3		200:5	72:18	173:5		Thousands
307:11,12		201:11	183:2	171:22		85:13
307:20,23		211:3	250:3	173:6	181:1	threaded
307:24		227:15,18	thanks	188:13		120:10
308:1,5,12		227:23	67:2	197:6	212:8	three
308:15,16		243:2,5,12	102:3	215:13	14:17	14:17
tested	7:10	249:15	theory	233:22	23:21	34:21
8:12	59:1	246:15,18	71:4	248:8	37:14	45:23
242:5,8		258:9	108:7	267:12	82:14,14	
256:8		259:22	225:22	271:20	91:2	104:23
296:21,24		260:1	231:21	286:11,16	105:1,19	
297:9,9		261:18	256:22	286:21	134:2	
Testam	6:18	264:6,7	260:3	291:21	144:23	
testified	2:6	267:18,23	thermal	294:25	146:14	
128:22		268:14	47:15	things	150:18	
129:8	201:3	271:17	90:15	13:25	158:4	161:6
201:16,17		273:2,25	91:4	16:12	168:9	178:5
testify		276:16	91:14,19	43:23	192:24	
131:14		281:5,14,23	102:11	45:4,16,16	215:19,21	
132:4	133:2	282:14,17	143:25	59:8,16	270:8	
162:5		293:23,23	144:10,15	82:19	throw	55:16
254:21		294:25	144:16,19	91:25	193:14	
testimony		296:14	146:2,19	113:3	throwing	
12:8	39:1	297:6,10	147:4	124:10	191:8	
50:2	52:12	298:19	183:4	131:15	THURSDAY	2:1
54:8	58:3	305:15	219:6	136:3	17:23	65:4
128:15,19		tests	223:20	137:1	214:21	
128:25		9:24	248:6	143:21	297:14	
		10:6,8	264:22	149:4,7	305:12	
			265:9	151:3	tier	243:13
			274:6	161:6		
			276:22	178:23		
			296:23	197:4		
			299:7	212:17		
				241:18		

ROUGH & ASSOCIATES, INC.

(206) 682-1427

E962-B29-A 8488

243:16	50:9 85:9	262:18	81:2 82:1	177:9
time 14:21	96:17,18	265:23	87:22 89:5	transmitted
time 4:10	175:13	283:12	106:21	103:6
7:19 8:12	191:13	287:17	119:7	108:17
12:8 13:10	251:2	topic 161:16	152:20	Transport
13:12 14:11	283:25	Topinka 30:16	153:16,18	6:22 7:7
16:15 20:24	tire 45:2,3,6	35:21 38:5	155:19	156:20
21:2,4	45:8,11	50:1 56:6,8	178:10,20	transporta...
22:13,15,19	46:5,8	57:8 90:2,5	178:22	6:18 302:5
26:1 35:20	55:21,23	175:23	191:3 192:5	transported
38:12 39:24	56:1 169:1	197:24	197:1 207:8	286:14
55:19 60:14	169:3,5,6,9	199:10	208:3	trapezoid
65:17 72:9	170:7 172:9	218:6	223:20	105:3
74:20 75:2	174:9,10,11	222:14	225:6 237:7	trapezoidal
76:9 78:9	180:20	272:1	237:18	104:9,11
79:23 80:5	tires 35:8,9	Topinka's	238:12,13	trapezoids
87:22	35:10 45:12	30:10,15	238:17	105:20
113:21	273:15,16	57:13,16	244:4,19	trapped 47:4
137:16,17	title 10:5	89:19,23	284:15	47:8
138:8,22	283:2	tops 272:25	287:3,4	trapping
140:18	today 65:15	torch 43:12	292:9	191:21
141:22	102:3	44:16,24	294:19	travel 125:24
142:8,24	123:21	45:4,8 56:2	298:17	177:3
143:1	124:8 135:3	58:3,25	Toyota 139:13	traveling
144:14,22	135:23	190:16	141:18	105:21
149:11,22	222:12	191:16	track 144:8	172:23
152:17	244:12	259:15	tracking	tremendous
153:6	255:5 261:5	tore 224:20	150:13	273:16
170:25	261:22	torn 224:20	trademark	trial 12:8
175:15	262:3	224:22	141:21	129:8
179:14	274:25	284:5	train 75:7	136:17
185:24	told 179:19	torn-down	trained	trials 128:16
187:10	192:17	29:8	253:10,24	triangle
195:6,22	203:5	torquing	training 5:19	105:19
196:2 198:3	206:21	147:23	7:7 8:8	triangular
199:15	229:5	total 59:5,25	143:5,6	104:5
201:24	282:19	88:17 191:4	220:11	105:19
203:23,24	2:19 61:6	totally 60:7	trick 189:11	trick 189:11
211:18	61:17	171:14	tried 132:6	tried 132:6
212:14	top 99:5	226:19	150:12	150:12
232:24	100:2 101:6	touch 270:24	166:9	166:9
233:7 239:8	112:6 120:3	touched 130:2	transcripts	250:13
241:14	121:16,17	touches	4:4	259:24
266:1	122:9 127:9	214:14	transducer	268:17
272:17	166:13	town 16:17	3:22	308:12
285:18	172:18	20:24 23:18	transfer 79:7	trip 80:2
298:8	177:18	23:25 27:8	127:25	287:11
301:10	183:20	38:1 39:6	214:13	trouble 30:4
305:4,21	189:17	42:16 45:24	215:6	114:3
306:23	194:4,19,21	53:4,21	228:25	290:22
308:10	214:7 236:4	58:22 64:6	transmission	troublesh...
times 31:21	245:6	65:5 71:22	134:15	143:4

ROUGH & ASSOCIATES, INC.

(206) 682-1427

682-825-A 2488

trouble-free	turned 160:8 151:19	two-year	176:24	units 142:25			
truck	129:1 275:7,9,19 275:20 276:6 278:13 279:23 280:1 282:24 301:17 trucks	212:16 294:6 turning 186:1 twelve 49:8 twice 201:17 twisted 250:14 two 6:24 9:24 12:22 15:17 22:24,24 29:11 34:21 44:7 72:24 79:2 99:17 100:1,25 105:19 110:13 115:3,4 123:3 128:16 142:23 145:7 148:7 159:18 173:24 174:4,5 192:24 195:8 198:16 202:10 203:1 215:7 216:21 219:3,22 221:20 226:22,23 232:19,20 236:2 239:10 240:7 244:4 248:21 249:20 270:8 274:15 275:23 276:1 291:17,24 293:16,18 293:20 294:1 two-plus	140:13 41:25 42:4 43:12 48:5 119:7 134:2 134:5 138:12,19 141:8 191:9 191:18 204:5 216:15 218:12 252:9 258:16 280:22 296:7 298:3	177:1 287:17 understand 11:9 19:2 23:24 39:17 41:1 50:18 56:5 59:19 61:4 96:15 171:7,9,10 171:16 202:13 219:21 223:12 233:13,24 256:19 302:18 303:9 understanding 51:15 65:9 308:21 UK 4:19 7:10 145:13 ultimately 67:16 umbilical 141:4 Um-hmm 117:5 160:21 181:7 unauthorized 74:11 uncommon 140:9 undercartage 175:2 176:18 undergone 280:22 underneath 78:20 101:14 106:4 123:8 166:23 177:10 191:15 underside 35:4 101:21 102:7,10,14 108:1 175:4 175:7,10,12 175:17	177:1 287:17 understand 11:9 19:2 23:24 39:17 41:1 50:18 56:5 59:19 61:4 96:15 171:7,9,10 171:16 202:13 219:21 223:12 233:13,24 256:19 302:18 303:9 usage 81:17 81:19 use 24:22 50:17 51:7 82:1 94:3 96:5 150:8 151:24 152:3 164:11 230:24 250:15 253:15 276:15 286:4,7,9 298:1,14 302:7 useful 14:25 151:12 152:3,11 usually 7:20 13:9 34:21 35:1 69:4 81:1 107:3 211:19 241:14 249:2 250:20 287:12,20 U.S 5:9 11:20 143:7 V	University 9:8 unknown 85:18 unlatch 129:13 unrelated 171:15 unusual 46:22 89:24 194:7 232:24 updated 145:14 upgrade 146:22 upgrading 145:25 upside 121:3 usage 81:17 81:19 use 24:22 50:17 51:7 82:1 94:3 96:5 150:8 151:24 152:3 164:11 230:24 250:15 253:15 276:15 286:4,7,9 298:1,14 302:7 useful 14:25 151:12 152:3,11 usually 7:20 13:9 34:21 35:1 69:4 81:1 107:3 211:19 241:14 249:2 250:20 287:12,20 U.S 5:9 11:20 143:7 V	96:2 100:5 100:5,10,14

ROUGH & ASSOCIATES, INC.
(206) 682-1427

108:22	221:2	110:1,3,25-	272:19	176:10
314:1	226:19	115:7 117:7	293:6,22	181:3,23
vacuum 112:15	232:7 240:7	117:12	295:17	186:15,16
valid 260:4	240:19	119:6	306:23	190:10
values 238:25	243:24	157:13	voluntary	202:18
valve 119:22	247:17	164:24	145:3	212:20
148:5,6	256:9	168:11	volunteered	222:4 224:2
224:9 245:4	271:23	172:8 191:1	239:11	225:21
246:4 294:3	272:23	213:21	vs 310:8	226:4
valves 225:17	278:5	214:4	V-150 64:4	230:23
236:23	287:13	215:23		232:6,7
244:14	301:20	224:11	wait 39:15	239:11,13
245:14	304:16	238:19	52:2 78:15	251:13
vaporize	305:1 307:4	278:9	78:15 96:4	252:3
271:18	vehicle's	viewed 35:20	170:12	256:19
variety	111:6	views 215:11	waive 74:17	257:3
144:10,12	venting 45:9	293:18	260:20	
various 42:16	verdict 202:3	VIM 98:7,9	74:21,25	266:23
124:19	202:7	237:15	waived 74:13	274:4
155:9	version	244:10,20	walk 142:20	279:12
202:18	150:11	276:7 287:6	wall 70:25	288:10
258:25	versus 26:22	virtually	71:2,8,14	291:15
267:13	201:3	29:12 45:15	199:22	302:23
270:22	224:25	188:3	walls 50:4	wanted 5:20
vaseline	248:9	visible 29:11	want 14:9	5:24 24:22
126:18	283:13	92:18 93:11	19:24 28:8	27:15 66:18
214:24	vertically	94:6 98:3	29:24 38:21	115:17
228:7	119:24	111:5,24	46:25 50:16	222:7 225:4
vehicles 5:23	vice 73:21	113:4 166:1	50:19 62:3	225:13
6:22 7:1,5	75:3 101:25	166:16	78:7 86:19	wanting 191:6
22:8 26:12	vicinity	167:1	86:20 87:16	wants 54:22
32:9 45:14	190:17	209:17	89:17 90:25	warehouse
47:20 65:6	260:17	258:5	91:12,12,15	204:2
67:6 84:22	268:1	visited 205:3	91:17,18	warn 305:1
106:7,10	video 21:3,17	visually	92:3,7 93:4	warned 305:2
112:10	21:19 259:4	265:6,7	96:24 98:12	warranties
140:15	259:15	vital 176:22	99:25	142:12
141:12	294:1	volt 292:10	101:11	warranty
142:18,21	297:24	292:12,14	107:3	143:6
143:24	298:22	293:10	109:11	240:18,18
144:22	299:14	301:5	111:20	240:19
145:11,13	videography	voltage	113:8 114:8	241:12
146:1,15	287:19	205:22	114:9,25	washer 147:20
147:5,6	video 178:15	272:25	115:13,17	
148:4	259:25	293:5,9	116:5,11	2:1 52:18
149:19,23	305:14	306:23	118:14	74:4,9
150:10,16	videotape	307:3	124:14	310:2,18
150:19	287:20	volts 14:22	130:16,16	311:5,12,19
151:7,8	296:21	14:23	155:15	314:3,20
178:5	view 63:20	230:10	162:21,24	wasn't 19:14
185:18	98:17	239:1 269:5	162:25	20:12,15,17
212:25	109:17	269:10,12	175:10,16	20:19 24:25

ROUGH & ASSOCIATES, INC.
(206) 682-1427

682-825-A 9581

25:18 34:23	166:11	135:19	168:23	window 52:15
38:16,17	167:6,7,7,9	138:14	169:3,5,12	151:22
52:21 60:1	169:24	145:8 149:4	172:8,9	wings 4:18
66:10 67:13	170:4,22	166:8 170:4	173:7	wire 197:7,9
138:23	171:2	179:18	174:20	197:10
141:13	172:10,16	195:21	180:19	198:1,2,10
147:16	172:23	200:8	184:8,14,18	292:21,23
153:17,17	174:17	202:19	184:21,23	294:12,13
193:10,12	176:8 182:2	220:1	184:24,25	294:15,16
194:3,20	187:9	233:14	185:7,8,10	294:21,23
198:2	201:13	243:13	185:13,13	298:2
236:13,16	205:24	246:2,6	185:21	wired 238:11
237:24	210:2 211:9	271:21	186:1,17,18	238:25
238:10	225:25	293:3	187:7,10,11	239:2
239:9	226:2 230:8	weren't 84:15	187:18,24	306:22
241:13	237:17	147:22,23	187:25	wires 29:11
288:1,21,23	243:10	151:9	188:2	232:20
294:7	247:22	201:14	191:15	270:22,23
watch 267:19	250:13	251:17	194:13,13	270:24
watched 293:7	267:19	272:24	194:14	271:3,11,14
water 145:13	281:3	277:17	266:4,6,14	281:10
170:24	293:24	288:24	266:16	294:22
195:19	304:7 308:4	305:21	269:16,24	297:20
271:6	ways 172:3	WESTERN 310:2	269:25	wiring 62:21
281:18	241:3	wet 35:10	273:12	64:2 148:18
waterbase	wear 242:16	wa'11 39:16	284:16	148:20,23
34:13	242:17,18	60:15 62:5	288:1	149:9
way 5:22	wearing 14:21	62:6,6,14	wheels 34:25	197:11,13
28:18 29:20	wearrs 241:21	62:25 67:21	35:3 112:1	197:18
29:23,24	242:11,14	84:5 98:25	168:19	225:18,20
34:3 42:16	weather	227:20	169:1,22,25	258:25
45:7,10	101:15	252:22	171:2	260:17,18
67:23 69:9	151:24	272:11,12	whispering	261:14
71:16 75:14	webbing	285:9	239:10	262:17
75:24 76:2	218:13	we're 126:19	white 16:21	263:6
77:9,20,25	WEAKER 311:10	we've 64:2	60:22 93:3	266:17
79:11 85:25	website 88:23	232:25	80:21	267:10
87:19 92:15	weak 9:13,14	wheel 140:18	wholly 187:3	271:24
96:2 101:11	10:3 12:11	41:7 44:12	widely 157:22	272:5,15
101:11	45:15	44:17,19,19	161:20	273:7
111:6,13	171:12,14	44:20,20	width 192:23	294:18
119:16,24	weeks 7:18,19	45:11 47:1	311:6	295:1
120:3	226:16	47:5 51:11	39:1,9	wishes 66:10
125:24	wells 47:5	52:10 58:12	39:15 43:10	withered
127:9 131:2	52:10 192:1	58:17,24	43:25 54:7	253:18
134:24	went 4:22,25	100:8	55:18,25	withstand
147:1,15	9:7 26:13	101:10	60:9 191:9	151:24
152:5	26:20 66:8	111:24	191:11	witness 2:4
153:15	67:2 69:3	117:3	198:3	30:7 33:7
158:15	86:17 87:15	166:12	wife 136:25	52:12 53:15
159:11	88:2,5,22	168:13,14	203:24,25	72:10 90:13
166:7,8,10	114:3	168:19,22	134:7	98:24

ROUGH & ASSOCIATES, INC.
(206) 682-1427

2962-628-A 0502

102:25	137:12	19:24 47:14	T	74:19 82:16
109:16	138:14	49:10 66:7	yard 56:24	83:16 89:4
114:11	147:2,22	81:13	107:8	89:4 138:12
115:15	153:19,20	103:23	Yarmouth 4:13	138:14
116:3 163:8	153:20	107:15	4:17,22,24	159:17
164:5,13	154:21	120:8 140:9	134:25	160:13
172:7 173:4	155:2,8	152:4	135:11,12	179:15
173:21	157:12,22	166:25	135:13,14	238:4
174:8	160:9	185:16	135:16,25	275:16
180:14	161:22	187:14,25	136:4	287:4
196:1,14,14	162:16	191:17,19	199:15	291:20
196:15	166:10	193:7 231:6	200:3	297:9
216:10	203:1	272:14	year 6:6 9:4	yearly 6:23
218:3,5	210:20,25	wrapped 169:1	16:12,14	years 6:24
219:2	211:19	169:2,11,25	20:3 24:4	9:7 13:5
258:13	212:10	225:19	24:19 28:1	23:21 24:9
274:12	218:10	wreck 49:18	31:3 33:5	34:20,22
307:8	281:7	wrote 158:14	62:19 69:3	65:24 82:12
309:15	worked 28:3	275:8	73:13 80:16	82:14,14
witnesses	82:25	writing 138:5	107:23	83:23 84:1
51:13 54:15	117:16	156:17	116:11	84:9,12,15
72:4 186:21	138:11	158:19	122:10	85:10
187:12	140:18,19	written 52:17	124:25	123:24
190:6	144:23	286:13	129:12	140:6
wonder 27:6	147:17	wrong 53:23	136:24	150:18
wondered 15:8	240:25	73:14 158:7	137:3,13,21	152:23,23
wondering	working 5:22	185:19,19	141:13	159:18
139:12	13:6 54:15	286:1	144:12	234:7,19
wood 149:6	65:12 131:8	304:10,22	145:10	240:7
Woodward	138:22	wrote 156:20	149:1	241:15
311:7	139:15	167:4	162:15,18	297:10,16
word 50:16,17	140:4	Wyoming 12:10	177:16	297:16
96:5 154:1	141:23	45:15	188:14	yellow 230:23
worded 145:2	142:10	X	190:5,23	230:24
words 25:12	145:17	X 2:9 196:17	199:18	253:16,25
28:22 39:21	148:4	226:8,11	201:14	256:21
44:7 51:7	149:19	307:9	204:6 207:8	257:13
82:6 90:25	162:2	308:21	209:23	Yap 89:10
91:15 92:6	248:15	x-ray 63:6	210:23	99:11
144:25	280:24	65:4 274:9	211:7 213:6	yesterday
293:20	282:20	278:9,20	213:23	73:22
work 2:15 3:4	302:21	279:14	228:16	310:22
5:21,22	works 7:12	287:21	230:19	
7:11,13	202:24	302:25	247:15	310:22
8:14 10:16	204:1	x-rayed	285:7	
12:18 14:4	307:22	280:17	287:12	Z
15:1,25	world 54:21	x-rays 89:25	288:14	zeroed 28:20
18:5,7,8,16	131:3	90:1 232:10	293:12,21	zinc 214:23
19:10,16	worn 240:22	253:18	296:9,16	214:23
21:5 26:11	240:24	255:25	297:15	\$
29:14 54:3	241:11	XL80Ra 150:17	300:4,8	\$100,000
83:1 131:8	wouldn't	year 67:7		

ROUGH & ASSOCIATES, INC.
(206) 682-1427

149:20	110:22	112:18	174:14	222:3 61:16
\$4,000 211:22	111:20,22	115:6,22	312:25	61:20 214:2
211:25	208:19	163:5,6,7,9	17th 212:22	223:14
	223:9	163:12	213:11	244:5,13
0	11th 223:11	164:1	1700 124:15	291:18,22
01 130:18,18	11-12 110:20	213:14	128:10	300:17,20
02 203:9	312:20	215:4 224:2	18 117:6,10	303:1
	110 312:20	224:6	140:10	307:23
1	118 312:21	312:22	167:15	312:4
1 22:2 25:24	12 14:22	140 134:10	168:6	2,000 128:10
29:10 61:16	110:18,22	15 25:24 26:4	180:15,16	209:7 19:3,3
61:20	110:24,25	28:17,18	180:19	47:22
130:13,17	112:3,18	72:8 151:1	192:21	179:15
130:19,21	192:19	151:2	313:4	180:12,13
223:9,13	209:4	164:24	180 313:4	183:6,6,11
244:4,13	213:14	165:2,3	183 313:5	215:10
291:18,20	214:3	194:24	19 117:12	216:11
1-12-00 22:3	229:25	195:11	180:10,11	221:10,15
22:3 63:9	230:10	210:9	180:13,15	227:14
1-12-01 80:10	239:1 269:5	225:14	180:21	229:25
1-223:1	269:10,12	227:14	183:9,13	284:20
312:12	272:19	229:25	191:19	313:6
1-20-2001	292:10,12	230:4 292:9	215:10	20th 68:2,4
234:6	292:14	292:16,19	313:5	80:16 85:17
1:00 118:19	293:6	293:1,3	196 312:5	20,000 151:1
10 72:8 92:10	295:17	298:6,11,15	197 85:2 8:22	151:2
98:17,19,20	301:5	298:17	198 25:2 8:22	200 131:5
98:21 99:14	306:23	312:23	8:24 9:2	299:9
109:22,24	12th 63:14	150 307:11	1986 144:23	200,000 81:12
116:24	80:15	162 7:2	1987 142:7	88:5 240:8
194:24	291:20	167:13,15	1992 16:17	2000 63:14
210:9	12-volt 292:4	167:16,17	23:17,25	251:11
224:25	12.1 293:6	167:22,25	89:4 234:2	291:20
234:24	12.2 293:6	168:10	234:3,21	297:10
236:19	12:15 118:18	169:8	237:16	308:13
245:5	1200 188:21	172:16,20	238:13,17	2001 80:15
269:24	189:15	172:24	243:7	279:23
270:1	191:23	173:1,2,3	244:15,18	301:21
312:19	235:9	173:22,23	244:20	2002 2:1
100 44:1,3,5	1201 311:4,18	184:7 185:6	261:2	10:10,15,21
44:8 131:5	121 224:25	186:2,15	284:15	212:22
149:20	1230 310:17	312:24	297:7,8	310:21
202:11	1250 265:13	163 312:22	1993 23:18,25	314:17
100,000 81:9	13 110:19,24	165 312:23	98:19	21116:9
238:15	112:3	1650 265:13	238:13,17	218:11
1000 311:11	118:20,24	167 312:24	287:7	225:14
311:14	121:5 226:6	168 312:25	1994 207:8	245:22
101 131:9	233:19	17 167:15,19	208:3	246:9
102 312:18	256:20	167:20,25	1995 275:7,8	250:24
103 130:9,13	291:6	167:25	1997 8 18:24	21-23 218:8
109 312:19	312:21	168:7 172:8		313:7
11 109:17,19	14 28:25 49:8	173:7,7,17	2	216 313:6

ROUGH & ASSOCIATES, INC.
(206) 682-1427

EAB2-025-A 2554

22 218:11,20	299:10	285:11	60 312:13	149:20
222:10,21	285 313:11	312:14	600 139:4	91 297:15
.246:7,9	29 234:25	40 195:25	61 312:14	92 65:5 67:7
249:9		40-hour 11:21	650 268:11	238:5
250:24	<u>3</u>	400 131:5		93 16:17 65:5
22nd 10:20	32:1 60:19	41 202:20,21	<u>7</u>	67:7 197:1
23 215:16,22	60:21 61:20	212:10	727:4 92:12	297:7
218:20	90:14	216:24	92:21 93:5	94 16:17
222:10,21	130:21	421 865:1	93:17,18	23:18
246:7	239:23	45 21:15	94:11 95:8	95 64:16
312:12	249:21	139:14	98:25 99:1	149:20
230,000 82:15	250:2	303:17	99:3 163:18	312:15
85:10	310:21	47 19:6	164:3	96 64:11
24 14:22	312:13	296:19,20	167:17	142:7,9
215:16,21	3A 62:6	47 94 206:8	168:10,16	97 64:3,13
216:7	3B 62:14	48 17:12	169:8,8	312:16
249:18,20	3C 62:25	18:19	172:3	98 101 311:5
250:6,17	3D 67:22	211:23	174:16,17	311:19
284:20	30 88:21	283:1,2	189:12	98 104 311:12
313:8	30 47:22	285:3,12,13	312:17	99 229:20
24-month	114:13	285:22	7-17 203:9,12	312:17
140:10	195:23	48 304 311:8	7-18 203:12	
249 313:8	245:22	<u>5</u>	7-30 35:25	
25 224:1,10	246:13		7-30-2002	
274:13,15	30th 30:25	5 95:5,6	11:3	
274:16,18	31:3 63:2	96:23 97:24	70 123:15,16	
274:19,23	68:13 69:1	163:4 181:8	194:3	
313:9	175:1,17,21	245:2	7298469 244:9	
26 234:24	30,000 82:8	248:22	77002 311:15	
237:6,9	300 23:20	312:15	<u>6</u>	
244:3	131:5	5,000 143:2	8 92:12 98:7	
279:17,20	3000 311:11	241:16,17	98:8 102:6	
280:21	307 312:6	5-16-00 224:5	102:24	
282:18	308 312:7	5-22 10:20	8-9 102:4	
313:10	309 0 311:18	5-3-99 67:4	312:18	
26th 68:5,7,7	31 116:24,24	50 55:9	8:15 195:8	
27 68:17 69:1	33 235:22	139:14	80,000 84:23	
285:19,21	34 235:22	200:10	84 139:10	
289:10	35 980 311:7	50,000 82:16	85 139:10	
313:11	36 236:2	83:16	87 142:9	
274 313:9	36,000 240:20	5100 311:14	<u>9</u>	
279 313:10	37 115:22	52nd 161:14		
280,000 80:10	37 13 64:25	5200 310:17		
80:11,21	37 13 5898 66:3	311:4	9 92:10 98:15	
81:5 87:22	<u>4</u>	<u>6</u>	98:19,23	
88:2 150:20	4 61:8,11,12	6 90:19 97:19	115:1 245:5	
150:23	61:13,20	97:21 98:19	248:22	
151:19	81:13 92:5	100:2 236:2	249:6	
234:10,19	92:12	245:2	9F 924 66:8	
239:19	202:14	312:16	67:2	
240:13,22	223:8 250:3	6:20 309:13	9:00 2:2	
241:10			90 76:9	

ROUGH & ASSOCIATES, INC.
(206) 682-1427

E982-825-A 2586

Ford's Initial Disclosures

ER02-025-A 0506

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The Honorable Robert S. Lasnik

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
AT SEATTLEALLSTATE INSURANCE COMPANY, and
Illinois Corporation and NORTHLAND
INSURANCE COMPANY, a Minnesota
Corporation,

Plaintiffs,

vs.
FORD MOTOR COMPANY, a Delaware
corporation, and TEXAS INSTRUMENTS,
INC., a Delaware corporation,

Defendants.

NO. 01-2-22371-2SEA

DEFENDANT FORD MOTOR
COMPANY'S INITIAL DISCLOSURE
PURSUANT TO FRCP 26(f)(a)(1)INITIAL DISCLOSURE OF DEFENDANT FORD MOTOR COMPANY PURSUANT TO
FEDERAL RULE OF CIVIL PROCEDURE 26(a)

Defendant, Ford Motor Company (hereinafter "Ford"), by and through its counsel, Mills, Meyers & Swartling, hereby makes the following self-executing disclosure pursuant to Fed.R.Civ.P. 26(a)(1).

Ford makes this initial disclosure in accordance with the Federal Rules of Civil Procedure ("Federal Rules"). Ford makes this disclosure subject to and without waiving its right to protect from disclosure any work product of Ford's attorneys, including mental impressions,

DEFENDANT FORD MOTOR COMPANY'S INITIAL
DISCLOSURE PURSUANT TO FRCP 26(f)(a)(1)

FILE COPY

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conclusions, opinions or legal theories of Ford's attorneys or other representatives concerning the litigation. In the spirit of cooperation and in an attempt to advance the goal of Federal Rule 26(a) to reduce expense and delay, Ford provides substantial disclosure at this time. Ford anticipates that it will not be able to identify additional documents, if any, until after Plaintiffs have specified their defect allegations through additional pleadings (if any), through any disclosure they may make under Federal Rule 26(a), and through discovery (particularly including expert discovery) in accordance with Federal Rules.

The substance of Plaintiff's claim appears to be that, Plaintiff's 1993 Lincoln Town Car on or about January 20, 2001, caught fire as a result of an alleged defect in the speed control deactivation switch. Based on this understanding of the Plaintiff's allegations, Ford provides the below disclosure regarding the speed control deactivation switch. Ford makes that disclosure without waiving any right or opportunity to assert a defense or otherwise present, at any time in this lawsuit, information - including information contained in any and all documents - addressing facts and issues other than those identified above. In addition, because Plaintiffs may assert, clarify, modify, or otherwise develop their defect theories in this lawsuit, Ford reserves the right, at any time in this litigation, to identify additional witnesses or documents, if any that pertain to any such theories.

In accordance with the Federal Rules, Ford provides the following disclosures:

- (A) The name and, if known, the address and telephone number of each individual likely to have discoverable information relevant to disputed facts alleged with particularity in the pleadings, identifying the subjects of the information:

Disclosure:

The speed control deactivation switch was designed and manufactured by defendant Texas Instruments. Ford believes one or more present or former Texas Instrument employees

1 will have information regarding the manufacturing processes utilized in the manufacture of the
2 switch in question.

3 Ford believes the following individuals may have knowledge of the fire and its
4 aftermath.

5 [REDACTED]
6 Federal Way, Washington
7 [REDACTED]

8 [REDACTED]
9 Federal Way, Washington
10 [REDACTED]

11 [REDACTED]
12 Federal Way, Washington
13 [REDACTED]

14 [REDACTED]
15 [REDACTED]
16 [REDACTED]
17 Federal Way, Washington
18 Bryan S. Peterson, Inspector, Federal Way Fire Department
19 31617 First Avenue South
20 Federal Way, Washington 98003
21 Tom Robinson, Detective, Federal Way Police Department
22 34008-9th Avenue South
23 Federal Way, Washington 98003
24 At this time, Ford is not aware of any other individuals with knowledge relevant to
25 disputed facts that are alleged with particularity in the pleadings.
26

- (B) A copy of, or a description by category and location of, all documents, data compilations, and tangible things in the possession, custody, or control of the party that are relevant to disputed facts alleged with particularity in the pleadings.

1 Disclosure:

2 Without waiving any objections as to relevance or admissibility at trial, Ford provides the
3 following disclosures:

4 Ford identifies the following materials pertaining to the subject 1993 Lincoln Town Car
5 vehicle:

- 6 • The Owner Guide that Ford provided with the subject 1993 Lincoln Town Car
7 vehicle, VIN 1LNLM81W0P[REDACTED]
- 8 • The Warranty Facts Booklet that Ford provided with the subject 1993 Lincoln Town
9 Car vehicle, VIN 1LNLM81W0P[REDACTED]
- 10 • The factory invoice for the subject 1993 Lincoln Town Car vehicle, VIN
11 1LNLM81W0P[REDACTED]
- 12 • Warranty records, if any, applicable to the subject 1993 Lincoln Town Car vehicle,
13 VIN 1LNLM81W0P[REDACTED]
- 14 • Representative national print advertising featuring the 1993 Lincoln Town Car
15 vehicle;
- 16 • The showroom brochure for the 1993 Lincoln Town Car vehicle;
- 17 • Recalls applicable to the subject 1993 Lincoln Town Car vehicle, VIN
18 1LNLM81W0P[REDACTED]
- 19 • Assembly drawing for the speed control deactivation switch installed on 1993
20 Lincoln Town Car vehicles;
- 21 • Relevant engineering specifications identified on the assembly drawing for the speed
22 control deactivation switch installed on 1993 Lincoln Town Car vehicles;
- 23 • A copy of the communications between the National Highway Traffic Safety
24 Administration and Ford regarding PB 98-055 pertaining to under the hood fires of
25 certain 1992 and 1993 Lincoln Town Car, Ford Crown Victoria and Mercury Grand
26 Marquis vehicles.

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2 Marquis vehicles. In addition, Ford states it will provide a copy of Appendix XV of
3 PR98-055 which contains confidential business information subject to protective
4 orders;

- 5 • Relevant pages from the Shop Manual which depict the speed control deactivation
6 switch which was installed on 1993 Lincoln Town Car vehicles;
7 • The Field Review Committee Report drafts dated, 5/3/99, 5/28/99, 8/3/99, and
8 9/14/99, entitled "1992 and 1993 Town Car, Crown Victoria and Grand Marquis
9 Speed Control Deactivation Switch";
10 • Recall campaign bulletin 99615 regarding the speed control deactivation switch
11 installed in certain 1993 Lincoln Town Car vehicles;
12 • Relevant portion of the Electrical & Vacuum Trouble-Shooting Manual pertaining to
13 the speed control deactivation switch which was installed on 1993 Lincoln Town
14 Car vehicles; and
15 • Ford also states that the Service Manuals and Electrical Vacuum and
16 Troubleshooting Manual for various model years and vehicles are available by
17 writing to Heini Incorporated, Publication Division, P.O. Box 07150, Detroit,
18 Michigan 48207. Toll-free telephone: 800-782-4356.

- 19 (C) A compilation of any category of damages claimed by the disclosing party, making
20 available for inspection and copying as under Rule 34 the documents or other evidentiary
21 material, not privileged or protected from disclosure, on which such computation is based,
22 including materials bearing on the nature and extent of injuries suffered; and

23 Disclosures:

24 Not applicable.

- 25 (D) For inspection and copying as under Rule 34 any insurance agreement under which any
26 person carrying on an insurance business may be liable to satisfy part or all of a

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1 judgment which may be entered in the action or to indemnify or reimburse for payments
2 made to satisfy the judgment.

3 Disclosure:

4 Ford states that it has sufficient resources to satisfy any judgment that reasonably could
5 be expected to be awarded as damages in this action.

6 DATED: December 7, 2001.

7
8 MILLS MEYERS SWARTLING
9 Attorneys for Defendant
10 Ford Motor Company

11 By: _____

12 David D. Swartling
13 WSBA No.: 6972
14 Raymond S. Weber
15 WSBA No.: 18207
16 Caryn Jorgensen
17 WSBA No.: 27514

18 CERTIFICATION

19 I hereby certify that on December 7, 2001, I: [] deposited in the mails of
the United States of America; [X] placed with legal messenger; [] found
a copy of the document to which this certification is attached for
delivery to all counsel of record.

20 _____
21 Linda McIntosh Wheeler
22 Legal Assistant to Raymond S. Weber
23 Mills Meyers Swartling

24
25
26 DEFENDANT FORD MOTOR COMPANY'S INITIAL
DISCLOSURE PURSUANT TO PRCP 26(0)(1) - 6

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2002-02-26-1

Defendant Ford Motor
Company's Expert Witness
Disclosures

Milwaukee

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September 30, 2002

VIA LEGAL MESSENGER

Thomas Dunford
Cozen & O'Connor
1201 Third Avenue, Suite 5200
Seattle, Washington 98111

Edgar G. Sargent
1201 Third Avenue, Suite 3100
Seattle, Washington 98101-3000

Re: *Allstate v. Ford/Texas Instruments*.
Superior Court of Washington for King County
Case No. 01-2-22371-2SEA

Dear Counsel:

Enclosed please find Expert Report, Curriculum Vitae, and
Publication/Testimony of the following:

Ralph Newell
Lee Swanger, Ph.D., P.E.
Mark Hoffman, Design Analysis Engineer

Ford may use a demonstrative exhibit consisting of an exemplar of the engine compartment of a Lincoln Town Car in connection with the testimony of one or more of these experts.

Very truly yours,

MILLS MEYERS SWARTLING

Raymond Weber

RSWlmw
Enclosures

3510.020

EM2-E25-A 8614

1
2 Honorable Robert S. Lasnik
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9
10 UNITED STATES DISTRICT COURT
11 WESTERN DISTRICT OF WASHINGTON
12 AT SEATTLE

13 ALLSTATE INSURANCE COMPANY, and
14 Illinois Corporation and NORTHLAND
15 INSURANCE COMPANY, a Minnesota
16 Corporation,

17 Plaintiffs,

18 vs.

19 FORD MOTOR COMPANY, a Delaware
20 corporation, and TEXAS INSTRUMENTS,
21 INC., a Delaware corporation,

22 Defendants.

23 NO. C01-1416L

24 DEFENDANT FORD MOTOR
25 COMPANY'S EXPERT WITNESS
DISCLOSURE

26 Defendant Ford Motor Company identifies the following individuals as potential
27 expert witnesses in this matter pursuant to FRCP 26(a)(2):

- 28 1. Walter Ralph Newell
29 Newell Investigative Services, Inc.
30 470-C Woods Mill Road
31 Gainesville, Georgia 30501
32 770.297.7138

33 Mr. Newell will testify regarding cause and origin of the fire as set forth in his
34 attached report.

- 35 2. Lee Swanger, Ph.D., P.E.
36 Exponent
37 4101 SW 71st Avenue
38 Miami, Florida 33155
39 305.661.1000

40 DEFENDANT FORD MOTOR COMPANY'S EXPERT WITNESS
41 DISCLOSURE (No. C01-1416L) - 1

42
43
44
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46 MILLS MEYERS SWARTLING
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48 SEATTLE, WASHINGTON 98101-3064
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51
52
53
54

55 202-625-7815

2 Dr. Swanger will testify regarding the speed control deactivation switch as set
forth in his attached report.
3

4 3. Mark Hoffman
5 Ford Motor Company
6 528 Parklane Towers West
7 Three Parklane Boulevard
8 Dearborn, MI 48126
9 313.323.7450

10 Mr. Hoffman will testify regarding the configuration of the Lincoln Town Car,
11 the condition of the garage, and the results of his inspection of the subject vehicle as set
12 for in his attached report.

13 4. Ford Motor Company reserves the right to elicit opinion testimony from
14 Ford Motor Company employees regarding the design, manufacture and testing of the
15 Lincoln Town Car.

16 5. Each of the experts disclosed above may be called to testify in response to
17 the opinions, methods and conclusions of plaintiff's experts. In addition, the expert
18 witnesses disclosed above may amend, alter or add to the opinions disclosed herein
19 upon review of additional information.

20 DATED: September 30, 2002.

21 MILLS MEYERS SWARTLING
22 Attorneys for Defendant
23 Ford Motor Company

24 By:

25 DAVID D. Swartling
WSBA No.: 6972
Raymond S. Weber
WSBA No.: 18207
Carlyn Geraghy Jorgensen
WSBA No.: 27514

DEFENDANT FORD MOTOR COMPANY'S EXPERT WITNESS
DISCLOSURE(No. C01-1416L) - 2

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CERTIFICATION

I hereby certify that on 7.20.07, I [] deposited in the mails of the United States of America; [] placed with legal messenger; I [] faxed a copy of the document to which this certification is attached for delivery to all counsel of record.


Mills Meyers, Certified Mail, CO-Keeler
Legal Assistant to David D. Swartling
Mills Meyers Swartling

DEFENDANT FORD MOTOR COMPANY'S EXPERT WITNESS
DISCLOSURE(No. C01-1416L) - 3

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Ford Motor Company

Ford Motor Company

Environmental & Safety Engineering
528 Parklane Towers West
Three Parklane Boulevard
Dearborn, Michigan 48126

September 24, 2002

Ray Weber
Mills Meyers & Swartling
1000 Second Avenue
30th Floor
Seattle, Washington 98104-1064

Subject: Engineering Report in the Allstate Insurance (Mejlumian) v. Ford Matter (Ford LMMS #44-1830)

MATERIALS USED:

The following materials were used in the preparation of this report:

- Photographs and observations made during the vehicle inspection and component disassembly events on October 23, 2001 and July 30, 2002, respectively.
- Fire scene inspection photographs supplied by Schaefer Engineering, Federal Way, Washington Fire Department, Fire Investigation Report on Incident #01-00489.
- Records from the Federal Way, Washington Department of Public Safety regarding Case Number 01-1036, received from them around February 2002.
- Various police and insurance documents describing two auto accidents involving the vehicle in this matter,
- Depositions of the following people: [REDACTED] and [REDACTED] taken on April 15, 2002, April 15, 2002 and May 9, 2002, respectively,
- Ford sales, warranty, service, and engineering records and documentation that pertain to the 1993 Model Year (MY) Lincoln Town Car involved in this matter,
- My 24+ years experience as an engineer in the automotive industry,
- My 3+ years of fire investigation experience, including instructing.

FIRE SCENE PHOTOGRAPH OBSERVATIONS:

The photographs supplied to me indicate that the dwelling at [REDACTED] in Federal Way, Washington experienced a fire that originated in the garage area of the structure. The fire caused heavy damage to the interior of the garage, consumed most of

the roof above the garage, melted the siding to the exterior of the second story wall above the garage that is approximately half way back on the structure from the garage door opening, and damaged portions of the second story roof on the portion of the structure directly above the garage area.

The interior of the garage contained two motor vehicles which were heavily damaged, a recess in the wall at the rear, left corner (looking into the garage doors from the driveway) that contained a gas fueled furnace and a gas fueled water heater, the electrical service panel on the right side wall (the underground service enters the dwelling at this point through the outside of the garage wall where the meter is located), two garage doors with electric powered openers, and a small amount of other debris that is not identifiable from the photographs provided but does appear to include some cans of paint.

The owners identified the vehicles later as a 1993 MY Lincoln Town Car and a 1996 MY Chevrolet Camaro. The Town Car was parked in the left bay and the Camaro in the right bay as one looks into the garage doors from the street. The Town Car, the furnace, the water heater, the garage door openers, and other debris were collected and retained.

As a result of the fire suppression efforts, the wallboard in the garage was torn down. The garage wall studs appear to have little to no heat or fire damage. This is also true of most of the wall wiring and plastic plumbing drain pipes. The pedestrian door in the rear left portion of the garage, adjacent to the water heater, is not clearly depicted in the photographs but the opening appears to have allowed very little fire penetration into the adjoining laundry room. The ceiling wallboard and some insulation were also pulled and showed that the ceiling area above the left rear quadrant of the garage (as viewed looking into the garage from the street) sustained little to no fire or heat penetration through the wallboard. There were signs of fire and heat penetration in the ceiling area above the furnace and water heater, where exhaust tubes from these appliances pass through, toward the roof. The photographs also indicate that the remaining ceiling area of the garage, all the way across the front, approximately half way back and all the way along the right side of the garage was consumed in the fire, along with the roof risers, sheathing and shingles mentioned earlier.

The floor of the garage exhibited several locations where spalling of the concrete had occurred or material deposits had adhered. Most of these areas are not clearly located in the photographs provided but some of them appear to be located around the rear of both motor vehicles, either near the tires or the gasoline tanks/filler pipes. The remains of a rug were also recovered and stored. Based on materials found adhering to it, the rug appears to have been located on the floor underneath the front portion of the Lincoln Town Car. The rug was partially consumed on the end that appears to have been located under the engine compartment.

WITNESS AND PUBLIC SAFETY STATEMENTS AND REPORTS:

Various statements, including deposition transcripts, given by the homeowners and residents, their neighbor across the street, and reports from fire and police personnel were reviewed. The following statements are facts represented in these statements/documents:

1. [REDACTED] and [REDACTED] reported that the fire was discovered around 10:15 PM PST, January 20, 2001.
2. Federal Way Fire Department's Fire Incident Report states that initial dispatch occurred at 10:26 PM and arrival time was 10:34 PM. The narrative in this report by the first-in fire fighters stated that they could see flame and smoke from approximately a $\frac{1}{2}$ mile south during their approach.
3. [REDACTED] reported that the family became aware of the fire when they observed smoke in the family room and heard two loud noises, like doors being slammed. They investigated and when they opened the pedestrian door from the laundry room to the garage he told Detective Robinson of the Federal Way Police that they saw, "...very thick smoke all through the garage and fire burning near the front tires of both Lincoln tires. I immediately opened the garage door for the Lincoln and ran around to outside....open the door for the Camaro, but the door would not open."
4. [REDACTED] said, "I then opened the garage door and I saw thick smoke and fire near the front of the Lincoln, by the heater".
5. [REDACTED] also reported, "I did not notice the fuel doors open on either car, and the Lincoln has a lock cap which I have the sole key for. Both vehicles had front and back license plates on them".
6. The neighbor across the street reported that while he was upstairs that night, he heard popping and crackling sounds that made him look out the front upstairs window and he saw fire in the [REDACTED] garage, through the left side door, that was open at that time. He further reported seeing a hose-like object on the garage floor, running along the side of the Lincoln from approximately the rear axle to the front axle.
7. [REDACTED] explained in her deposition that the hose-like object on the garage floor to the left of the Town Car was a regular green garden hose. The hose was normally hung on the wall along the front driver's side of the Town Car and was either not fully replaced on its hook or had already started to fall off the hook when she saw it from outside.
8. The neighbor also reported seeing a bright blue flame between the Town Car and the left side wall of the garage.
9. Investigating Officer S. Lunt, ID [REDACTED] reported that gas caps were open on both vehicles and that both rear and front license plates were missing.
10. Detective Tom Robinson reported that license plates were never uncovered, even after sifting through debris looking for them.
11. Detective Robinson also reported that the wooden step at the pedestrian door in the left back corner of the garage (directly in front of the driver's side of the Town Car) was charred but still intact.
12. The vehicle in question in this matter was involved in two frontal collisions, one in September 1999 when the vehicle had 177,797 Miles on it and another in March 2000 when the vehicle had 214,825 Miles. Both accidents required repairs and part replacements to the front structure of the vehicle.

VEHICLE INSPECTION OBSERVATIONS:

The remains of the 1996MY Camaro involved in this matter were not part of my vehicle inspection, only the 1993MY Town Car. However, the scene photographs did contain some pictures of the Camaro. The Camaro exhibited severe fire damage, mainly due to the use of plastic composite body panels for the front fenders and doors. All the plastic body panels were consumed, most of the interior was consumed, and the front and rear lamp panels were consumed.

The rear tires were almost totally consumed with the driver's side tire being more heavily damaged, including almost complete melting of the aluminum wheel. The front tires were not totally consumed and neither wheel exhibited much melting.

The engine compartment and underbody of the Camaro were not photographed. The location of the Camaro remains is unknown.

The exterior of the Town Car exhibited severe fire damage. Virtually all of the finish coat, primer coat, and e-coat were consumed in the fire. There were portions of the plastic grille opening panel still remaining on the front of the vehicle, around both headlamp areas. The remains of the hood showed red oxidation, a sign that the part was made of steel. The production hood for the 1998MY Town Car was made of aluminum, not steel. This is an indication that a non-standard, aftermarket hood had been put on this vehicle as part of repair work required after the frontal collisions.

The driver's side front wheel & tire exhibited the most fire damage (tire consumed, wheel partially melted), the passenger's side front wheel exhibited the least amount of heat damage with little or no wheel melting and a portion of the tire perimeter remaining. The passenger's side rear wheel exhibited almost as much damage as the driver's side front with most of the tire consumed and some wheel melting. The driver's side rear wheel was similar to the passenger's side front with no wheel melting and portions of the tire remaining.

The interior of the vehicle also exhibited severe fire damage, however to a lesser degree. Some charred and/or partially melted plastic components were found, mostly in the lower portions of the interior.

The engine compartment was severely damaged by the fire. Almost all combustibles on the driver's side, in the lower half of the compartment were consumed. Some of the aluminum components in this area were melted down. Some combustibles mounted higher up in this region, such as the brake booster vacuum feed rubber grommet and the steering shaft dashpanel seal, were not totally consumed.

Aluminum and some plastic materials along the front and passenger's side of the compartment were only partially melted/consumed. The headlamp housings on the very front end of the vehicle were only partially consumed.

The area directly behind the throttle body on the center of the engine and the dash panel exhibit signs of higher heat/fire damage. The sound/heat insulator on the dashpanel is

totally consumed to what appears to be about the top of the transmission housing and the aluminum throttle body shows melting along its rearward side. These observations are indications of fire and/or heat coming up into the engine compartment from underneath.

SPEED CONTROL DEACTIVATION SWITCH DIS-ASSEMBLY OBSERVATIONS:

The remains of the Speed Control Deactivation Switch Assembly from the 1993MY Town Car were recovered from the vehicle and the debris collected from below the vehicle. The top (electrical connector and switch contact housing portion, made mostly of plastic) of the assembly was found on the vehicle frame rail on the driver's side of the engine compartment directly below the brake booster. This piece of the assembly was X-rayed and those exposures were available during the dis-assembly event.

The bottom (the pressure sensing portion, made of steel and plastic parts) of the assembly was reportedly found by sifting fall-down debris recovered from under the vehicle. The bottom of the assembly was also inspected and dis-assembled during this event. The aluminum retaining ring that holds the top and bottom halves together was partially melted and deformed by the fire. The manufacturing date code on this ring was determined to be November 6, 1992 after cleaning and under microscopic examination. The remaining parts of this portion of the assembly exhibited heavy rusting/corrosion of the steel pieces. When the rest of this portion was cut open, it was found that the o-ring and Kapton seals inside the pressure-sensing chamber were almost entirely consumed by the heat from the fire event.

TECHNICAL FACTS & OBSERVATIONS:

(A) APPLIANCES

1. The appliances in the area of origin are fueled by natural gas. The iron pipe gas line feeding the furnace extended up through the concrete pad in the garage area in front of the furnace. The water heater feed pipe came around from behind the heater. Both appliances were connected to these solid feed pipes by flexible metal gas lines.
2. Both appliances in the area of origin had pilot lights to ignite the main burners.
3. Natural gas is in vapor form above -258 degrees Fahrenheit and is lighter than air.
4. It is unclear from the scene photographs provided whether the furnace or water heater gas supply lines had appropriate sediment traps/drain legs in their installation.
5. It is unclear from the pictures provided whether the burner area of the water heater was mounted at a sufficient height from the floor to protect against corrosion due to water intrusion.
6. It is unclear from the pictures provided whether the furnace draft hood and exhaust pipes were performing as intended.

(B) THE TOWN CAR

1. Gasoline forms vapor at temperatures above -40 degrees Fahrenheit and the vapor is lighter than air.
2. There was evidence on the engine compartment fuse box input post (which is connected directly to the battery and alternator of the vehicle) that unknown aftermarket wiring of insufficient wire size had been added to the vehicle at this location at some time in the past. This wiring was virtually destroyed in the fire but the remains left an indication of high temperature damage that may have been caused by electric arcing due to a short circuit in an unfused circuit.
3. The location where the switch-contact-half of the speed control deactivation switch was found is consistent with its production position in the vehicle (the switch is mounted facing forward and upward in the vehicle, at a 45 degree angle, in the top of one of the two rear brake line proportioning valves located in the engine compartment, on the driver's side frame rail, at the base of the dashpanel, directly in front of the driver's position) and the fact that it had been involved in a fire.
4. The pressure-sensing-half of the speed control deactivation switch had fallen to the ground because the aluminum rear brake line proportioning valve assembly on which it is mounted in production, melted down during the fire.
5. The X-rays of the switch-contact-half of the component show evidence that the electrical contacts of the switch experienced arcing and partial destruction of the brass contact arms. The remains of the metal parts were partially encased within melted plastic from the surrounding switch housing and connector remains.
6. The face of the pressure-sensing-half of the component (that faces the electrical contacts in normal production position) contained what appeared to be melted brass deposits adhering to it.

(C) OTHER

1. The rug that was reportedly on the garage floor under the Town Car to absorb fluid leaks (assumed to be engine oil), exhibits areas of total consumption and contains the remains of vehicle componentry (such as the load leveling compressor and pump, remains of the radiator mounting hardware and remains of the metal screen portion of the air filter) that indicates the fire burned the rug from the outer edge inward, in the general area of the front bumper and to a lesser degree below the rear of the engine, where the absorbed fluid leak may have been concentrated.
2. First-in firefighters used deck-mounted water cannon to begin extinguishing upon arrival. They requested utilities shut-off after initial knock down. They did not mention whether they noticed gas or gasoline leaks.

CONCLUSIONS:

Speed Control Deactivation Switch

It is my opinion that the speed control deactivation switch was a victim of this fire, not it's cause. The high amount of plastic remains of the switch itself and other plastic/rubber component remains in the vicinity of the switch's mounting location are inconsistent with a fire originating inside the switch and following the physics of fire by burning upward and outward from its origin.

The melted brass remains on the steel pieces of the switch and the contact remains in the plastic housing indicate that a very hot, very fast arcing occurred, which is inconsistent with the failure mode of this switch that might result in a fire. The failure mode typically involves long-term corrosion of the brass pieces and a slow-acting electric conductive path (also referred to as a resistive short circuit) to ground that leaves evidence of plating of brass onto the entire surface area of the steel parts, not the globules of brass found in this case.

The globules and the rough melted edges of the contact remains indicate a low to near zero resistance short circuit that must have occurred due to the switch melting, sagging and contacting a grounded surface as a result of fire damage, along with other electrical components like wire insulation and fuses. If this type of short circuit had occurred without the fire damage present, the vehicle's fusing system would have opened to disconnect the circuit.

Other Possible Vehicle Sources

There are two observations of the vehicle and garage remains that could be possible causes of this fire. One is the aftermarket wiring found on the power distribution box on the passenger's side of the engine compartment. The remains of this wire indicate that a small gauge wire with no fuse protection between it and the battery had been connected to this vehicle. The wire was so destroyed by the fire event it was impossible to determine where it went in the vehicle. An unfused wire is a potential ignition source for a fire.

The other possibility is the fact that a rug underneath the vehicle was being used to absorb unknown fluid leaks. This is an indication of improper maintenance or complete lack of maintenance. In an 8 year old vehicle that has somewhere around 250,000 to 300,000 miles on it, regular, routine maintenance, as well as replacement of worn out components, is essential to its safe and comfortable operation.

Other Possible Scenarios

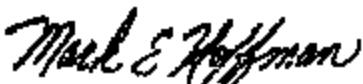
It is evident from various eyewitness accounts and damage to various items from the garage that the gas lines and accompanying appliances are possible sources for the cause of this fire. It appears in the photographs supplied to me that the gas lines may not have had proper drain legs in them and the water heater may not have had sufficient clearance off the floor. Both of these areas are indications of improper installation techniques that do

not meet codes in certain municipalities. Both are known to be possible causes for gas pressure control and/or gas leak faults, both of which could lead to a fire in the presence of pilot and/or electric ignition of other gas powered appliances, as found in this case.

The gas feed lines were not removed for later inspection and have been lost/ altered. The gas regulators, pilots, burners and other pieces within the appliances are still available but have been moved about quite a bit and have not been further dis-assembled or analyzed.

Another possible scenario is one that seems to have been part of an initial investigation by the local fire and police authorities and that is arson. It does not appear that there is sufficient evidence in this case for this to be a highly probable scenario, especially since the garage doors were reportedly closed when the fire was discovered, but at this time, it cannot be removed as a possible cause.

I reserve the right to update this report as new information becomes available.



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