EA02-025

FORD 10/27/03

APPENDIX N

BOOK 33 OF 61

PART 2 OF 6

you've got a blown brake light fuse --

A. Uh-huh.

Q. -- and your cruise control won't work, then you don't need to turn it off.

A. If you have a blown brake lamp fuse --

Q. Yeah.

A. Okay. -- then speed control won't work, that's correct. But that's because the speed control is wired to the brake lamp. If you were going to wire it to something else that you could control with the ignition switch, then when the brake lamp fuse would blow, speed control would continue to work.

Q. That's assuming if it was wired up like that. But it's not?

A. But it's not.

Q. That is, if Ford would've chosen that circuitry design?

A. If Ford had chosen that alternative circuitry design, that -- that would be what happened.

Q. Are there any Ford vehicles today that are designed where the speed control deactivation switch is wired hot at all times?

A. Yes.

Q. How many? All of them?
A. Yes.
Q. There is not one Ford vehicle produced that does not have the speed control deactivation switch wired hot?
A. You may be able to find a couple of exceptions to that. But generally speaking, they are all wired hot.
Q. And do they all have a 15-amp fuse that operates them?
A. Some of them may have a 20-amp fuse.
Q. And you say that is because it operates brake lights and you need that kind of amperage to operate the brake lights?
A. Yes.
Q. Ford's never considered doing some kind of separate fuse circuit going to the deactivation switch?
A. The -- Actually, no.
Q. Is there a problem with doing that? You know, the wire that comes out of the fuse block that comes off with a 15-amp fuse and goes down to the speed control deactivation switch, what you -- is there anything prohibiting someone putting an in-line fuse on that wire to reduce the amount of

amp load that goes to the deactivation switch?

A. There wouldn't be a problem with doing that; although, the question would be: Why would you be doing that?

Q. I don't know. I though that you needed a certain number of amps to cause a fire.

A. We don't know what that is.

Q. And that's because Ford hasn't looked at that issue, has it?

A. We haven't been able to determine what that would be.

Q. Okay. But we do know that the way it is now at 15 amps, that is sufficient to cause fire, right?

A. If there's a defect in the switch.

Q. All right. If we've got fuel, which is caused by the defect in the switch?

A. Uh-huh.

Q. The brake fluid, right?

A. Right.

Q. I understand that. We've got to have all three: Voltage, amps and fuel and heat, which is caused by the defect. I just want to make sure that Ford hasn't considered any other amp -- amper source or level to that switch.

A. Again, to say Ford hasn't considered any other, I -- Really, as part of the investigation we were looking at what some of the other alternatives were. You know, one -- one that thought is would be to have something that would eliminate the current to that switch, such as a relay. But again, that -- based on the other vehicles, that is not a -- that is not the cause.

Q. All right. Now, you're saying, other vehicles. You're talking about --

A. Other Ford vehicles.

Q. Other Ford vehicles that have 15-amp fuses that are wired hot at all times and has speed control deactivation switches?

A. Yes.

Q. What is different about -- about the recalled vehicles' switches? Is it just the manufacturing defect?

A. Yes.

Q. The crimping pressure?

A. That could be one of the things.

Q. Is there anything else different about the Ford vehicles that you've looked at Ford to determine what it -- The orientation of the switch, does that have anything to do with it?

A. We considered orientation as a possibility, but the orientation of the switch is the same in the '94, '95, '96, '97 Town Car, Crown Vic, Grand Marquis and those don't have a problem. There are other differences in switches on different vehicles, being the plastic that was used in the switch body, that maybe the pressure that the switch switches at; and again, you know, those aren't -- those are not happening on other vehicles.

Q. The operating temperature?

A. The operating temperature for, you know, the Town Car, Crown Vic, Grand Marquis was essentially the same from '93 -- or '92 through '97.

Q. And did Ford ever conduct -- I think we had seen some heat studies done in a wind tunnel. Does Ford have some kind of a setup like that?

A. There is some studies, I understand, that are done like that.

Q. And did Ford ever do such a study with a thermister -- a thermometer or a thermister attached to the speed control deactivation switch to determine if the specifications for the switch would be exceeded during a normal operation of a Panther platform vehicle?

A. I -- I recall having seen a document that

showed that there were some temperature studies that were done. I don't believe there was an thermister placed directly on the speed control deactivation switch, but there was one nearby.

Q. So we don't know -- Ford doesn't know what if temperature is that -- the temperature that the switch experiences during the normal operation of the Panther platform vehicle in South Texas, for example?

A. Not specifically exactly, no.

Q. Ford never conducted a road test to see if the temperature at the speed control deactivation switch was -- that exceeded the specifications at any time, has it?

A. The -- Not -- Not specifically the speed control deactivation switch. Again, there were thermisters in the area that did not indicate that there would be a problem in that direction.

Q. But Texas Instruments supplies the switch which has a limited operation temperature?

A. Uh-huh.

Q. Correct?

A. Uh-huh. Yes. Excuse me.

Q. And it's important, isn't it, that when Ford receives parts from its suppliers; that the

parts aren't subjected to some kind of a condition that is outside what the supplier expects the part to be exposed to. Would that be fair to say?

A. Yes, that would.

Q. Now, the places that Ford looked at temperature, could you tell us where it is on the vehicle that the temperature was monitored on the Panther platform vehicles?

A. I don't recall exactly where it was. It was a device. I believe it was a few inches away from the speed control deactivation switch.

Q. All right. Was it a shifter cable?

A. I don't remember what it was.

Q. All right. Well, just a few inches away is also an exhaust manifold; isn't it?

A. Yes, it may be.

Q. Is there a heat shield between the exhaust manifold and the speed control deactivation switch?

A. I don't know what the design is there.

Q. That's important though, isn't it, to know about what the temperature is of that switch while it's in normal operation?

A. The place where they measured the temperature was, I understand, within the range that the speed control deactivation switch would've seen.

And if that's the case, then the temperature of the speed control deactivation would be less than whatever was measured there.

Q. All right. Did Ford -- Did Ford ever communicate with Texas Instruments about what it expected the temperature range of the switch to be exposed to on the Panther platform vehicles?

A. Other than what was in the specification, I don't know that they did.

Q. Okay. So whatever it says in the specification, that's the number that Ford wanted T.I. to rely upon to supply a switch that would perform properly?

A. That would be the -- the initial basis, yes.

Q. All right. And what about electrical conditions of the switch, did Ford communicate to T.I. that the switch would be wired hot at all times?

A. I wasn't really part of the design team at the time, but I understand that they did.

Q. And what about the current loads, the 15-amp?

A. I believe that -- in the Highlights there was actually a test that asked to see if the current

up to 30 amps could be handled by the switch.

Q. Did T.I. ever make any suggestions to Ford -- I mean, from the very beginning of the development of this switch to present, for any kind of a change in the circuitry that operates the speed control switch?

A. I don't know that they did.

Q. It wasn't communicated to you?

A. Certainly wasn't communicated to me. But I wasn't there at the time of the design.

Q. Well, not just the design. I mean, from any time from the design of the switch back in the late '80s to present.

A. During the investigation they suggested -- they were in favor of the relay in the circuit.

Q. And did they -- T.I. say why?

A. That that would be to turn off the power when the ignition was off.

MR. JOLLY: Pass the witness.

MR. MANSKE: Now a good time for a break?

MR. MAYER: Okay.

E X A M I N A T I O N

Q. (BY MS. WEINER) Mr. Porter, my name is Monique. We introduced ourselves before the

deposition began. I represent Du Pont in this case. I'd like to discuss with you your testimony that the -- that -- as I understand it, as Ford sits here today, the root cause of the fire as far as Ford is concerned in 1992 Lincoln Town Cars and I'll restrict my questions to that, because that's what was involved in the Campbell case. The root cause of the fire is that the Kapton leaks; is that right?

A. That there's a leakage path through the Kapton.

Q. Okay. How, in Ford's opinion, did that leak come about?

A. We don't have a clear understanding of that.

Q. Okay. Has any of Ford's investigation to date been able to narrow it down to some possibilities as to what -- what the leak --

A. No.

Q. -- mechanism may be?

A. No.

Q. Okay. There's been some discussion and Mr. Jolly asked you some questions about the manufacturing process that T.I. had for the pressure control deactivation switches and that that manufacturing process may have had a defect that

allowed the Kapton to leak. Is that Ford's understanding?

A. That would be one of the possibilities.

Q. Okay. And I think, in your testimony you specifically referenced a manufacturing defect on the part of T.I.; is that correct?

A. Well, I think that -- I think I mentioned a couple of things that we understand may have happened at Texas Instrument during that time.

Q. Okay. Explain those to me, what Ford's perspective is as far as what was happening at T.I. during the time. And tell me first, when you say during that time, what time period are you talking about?

A. It would be the 1992 time frame.

Q. The entire year?

A. Again, really, our perspective, our insight into that time is T.I.'s Highlight documents. And really, we only have what that says as far as to what may have been going on at Texas Instrument at the time.

Q. Okay. Give for me, if you can, the recall period. What does Ford consider the recall period as far as when the switches were manufactured?

A. Our only real ability is looking at -- at

identifying the recall period is from the trend data. And that would make it switches that were potentially built prior to November of 1992.

Q. Going back how far?

A. To the start of the switches.

Q. And what year?

A. I believe T.I. started producing switches for Ford at the end of 1991.

Q. So the end of 1991, whatever month it was that T.I. began producing switches for Ford up until November of 1992, that is the recall population as far as Ford understands it?

A. That's the recall population of vehicles, right.

Q. Okay. The recall populations as you have just described it would include speed control deactivation switches that were manufactured by T.I. both on their automated crimping process and on their manual crimping process, right?

A. That was included, yes.

Q. Okay. Backing up some of my questions, I had asked you, as far as Ford is concerned about the manufacturing defects -- And we'll just say it that way -- as far as T.I. and with the productions of the switches, what manufacturing defects, if any, is

Ford specifically looking at in the T.I. process as the cause for these fires?

A. The areas, again, identified in the Texas Instruments Highlights that they specifically mentioned for failures in the Kapton had to do, I think there was -- crimp pressure was one of the identified items, the placement of a gasket seal was identified. I guess I'd have to look specifically at some of the Highlight documents as to if there were any others, but I do recall those two specifically.

Q. Okay. So I want to make sure I understand your testimony correctly. Ford is looking at possible manufacturing defects as the root cause of this problem beyond simply the period of time where T.I. had the automated versus manual crimping, the 90-day period that they had a variance for Ford to do manual crimping versus automated crimping; is that right?

A. The -- The trend data and the parts returned from the field appears though that the defect was -- was essentially, if not solely, in the automated time period.

Q. Okay. So the information you're getting back or that Ford's getting back as a result of

looking at the switches in the fields is that there were more fires; is that right, fires or were they just defects?

A. Well, the -- the data that we were looking -- that we were looking at for the trend data was specifically looking at fires that -- that could've been associated with the brake pressure switch. The field data or the field parts that we looked at coming back were not necessarily fires. But switches that had some thermal anomaly such as the plastic had deformed from heat.

Q. So the population of switches that you're looking at as far as defects to analyze what may have been causing some problem in the cars is not limited totally to just fires; it could be any kind of thermal anomaly, as you said?

A. Correct.

Q. And as far as Ford's investigation, the number of incidents with the switches actually increased after T.I. started the automated crimping process in March of '92?

A. That appears to be the case in some of the analysis, but it's not clear that that's necessarily the break-off point.

Q. So at this point -- I just want to make

sure that I understand correctly -- Ford can't limit itself to saying that the manufacturing defect was a result of the manual variance in the crimping process during the limited 90-day period?

A. No.

Q. So that is correct, they cannot limit themselves in that regard?

A. Correct.

MS. WEINER: Can I borrow the Hi-Stat exhibits?

MR. MAYER: Yeah.

Q. You were asked some questions about Exhibits 3 and 4, which are the Hi-Stat test results. Can you explain for me who Hi-Stat is and who hired them to do this testing for Ford?

A. Hi-Stat is a company in Lexington, Ohio that also can -- or makes pressure switches similar to T.I.'s product; not exactly the same. We asked them to do a comparison -- or not a comparison -- but to run a test to some T.I. parts to see what the -- to see how their activities, that is, Hi-Stat's test, would effect what the T.I. parts looked like from a reliability point.

Q. Before this testing was done by Hi-Stat, is Hi-Stat a supplier to Ford Motor Company or were

they a supplier beforehand of certain products and components? Does Ford buy their products?

A. Hi-Stat is a supplier to Ford of some products.

Q. Okay. Is Hi-Stat a competitor of Texas Instruments?

A. I understand that they are.

Q. And Hi-Stat has just recently in September of this year done the testing that you described. And as I understand your testimony regarding the test results, the Kapton diaphragms did not -- with the exception of one, all of them failed before the 500,000 life cycle test was completed?

A. From the testing here, it says that yes, all of them had a leak prior to 500,000 cycles except for one.

Q. Okay. Part of your job as -- I'll just put it in the vernacular -- leading up the Ford investigative group, with regard to these -- you know, the failures in these switches, your group put together the field review committee report --

A. Yes.

Q. -- is that right?

A. Yes.

Q. And this was put out sometime in mid 1999;

is that right?

A. Yes.

Q. I apologize. I'm going to probably you my document that's got stickies and highlights and things, but at least we can talk about the same document. Were you basically responsible for putting out this report, the field review committee report?

A. Yes.

Q. Mine has a draft date of 5-28-99. Do you know if there was anything later than that?

A. I don't know what the most recent date is.

Q. Okay. Is that a document that you continue to update and make changes to as Ford learns more about the case?

A. We would update it as we learn more, although the last update Has been some time ago.

Q. Can you give me a period, months or years? Do you recall vaguely when the last update would've been?

A. This may, in fact, be the last update.

Q. Okay.

A. I don't know that.

Q. Okay. Assuming this is the last update, this draft, 5-28-99 -- And just for purposes of the

record, the Bates number is 37136132 through 37136161, produced by Ford.

MR. FEENEY: Monique, why don't you just put an exhibit sticker on that.

MS. WEINER: Okay. Is our next one No. 5? And what we'll do is, we can just get a copy of this so I can take mine back. Let's just do it that way.

(Exhibit No. 5 marked.)

Q. Attachment 4 to Exhibit 5 -- And it's -- the page is 37136147 -- The attachments references that during the tests that were done, I guess, on the speed control deactivation switch, is that right, to see under what circumstances they may fail.

A. Yes.

Q. Do you recall that?

A. Uh-huh.

Q. And feel free to look at the entire discussion of the testing. But the results that are put forth in this Ford document, as of May of 1999, states that the Kapton seal exceeds the design specification of 500,000 life cycles. Do you recall that to be Ford's conclusion as a result at the end of it testing in May of 1999?

A. That was the conclusion for those parts that were tested that were also produced in -- it was probably 1990 to 1999.

Q. So what you're telling me is, the parts that were tested that were part of your field review committee report were not necessarily the recall population; is that right.

A. That's right.

Q. And you don't know for sure that this Hi-Stat testing was necessarily the recall population either, right?

A. It probably was not the recall population.

Q. Okay. Do you have any explanation for why in Ford's testing the Kapton seal would've exceeded the life cycle specification that Ford gave and in the Hi-Stat testing it did not pass that life cycle specification?

A. The explanation might be that the Hi-Stat test may have actually been run at a higher temperature than the specification.

Q. Okay. Do you know the actual temperature that the Hi-Stat tests were run at?

A. No, I do not.

Q. Do you recall what the Ford specification temperature was?

A. It says here on Exhibit 3, 135 degrees, plus or minus 14.

Q. And the Ford specification temperature was what -- the tests were run that the results are included in the field committee report; is that right?

A. The field committee report results were actually run by Texas Instruments.

Q. But Ford accepted those results as consistent with what they were looking at in the investigation as far as whether the Kapton diaphragm met the specifications that Ford and T.I. had put forward in connection with the speed control deactivation switch?

A. For the parts built at that time, yes.

Q. Do you know why Hi-Stat would've tested the Kapton at a higher temperature than the Ford specification?

A. I don't know why they would've done that, no.

Q. And that would've affected -- And Ford would expect that that would affect the life cycle of the Kapton diaphragm; is that right, the temperature?

A. I don't know that Ford would expect that

either way. But that certainly could be an explanation.

Q. Okay. Are there any other explanations that you know of as to why the Kapton diaphragm would've passed in the field review committee testing that was done by T.I. and not on the Hi-Stat?

A. Not that I could put my finger on, no.

Q. Do you know if any tests have been run to verify that the Kapton diaphragm passed the 500,000 life cycle specification from the recall population of switches? Do you know if any tests have been run on those switches?

A. Just from the summaries that were provided by Texas Instrument.

Q. The Highlights documents?

A. They -- During our investigation we asked them if they had test data from that time period and they provided some summaries of that.

A. Okay. Part of Ford's specification was that the speed control deactivation switches manufactured by Texas Instruments had to pass the 500,000 life cycle specification in order to be installed on the Ford vehicles, right?

A. That's correct.

Q. And so presumably, Ford verified before any switches were put on any Ford vehicles that those switches had passed the 500,000 life cycle test, correct?

A. It would've been Texas Instruments' testing that would've been that verification.

Q. And Ford accepted that testing as the verification that those -- even those switches in the recall population had, in fact, passed that testing, correct?

A. Again, you'd have to refer to somebody who was there at the time, but that would be the standard procedure, I would think.

Q. Okay. When you say, refer to somebody who was there at the time, are you talking about from Ford or T.I.'s perspective?

A. From Ford.

Q. Okay. Who would that have been?

A. That would've been some of the supervisors or engineers at the time.

Q. Do you recall specific names?

A. Let's see. There's, I think -- Well, there's a truck supervisor who was there, Niru Modi.

Q. I'm sorry?

A. Niru Modi.

THE COURT REPORTER: Spell it, please.

THE WITNESS: I think it's N-I-R-U M-O-D-I.

Q. And he would've been involved in the verification that the switches manufactured by T.I. had, in fact, passed the 500,000 life cycle specification test?

A. He would've been involved with reviewing what information they might've had.

Q. On that issue?

A. On that issue.

Q. And he's an employee -- Is he a current employees of Ford?

A. No, he's not.

Q. Do you know when he left the company?

A. I don't know exactly, but I think it was a few years ago.

Q. Do you know where he is now?

A. I think he's retired.

Q. When you received the letter from the National Transportation and Highway Safety Administration with regard -- that, I guess, started the whole investigation; is that right?

A. Again, I didn't receive the letter. But

from -- generically, Fort Motor Company received the letter.

Q. Okay.

A. That is what started my investigation.

Q. And Ford may have had some investigation going on before that?

A. I don't know that.

Q. You're not aware of that personally?

A. No.

Q. Okay. Did the National Highway Transportation and Safety Administration's focus on the brake pressure switch give you an idea of where to start your analysis?

A. Well, yes. My team was specifically assigned to look at the brake pressure switch because of the NHTSA letter.

Q. And what's why -- Was any another component of the car or anything else looked at besides the brake brick pressure switch?

A. I believe the NHTSA had identified three other possible components.

Q. Okay. And what were those?

A. I guess I'd prefer referring to their letter exactly.

Q. Okay. You don't recall off the top of

your head?

A. I can guess, but I'm not sure what the wording was that they used was.

Q. Okay. Did Ford also investigate those three other components to see if they were a potential cause of these fires?

A. There was -- There was another team that looked at those, yes.

Q. Okay. And do you know what the conclusions of the other team were with regard to the three other components?

A. I believe that the results pretty much stand by themselves in that the trend data did not show that those were -- were factors.

Q. So as far as Ford was concerned, the trend data only showed that the brake pressure switch may have been a factor in the fires?

A. Yes.

Q. You discussed a little bit the testing that was done by Texas Instruments to put foreign substances into the switch to see what could possibly corrode the switch or lead to a fire. My understanding of the Texas Instruments' testing is that the majority of the applications where they could induce a fire, if you want to put it that

way --

A. Uh-huh.

Q. -- were when they did the saltwater testing; is that right?

A. The saltwater testing was the test that T.I. was able to repeat on a regular basis.

Q. Okay. The tests regarding brake fluid, they were not able to repeat on a regular basis that the brake fluid would actually cause a fire?

A. The T.I. test using brake fluid, I'm not sure how many parts they ran. I think it was only a few parts and they stopped that testing at 250 hours.

Q. Okay. Is that a criticism that Ford have -- had -- or has that testing?

A. The tests that we ran, it took 500 hours.

Q. Okay. And you testified about that, that Ford ran its own tests with regard to brake fluid. And was Ford able to repeat testing, I guess, at 500 hours, that brake fluid would then result in a fire?

A. We're in the process of trying to do that.

Q. So as you sit here today, Ford has not been able to verify through validity testing or repeated testing that the brake fluid entering the electrical component would necessarily cause a fire?

A. That test is running as we are speaking today, yes.

Q. Okay. So you can't give me conclusions here today?

A. I can't give you a conclusion.

Q. Okay. In some of the documents that I've looked at, there's discussion that -- about chlorine. And maybe you can help me on the issue. Chlorine is only involved in the saltwater testing, there is no chlorine that would be included in brake fluid?

A. Again, I guess I'm not really understanding of all the chemistry that is involved. During our investigation we were looking at the possibility with the contamination as coming in through the connector and we thought that if that was the case, that there would be a large amounts of chlorine inside the switch if water gotten had in through the connector.

Q. Okay. And to date no chlorine has been found in the switches that has been returned to Ford for testing; is that right?

A. There has not been a significant amount of chlorine. There has been some chlorine that was -- that was found.

Q. But it was not enough that Ford considers that significant or a cause of the fires?

A. That's correct.

Q. Okay. You talked about the -- of the 15 or 20 switches you know that were involved in a thermal event that have been tested and analyzed by Ford, that all the switches have leaks in the Kapton. Do you recall that --

A. That's correct.

Q. -- testimony? Okay. Is there any way that Ford can verify that those leaks in the Kapton pre-existed the fire, that is, that the leaks in the Kapton were not caused by the fire, the thermal even, as a result of some other part?

A. I don't know how that would be defined.

Q. Has Ford tried to control for that in investigating -- In looking at the switches or running any tests on them, is there any way that Ford has been able to control for that, that the possibility that the leaks or the cracks in the Kapton developed as a result of the fire?

A. I don't know what the mechanism is that created the cracks in the Kapton.

Q. Okay. So the fact that there were leaks observed in the Kapton, has Ford been able to

necessarily say that those leaks are what caused the fire?

A. That those leaks are consistent with -- or in all of the cases that had thermal events and it's Ford's determination, that's part of the necessary ingredient to a fire.

Q. As far -- I understand that Ford's investigation is still ongoing and there may be, you know, certain specifics about the root cause of the speed control deactivation switch problem that Ford cannot answer. But as far as its current investigation today, is there anything as far as the bulk product, the Kapton, or the 500-FN131 product that was provided by Du Pont that was incorporated into the switch by Texas Instrument, is there anything with that Ford thinks was a problem that created the fires in the case outside of the manufacturing process that T.I. may have put into the mix, if you will?

A. We don't have any information on that.

Q. As you sit here today, does Ford have any criticisms of the bulk product, FN -- 500-FN131 supplied by Du Pont for this switch?

A. We wouldn't have any information on that either.

Q. Okay. Are you aware that that same product is used in switches manufactured by Texas Instruments that are in place in Ford vehicles today?

A. I -- I believe that's the case, yes.

Q. Ford has not ordered Texas Instruments or any other supplier to stop using 500-FN131 in any of its switches?

A. Not that I'm aware.

MS. WEINER: I think that's all I have. Pass the witness.

E X A M I N A T I O N

Q. (BY MR. MAYER) When Ford -- This -- It's Eric Mayer. When Ford decided to institute a recall in May of 1999, were you involved in what the suggested action was going to be for Ford's customers?

A. Yes.

Q. And was it your recommendation that Ford purchase 273,000 replacement switches from Texas Instruments to put in the vehicles?

A. If that's what the number is, yes.

Q. But you were in favor of that --

A. Yes.

Q. -- were you not, sir?

A. Yes.

Q. And you told your management that you thought that the correct action for Ford was to replace the switches; is that your testimony?

A. To replace the switches, yes.

Q. With identical switches manufactured by Texas Instruments?

MR. JOLLY: Object to form.

A. It would've been switches that were built by Texas Instrument in 1991.

Q. Okay. They were manufactured at a later date, but they were virtually identical to the switches that were removed from the cars, as far as you know?

A. I don't believe they were necessarily identical.

Q. What were the differences? Do you know?

A. The -- After the fact, based on the highlights?

Q. No. What were the differences in the switches that were installed in 1999 and 2000? What were the design changes, if any? Are you aware of any?

A. At that time?

Q. Yes.

A. What I know is is that the designs -- the design and/or process that T.I. used to build those switches after 1993 were not showing the defect.

Q. So you believe that you got a bad batch of switches from Texas Instruments at some time period in '91 and '92, that's Ford's position?

A. I'm not sure that I would restrict it to a batch of bad switches, yes.

Q. Let's talk a moment about the Campbell case. Am I correct that in this case, the Campbell case currently pending in Mississippi, the one that we're here in the deposition on, that you don't have any evidence to suggest that in that fire, a switch manufactured by Texas Instruments was the cause? Am I correct about that?

A. I'm not familiar with the Campbell case.

Q. But do you have any evidence to suggest that the fire originated in that vehicle at the Texas Instruments switch?

A. I'm not familiar with the Campbell case.

Q. Do you know what the position of Ford Motor Company is in that litigation that we're here on today?

A. No, I do not.

Q. Would it surprise you if the position of

Ford Motor Company and its experts are that the fire in the Campbell vehicle originated at the battery?

A. No, it would not.

Q. Have you heard that from anyone?

A. I have not heard that.

Q. Why would that not surprise you, that the fire originated at the battery, Mr. Porter?

A. Because that may be what the fire investigation may have come up with.

Q. And you've seen that in other vehicles, have you not?

A. I haven't really seen other vehicle fires.

Q. Have you been involved in any other vehicle fire investigations for Ford or is this your first one?

A. This would be my first one.

Q. Do you have any evidence, Mr. Porter, to suggest that the Texas Instruments switch installed in the Campbell's vehicle caused the fire?

A. I do not have any information on that.

Q. Has anybody told you that it did?

A. No.

Q. You mentioned that Ford is currently conducting some tests with brake fluid and I'd like to know, approximately when did Ford start that

test?

A. The present test?

Q. Yes. You said that Ford is currently testing a switch. I think you mentioned that -- with brake fluid to see if a thermal event can occur.

A. Uh-huh.

Q. And you mentioned that it's 500 hours and so far no event has occurred. Am I correct?

A. It has not -- It has not reached the 500 hours yet.

Q. When did Ford start the test?

A. I believe this particular test -- I would have to refer back to -- to the technician who's running the test to know exactly when it started.

Q. Who is that?

A. Allen Janetic.

Q. And give me a ball park. When did Mr. Janetic start running his test?

A. I think it was about two or three weeks ago.

Q. Were you involved in designing the protocol for the test, Mr. Porter?

A. I reviewed what they were doing.

Q. And did he prepare something in writing

for you to look at?

A. No. I was just looking at the setup.

Q. And do you know how many switches are being tested?

A. I believe it's something around five or six.

Q. And what are the date codes on those switches?

A. I think that they are 1999 date codes. I'm not sure exactly which.

Q. Okay. And how are the switches being impregnated with brake fluid?

A. A hole was punched in the Kapton and brake fluid is entered in through the hex port into the -- into the switch cavity.

Q. So am I correct, that Ford Motor Company is cutting open the switches, puncturing the Kapton intentionally and then sealing the switches back up?

A. No.

Q. How are you getting the hole in the Kapton?

A. With a punch through the hex port.

Q. Can you explain how that works?

A. The hex port is a round hole in the fluid side of the switch and it is opened from that hole

into the Kapton and so with a punch the Kapton is accessible.

Q. So Ford's intentionally inserting a sharp object in the hex port to puncture the three layers of Kapton so that brake fluid will migrate to the other side of the switch?

A. Yes.

Q. And do you know who in addition to Ford is participating in this test?

A. I believe it's just Ford.

Q. Where is it being done, what Ford facility?

A. Over in our laboratory in Building 5.

Q. Now, you mentioned when Ms. Weiner was asking you about the investigation that you participated in, that you were not involved in the team that looked at other Ford components; is that correct?

A. That's correct.

Q. Okay. And who were the individuals that were involved in those investigations?

A. The lead looking at those was a supervisor named Tom Masters.

Q. And was that a completely separate investigation from your team?

A. Not completely separate. He was involved in looking at the information for the brake pressure switch also.

Q. Now, you said in your testimony when Mr. Weiner was asking you, did you look at the other deponents and you said no, I didn't, but some other people did. Now we know it's Mr. Masters. You said that the trend data did not show that those other components were factors. Do you recall testifying to that?

A. I believe that's what I said.

Q. Explain to me how the trend data was used to rule out fires and other components.

A. I don't know how they did that with the other components.

Q. Would it be fair to say that you were not involved in that?

A. Not in doing those other components --

Q. And you don't have --

A. -- no.

Q. -- any firsthand knowledge of that?

A. Correct.

Q. So when you said that, that really wasn't something you had participated in, was it?

A. That was something that was reported back

to us.

Q. And you don't even know how it was done, correct?

A. Correct.

Q. Now, the trend data, as I understand it, Mr. Porter, is somebody deciding when certain fires occurred in cars; is that right?

A. They looked at all the vehicle lines and -- for -- for fires.

Q. Who did that?

A. It was people working with Tom Masters.

Q. Who looked at the trend data? I'm trying to find the name of the team that did that.

A. It would've been Tom Masters.

Q. You don't know who on his team looked at the trend data?

A. No, I can't -- I don't know who else was on the team.

Q. And when you say trend data, explain to us what you mean by that. What is exactly the trend data that you are referring to?

A. Okay. Specifically for the brake pressure switches, they were looking at customer report back of fires and they were looking at things that was -- would be associated with the brake pressure switch

failing prior to the fire.

Q. Okay. That's on your team?

A. Yeah.

Q. Okay. And the person who did that for your team is who?

A. It was -- Tom Masters team was looking at that also.

Q. Okay. But did you have somebody on your team who looked at reports from Ford Warranty and Ford mechanics to determine fires that occurred in '92 and '93 Lincoln Town Cars?

A. Tom Masters was a part of my team.

Q. And he would be the best person to speak to about how that trend data was collected?

A. Yes.

Q. You did not participate in the collection of it, did you?

A. No, I did not.

Q. Did you interview any people whose vehicles experienced a thermal event?

A. No, I did not.

Q. Would everything you know about the trend data be something that either people told you or you learned from others?

A. Or it was reported to us, yes.

Q. And when we -- when you read the trend data for the brake pressure switch, was it a simple collection of dates of -- of vehicles that had experienced some type of thermal event?

A. It was graphical.

Q. It was attached to the documents Ms. Weiner showed you, wasn't it?

A. I didn't look at it, but it should've been in there, yes.

Q. And was there separate data for each component? In other words, was there one set of trend data for the brake pressure switch and then one set of data for the air leveler system or the EEU relay or whatever the it was?

A. I don't know what the -- what it looked like for the other parts.

Q. Did you ever see it?

A. I -- I didn't see it, no.

Q. Now, explain to me how the trend data that you did look at for the brake pressure switch supported your conclusion that there were two possible root causes, brake fluid entering through the diaphragm and water getting through the connector.

A. The trend data does not support two

possible causes.

Q. Okay. Did the reports that you provided to management until -- Well, has -- have you provided any formal report to management that eliminates water coming through the connector as a potential root cause?

A. I don't believe we have.

Q. Okay. In fact, if we looked at the -- the document Ms. Weiner marked -- I think it was Exhibit 5, if you'd pass it back to me -- it's entitled Field Review Committee. And this one's dated May of 1999. And where it says: Define root cause, would you read to the jury what your group has written in there?

A. We have not identified the root cause, speed control deactivation switches appear to be susceptible to brake fluid leaks and corrosion that may create conductive path in the switch, resulting in overheating. Analysis preformed on field samples of the speed control deactivation switches involved in under hood fires has not allowed us to conclude that the speed control deactivation switch was the cause of the fires.

Q. Did Mr. Porter, have you ever changed that sentence in any report to Ford's management?

A. I don't believe that we have.

Q. Sitting here today, in November of the year 2000, so we're on a year-and-a-half beyond that a date and there have been other drafts. Am I correct that you and your team, your still official position in the 14-Ds that have been filed with your management are that -- the passage you just read us?

A. The -- Our position is that the defect is a hole in the Kapton, which is different than what this says. But that doesn't change the recall population or the results of the recall. So there has not been a need to go back to management with that update.

Q. Okay. I understand that.

MR. MAYER: Object, nonresponsive.

Q. Just answer my question. Am I correct that today, November, 2000, you have yet to submit anything formally in writing to your management to contradict the statements you just read us from you report filed in this matter?

A. As I said, we have not updated the report to reflect that since it would not have an effect on the recall.

Q. Now, this fellow, Niru Modi, is that his name?

A. Uh-huh.
Q. Have you spoken to him recently?
A. Yes, I did.
Q. When did you speak to him?
A. It was a couple of weeks ago.
Q. You called him or he called you?
A. I called him.
Q. What did you call him for?
A. To ask him if there was any information that he might have on this.
Q. Okay. How did you find his name?
A. He was on the Internet.
Q. I mean, how did you know he was the person to call? Did somebody tell you you should call him or did you make that determination on your own?
A. His name was in the T.I. Highlights.
Q. And what did you ask him?
A. I asked him if he remembered anything about the time frame when the switch was being developed.
Q. And what was his position at the time?
A. When I asked him?
Q. Yes, sir.
A. That -- That Did he remember what was going on.

Q. No. I'm sorry. I misunder -- I want to know what his position at Ford was at the time in 1991, 1992.

A. I believe he was the supervisor for the truck group that was looking at using the deactivation switch.

Q. And I go back to what you answered that I -- What did he say when you asked him, did he remember anything?

A. He remembered -- He said that he remembered a lot of -- a lot of things; that he does remember that time frame.

Q. And what did you and he discuss? I mean, what kind of questions did you ask him?

A. Basically, I asked him if he would be willing to talk to our attorneys.

Q. Okay. And what did he say?

A. Yes.

Q. And did you ask him anything other than, would you be willing to talk to our attorneys? Did you ask him anything about the merits or what was in the Highlights or anything like that?

A. No, I didn't.

Q. How long did you talk with him?

A. I think it was five or ten minutes.

Q. Okay. And have you told me everything that you can recall that you and he discussed?

A. Yeah. Yes.

Q. Do you know if -- if he has met with others at Ford?

A. I don't know if he has or not.

Q. By the way, where does -- where does he work?

A. I believe he's retired now.

Q. And you said you got his number through the Internet?

A. Yes.

Q. Do you still have his phone number?

A. Not with me.

Q. I mean, you have it in your office?

A. Yes.

Q. Have you spoken to any other ex-Ford employees either during the year 2000 or at the time this investigation was ongoing?

A. Can you restate that? I'm not sure what --

Q. It was a bad question. Let me rephrase it. Have you spoken to any ex-Ford employees in the course of your investigation other than this gentleman?

A. No.

Q. He's the first one you contacted and that was in November of 2000?

A. It was maybe in October.

Q. The recall was May of 1999, correct?

A. Yes.

Q. Now, there was also some exhibits in front of you, these are tests that were produced to us just recently. I don't have did exhibit numbers because I was --

A. 3 was September 27 and 4 was May 12th.

Q. What is the exhibit on the Ford report.

A. The exhibit on the Ford report is --

MS. WEINER: 5. I'm sorry.

Q. That's Exhibit 1?

A. Yes.

Q. And then there's two reports -- two documents from Hi-Stat. One of them has some handwritten, received from so and so. What exhibit number is that?

A. That's Exhibit No. 3.

Q. And then the other one's Exhibit 4?

A. Yes.

Q. Thank you. Take a look at Exhibit 4. Okay. And there's a -- On the first page there's a

name, Prepared by Roger Nieter or Neeter. Do you see that?

A. I guess I don't see that. Okay.

Q. Look at --

A. Okay. In the corner.

Q. Up at the top right, May 12, 2000, Page 1 of 3, Prepared by Roger Nieter, Project Engineer.

A. Yes.

Q. Have you ever spoken with Mr. Nieter?

A. No, I have not.

Q. Were you present when any of this test in Exhibit 4 was run?

A. No, I was not.

Q. Do you know how it's run -- how it was run?

A. No, I do not.

Q. Would I be correct that you're not here testifying that these results in the report are something that you are personally familiar with?

A. Correct.

Q. You don't know whether the results reached here were the results that were reached by test procedures that you would've run, correct?

A. Correct.

Q. Now, there's something here. It's a date

code and it says: N/A. Do you see that on the left-hand side?

A. Yes, I do.

Q. Now, all your specifications require that all T.I. parts have date codes stamped on them --

A. Yes.

Q. -- correct, sir?

A. That's correct.

Q. Okay. And so the date codes are one way to can track when a particular device was manufactured by Texas Instruments?

A. Yes.

Q. Now, on this test, Exhibit 4, there is no information on the date codes. Am I right about that?

A. It does not appear to be on there.

Q. So we have no way of knowing when those parts were manufactured; is that right?

A. That's correct.

Q. You don't know whether the parts were manufactured in 1991 or 1995, correct?

A. We don't have a way of knowing that.

Q. Uh-huh.

A. However, since the parts that have gotten relative to that time frame, it's unlikely that they

were from 1991.

Q. But you don't know for a fact because you were weren't at the test?

A. For a fact, I don't know that.

Q. In fact, the test should have a date code in it, shouldn't it?

A. Well, I think that the individual parts should have the date codes on them.

Q. If you look at the next page, there is a series of switches that apparently they did do some testing on. Do any of those have dates codes?

A. There doesn't seem to be a date code there.

Q. Okay. And if you looked at the first page -- Well, do you know who designed the testing protocol for this test?

A. I believe it would've been Hi-Stat.

Q. Not Ford?

A. Not Ford.

Q. Okay. Look at the test procedure. It says: 20 parts (10 --- F2AC-9F924-AA & 10 --- F2VC-9F924-AB). Those letters, the F2AC, those are Ford part numbers, are they not?

A. Yes.

Q. And that's a -- That's a unique identifier

Ford puts on the parts and they ask Texas Instruments and all its suppliers to typically stamp the parts with the Ford part number?

A. To have some identification, yes.

Q. And what is the difference between the two parts? Do they go on different cars?

A. I believe that -- And I'm not sure which is which, off the top of my head right now. But one of those is used only for the Town Car.

Q. Right.

A. And -- But both of them may be found on the Crown Vic and Grand Marquis.

Q. Okay. And you're not familiar, sitting here today as Ford's rep, on which part is which; is that right?

A. I --

Q. Do you need to look at something?

A. Yeah.

Q. Okay. It's not a memory game. I just want to make sure you don't know off the top of your head.

A. I don't know off the top of my head.

Q. Okay. Did you look at this test result when it -- When did you first get this, this document, Exhibit 4? When did you first see it?

A. I think I probably saw it sometime -- Well, it would've been after May 12th. I don't know how long after that it would've been.

Q. Would it be safe, the way Ford operates, to assume you got it sometime shortly after May 12th, 2000?

A. It wouldn't surprise me if it weren't until June or July.

Q. Okay. But you would've received it, surely, sometime in the summer?

A. I think so.

Q. Okay. And did you discuss the results of this report with anyone from Texas Instruments?

A. No, we did not.

Q. Did you tell anyone from Texas Instruments that you had this test run and what the results were?

A. No, we did not.

Q. Do you know whether people in your -- on your staff discussed this test with anyone from Texas Instruments?

A. I don't believe they did.

Q. Does Hi-Stat provide pressure switches to Ford today?

A. Generically?

Q. Yes, sir.
A. I guess I really don't know that.
Q. I was going to ask you to explain what type of product they provide. Do you know?
A. They -- They provide a pressure type device. I don't know if it's a pressure switch, pressure sensor. I don't know if it's directly to Ford or to a sub-supplier.
Q. You wouldn't be the right person to ask, there would be somebody else that would be more familiar with this?
A. Yes.
Q. And you don't know who that would be?
A. No, I don't.
Q. Do you know where the switches were obtained from that were used in this test?
A. I believe they were purchased at a dealership.
Q. Is that something somebody told you?
A. That -- Yeah. I mean, again, I -- I don't think -- I guess I'm not really sure where those switches came from.
Q. You touched upon something I do want to discuss though. Let us assume that the switches were purchased by Ford at one of it's Ford

dealerships. Okay?

A. Uh-huh. Yes.

Q. Let's talk a little bit about the way that this part was supplied. First, let's talk about how it's supplied today and then we'll talk about 1991 and '92. Are there Ford vehicles that are still using brake pressure switches manufactured by T.I.?

A. Yes.

Q. And can you give the jury an idea of the number of millions of switches that T.I. has provided to Ford over the last six, seven years?

A. Millions would be the right number, but I don't know how many.

Q. And tell the jury what vehicle lines are using those switches.

A. Vehicle lines today are vehicles using speed control that are the F Series, basically, the truck brands.

Q. What about your -- your Explorers?

A. I believe they're on the Explorers.

Q. What about Expeditions?

A. I believe they're on the Expeditions.

Q. What about Windstar vans?

A. I think they're on the Windstar.

Q. And how about F-150 pickup truck?

A. Yes.
Q. F-250 pickup truck?
A. If they have speed control, yes.
Q. The parts that are being supplied today, they aren't sold directly from Texas Instruments to Ford, are they?
A. I'm not sure exactly what all the processes are, but some of them are.
Q. Well, when you were doing your investigation on 1992 and 1993 Lincoln Town Car fires, I'm sure, one of the things you were interested in is, how does this part get to a Ford factory for installation.
A. Yes.
Q. You were interested in that, weren't you?
A. Yes.
Q. Why would you be interested in that, Mr. Porter? Tell the jury.
A. We were interested in knowing what the different effects might be that -- that would effect the switch.
Q. Things can happen to a switch in the distribution channel, correct, sir?
A. I guess so.
Q. Ford's seen that in other problems it's

had with vehicles, hasn't it, sir?

A. I don't know that.

Q. Do you recall that a similar brake pressure switch that was supplied to Ford, Australia had problems because the Ford factory in Melbourne pulled a vacuum on the switch that was excessive?

A. I don't remember that.

Q. Did you come across that in your investigation in this case?

A. I don't remember if I did or not.

Q. You don't dispute it though, do you?

A. I wouldn't dispute it.

Q. Back to my original line of questioning: The reason you wanted to know the chain of distribution, Mr. Porter, is because you were curious to find out where this switch went after it left Texas Instruments to see whether anything could have happened to it to have caused problems that you believed may exist in the switch, right?

A. That was what we were trying to find out.

Q. And did you, in fact, investigate the chain of distribution for this switch in the '91, '92 time frame?

A. We understood that this switch for the Town Car was delivered to a company named Highlight

and that they delivered that ultimately to Ford.

Q. They didn't just turn the switch around and ship it again; they actually installed it into the proportional valve of the vehicle, correct?

A. That's what I understand, yes.

Q. So the jury's clear, Texas Instruments manufactures these switches during this time frame in Massachusetts; is that right?

A. That's what I understand.

Q. And you investigated that during this investigation, didn't you? You wanted to know where the switches were manufactured, right?

A. We did ask Texas Instrument where they were manufactured.

Q. And they told you they were in Massachusetts?

A. That's correct.

Q. And then you wanted to know, well, what happened to the switch after it left Texas Instruments, right?

A. That's right.

Q. And those switches that are shipped out of Texas instruments, they're shipped in bulk; they're not attached to anything; they're manufactured, put in a box and sent off to a Tier 1 supplier that is

designated by Ford; is that correct?

A. I don't know if that's correct or not.

Q. Is that the way you understood the distribution chain in this investigation that you were in charge of for this part?

A. I don't know that -- how they were shipped? You said that they were shipped in bulk. I don't know if they were shipped in bulk or not.

Q. But you know they were shipped by T.I. as just switches alone, not attached to anything, to another supplier of Ford's, right?

A. Yes.

Q. And Ford is the one that tells Texas Instruments where to ship those parts, correct?

A. My understanding is, at that time frame, that Ford directed Hi-Stat to use the T.I. switch.

Q. Okay. Was it Hi-Stat or Hi-Strength?

A. Highlight. I'm sorry.

Q. And so, in the -- in the 1991, 1992 time frame for Lincoln Town Cars, Texas Instruments shipped the switches to a company, Highlight Industries?

A. Yes.

Q. And how did you determine that?

A. Texas Instrument told us that.

Q. And when the switches are received by Highlight Industries, what did you understand were then done with them?

A. What I understand is that they installed the proportioning valve.

Q. Okay. What else did they have to do?

A. That was when they --

Q. Do you know, is my question?

A. I don't know.

Q. But you don't have firsthand knowledge one way or the other of what exactly was done by Highlight Industries when the part was received. Am I correct on that?

A. That is correct.

Q. Okay. As far as you know, something was done, they installed it to a proportional valve and then what happened to the switch; now it's incorporated into someone else's part, correct?

A. That's -- Yes.

Q. Who made the proportional valve that this switch was incorporated into?

A. I believe Highlight made the proportional valve, right.

Q. And were there any -- The switch has an electrical side to it. Do you recall that?

A. That's correct.

Q. Where is that electrical connector sealed? Is that sealed at Highlight Industries or is that then connected at -- up at the Ford factory where the vehicle's assembled?

A. I -- I'm not sure where it's sent then.

Q. Well, let's be clear. I'm talking about the seal that you mentioned in the Exhibit 5 that you said may be a root cause for these leaks. Correct, sir?

A. It was identified as -- by Texas Instruments.

Q. Right. And is it your testimony that you do not know where that seal was placed on the vehicle, whether it was done at Highlight Industries or at Ford's Wixom plant?

A. That -- The seal connector would've been done at the Ford's Wixom plant.

Q. Okay. So at Highlight Industries, we know that some things were done, the switch that T.I. manufactured was connected to a proportional valve that was manufactured by Highlight Industries --

A. Uh-huh.

Q. -- and other components may or may not have been included in that prepackaged assembly. Is

that a fair statement?

A. That's a fair statement.

Q. Okay. You don't know what the other components were or even if there were some?

A. Correct.

Q. All right. Then that product -- Let's just call it the -- the assembled components -- is then shipped by Highlight Industries somewhere else, correct?

A. That's correct.

Q. So it is now moving to another location and where -- as your investigation revealed, where did that part go then?

A. That would've gone to the Wixom Assembly Plant for the Town Car.

Q. Okay. And that plant is located where?

A. Wixom, Michigan.

Q. And is that plant owned and operated -- At the time, was it owned and operated by Ford?

A. Yes.

Q. Now, I've heard a name in -- or I read a name in some of the documents, Visteon. What connection did Visteon have, if any, to this speed control system?

A. In 1991, '92 the Electronics Division of

Ford Motor Company was developing the speed control system.

Q. Okay.

A. That Electronics Division has since been spun off as a separate company named Visteon.

Q. I guess, so it's clear for the jury, during the time the speed control system was designed by Ford, it was designed by a Ford subsidiary named Visteon. Is that a fair statement?

A. It was designed by a Ford division named Electronics Division.

Q. Part of Visteon?

A. Engineers who were working in the Electronics Division were -- went to work and became part of Visteon.

Q. So Visteon as a separate company did not really exist in 1991 and '92; is that --

A. That's correct.

Q. Okay. And if someone said they worked for Visteon in '91 and '92, that would not make sense, given the corporate structure?

A. That's correct.

Q. They would've said: I work for Ford?

A. That's correct.

Q. So the engineers that designed the speed

control system that went in the '92, '93 Lincoln Town Car, they worked for Ford?

A. Yes.

Q. Okay. Back to the chain. The assembled components are shipped by Highlight Industries to a plant, the Wixom plant where the Lincoln Town Cars are made. Was that the only plant that made Lincoln Town Cars in that time frame?

A. Yes.

Q. Okay. And Ford would give instructions to ship the part to its factory, I assume?

A. I -- This makes sense. I would assume that also.

Q. Okay. And do you know what kind of time lag we're talking about for when the product leaves Texas Instruments until it shows up at Wixom?

A. It could be -- No, I don't. I mean --

Q. Did you investigate that in this investigation?

A. We did talk to people and ask them what type of lag time there could be. We determined from that discussion -- being discussion points and not being data -- that it could be anywhere from 15 to 60 days.

Q. Okay. So when you say it's a discussion

points, not a data, what is the difference? I don't understand. Is that just somebody talking?

A. Somebody talking about their process flow and not -- not actually timing it.

Q. You did not deem that accurate enough to be categorized as data?

A. Correct.

Q. Okay. So did you, in fact, do any more investigation other than just talk to people to figure out what that delay was from when the part left T.I.'s facility in Massachusetts, went to Highlight Industries in Texas and then ended up back up in Michigan?

A. No.

Q. Today -- Sitting here today, do you have any information you can give the jury on what that turn-around time was?

A. No, I cannot.

Q. Okay. Now, who at the plant in Wixom actually installed this assembled group of components into the vehicle?

A. I don't know who they are.

Q. Okay. Would that have been people on the line or is that something that you simply have no idea about?

A. That would most likely be somebody on the production line.

Q. In this investigation that you headed, did you go to Wixom and look at the facility to determine where this actual event would've occurred?

A. No, we did not.

Q. Is the Wixom plant reconfigured so that it's making other vehicles or it still makes Lincolns?

A. It's reconfigured from what it was then.

Q. Okay. The -- The preassembled group of components, including one of which is manufactured by Texas Instruments, is now installed in a Ford vehicle by a Ford worker; is that right?

A. That's correct.

Q. Okay. Now, I asked a question about pulling a vacuum in Australia and you said you don't know anything about that one way or the other. But explain to the jury what pulling a vacuum means in connection with this brake pressure switch and how it's used in the '92, '91 Lincoln.

A. Not being an expert on the -- brake -- the brake design system, I can't tell you what -- what really goes on there. What I -- I do know is that the vacuum that is used at the Wixom assembly plant

is the same vacuum from 1991 through 1997.

Q. Let's talk a little bit about it. I know can't -- Well, let me -- let me back up. Did you investigate how the vacuum was pulled on the part during the '91, '92 time frame that you claim resulted in the production of vehicles that had to be recalled?

A. We asked if there was any information as to what the vacuum was for that time period.

Q. And what did you learn?

A. We learned that there was a vacuum drawn on the braking system.

Q. Were there records at Ford kept about how the vacuum was pulled on those parts when they were installed into the vehicles?

A. There was a procedure that -- that was identified.

Q. But did you have data that allowed you to go back and examine that, is what I'm asking?

A. I don't believe there is data.

Q. Is this discussion points again?

A. Yes.

Q. Okay. So it would be fair to say that as head of the investigation, you're not able to share with us any real data about what happened when those

parts were installed in Ford vehicles vis-a-vis the vacuum pull. Is that a fair statement, except that it was the same procedure used for eight years?

A. That's correct.

Q. Okay. Now, the same procedure you used for eight years, let's talk about that. Can you explain that procedure to the jury?

A. It would've been the same -- I mean, it's the same from '91 through '97.

Q. Okay. But explain how it's done. That's what I'm trying to -- When you say the vacuum was pulled, most people like me, they don't understand what that means.

A. It's -- It's really something that -- that would be best described by a brake engineer.

Q. Would it be fair to say that you don't have the information to give the jury here today about what exactly was done or what you would need to do to pull a vacuum to install this part in a Ford vehicle in Wixom in '91 or '92?

A. The vacuum that -- that was used for the brake system was the same for '91, '92 through '97.

Q. I understand that. I'm asking you a different question.

A. I'm trying to understand what the question

is.

Q. What did they actually do? Explain it to us. Why do you need a vacuum? Let's start there.

A. The brake engineer would be best able to explain that.

Q. You're not?

A. Right.

Q. Okay. So the part is installed in a Ford vehicle with a collection of others components, there are some technical things that need to be done to install this switch correctly in the vehicle, correct? You've got to do it right. You've got do install right vacuum. You've got to connect it. You've got to put the connector on. You've got to check it out electronically. All those things have to be done at the Ford factory, correct?

A. That's correct.

Q. Okay. Do you know how those things were, in fact, done at Wixom, the 1991, '92, were there documents around that allowed you to go back or were they all gone?

A. I believe they were all gone. They would've been followed from '91 through '97.

Q. Okay. So in your investigation, am I correct that you were not able to collect any real

data, for example, on how long it took the parts to cycle from Massachusetts to Wixom, correct? You had no real data on that? Am I right?

A. That's correct.

Q. You had no real data on how the part was actually assembled in Dallas, Texas to the collection of components, correct?

A. That's correct.

Q. You had no data on how the vacuum was actually installed and how the part was connected at the Ford factory, correct?

A. That's correct.

Q. And you had no data on exactly how the electrical side of the switch was connected by somebody at Ford at the Wixom factory?

A. Not in how they did that, correct.

Q. Okay. Let's talk a little bit about the electrical connector. That is a device that is fit on top of the switch and it connects the electrical component of the switch to the speed control system designed by Ford?

A. That's correct.

Q. Okay. Now, that connector is something that T.I. does not manufacture? Am I right about that?

A. T.I. manufactures half of the connector system, right.

Q. T.I. manufactures the switch as depicted in Exhibit?

MS. WEINER: 2.

Q. -- 2. Am I right?

A. That's right.

Q. All right. And there is something that fits on this part of the switch at the top of Exhibit 2 that T.I. does not manufacture?

A. That's correct.

Q. Now, who manufactures that?

A. I believe that was manufactured by United Technologies.

Q. Okay. And at the time in 1991, 1992, was United Technologies the supplier of the electrical connector that fit on the Texas Instruments switch?

A. I understand that United Technologies supplied that half of the connector system.

Q. Can you tell us the distribution chain for that product? Where did United Technologies manufacture it?

A. No, I cannot.

Q. Did you investigates that in your investigation of the Town Car fires?

A. No, we did not.
Q. Why not?
A. I need to restate that. Okay. The -- The electrical connector in the wiring harness was discussed. One of the engineers, Norm LaPointe, went and talked to that.
Q. Okay. I'm sure you discussed it. I'm asking you a different question.
A. Well, he -- he -- he did the investigation into the connector.
Q. You have trend data that -- As I understand it, there's some trend data that is driving some of this investigation. Am I right about that?
A. That's right.
Q. And I'm asking you, did you go and then who look -- Because you say in your -- in your white paper that one of the root causes, you think, is this connector leak. That's in the white paper, correct?
A. That was -- At the time we wrote that, that's on of the things --
Q. And it's never been changed?
A. And it's not been changed.
Q. Okay. Did you go to the people who

supplied the connector and ask them, where did you manufacture these connectors, guys?

A. I believe Norm LaPointe would've done that.

Q. Do you know if he did, is my question?

A. I don't know that he did.

Q. Did you -- Are you able here today as the representative of Ford Motor Company to tell us that Ford did it?

A. I would have to refer to Norm LaPointe about that.

Q. Did you check to see where the part went after it was manufactured by United Technologies? Did it go to a Tier 1 supplier like our part did or did it go directly to Wixom? Did you investigate that?

A. I would defer to Norm LaPointe for that.

Q. That's not something that you're able to tell us today?

A. That's correct.

Q. Did you tell Norm LaPointe, hey, go investigate this? Did you tell him that?

A. Yes.

Q. Okay. And you don't know what the results were or if he did?

A. I don't recall at this point what the results were.

Q. Okay. Do you know whether a Tier 1 supplier is involved with the connector side?

A. I don't know that.

Q. Do you know where the connector was, in fact, installed on the vehicle?

A. What do you mean?

Q. Was it done at Wixom?

A. I believe it was done at Wixom, yes.

Q. And were you able to find the procedures that were used by the Ford factory to make sure that both our switch and the connector were properly installed?

A. I don't have those procedures.

Q. At the time, were those -- I'm sure, at the time there were written procedures for Ford workers to follow so they would correctly install components on Ford vehicles, right?

A. I -- I would assume that, yes.

Q. Because Ford has an interest in making sure its components parts are correctly installed because Ford is responsible for the entire vehicle?

A. That's correct.

Q. Okay. And you're here today's as the

representative of the company. During the investigation, did you try to find the written procedures that Ford specified for installation of the T.I. switch and the connector at Wixom? Did you try to find those?

A. I believe we asked the question and we asked questions regarding that kind of information. In general, the answer was that that information was no longer available.

Q. Okay. Were these discussions or is this data?

A. That was discussion.

Q. Because if you look at the -- the trend data you would agree with me, would you not, Mr. Porter, that there are a lot more fires in Lincoln Town Cars than there are in Grand Marquis and Crown Vics, correct?

A. The Grand Marquis and Crown Victoria showed fewer fires than the Town Cars.

Q. I mean, isn't -- And we're all in litigation. I mean, we're here today because somebody in Mississippi has sued the company. What kind of car are we here today on?

A. I believe we're talking about a Lincoln Town Car.

Q. All right. And the vast majority of the claims and lawsuits against Ford Motor Company involving this switch are Lincoln Town Cars, are they not, sir?

A. That's because the vast majority of these switch were installed on Lincoln Town Cars.

Q. Okay. But the vast majority of the claims that are being brought are Lincoln Town Cars?

A. That would be corresponding to the -- the numbers where the switches were installed.

Q. How much switches were installed in Lincolns and how many switches were installed in the Crown Vic, Grand Marquis.

A. The Lincoln were -- all had the switch. The Crown Vic, Grand Marquis, I don't know what the number would be.

Q. You don't know the number -- what the number would be because those numbers are not available to Ford anymore or you simply don't know?

A. I don't -- I don't know. I don't think so those numbers are available to Ford.

Q. Let's take a look at Exhibit 5 and Page 7 of 25 --

A. I gave that back to you.

Q. -- Paragraph 6 and let's -- Do you see

where I am, Paragraph 6?

A. Yes.

Q. Estimated Production Of Problem Statistics (Magnitude Of Concern), did I read that right?

A. Yes.

Q. Okay. Take a look at -- There's a column that says: Potentially Affected Units. Do you see that?

A. Yes.

Q. Okay. And am I correct that there were actually more Crown Vics and Grand Marquis built during this time period than there were Lincoln town Cars?

A. Yes.

Q. Okay. And the Lincoln Town Car, you have 123,310 number of units; the Crown Vic for the same period -- Well, it's not the same period. But for the recall period it is 155,335; is that right?

A. That's correct.

Q. And there's Estimated Percentage Of Vehicles That Contain The Condition and that's unknown. Does that mean the potentially defective either connector or switch?

A. It would be the potentially defective switch.

Q. Or connector in this vehicle -- in this report, correct?

A. At this point in time the connector was not ruled out.

Q. And it's unknown because you don't know which cars during this time frame may or may not exhibit a defect?

A. We also don't know which cars have the switch.

Q. Okay. And has -- have you done some work since this document, Exhibit 5, to be able to share with us the exact number of switches that were installed in each vehicle line?

A. We do not know the number of defective -- potentially defective switches that were installed in the Crown Vic, Grand Marquis.

Q. Do you know the -- the -- the number of switches, period, that were installed in the Crown Vic and Grand Marquis line? I'm asking, have you done any additional work so the unknown is now maybe something that you've been able to calculate?

A. No. I'm -- I -- I can't calculate that for you right now.

Q. Let's go back to the factory floor. There's going to be an installation. Ford personnel

are going the install. Did the trend data suggest to you that there were problems with Ford vehicles that were built during certain time periods?

A. Exhibit -- What do you mean by that, certain time periods?

Q. Well, the trend data that you said you looked at, that was data that tracked vehicle build dates with car fires, correct?

A. That's correct.

Q. Vehicle build dates?

A. Yes.

Q. And that means the date the car was built at your factory?

A. Approximately, yes.

Q. Okay. And you've told us you don't have any data on the time that it takes for a switch to get to your factory?

A. That's correct.

Q. So you're looking at: Is there a problem with cars that are built at Ford factories during a certain time frame? That's what that trend data really tells you --

A. Using --

Q. -- correct?

A. Using the Texas Instrument brake pressure

switch.

Q. All right. And that data that you relied upon is contained in Exhibit 5. Am I correct?

A. That's correct.

Q. Is there any data that you relied upon that is not contained in Exhibit 5?

A. For the decision of the recall?

Q. Yes, sir.

A. No.

Q. Who at -- I apologize if I asked you this before.

A. Can I -- Can I modify that?

Q. Absolutely.

A. Okay. And that is, that other vehicles were looked at for trend data and there was no trend available on other -- showing up on other vehicles.

Q. Okay. Let's -- Let's talk --

A. And that is not included in these vehicles.

Q. All right. Let's talk about that since it's not in here. When you say, other vehicles were looked at, let's starts with the beginning. What vehicles lines were rn looked at?

A. Well, we started with the Town Car, Crown Vic, Grand Marquis.

Q. Okay.

A. We went on to the Mark VIII, the Econoline, the F Series; and we went on through all of the other Ford vehicles lines.

Q. You looked at all Ford vehicles lines that used this switch and electrical connector or did you look at all Ford vehicle lines, period?

A. We looked at all Ford vehicle lines that used brake pressure switch from Texas Instrument used for speed control.

Q. Did you look at all other vehicle lines that used connectors that were manufactured by United Technologies?

A. Those would've been included with that.

Q. Okay. And the lines that you looked at were in addition to the ones you mentioned, were the Mark VIII, is that -- or Mark IV?

A. It was the Mark VIII.

Q. Okay. Explain why you looked at that vehicle line.

A. That vehicle line also used a brake pressure switch that was similar to this one.

Q. Okay.

A. And we wanted to see if there was a trend with the Mark VII and there was not.

Q. When did the switch first get installed in a Mark VIII, if you know?

A. There's a chart someplace. I think that was 1993.

Q. So the Mark VII was a vehicle line that eventually received the brake pressure switch, but it wasn't in the '91, '92 time frame?

A. Correct.

Q. Where -- The Econoline, when did that -- why did you look at that vehicle?

A. Again, it had a brake pressure switch that was used in the -- it was used by -- or built by Texas Instrument used in the speed control circuit.

Q. That's the Econoline line Ford van?

A. Yes.

Q. It's a van; isn't that what that is?

A. That's right.

Q. Okay. And that -- does that vehicle share the same type of electronic architecture?

A. How do you mean?

Q. I mean, has it got the same setup, feeding -- the things you discussed with Mr. Jolly, the amount of power going to the switch and is it continuously powered? I mean --

A. It's similar.

Q. Well, how -- I mean, you say it's similar. I mean --

A. I --

Q. Can you tell us what --

A. If we got out the schematic we might find that the fuse is -- is a little different, that is, it might have a 20 amp fuse instead of a 15 amp fuse. We --

Q. How about the Mark IV, is that the same electrical design?

A. Yes.

Q. And then you also mentioned that you looked at the F Series?

A. Yes.

Q. Okay. And those vehicles are -- also use Texas Instruments brake pressure switches?

A. Yes.

Q. And who actually did the investigation? Who's the person that went and looked at those other lines and -- to see if there were any trend data?

A. That would've been Tom Masters' group.

Q. Tom Masters' group. And -- And how would he do that; I mean, short of picking up the phone and calling up all your current owners? I mean, how -- how do you do that? How do you figure out if

there are problems that are going on with these vehicles?

A. That would be something that he'd be able to elucidate better for you.

Q. Are you able to share that with us today as the representative of Ford on how he actually -- or his group actually did that?

A. I couldn't tell you exactly how that happened.

Q. Okay. Anything else that you think may have happened that relates to trend data that's not contained in Exhibit 5 other than what we've talked about?

A. At this point I can't think of anything.

Q. Are you a statistician, Mr. Porter?

A. No, I'm not.

Q. What degrees do you hold?

A. I have a Bachelor of Arts in Mathematics and Physics, Bachelor of Science in Electrical Engineering and a Master of Science in Electrical Engineering.

Q. And are you a licensed engineer in any particular state?

A. Yes.

Q. What state?

A. Colorado.
Q. You're not licensed in Michigan?
A. No.
Q. Did you have on your team any statistical -- any statisticians, people with statistical backgrounds?
A. We did not have at the time of the investigation. We did not have statisticians, per se.
Q. And I've seen a name on some of the documents, a J. Kafadi.
A. That's our --
Q. Is that somebody that worked for Ford?
A. Yes.
Q. Okay. And did he work with Mr. Masters' group?
A. Yes.
Q. Do you know if he was the person that was responsible for collecting the so-called trend data?
A. He may have been involved with some of that.
Q. That's not an area that you have personal knowledge of, am I correct?
A. I don't know exactly what he did.
Q. You don't know exactly how it was done and

what parameters those people used to pull whatever data they brought into that Exhibit 5?

A. Well, the parameters -- the parameters that they used, I believe -- Take a look -- I believe they're -- they're basically specified on those charts.

Q. And by parameters, I mean what fires they ruled in and what fires they ruled out and how they made calls when something was listed; or whether this was a fire that they wanted to include in a data base or exclude. That's what I'm asking.

A. If you wanted to look at a specific instance, you'd have to speak with them.

Q. Right. What I'm trying to establish here for the jury is that you don't -- you're not here able to tell us how that was done, correct?

A. Well, not specifically, no.

Q. Okay. Let's go back to the factory floor. The part is installed in a vehicle, there's some things that need to be done to make sure that part's installed correctly. And after those parts are installed correctly, does Ford do testing to make sure that the vehicles that they have are, in fact, tested, all the components are tested to make sure they function properly?

A. I can't tell you specifically what goes on at the Ford plant. But Ford generally does do tests to validate that it's been assembled correctly.

Q. Did you, in your investigation, go to the Wixom plant people or Ford's archives or whatever to try to find out, well, hey, what testing was done during the time frame that the trend data supports to satisfy me, Ford's investigator, that there were tests being done on these vehicles to make sure the components operated properly? Did you do that?

A. We asked the people who were on the team from the V.C -- That would've been Joe Neme -- if there was any information that they had.

Q. Was is D.C.?

A. V.C.

Q. Oh, I'm sorry. What does that stand for?

A. Stands for Vehicle Center. That's the engineering group.

Q. So the answer to my question is: You did not do that; you did not go to Wixom or pick up the phone and talk to anybody at Wixom; you went to the Vehicle --

A. Vehicle Center.

Q. -- Center and asked if those records existed?

A. Yes.

Q. All right. And what were you told?

A. That that information is no longer available.

Q. So again, discussion; not data?

A. That's correct.

Q. All right. Now, the recall notice that was eventually issued buy Ford in May of 1999 called for two steps. One was an interim step and one was a final step. Am I correct about that?

A. I believe that's correct.

Q. Okay. And were you involved in -- in suggesting what the interim step was and what the final step was? Was that part of your job?

A. I think there was -- And again, I reviewed what that documents was.

Q. Was that decision made by somebody higher than you, I guess, is what I'm trying to get at? I'm trying to find out who the right person is to talk about that.

A. I guess I'm not exactly sure what the question is yet.

Q. There are two steps suggested. One's interim and one's long-term.

A. That's correct.

Q. Who came up with those two steps? That's all I'm asking.

A. It's -- The question that we were trying to address was: What do we do for customers who come in today --

Q. Uh-huh.

A. -- that want a fix before T.I. would be able to supply parts for the long-term fix.

Q. And you asked T.I. how long it would take them to get newly manufactured parts to you. And what was their response?

A. They came up with a timing plan of when they would be able to deliver those.

Q. All right. And did you understand that the parts were going to be manufactured in Attleboro, Mass?

A. Yes.

Q. And did you have any complaints with the timing schedule that Texas Instruments gave you to get the replacement parts into circulation?

A. It wasn't fast enough, but it wasn't --

Q. Nothing would've been fast enough, right?

A. If they had been able to deliver them that day, that would've been fast enough.

Q. 178,000 -- 278,000 switches delivered that

day, that would've been good, right.

A. That would be good.

Q. Okay. Back to my question: There's an interim fix and a long-term fix. Do you recall what the interim fix was for this problem?

A. I believe the interim fix was disconnecting the connector from the speed control switch.

Q. All right. And do you know why that was recommended as the interim fix?

A. Because that would eliminate the electrical power to the system.

Q. How would old that benefit a consumer, by having that electrical power disconnected from the switch or the connector?

A. I don't know how that would benefit a consumer.

Q. Why did you -- It was a bad question. I apologize. Why was that deemed an acceptable interim repair? Because it eliminated the chance of a fire, correct, Mr. Porter?

A. Because it eliminated the chance of a fire in a defective switch.

Q. By taking the -- By disconnecting it, the interim solution was, if we take the power away from

this switch, we eliminate the chance there could be a thermal event --

A. If it was --

Q. -- that was the thinking?

A. If it was a defective switch, removing the power would eliminate that, yes.

Q. And the long-term repair that was suggested was to change the switch with a brand new Texas Instruments switch and change the connector?

A. That's correct.

Q. And that's the connector that was manufactured by United Technologies, correct?

A. That's correct. That was decided to go with that in the event that there had been some thermal activity and damage had occurred to the connector, that it would not be involved either.

Q. Is it your testimony that prior to that point you had not seen any switches that had water that had come through the connector and caused problems? I thought the Memphis switch had evidence of water in it. Have I got that wrong?

A. I don't -- I believe the Memphis switch had primarily brake fluid in it.

Q. Yeah. But it also had water in it, didn't it?

A. It had -- Since it was put out with a fire extinguisher, it had a lot of other material with it also.

Q. And there was a chemical analysis actually done of what fluids were in that switch, right?

A. Yes.

Q. And that chemical analysis showed that there was more than just brake fluid in that switch, didn't it?

A. There was more than just brake fluid, that's correct.

MR. MAYER: This is a good stopping spot. Why don't we take a break for lunch.

(Lunch recess taken.)

Q. Mr. Porter, if you look at Exhibit 5, I do have a question I want to talk to you about, this issue of the number of vehicles equipped with the speed control. As I understand it, on Page 7 of 20, and Item 6, Estimated Production And Problem Statistics (Magnitude of Concern), it says: Potentially Affected Units, A-f-f-e-c-t-e-d. What does that mean?

A. That means these vehicles that were potentially having brake pressure switches that might have leaky diaphragms.

Q. And are these all the Town Cars that were produced during this time period?

A. That number would coincide with all the Town Cars from that time period.

Q. And the Crown Vic, Grand Marquis number is given as 155,333 affected vehicles. Am I right?

A. I believe it's 155,335.

Q. Oh, I'm sorry. I misspoke. You're correct. Those -- When it says: Potentially Affected units, those are vehicles that were equipped with speed control?

A. That would be vehicles, yes, with speed control.

Q. All right. So when you said to me that there were more Town Cars with speed controls than Crown Vics, Grand Marquis, that's not true? This document indicates that there are more Crown Vic, Grand Marquis than Town Cars in the period that were identified on this document?

A. What I was saying at that time was that the Town -- there were more Town Cars with the type of brake pressure switch that appeared to have leaky diaphragms than on the Crown Vic, Grand Marquis because there were two types of switches that were used on the Crown Vic, Grand Marquis.

Q. Okay. And what is the type of switch that you believe is more likely to have a leak in the Kapton?

A. The switch that was used on the Town Car, which I believe is referred to as the noisy switch.

Q. And the switch for the Crown Vic and Grand Marquis was a different switch?

A. The Crown Vic, Grand Marquis used both the noisy switch and another switch known as the quiet switch.

Q. Do you know the differences between the two switches?

A. They were design differences that T.I. had made.

Q. Now, let's -- Well, are there any defects, according to Ford, in the Crown Vic, Grand Marquis switches?

A. Of the switches that were similar to the Town Car -- Of the switches that were the same as the Town Car, they could potentially show water or brake fluid leakage through the diaphragm also.

Q. Okay. And I think there's something with that part number. My recollection there is something. Oh, I know what it is. It's the -- One of your Hi-Stat tests, I think it is Test No. -- I

mean, Exhibit No. 4. Didn't you tell me that's the two different numbers; one's a -- the first one is a Grand Marquis number, F2AC-9F924-AA, that's Grand Marquis and Crown Vic; and the other one, F2VC-9F924-AB is the Town Car?

A. What I said was that I wasn't sure which was which. But that could be correct.

Q. And so it's Ford's position that the -- the -- Well, let me -- let me ask it another way. Why do you believe there are many more car fires appearing in the Lincoln Town Car?

A. There -- There are multiple reasons. One of those reasons is that the Crown Vic, Grand Marquis used the quiet switch also. There are -- The two vehicles are, in fact, different. The Town Car weighs more than the Crown Vic, Grand Marquis. And therefore, the brake pressures that would be experienced in a Town Car might be slightly more. There --

Q. Has Ford done some testing to evaluate the brake pressures in the Town Car versus the Grand Marquis or the Crown Vic?

A. As I said, those were differences between the vehicles. Exactly, you know, how that would manifest itself, no, we haven't done that.

Q. You have not looked at the brake pressures in the respective vehicles?

A. No, we haven't. Well, I take that back. We did look at the brake pressures on the Town Car and to look at what levels those would -- would be at and they were well within the specification limits that we had.

Q. Did you compare that information with what the brake pressures were on the Crown Vic or the Grand Marquis?

A. We don't -- didn't compare that with the Crown Vic, Grand Marquis. It's only that the Crown Vic, Grand Marquis is a lighter vehicle.

Q. And it's your supposition that the brake pressures would be different because it's a lighter vehicle?

A. That would be one possible explanation.

Q. Has Ford done any testing of any kind in connection with the brake pressures that would be experienced in the respective vehicles, comparing them? Have you done any testing of any kind at any time to look at what the differences are in the brake pressures --

A. I can't say --

Q. -- of those two vehicles?

A. I can't say that -- that there is a compare between those two vehicles; although it would be similar for not only those vehicles, but the following years also.

Q. Back to my question: Have you done any testing that looks at the brake pressures --

A. That compares --

Q. -- experienced in these two vehicle lines?

A. That compares the Town Car to the Crown Vic, Grand Marquis, there's a whole lot of engineering that's been going on at Ford. And I don't know of that test. I don't know whether it exists or doesn't exist.

Q. Okay. Let me try to direct it more to the investigation that you were involved in and that you are involved in. Have you asked anybody to go out and examine what a possible cause could be for the fact that the Lincolns seem to have a much higher incidence of car fires than the Grand Marquis or the Crown Vics? Have you asked somebody to do that?

A. We did con -- We were concerned with why the Town Cars had a greater frequency of -- of fires than the Crown Vic, Grand Marquis. Our conclusion was that the different switches that were used in the Crown Vic, Grand Marquis were a possible reason

for that. And since it wouldn't change the population of the recall, it really didn't matter what the comparison was?

Q. Why wouldn't it change the population of the recall?

A. Because those switches with the leaky diaphragms could've gone into the same population in both vehicles.

Q. So that says that the fact that you have different switch numbers and they're different parts doesn't really give you any indication of which one, in Ford's opinion, is more likely to leak or not?

A. The switches that we got back that are associated with thermal events tend to be -- or tend to be the same switches that are used in the Town Car.

Q. When -- When were there changes in the type of switch put in the Crown Vic and the Grand Marquis?

A. It was during the 1992 model year.

Q. Do you know when?

A. Not exactly.

Q. Would it be correct to say that the initial production stages, maybe January through April, the Town Car and the Grand Marquis got the

same switch?

A. The Crown Vic, Grand Marquis didn't get any switch until after -- after the Town Car until production started.

Q. Uh-huh. Well, tell me a little bit about what -- I've asked you, did you ask anyone to go out and do this comparison and try to give you some answers on why there were more fires in the Town Car. Who did you ask to do that?

A. I asked Steve Reimers what -- what he thought. He works for me.

Q. Uh-huh. Anybody else?

A. That was a topic that was brought up in the meetings. And I don't recall any specific ideas that were brought out at that time.

Q. Okay. And to your knowledge, what test did Mr. Reimers run to try to determine whether there was a difference in either the component part placed in that vehicle or some other difference?

A. The question to Mr. Reimers was: What could explain the difference between the Town Car and the Crown Vic, Grand Marquis? And the answer is that different switches are used in the Crown Vic, Grand Marquis.

Q. Okay. I'm trying to find out, is -- did

you, at Ford, do anything more than simply ask that question and get an answer? Did someone actually go and collect some data to try to substantiate that or is that just supposition?

A. The information that we have, the data that we have, is that the Crown Vic, Grand Marquis uses the Town Car switch and the quiet switch.

Q. Okay.

A. And that both of those were used. Further clarification to that, will make no difference as to the population that got recalled for the Crown Vic, Grand Marquis.

Q. Okay. And did someone at Ford go and examine the switches that you had returned from the field and look at what type of switches they were? Were they quiet switches, were they -- Do you know?

A. We have had a company take a look at some of the switches that have been returned.

Q. Well, is there anything else other than your belief that different types of switches were put in the Grand Marquis or the Crown Vic that you believe could explain why there's a much higher incidence of car fires in Lincolns versus Grand Marquis and Crown Vics, when there were more Crown Vics and Grand Marquis with speed control?

A. As I said before, there are a variety of factors which I can't put my finger on all of them, but certainly one of them is the weight of the vehicle.

Q. Okay. Anything else?

A. That -- Not that I can put my finger on.

Q. And when you said that you believe -- Or Mr. Jolly, I think, asked you earlier in the deposition whether you had a root cause and you said yes, you thought some of the Texas Instruments switches that you were supplied in the '91, '92 time frame had a propensity to leak and were, I think, as you mentioned, you felt were defectively manufactured, can you -- are you able to describe the defect to us, explain what the defect is?

A. I cannot explain that information because that hasn't been provided to me by Texas Instrument. What I do know is that Texas Instrument had a problem with sensors or with switches surviving. I also know that they were dissatisfied with the life of that switch early on in the production process at the time that these switches were built. I know that they made changes to their production process that they did not inform us of and that we were unable to find out what was going on with this

switch in that time frame due to Texas Instrument's decision not to provide that to us.

Q. Okay. Is it -- It is my understanding that Ford believes there is a defect in the switches that were manufactured in that time period, but you as their representative are not able to describe what the defect is, how it manifests itself?

A. I can -- It manifests itself by a leak in the Kapton. How it happens, that would be something that T.I. would have to produce.

Q. Take a look at Exhibit 4. Okay. That's the tests that Hi-Stat ran in May of 2000. Do you see that?

A. Yes.

Q. Okay. And did you -- have you gone to look at any of the parts that were cycled to failure by Hi-Stat?

A. No, I have not.

Q. Have you looked at any parts that were cycled to failure by T.I. during this investigation?

A. No, I have not.

Q. Have you looked at any parts that were returned from the field that were reported to have failed, either leakage in the Kapton or water in the cavity?

A. Yes, I have.

Q. Where -- What switches did you look and when did you do that?

A. Those switches were returned from the field. They were disassembled at a company named Exponent. And we -- we reviewed those switches at the same time T.I. was there.

Q. Okay. And did you -- That's the only time you've been to Exponent?

A. I've been to Exponent a couple of times.

Q. To look at switches, is that the only time you were at Exponent?

A. I've probably looked switches other times also, but that is time that we were specifically looking at switch failures.

Q. And other than the switches that you looked at at Exponent when Texas Instruments was present during the investigation, have you looked at any other?

A. Well, there were other switches that -- that were opened up that came back from the field during the investigation. Texas Instrument was present at most of those also.

Q. Did you examine the Kapton yourself in any of the switches?

A. I looked through the microscope at the Kapton also, yes.

Q. Was that at Exponent.

A. I've looked at it at Exponent, also at Central Laboratories during the investigation.

Q. How many switches did you look at at Exponent?

A. I can't tell you what that number is off the top of my head. It was more than -- more than five or ten.

Q. More than 20?

A. I don't know that I looked at all 20 of those, but I think there's been 20 that they've looked at.

Q. And how many did you look at at Central Labs?

A. That was -- The ones that we've looked at at Central Labs were part of the report and I think -- I think it was five or ten.

Q. Okay. And what about your examination led you to believe that there were some defects?

A. My examination, I could see in the Kapton cracks. Examination by Central Laboratory people confirmed that there were cracks through the Kapton. The -- Similarly, the Exponent, those -- those

cracks have been confirmed.

Q. Can you describe those cracks to us? What did they look like?

A. They tended -- tended to -- There were a variety of forms. They tended to be -- look like a line in the Kapton.

Q. Okay. Can you be anymore specific than that?

A. I can't really. There was a variety of different --

Q. And -- I'm sorry. You told us before, you're not a chemist; that's not your field?

A. That's correct.

Q. And are you a specialist in Kapton?

A. No, I'm not.

Q. Would you defer to others on that topic?

A. Absolutely.

Q. Let's take a look at Exhibit 4 and that test that Hi-Stat did. They cycled some switches to failure. And the switches, according to Hi-Stat, leaked at approximately 1,310,000 cycles. Do you see that?

A. That looks like it's about the fifth one down?

Q. Well, the first one that says: "Leak." I

guess, diaphragms cut, is that it leaked. Look -- Look where there's the ones that talk about leaking.

A. Yeah.

Q. Only the first leaker from the group that you had tested or Ford had tested at Hi-Stat is 1,310,000 and 551,000 cycles?

A. That's correct.

Q. And what is it about that Kapton that differentiates it from Kapton that you've seen in the field that you believe is defective in some fashion?

A. This Kapton would've been produced in -- in all probability, 1998 or 1999.

Q. What were the -- The real answer is, you don't know because you haven't looked at these parts, right, Mr. Porter?

A. I --

MR. FEENEY: Wait a minute. Objection, argumentative.

Q. Okay, sir. You have not looked at any of these parts that failed at Hi-Stat after being cycled to --

A. No, I haven't. That's correct.

Q. So when I asked you what differentiates that Kapton with cracks in it from Kapton you saw in

the field; the answer is: I don't know because I didn't look at it, right?

A. That's correct.

Q. Okay. Now, you've seen Kapton with cracks in it in the field. How do you know that Kapton has not simply reached end of life?

A. In the application that it is, it may have reached its end of life, but it has not managed to reach the design cycle for the part. The -- The Kapton has failed at 50,000 miles -- 50- to 60,000 miles in some vehicles, which is far short of -- of the design life either for the vehicle or for the switch.

Q. Well, you don't know exactly how many cycles any of those switches saw that you looked at. Am I correct on that?

A. I cannot tell you how many cycles the switches saw. I can tell you that it was less than 500,000.

Q. And what do you base that on?

A. The analysis that was done that shows the 500,000 cycles of the switch at a hundred -- at 1450 psi and 135 C equates to about two-and-a-half times the vehicle life.

Q. And what testing are you referring to?

A. I'm referring to data that was collected on the 1992 Crown Vic, Grand Marquis for brake applications.

Q. What year was that data collected?

A. 1992.

Q. And have you looked at it in preparation for this deposition?

A. No, I have not.

Q. When is the last time that you saw it?

A. It was some -- I -- It was a long time. It was several months ago.

Q. Can you tell me from a chemical analysis whether there is any difference between Kapton that has simply worn out and Kapton that has a cut or a crack in it?

A. I can't tell you that.

Q. Did Ford do any testing to try to differentiate when Kapton would fail from simple end of life versus whether there was some anomaly to the Kapton?

A. No, they did not. You would depend on Du Pont for that.

Q. You're not aware of any such tests and you haven't seen any in this case?

A. I haven't seen any in this case.

Q. Is there somebody at Ford that you consider more knowledgeable than you on Kapton?

A. There are some polymer experts at our Central Laboratories.

Q. And did you ask any of those individuals to assist you in this investigation?

A. I didn't ask them directly, no.

Q. Do you know if any of them did assist in the investigation?

A. I believe they did.

Q. And who would that be?

A. I'm not sure what their names are.

Q. Is the best that you can describe the alleged defect in parts manufactured in '91 and '92, that those parts, in your opinion, have a propensity to crack in the Kapton at some point before you believe they should?

A. I guess the best that I can describe the defect is that fluid leaks through the Kapton into the electrical componentry.

Q. Okay. And the exact mechanism for how that leak occurs, you do not know?

A. I do not know exactly when that --

Q. Do you know if anyone at Ford knows that?

A. I don't believe they do, because that

hasn't been provided to us by Texas Instrument.

Q. Did any of the testing you did at Hi-Stat, was -- was any of that information something that you asked for or received?

A. What information.

Q. Did you ask Hi-Stat to run any tests to determine the failure mechanism that you believe occur in these switches manufactured in '99 and '92?

A. No, we did not.

Q. What -- What do you conclude from Exhibit 3, if anything?

A. That when Hi-Stat ran these tests, the parts that they had procured met the -- the design -- or the specification.

Q. What do you conclude from the Ford test, exhibit 1, the brake fluid test?

A. I conclude that brake fluid in the switch cavity can lead to a fire.

Q. One thing you mentioned earlier when Mr. Jolly was asking you questions, you said that Ford does have a root cause and you believe the root cause is failure through Kapton, allowing brake fluid leak into the switch. Do I have that right?

A. That's correct.

Q. Okay. Then why is Ford still doing tests

today with switches and brake fluid? If you have a root cause, why are you continuing to do tests, Mr. Porter?

A. Because T.I. continues to deny that it's a possibility.

Q. And what do you hope to learn from the tests that you're doing?

A. I hope to learn that -- that we can show that there is -- in this particular case, that brake fluid does cause a fire. T.I. had contended earlier that they had only been able to cause it with saltwater and that brake fluid must not be a problem. So this test flies in the face of that.

Q. Well, doesn't Exhibit 1 do that?

A. That's exactly what I meant.

Q. So why are you doing additional tests?

A. Why are we doing additional tests?

Q. Yeah. I mean, how are they different than Exhibit 1, I guess, is what I'm asking you?

A. You mean, that -- the Hi-Stat test?

Q. No. No. Exhibit 1 is Ford's test that -- the purpose is to show brake fluid without saltwater contamination causes electrical short circuit of test item. That's the purpose. And the conclusion is: Brake fluid contamination does cause electrical

short circuit and results in fire in the Texas Instruments switch test item.

A. Due to Texas Instruments' continued assertion that -- that it is not that, we wanted to be able to modify the process so that we could do it on a regular basis.

Q. Well, has this Exhibit 1 ever been provided to T.I., short of maybe two days, to your knowledge?

A. To my knowledge, it wasn't in existence short of November 3rd.

Q. In the testing that's being done now, explain how it's being done.

A. Explain how the test is being done?

Q. Uh-huh. What is somebody testing?

A. What they are testing is, as I said, they have punctured the Kapton to cause a fluid leak through the Kapton. They are providing brake fluid at a low pressure to allow for brake fluid to enter into the switch cavity and it is -- has 12 volts applied to it with the capability of -- of up to 15 amps of current.

Q. How many switches are being tested?

A. I believe there are six or seven on test.

Q. What are the date codes of the switches?

A. They are all 1999 date codes.
Q. And where are the tests being done?
A. They are being done at Building 5.
Q. That's right. I asked you that. Okay. Why did Ford ask Hi-Stat to run tests at temperatures that you were in excess of the specification, if you know?
A. I believe that was actually an error on Hi-Stat's part..
Q. Do you know what instructions were given to Hi-Stat?
A. I believe that we were -- we asked them to run the engineering specification test.
Q. And who dealt with Hi-Stat? Was that Mr. Reimers?
A. That was primarily Mr. Reimers.
Q. Do you know where these tests were done?
A. Not for sure. They were -- I believe they were at a Hi-Stat facility.
Q. Has Ford asked for microscopic analysis of the Kapton diaphragms in any of the switches that were cycled to failure in Exhibit 4?
A. No, we have not.
Q. Do you know why not?
A. We didn't think it was necessary.

Q. Why not?
A. They leaked.
Q. Well, surely you're not contending that any switch that leaks is defective?
A. No, I'm not. But if they leak prior to 500,000 cycles, they do -- they are.
Q. Well, was it -- was it of interest to anybody at Ford to examine the Kapton diaphragm in the switches that cycled to failure at 1,300,000, to compare those with switches that you believe may have cycled shorter than 500,000 on the field return vehicles (sic.)?
A. No.
Q. Why not?
A. Because it -- again, failing at 1,300,000 passes the specification and passes the life expectancy for the vehicle.
Q. Am I correct that Ford has done no analysis to examine the Kapton that failed through cycling to failure at -- in excess of 500,000 cycles with those that Ford contends cycled to failure prior to 500,000, to your knowledge?
A. To my knowledge, that would be correct.
Q. Do you know what the first Texas Instruments brake pressure switch was that was

provided to Ford?

A. I'm not sure what you mean by that.

Q. In your investigation when you began to look into the speed control deactivation switch, did you look to see when the first speed control deactivation switch -- or brake pressure switch was provided by Texas Instruments to Ford, what vehicle it went into?

A. The first switches that were -- came to Ford were -- went into the 1992 Town Car.

Q. Were you aware that Texas Instruments provided brake pressure switches to Ford for use from the 1987 T-bird?

A. Not for the use in speed control deactivation.

Q. But they were brake pressure switches, were they not?

A. They -- They may have been brake pressure switches.

Q. I'm trying to find out, did you, as part of your investigation look into that?

A. Actually, that was a piece of information that I don't recall being provided to us.

Q. Okay. Did you look at Ford to see when the first brake pressure switch Texas Instruments

supplied was received by Ford and how it was supplied?

A. You mean, the one that -- on the Thunderbird?

Q. Yes.

A. Subsequently we have.

Q. Did you look at the vehicle design and how that switch was used in the 1987 Thunderbird?

A. We've -- We've looked at that cursorily, yes.

Q. Can you explain to us how the system used Texas Instruments' brake pressure switch in that vehicle?

A. That switch was used as an input into the suspension control module.

Q. And how was the sys -- how was the switch activated and how was it used as an input?

A. It was activated based on brake pressure. I believe, internal to the switch there was a different design than what was on the Town Car. The inputs into a -- into a control module as a -- as a control point.

Q. Did you -- In your investigation, did you look and see what the similarities were between that 1987 '67 T-bird switch and the switch that was being

provided for the Lincoln Town Car?

A. We -- We tried to do that. The original information from T.I. was that they were essentially the same switch. Upon doing X-ray analysis of those switches, we found that the switch mechanism inside was actually quite different.

Q. How was it different?

A. They -- It had an S-spring type mechanism for -- for contact versus the spring arm that's in the Town Car.

Q. Okay. Were there any other differences that you recall?

A. Well, that -- that, in my mind, made it a different switch.

Q. And did you look at what the field history had been for warranty items in this 1987 T-bird switch?

A. No, we did not. We didn't -- We were not aware of that switch at the time.

Q. And have you looked since then?

A. No, I haven't.

Q. Do you know whether the 1987 T-bird brake pressure switch received constant power?

A. I don't believe that it did.

Q. Do you know whether it was energized at

any point in time with more than a hundred milliamps?

A. I don't believe that it was -- that it was energized with current ever. They're energized based on fluid pressure, not current.

Q. And in your investigation -- By the way, when did you join the investigation team that was looking into the possible cause of under hood fires in the '92, '93 Lincoln Town Cars?

A. November of 1998.

Q. And were you one of the initial team members?

A. Yes.

Q. Were there people who were working on the project before you got involved?

A. I wasn't aware of any of those.

Q. And when you got involved, did you ask to see what the warranty data was for the switch that was being provided by Texas Instruments for this application, the '91, '92 Lincoln Town Car switch?

A. Yes, I did.

Q. And what did the warranty data indicate?

A. I --

Q. First of all, let's -- What is the warranty data? Explain that to the jury.