

EA02-025

TEXAS INSTRUMENTS, INC.'S

9/10/03

REQUEST NO. 7

BOX 10

PART A - I

PART C

1 OF 3

VOLUME: I
PAGES: 1 - 288
EXHIBITS: 1 - 4

IN THE CIRCUIT COURT OF JACKSON COUNTY, MISSISSIPPI

[REDACTED]

Plaintiffs

v.

Case No.
CI-99-0211(3)

FORD MOTOR COMPANY, D & L, INC. OF
COLLINS f/k/a D & L, FORD, INC.,
WOOLWINE FORD LINCOLN-MERCURY, INC.,
Successor in Interest to D & L FORD,
INC., E.I. DUPONT DE NEMOURS AND
COMPANY, and TEXAS INSTRUMENTS
INCORPORATED

Defendants

VIDEO DEPOSITION OF [REDACTED]

[REDACTED] taken on behalf of the plaintiffs,
pursuant to the Mississippi Rules of Civil
Procedure, before Jeffrey A. Gabriel, a Notary
Public, in and for the Commonwealth of
Massachusetts, at the Courtyard Marriott, 35 Foxboro
Boulevard, Foxboro, Massachusetts, on Friday, June
30, 2000, commencing at 9:00 a.m.

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A-P-P-E-A-R-A-N-C-E-S

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A-P-P-E-A-R-A-N-C-E-S (cont'd)

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I-N-D-E-X

Witness Direct Cross Redirect ReCross

[REDACTED]

by:

Mr. Jolly	8	
Ms. Weiner		280
Mr. Burrow		286

E-X-H-I-B-I-T-S

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P-R-O-C-E-E-D-I-N-G-S

(Exhibit Number 1, Highlights; Exhibit Number 2, Hydraulic Pressure Switch Cross Section; and Exhibit Number 3, Process Flow Chart 77PSL2-1/2-3, were marked and entered into evidence prior to the beginning of the deposition.)

THE VIDEOGRAPHER: The tape is recording. We are now on record. The time is 9:06. Today is the 30th day of June, 2000. The video tape operator is Nancy Gunning. I am here from Gunning Legal Video Productions, Walpole, Massachusetts, in association with Eyal Court Reporting, Boston, Massachusetts. The case caption is In The Circuit Court of Jackson County, Mississippi, [REDACTED] versus [REDACTED] Ford Motor Company, D & L, Inc. of Collins, f/k/a D & L Ford, Inc. Worldwide, Ford Lincoln Mercury, Inc., successor in interest to D & L Ford, Inc., E.I. Dupont De Nemours and Company,

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and Texas Instruments, Incorporated, Case
Number CI-99-0211. The name of the
deponent is [REDACTED] The
deposition is being recorded at the
Courtyard Marriott, Foxboro,
Massachusetts, on behalf of the
plaintiffs. Counsel will now identify
themselves.

MR. JOLLY: Mike Jolly, here
for the plaintiffs.

MR. THOMAS: Philip Thomas
on behalf of the Ford Motor Company.

MR. MANSKE: Jeff Manske,
also representing Ford Motor Company.

MR. WEINER: Monique Weiner
on behalf of Dupont.

MS. SPEER: Dana Spear on
behalf of Dupont.

MR. BURROW: Stephen Burrow
on behalf of Texas Instruments.

MR. CARTER: Johnny Carter
on behalf of Texas Instruments. And I'd
also like to make just a brief
preliminary statement, which is that

1 pursuant to a cross notice and then a
2 subsequent Rule 11 agreement, this
3 deposition is also taking place in three
4 other cases, [REDACTED]
5 versus Ford Motor Company, Texas
6 Instruments, Dupont and the dealership in
7 Dallas County, Texas; [REDACTED]
8 versus Ford Motor Company, Texas
9 Instruments, the dealerships, intervenors
10 and Dupont in Harris County, Texas; and
11 [REDACTED] versus Ford, Texas
12 Instruments, Dupont and probably some
13 others in Wharton County, Texas.

14 THE VIDEOGRAPHER: The court
15 reporter is Jeff Gabriel, and he will now
16 swear in the witness.

17 [REDACTED] the
18 witness, having been duly sworn,
19 testified as follows:

20 DIRECT EXAMINATION.

21 BY MR. JOLLY:

22 Q. Would you introduce yourself to the
23 Ladies and Gentlemen of the juries of the
24 different counties and states that are

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going to be hearing these cases?

A. My name is [REDACTED]
and I'm an Engineering Manager at Texas
Instruments.

Q. You understand you're here today to talk
about four different fire cases, where
it's alleged that Texas Instruments had a
role in those fires, correct?

A. Yes.

Q. And one of those cases have to do with
[REDACTED] in Wharton County,
Texas, correct?

A. Yes.

Q. You understand that?

A. Yes.

Q. [REDACTED] are making allegations to
the effect that Texas Instruments, their
speed control deactivation switch, had
some role in causing a fire which
destroyed their house and all their
belongings? You understand that?

A. Yes.

Q. What is TI's position regarding those
allegations as to [REDACTED]

- 1 [REDACTED]
- 2 MR. CARTER: Carter.
- 3 Objection, form.
- 4 A. TI, Texas Instruments, does not feel that
- 5 any sw -- any pressure switches provided
- 6 by TI caused any vehicle fires.
- 7 Q. With regard to Pat and Martin Krupp
- 8 specifically?
- 9 A. Yes.
- 10 Q. Does that go for any possible
- 11 manufacturing defects that the switch may
- 12 have encountered?
- 13 A. TI is --
- 14 MR. CARTER: Objection,
- 15 form.
- 16 A. TI is not aware of any manufacturing
- 17 defects in any switches provided to Ford.
- 18 Q. So it's TI's position that there was no
- 19 manufacturing defect that may have been a
- 20 cause of the fire which destroyed the
- 21 [REDACTED] house?
- 22 A. Yes.
- 23 Q. Okay. And the same question for [REDACTED]
- 24 -- the [REDACTED] up in Dallas County,

1 Texas?

2 MR. CARTER: Objection,
3 form.

4 A. Which questions?

5 Q. The question having to do with
6 manufacturing defect? Is it TI's
7 position that there was no manufacturing
8 defect regarding the pressure control
9 deactivation switch -- the speed control
10 deactivation switch and any role that --
11 causing the fire which destroyed the
12 [REDACTED] house?

13 A. It is TI's position that there was no
14 manufacturing defect.

15 Q. All right. As -- and as far as [REDACTED]
16 [REDACTED], she is a single lady, and she
17 lives in Harris County, Texas. She
18 alleges that her house was destroyed by a
19 defective speed control deactivation
20 switch. And is it TI's position that
21 there was no manufacturing defect which
22 caused, or contributed to cause that
23 fire?

24 MR. CARTER: Objection,

1 form.

2 A. It's TI's position that there was no
3 manufacturing defects in pressure
4 switches provided to Ford.

5 Q. What about the switch that was on [REDACTED]
6 [REDACTED] vehicle at the time of the fire?

7 A. Assuming that that switch was a TI switch
8 from a Ford vehicle, then, no, there were
9 no manufacturing defects in TI pressure
10 switches provided to Ford.

11 Q. Okay. And how about the, the folks who
12 live in Mississippi, the [REDACTED]
13 Their house was destroyed, and they're
14 making allegations that Texas Instruments
15 speed control deactivation switch which
16 was installed on their Panther platform
17 vehicle contributed to or cause the fire?
18 Is it TI's allegation that there was no
19 manufacturing defect with the switch that
20 may have caused that fire?

21 MR. BURROW: Object to the
22 form of the question.

23 A. There, there were no manufacturing
24 defects in Texas Instruments switches

1 that may have caused that fire.

2 Q. Including the switch that was installed
3 on the Campbell's vehicle at the time the
4 car caught on fire?

5 MR. CARTER: Objection,
6 form.

7 A. I don't know exactly what switch was on
8 that fire.

9 Q. Well, the pressure, pressure switch, the
10 speed control deactivation switch which
11 was, which was installed on the
12 [REDACTED] car at the time the car caught
13 fire?

14 A. None --

15 MR. BURROW: Object to form.

16 A. None of the switches provided by TI to
17 Ford had any manufacturing defects.

18 Q. Did you look at the [REDACTED] vehicle?

19 A. No, I did not.

20 Q. Did you send anyone from Texas
21 Instruments to go look at the Campbell
22 vehicle?

23 A. I did not.

24 Q. Did anyone from TI send anyone to go look

1 at the [REDACTED] vehicle after the fire?

2 A. I, I believe that vehicle's been
3 inspected by a cause of origin expert.
4 hired by Texas Instruments' attorneys.

5 Q. All right. And -- but no one from -- no
6 engineers from Texas Instruments have
7 gone out to look at the [REDACTED]
8 vehicle after the fire?

9 A. Not that I'm aware of.

10 Q. And how about [REDACTED] car? Did
11 you go look at [REDACTED] car after
12 her fire?

13 A. I did not look at [REDACTED] car
14 after a fire.

15 Q. Did anyone from Texas Instruments go look
16 at [REDACTED] car after the fire?

17 A. Not that I'm aware of.

18 Q. Did anyone from Texas Instruments ask
19 anyone to go look at [REDACTED] car
20 after the fire?

21 A. I believe there was a cause of origin
22 expert hired by Texas Instruments'
23 attorneys that, that inspected [REDACTED]
24 [REDACTED] car after the fire.

- 1 Q. And is that the same expert that looked
2 at the Mississippi car?
- 3 A. I don't know.
- 4 Q. You never have seen who was retained by
5 Texas Instruments to go look at that car
6 to determine what the cause of origin of
7 the fire was?
- 8 A. I know Bill Hamilton and Roger Owens were
9 retained by Texas Instruments. I'm not
10 sure which of the two visited --
11 inspected which car.
- 12 Q. Do they work at the same location?
- 13 A. I don't know.
- 14 Q. You don't know -- do you know -- so it
15 was one of the -- one or the other of
16 those two guys?
- 17 A. Yes.
- 18 Q. Looked at the Mississippi car? One of
19 those two guys looked at the Mississippi
20 car after the fire?
- 21 A. Yes.
- 22 Q. All right. And one of those two guys
23 looked at the [REDACTED] car after the fire?
- 24 A. Yes.

1 Q. And how about the [REDACTED] car after the
2 fire? Did one of those two guys look at
3 that car?

4 A. Yes.

5 Q. And als -- also the [REDACTED] car? One of
6 those two guys looked at the Payne car
7 after the fire?

8 A. Yes.

9 Q. Have you looked at any reports or, or
10 findings or anything written by those two
11 gentlemen regarding any of their
12 inspections of any of those four cars?

13 A. No, I have not.

14 Q. Have any of those gentlemen or anyone who
15 works for them told you or anyone at
16 Texas Instruments whether or not those
17 four cars had TI pressure control speed
18 -- pressure switches installed on the
19 cruise control?

20 A. Not that I'm aware of.

21 Q. Is it TI's position that these four cars
22 did not have a speed control deactivation
23 switch manufactured by TI?

24 A. I, I don't know whether they had a speed

1 control deactivation switch on those cars
2 or not.

3 Q. Well, does TI know if they did have a
4 pressure switch for the cruise control?

5 A. I don't know.

6 Q. You don't know if these four cars had a
7 speed control deactivation switch?

8 MR. CARTER: Objection,
9 form.

10 MR. BURROW: Objection to
11 form. Asked and answered.

12 A. Which four cars?

13 Q. Four cars, one owned by [REDACTED]
14 [REDACTED]

15 A. I don't know.

16 Q. All right. Are you going to go to, to
17 court and tell the jury you just don't
18 know if any of these four cars were
19 fitted with a Texas Instruments speed
20 control deactivation switch?

21 MR. CARTER: Objection,
22 form.

23 A. I can't tell you what I'm going to say in
24 court. I can only tell you what I know

1 right now.

2 Q. Well, if you're in court on the stand in
3 front of the jury, and the lawyer asks
4 you, does TI know if any of these four
5 cars were fitted with a speed control
6 deactivation switch at the time they
7 caught fire, what are you going to say?

8 MR. CARTER: Objection,
9 form.

10 MR. BURROW: Object to the
11 form. You've asked him four times now.

12 A. I can't tell you what I would say at that
13 time, because more information may become
14 available to me. The only thing I can
15 tell is you what I know today.

16 Q. And so what do you think -- how, how are
17 you going to learn whether or not any of
18 these four cars TI speed control
19 deactivation switches mounted on during
20 -- at the time they burned?

21 MR. CARTER: Objection,
22 form.

23 A. I, I didn't say I was going to learn. I
24 said I don't know.

1 Q. Do you think that maybe you will learn
2 before trial?

3 A. I don't know.

4 MR. CARTER: Objection to
5 form.

6 Q. Okay. What do you know about the
7 manufacturing and production and
8 development of the speed control
9 deactivation switches?

10 MR. CARTER: Objection,
11 form.

12 A. I know a lot of details about the
13 development and manufacturing of the
14 speed control deactivation switches by
15 TI.

16 Q. Okay. How about the, the switches that
17 were installed on the Panther platform,
18 '92 - '93 era?

19 MR. CARTER: Objection,
20 form.

21 A. Can you repeat the question?

22 Q. Do you know quite a bit about the
23 development and production of the speed
24 control deactivation switches which were

1 manufactured by Texas Instruments that
2 were installed on the '92 - '93 Panther
3 Platforms?

4 A. I am knowledgeable in those areas.

5 Q. Okay. Did you work at TI at that time
6 period?

7 A. Yes, I did.

8 Q. When did you start working at TI?

9 A. September 1st, 1988.

10 Q. All right. And what was your job
11 capacity at that time?

12 A. As a Design Engineer.

13 Q. Working in what group?

14 A. In the advanced sensors group.

15 Q. And does the advanced sensors group make
16 pressure switches?

17 A. No.

18 Q. What do they make?

19 A. That's -- it's the design group that --
20 where we were designing different
21 sensors, not -- that individual group did
22 not design pressure switches.

23 Q. What, what kind of sensors did that group
24 make? The group that you first started

1 out in?

2 A. At the time we were designing pressure
3 sensors. We were designing
4 accelerometers. Designing wheel speed
5 sensors.

6 Q. Pressure sensors? And what, what type of
7 pressure sensors were you designing at
8 that time?

9 A. Diazo electric cylinder pressure sensors.

10 Q. The kind of pressure sensor that would be
11 exposed to a fluid? Fluid pressure or an
12 atmospheric gas type pressure?

13 A. It would be exposed to the, the
14 atmosphere that was in a cylinder in the
15 engine.

16 Q. Okay.

17 A. So it's a mixture of gas and, and air and
18 measure -- monitoring the combustion
19 pressure.

20 Q. All right. What are the different groups
21 at, at TI that have to do with designing
22 or developing pressure switches?

23 A. At the time there was a design
24 engineering group for pressure switch.

- 1 design.
- 2 Q. Specifically for pressure switch design?
- 3 A. Yes.
- 4 Q. And was that group specifically for
- 5 pressure switches which were going to be
- 6 designed and developed and, and produced
- 7 for the automobile industry?
- 8 A. Yes.
- 9 Q. And give us some kind of a sketch or
- 10 schematic of just the, the structure of
- 11 the engineering groups --
- 12 A. Okay.
- 13 Q. -- around the pressure switch area or,
- 14 or, you know, in that area, if you can?
- 15 MR. CARTER: Objection,
- 16 form.
- 17 A. In the, in the department, there was a
- 18 design engineering group that was broken
- 19 down into different sections, each
- 20 section lead by a design supervisor. And
- 21 generally those sections were broken,
- 22 broken out by different products. So
- 23 there would be one group focusing on
- 24 pressure switches, another group on

1 pressure sensors. There was a group on
2 advanced sensors, and things like that.

3 Q. Okay. So that you started out in the
4 advanced sensor group?

5 A. Yes.

6 Q. And when, when did you -- did you move
7 out of that group at any time?

8 A. Yes. In, in 1993.

9 Q. All right. Where did you move to?

10 A. I became the Design Supervisor for our
11 pressure transducer group.

12 (Discussion off the record.)

13 A. Pressure transducer group.

14 Q. And how is that related to pressure
15 switches for vehicles?

16 A. There's many ways that they're related.
17 They serve similar applications, send
18 similar fluids, similar components inside
19 the devices are similar.

20 Q. What is a transducer?

21 A. A transducer is a, a -- essentially it's
22 a pressure sensor. It, it converts the
23 pressure to a voltage output. In this
24 case a zero to five volt output that's

- 1 linearly proportional to the input
2 pressure.
- 3 Q. Okay. The pressure switches that were
4 installed on this -- on, on, on the
5 affected vehicles we're talking about,
6 the Panther platform, '92 - '93 era, are
7 those transducers?
- 8 A. No, they are not.
- 9 Q. But there are similarities in the
10 transducers as to these pressure
11 switches, correct?
- 12 A. Yes.
- 13 Q. And could you tell us a little bit about
14 those similarities? Structurally?
- 15 MR. CARTER: Objection,
16 form.
- 17 A. There are similarities between the two in
18 terms of they both use elastomer seals.
19 They both generally have connectors that
20 -- or, or bases that are made with
21 customer connectors --
- 22 Q. I'm sorry. Are made with what kind of
23 connectors?
- 24 A. Our customers' connector.

- 1 Q. Okay.
- 2 A. They both sense similar pressure media.
- 3 There's probably other similarities that
- 4 I'm not thinking of right now.
- 5 Q. What do you mean similar, similar
- 6 pressure media? Is that the, the fluid
- 7 that's in contact with the seal?
- 8 A. Yes.
- 9 Q. Would those transducers be fitted with
- 10 things like Kapton seals?
- 11 A. The pressure transducers do not have
- 12 Kapton seals.
- 13 Q. And what kind of barrier is there between
- 14 the media -- pressure media and the
- 15 electronic, or electrical components of
- 16 those transducers?
- 17 A. There's a ceramic disc that compresses an
- 18 O-ring or a gasket between the ceramic
- 19 disc and the metal hexport which provides
- 20 the seal to pressure.
- 21 Q. All right. So, so that mechanical
- 22 separation between the fluid -- the
- 23 pressure media and the electrical
- 24 components, that's really a lot different

- 1 than what we're talking about on these
2 pressure switches installed on the
3 Panther platform, right?
- 4 A. They're similar in terms of using an
5 elastomer, but the ceramic disc is part
6 of the sensing element of the transducer.
7 It's --
- 8 Q. Where, where is the elastomer installed
9 on those transducers?
- 10 A. Where, meaning location of the part?
- 11 Q. Yeah. I don't get you on where the
12 elastomer is on the, on the transducers?
- 13 A. There's a, a metal pressure port, and the
14 elastomer sits in the bottom of the metal
15 pressure port, and then the components or
16 transducer are mounted on top of that,
17 first the sensing element and then the
18 electronics. And that ceramic disc,
19 which is part of the sensing element,
20 compresses that, that elastomer, that
21 O-ring.
- 22 Q. Okay. It's an O-ring, that elastomer?
- 23 A. In some parts it's an O-ring. In some
24 parts it's a gasket.

1 Q. Okay. It is similar to the, to the
2 gaskets that's on the pressure switches
3 that were installed on the Panther
4 Platforms?

5 A. That gasket's an environmental seal
6 gasket. I'm referring to the pressure
7 media seal.

8 Q. Okay. Okay.

9 A. O-ring, or elastomer.

10 Q. But there's no Kapton or anything like
11 that in these transducers?

12 A. There is, there is Kapton in the
13 transducers, not for pressure media
14 sealing.

15 Q. Okay. And what is the function of the
16 Kapton?

17 A. It forms the circuit board material.

18 (Discussion off the record.)

19 Q. It forms what?

20 A. The circuit board material.

21 Q. Okay. So that was in '93 you went to
22 that group?

23 A. Yes.

24 Q. And what was your job title there?

- 1 A. Design Engineering Supervisor.
- 2 Q. At that time, in '93, the switches that
3 we're talking about that are installed,
4 or that may have been installed in, in
5 the four cars that we're here about
6 today, those had already been
7 manufactured and distributed by Texas
8 Instruments, correct?
- 9 A. I'm not sure of the exact date of the
10 manufacture of the switches on those four
11 cars, but we would have already been in
12 production of the 77PSL2-1.
- 13 Q. Okay.
- 14 A. By January, '93.
- 15 Q. What do you call that?
- 16 A. 77PSL2-1.
- 17 Q. Okay. 77PSL2-1?
- 18 A. Yes.
- 19 Q. Okay. Did you have any contact, or were
20 ou involved at all during the
21 developmental stages of the -- what you
22 just said, the 77PSL2-1?
- 23 A. I was not directly involved, no.
- 24 Q. Okay. So in 19 -- after -- you went to

- 1 the transducer group in '93. How long
2 were you there?
- 3 A. I was in the Design Supervisor position
4 for about two and a half, two and three
5 quarter years.
- 6 Q. Okay. And then where, where did you --
7 where was your next move within TI?
- 8 A. In, in late 1995 I was promoted to
9 Engineering Manager, still responsible
10 for pressure transducers.
- 11 Q. Okay.
- 12 A. But as an Engineering Manager position.
- 13 Q. As an Engineering Manager, who do you
14 oversee? Who did you oversee at that
15 time period?
- 16 A. It's still design engineering. I had
17 design engineering supervisors that
18 reported to me in that role.
- 19 Q. Which, which of the design engineers?
20 For what groups?
- 21 A. Pressure transducers.
- 22 Q. And what else? What other group?
- 23 A. Solely at that time pressure transducers.
- 24 Q. Okay. The guys who were, or the, the

- 1 people who were developing and producing
2 the Panther platform pressure switch,
3 what group are they under? What
4 engineering group --
- 5 A. The design engineers were in the pressure
6 switch --
- 7 Q. Okay.
- 8 A. -- design group.
- 9 Q. All right. Who was the Manager of that
10 group?
- 11 A. The Engineering Manager was Tom
12 Charboneau.
- 13 Q. Right.
- 14 A. Charboneau, C-H-A-R-B-O-N-E-A-U.
- 15 Q. And you and Tom, and I guess it -- was he
16 at that position in capacity in '95?
- 17 A. Yes, he was.
- 18 Q. And how about 1990? Do you remember?
- 19 A. I believe so, yes.
- 20 Q. So he would have been there -- well, I
21 don't know if you'd know, but when the
22 first developmental activity started at
23 TI with regard to the pressure switches
24 that we're talking about for the Panther

- 1 platform, he would have been there at the
2 beginning of that period?
- 3 A. I don't know if he was there exactly at
4 the beginning. He was put in that
5 position in, I think it was sometime
6 during 1989. I think the development
7 started actually a little before that.
8 But he was in that position relatively
9 early on.
- 10 Q. All right. But he would have been in
11 that position throughout most of the
12 development, at least, and then the
13 beginning of the production?
- 14 A. Yes.
- 15 Q. Of the Panther platform speed control
16 deactivation switches?
- 17 A. Yes.
- 18 Q. How long were you in this managerial
19 capacity? Are you still?
- 20 A. That's my current position today.
- 21 Q. Okay.
- 22 A. My responsibility has grown over time,
23 but it's the same title.
- 24 Q. Yeah. Does Tom still work there at Texas

1 Instruments?

2 A. Yes, he does.

3 Q. Don't you think that he may know more
4 about these pressure switches than you?

5 MR. CARTER: Objection,
6 form.

7 Q. Since he was the manager of the group
8 that was developing and manufacturing,
9 producing?

10 MR. CARTER: Objection,
11 form.

12 A. I don't know if Tom knows more about
13 these pressure switches than I do.

14 Q. Well, does he know more about the
15 transducers that you oversee than you
16 do?

17 MR. CARTER: Objection,
18 form.

19 A. I don't know. He knows a great deal
20 about the transducers.

21 Q. Tell us, just a thumbnail sketch, what
22 happens when a customer comes to Texas
23 Instruments and asks for Texas
24 Instruments to develop, help develop or

1 -- and produce a pressure switch like we
2 have in this case? What are the, what
3 are the periods of time?

4 A. Well, typically a customer would, would
5 come to us, discuss their needs and their
6 system, what the requirements for the
7 part need to be. We would review with
8 them devices we have already in
9 production and anything else that we're
10 working on. If the customer had a desire
11 to work further with us, we would work
12 together on the design of that product.
13 As, as the customer was developing their
14 application of the system, they would
15 provide that information to us. We would
16 design the part, test the part, continue
17 to make improvements to the design,
18 eventually go through design validation
19 testing to prove out the, the
20 functionality of the design. We would
21 tool up the production line and then do
22 the production validation testing to
23 prove that the product meets the
24 specification coming off the production

1 line. We would provide all that
2 information to the customer. They would
3 approve us for production. And then we
4 would, we would launch into production.

5 Q. I guess the first, the first thing that a
6 cus -- you and -- or Texas Instruments
7 and the customer would do would come to
8 -- you would be able to come to some kind
9 of an agreement to terms about what
10 you're going to make and how you're going
11 to go about making it --

12 MR. CARTER: Objection,
13 form.

14 Q. -- or designing it or developing it?

15 MR. CARTER: Objection,
16 form.

17 A. The customer would provide to us the
18 details or the specifications of what the
19 part needed to meet.

20 Q. All right. And what, what does Texas
21 Instruments usually call that set of
22 information? Is it ES, or engineering
23 specifications?

24 A. Customer specifications.

- 1 Q. Okay. You all -- does Texas Instruments
2 initial that, like CS or anything like
3 that in its documents?
- 4 A. No.
- 5 Q. What, what's the designation ES that's --
- 6 A. That's a Ford designation for engineering
7 specifications.
- 8 Q. Okay. Does -- okay. So if I see the
9 term ES in a TI document, that would mean
10 what?
- 11 A. They're referring to the Ford
12 specification.
- 13 Q. Okay. So a customer like Ford would come
14 to TI -- and do you remember, do you
15 remember when Ford first came to TI to
16 discuss the design or development of the
17 pressure switch that was installed on the
18 Panther platform vehicles in '92 and '93?
- 19 A. I don't remember when the first time was.
20 I would imagine it would have been some
21 time in 1988.
- 22 Q. All right. And when that happened, was
23 there like a meeting, where, where people
24 met face to face and discussed it, or did

1 you guys take him around the plant and
2 show him how you make switches?

3 MR. CARTER: Objection,
4 form.

5 A. I don't know exactly what took place at
6 that time. Typically, either we would
7 visit the customer or they would come in
8 to visit with us.

9 Q. All right. Would Tom have been the one
10 that they spoke with or talked to at the
11 time? If it were -- if it had to do with
12 pressure switches that were going to be
13 developed under his group?

14 MR. CARTER: Objection,
15 form.

16 A. I don't know if it was Tom or not. There
17 was a Design Engineering Supervisor
18 placed at the time. It may have been
19 that Design Supervisor. And, as I said
20 before, I'm not sure exactly when Tom
21 took over that group as Engineering
22 Manager.

23 Q. Who was that supervisor's name that was
24 under Tom at that time?

1 A. It would have been Carl Sanford.

2 Q. With a "K" or a "C"?

3 A. With a "C".

4 Q. Okay. So after the initial visit from
5 the customer, I guess, what do you all
6 talk about, the specifications that the
7 customer may want to achieve and whether
8 or not TI can develop a product that can
9 do so?

10 MR. CARTER: Just for
11 clarification, are we talking just
12 hypothetically or --

13 MR. JOLLY: Yeah.

14 Mr. CARTER: --

15 specifically? Okay.

16 MR. JOLLY: We're -- just,
17 just hypothetically really.

18 Q. I just want to get a, a thumbnail sketch
19 about what happens when a customer comes
20 to TI and TI starts the wheels going to,
21 to produce a switch?

22 A. Typically, the customer would talk about
23 their requirements for the switch.

24 Q. Okay.

1 A. What their needs were, and TI would talk
2 about our capability and what we could
3 provide. And we'd talk about how those
4 two matched up and what improvements were
5 needed to be made in the device.

6 Q. And that kind of discussion and trading
7 of information would be pre-development,
8 correct?

9 A. It really depends how you define it. I
10 would call it part of development, 'cause
11 essentially you continue to exchange that
12 type of information during the entire
13 development program.

14 Q. Is it typical for TI to enter into some
15 type of a written agreement that may have
16 not -- maybe not real strict terms, but a
17 working agreement at the beginning of the
18 developmental step -- or stage?

19 A. Usually the customer will formally give
20 TI the business, which usually either
21 means a letter which ultimately we
22 usually turn into some type of contract.

23 Q. Okay. Do you ever remember seeing any
24 type of a letter that initiated the

1 developmental stages of the pressure
2 switch that was involved in, in these
3 cases?

4 A. No, I did not. And usually the
5 development will start even before any,
6 any letter is given.

7 Q. Okay. Just informal discussions about
8 the possibilities of making the switch
9 and developing a switch?

10 A. More than informal discussions, actual
11 starting to development.

12 Q. Okay. Have you looked at the history of
13 the development of the pressure switch --
14 I, I can't remember the part number you
15 call it. It's a PS -- 77PS something?

16 A. 77PSL2-1.

17 Q. Okay. Have you looked at the history of
18 TI's development of that switch?

19 A. I've reviewed documents, and I've spoken
20 to some of the people that were involved
21 in the development.

22 Q. All right. At that time during the
23 beginning of the development of the
24 77PSL2-1, was Texas Instruments making

- 1 any other pressure switches that would be
2 installed on a braking system of a
3 vehicle?
4 A. Yes, the were.
5 Q. All right. And can you identify what
6 those part numbers were?
7 A. I can't remember the exact part number.
8 It was part of the 57PS family.
9 Q. Like 57PSL11-3?
10 A. I don't know.
11 Q. Would that have been one?
12 A. I don't know the exact part number.
13 Q. Any of the 57PS switches that TI made,
14 those would be switches that would be
15 installed on brake hydraulics of
16 vehicles?
17 A. Most of the 57PS family was installed on
18 power steering systems.
19 Q. Okay.
20 A. There was at least one. I don't
21 remember. I think there might have been
22 two or three different, different
23 versions that were provided to Ford for a
24 brake application.

1 Q. And that was prior to the beginning of
2 the development of the 77PS switch for
3 the Panther platform?

4 A. Yes. We start production on that switch
5 in 1987.

6 Q. The 57PS?

7 A. The 57PS switch specifically for Ford in
8 the brake system.

9 Q. Okay. In '87?

10 A. Yes.

11 Q. And that 57PS switch for the brake
12 system, and you started -- TI started to
13 develop and manufacture in 1987, did that
14 switch include the similar kind of
15 internal components like Kapton and a, a
16 crimp cup and those kind of features?

17 MR. BURROW: Objection.

18 MR. CARTER: Objection,
19 form.

20 A. The, the 57PS switch provided to Ford for
21 brake system did include, did include
22 Kapton crimp cup.

23 Q. Okay. And did it have three layers of
24 Kapton?

- 1 A. Yes, I believe it did.
- 2 Q. Were they square?
- 3 A. Yes, they were. Or roughly square.
- 4 Q. Right.
- 5 A. I should say.
- 6 Q. Okay. Any other features of that switch
7 that were used or -- well, let me ask it
8 this way. Did TI use similar features
9 from the 57PS switch to help design and
10 develop the 77PS switch for the Panther
11 platform vehicles?
- 12 A. Yes.
- 13 MR. CARTER: Objection,
14 form.
- 15 MR. JOLLY: What's
16 objectional about that?
- 17 MR. CARTER: Vague on
18 similar features.
- 19 Q. Did they, TI?
- 20 A. Yes, in relation to the similar features,
21 we just stayed at the use of Kapton and
22 crimp cup.
- 23 Q. Okay. Crimp cup and Kapton --
- 24 A. And other components.

- 1 Q. Okay. What other kind of components were
2 similar between the 57PS and, and the
3 77PS?
- 4 A. The converter, the washer, the elastomer.
- 5 Q. Okay. Let me get a drawing out so we can
6 go over those parts.
- 7 A. Okay.
- 8 (Discussion off the record.)
- 9 Q. You probably have a better drawing of
10 this somewhere, so I apologize. But I'm
11 just -- this was something that was
12 produced by Ford, and we used it in
13 another deposition, so it's got some
14 notes on it, and so I apologize. I'm
15 going to call this Exhibit Number 2,
16 'cause we've already marked an Exhibit
17 Number 1. It's a schematic of the
18 switch, the 77PS switch which was
19 installed on the Panther platform
20 vehicles. If you, if you could look at
21 that switch for us and, and just point
22 out for me the, the similar
23 characteristics of that switch and the
24 57PS, similar parts?

- 1 A. And what exactly are you -- how do you
2 define similar?
- 3 Q. I don't know. You define it for me.
4 What would you use on the 57, identical,
5 and just put it on a 77PB7
- 6 A. And I'm not sure if any of the part
7 numbers are, are identical, the exact
8 same component.
- 9 Q. All right. I'm not talking about the
10 numbers on the parts, but the actual
11 parts themselves, the dimensions?
- 12 A. Well if the -- all the dimensions were
13 the same, then it would have the same
14 part number.
- 15 Q. Okay. So if it's got a different part
16 number, it's got different dimensions?
- 17 A. Yeah, at least one.
- 18 Q. Okay. But --
- 19 A. Each device is custom designed for a
20 certain actuation pressure, certain
21 requirements for, for that individual
22 application.
- 23 Q. Okay. What -- for example, tell us if,
24 if you can point out the parts on this

- 1 switch on Exhibit Number 1 -- 2, which
2 parts would be changed on this switch to
3 have a different actuation pressure?
- 4 A. There's several parts that could be
5 changed. The, the disc could be changed.
6 The converter could be changed.
- 7 Q. Where's the converter?
- 8 A. It's labeled on the drawing.
- 9 Q. Okay. And that goes right above the
10 disc?
- 11 A. That goes right above the disc.
- 12 Q. What does that converter do?
- 13 A. That converter converts the pressure to a
14 force on the disc.
- 15 Q. It's got a top surface that's made
16 contact with the Kapton?
- 17 A. Exactly.
- 18 Q. And then it's engaged somehow with the
19 disc, right?
- 20 A. Yes.
- 21 Q. All right. That converter, is that the
22 -- a similar type converter that was used
23 on the 57PS?
- 24 A. Yes.

- 1 Q. Is there any difference dimensionally
2 between the 57PS converter and the 77PS
3 converter?
- 4 A. I don't know.
- 5 Q. Who would know?
- 6 A. If I went, if I went and looked at the
7 drawings, I would be able to tell.
- 8 Q. If there were differences, where do you
9 think those differences would be,
10 dimensionally?
- 11 A. Most likely in the location of the bumps
12 that contact the disc.
- 13 Q. The bumps that -- I guess there would be
14 a circular bump, correct?
- 15 A. Yes, that's correct.
- 16 Q. To match up with the circular disc?
- 17 A. Yes.
- 18 Q. Can you take a pen and, and draw an arrow
19 to that bump you're talking about that
20 contacts the disc? What does TI do, make
21 that bump higher or lower depending on
22 what kind of actuation pressure the
23 customer needs?
- 24 A. We can change the diameter of that bump.

1 Q. The diameter?

2 A. Yes.

3 Q. And that makes it either what, higher or
4 lower, or?

5 A. Yes. Because it changes the moment arm.

6 Q. Okay.

7 (Discussion off the record.)

8 Q. And any other differences on the
9 converter between the 57PS and the 77PS?

10 A. It's also possible to change the diameter
11 of the converter bump that's in contact
12 with the Kapton. That will also affect
13 the actuation pressure.

14 Q. Okay. Was that done on the 57 -- any
15 difference between the 57PS than the --
16 and the 77PS in the diameter of the part
17 that contacts the Kapton?

18 A. Referring to the two different brake
19 pressure switches?

20 Q. Yes, Sir.

21 A. I'm not sure if they're different
22 diameter or not.

23 Q. All right. Okay. Any other differences
24 that you can remember?

1 A. Differences in what way?

2 Q. In any way at all in the dimensions of
3 the converter between the 57PS that was
4 made by TI in the late eighties and the
5 77PS, which was eventually developed by
6 TI to be put on the Panther platform
7 vehicles?

8 A. I don't remember whether those
9 differences that I talked about exist or
10 not. I was responding to your question
11 of what differences would you make in the
12 part, or would TI make in the part, to
13 change the actuation pressure.

14 Q. Oh, okay. Okay. So those things that
15 you just said a while ago which may be
16 differences may not really have been
17 differences that were -- that occurred or
18 were in place on the two converters?

19 A. Right. Without, without looking at the
20 two prints, I could not tell you
21 definitely what differences --

22 Q. Okay.

23 A. -- there were.

24 Q. So, in fact, they could be almost

- 1 identical, huh, the 57PS converter and
2 the 77PS converter?
- 3 A. Yes.
- 4 Q. All right. How about the discs between
5 the two, the 57PS and the 77PS? Any
6 differences?
- 7 A. There may be.
- 8 Q. May be a little bit thicker or thinner
9 material?
- 10 A. We change -- we'll change thickness,
11 we'll change crown height, we'll change
12 material.
- 13 Q. Who supplies the disc to, to TI that was
14 installed in the 57PS?
- 15 A. TI stamps that disc out ourselves. TI
16 stamps the disc out ourselves.
- 17 Q. And the same as, the same as for the 77PS
18 disc?
- 19 A. Yes.
- 20 Q. Okay. Any other parts? Let's talk about
21 the other parts inside the switch. The
22 transfer pin. It's a little ceramic --
23 it's like an eraser on a pencil, right?
- 24 A. Except for out of a ceramic material.

- 1 Yeah, it's a cylinder shaped part.
- 2 Q. Okay. Any -- in fact, there's one, and
- 3 it's inside this switch that I brought
- 4 that is partially disassembled. And
- 5 that's that white part that's, that's
- 6 right there, right?
- 7 A. Yes. That's the ceramic pin right there.
- 8 Q. Okay. Any differences between that cera
- 9 -- that transfer pin on the 57PS than in
- 10 the 77PS?
- 11 A. It's possible. I'm not sure.
- 12 Q. Okay. They do perform the, the same
- 13 function?
- 14 A. Performs the same function, yes.
- 15 Q. All right. And the Kapton layers which
- 16 are -- a while ago when we circled that
- 17 part that was raised -- what's that
- 18 called?
- 19 A. The -- that's the bump on the converter.
- 20 Q. Yeah. What did we label that?
- 21 A. I --
- 22 Q. Did you label that at all?
- 23 A. No, you asked me to draw an arrow to it.
- 24 Q. Okay. Why don't you label what you

1 pointed to there? And just initial your
2 -- initial it? And, you know, I don't
3 see anywhere on here where the Kapton is
4 labeled. Will you label that for me also
5 with an arrow?

6 A. It's labeled seal in the drawing.

7 Q. Okay. Well over there by where it says
8 seal, could you write down Kapton and
9 then put your initials, if that's where
10 it is? And that, that Kapton seal
11 comprises three layers of Kapton, right?

12 A. In brake pressure switches, yes.

13 Q. Okay. And some other switches made by TI
14 there, there may be less --

15 A. Yes, that's correct.

16 Q. -- used? All right. Why, why does TI
17 put three layers in brake pressure
18 switches?

19 A. To make sure that we meet the cycle life
20 specification.

21 Q. Okay. And, and what are some other
22 examples of how many layers may be in
23 other switches?

24 A. Power steering switches will typically

- 1 have two layers.
- 2 Q. Okay.
- 3 A. Transmission switches typically have one
4 layer.
- 5 Q. All right. Well, why, why is there a
6 difference between those -- why is there
7 one layer in the transmission, two layer
8 in the power steering and three in the
9 brake system?
- 10 A. The parts are designed differently,
11 different fluid media.
- 12 Q. Is that -- and, and is there something
13 about transmission fluid that isn't as,
14 isn't as malignant or detrimental to the
15 Kapton as, as a brake fluid?
- 16 MR. BURROW: Object to the
17 form of your question.
- 18 A. Can, can you repeat the question?
- 19 Q. Is there something about transmission
20 fluid that's less destructive to Kapton
21 than brake fluid?
- 22 A. The major thing in the -- the
23 transmission switches are designed very
24 differently than the, the brake switches.

- 1 So that's really what drives the
2 differences in the layers. It's a much
3 lower pressure switch. It's a direct
4 contact between the Kapton and the disc.
5 There's no converter.
- 6 Q. Okay. So it's not a, it's not a chemical
7 degradation question, it's more of a
8 mechanical actuation issue?
- 9 A. The brake fluid itself will absorb more
10 water than transmission fluid, and water
11 can be detrimental to Kapton.
- 12 Q. Okay. So it is, it is a chemical attack
13 issue in --
- 14 A. No, the re --
- 15 Q. -- the section --
- 16 A. The reason the two parts are designed
17 differently has more to do -- or uses
18 different number of layers of Kapton has
19 a lot more to do with the design
20 construction and the pressures involved
21 in those switches.
- 22 Q. And it really has not much to do with
23 chemical problems associated with water
24 and Kapton?

1 A. Between a transmission switch and a brake
2 switch, no.

3 Q. No? It's not very likely -- you're not
4 very likely to see, if you know, water in
5 the automatic transmission fluid, are
6 you?

7 A. There will be some water --

8 Q. There will be --

9 A. -- in automatic transmission fluid, yes.

10 Q. But as opposed to -- in comparison
11 between that and brake fluid, where would
12 you expect to see more?

13 A. You expect to see more water in brake
14 fluid.

15 Q. That's because brake fluid what, it likes
16 water?

17 A. It absorbs water, yes.

18 Q. Water likes brake fluid and brake fluid
19 likes water?

20 MR. CARTER: Objection,
21 form.

22 A. I can't tell you chemically exactly
23 what's going on, but brake fluid will
24 absorb --

- 1 Q. Right.
- 2 A. -- some level of water over time.
- 3 Q. Brake fluid is what they call, what,
- 4 hydrophilic by fluid, as opposed to
- 5 hydrophobic?
- 6 A. Yes.
- 7 Q. Okay. Let's look at the switch again on
- 8 the diagram?
- 9 A. Yes.
- 10 Q. The washer.
- 11 A. Yes.
- 12 Q. Is that pretty much the same or similar
- 13 to the, the -- between the 57PS and the
- 14 77PS?
- 15 A. I don't know if there are any dimensional
- 16 differences. It is the same basic shape.
- 17 Q. It's in the same basic place also, right
- 18 in between --
- 19 A. Yes.
- 20 Q. -- the switches?
- 21 A. Yes.
- 22 Q. As a matter of fact, a lot of the
- 23 switches are -- have the same kind of a
- 24 schematic layout, right, that you make --

- 1 form.
- 2 Q. In late, late '88?
- 3 A. I don't think so. The -- I don't
- 4 remember exactly when the launch of the
- 5 brake pressure switch for ITT was.
- 6 Q. Okay. But it was -- may have been late
- 7 '88, early nineties, or what?
- 8 A. I think it was early nineties.
- 9 Q. Okay.
- 10 A. But I'm not positive.
- 11 Q. ITT?
- 12 A. They're now, they're now Continental
- 13 Teves.
- 14 Q. Okay.
- 15 (Discussion off the record.)
- 16 Q. Any differences in the electrical part
- 17 out of the 77PS and the 57PS of the
- 18 switch?
- 19 A. In the, in the switch itself?
- 20 Q. Yes, Sir.
- 21 A. Yes.
- 22 Q. And --
- 23 A. Some significant differences.
- 24 Q. Okay. Where, where abouts? If you

- 1 could, if you could indicate that on
2 Exhibit Number 2?
- 3 A. The, the spring arm is very different.
- 4 Q. I, I, I saw that described as a -- one
5 was a "S", one was a "L"?
- 6 A. Yes, correct.
- 7 Q. It's described that way?
- 8 A. That's correct.
- 9 Q. What, what part changed from an "S" shape
10 to an "L" shape?
- 11 A. The spring arm.
- 12 Q. And that's labeled spring?
- 13 A. Yes.
- 14 Q. So as, as depicted in Exhibit 2, it's an
15 "L" shape, so that's the 77PS version,
16 right?
- 17 A. Yes.
- 18 Q. Do you know why TI went from the "S"
19 shape to an, to an "L" shape on the
20 spring arm?
- 21 A. Yes. It's a, a lower cost version and
22 more manufacturable.
- 23 Q. Okay. The 57PS was manufactured
24 automated or non automated by TI in the

- 1 late eighties?
- 2 A. Non automated.
- 3 Q. All the switches were -- when I say non
4 automated -- or when you say non
5 automated, what do you mean by that? It
6 was not being manufactured on the AMI
7 line?
- 8 A. Certain -- I'm not a hundred percent sure
9 of, of all -- the, the exact level of
10 automation of the 57PS switches. It, it
11 was not as automated as the 77PSL2-1 line
12 was.
- 13 Q. Was it manufactured in, in the same
14 location at TI?
- 15 A. It was in the Attleboro facility.
- 16 Q. In the same manufacturing line or --
17 what, what do you call the line that they
18 --
- 19 A. It was in the same, it was in the same
20 building. It was manufactured on the
21 57PS line.
- 22 Q. Okay. And was that line devoted and put
23 together and assembled by TI solely to
24 manufacture 57PS switches?

- 1 A. I'm not sure if other switches were
2 manufactured on that line or not.
- 3 Q. Other brake pressure switches or other
4 transmission pressure switches or power
5 steering pressure switches?
- 6 A. I, I know, I know power steering pressure
7 switches were manufactured on that line
8 'cause they're part of the 57PS family.
- 9 Q. Okay.
- 10 A. I don't know if there were any other
11 switches other than 57PS switches that
12 were manufactured on that line.
- 13 Q. All right. Was the same line utilized to
14 manufacture the 77PS switches?
- 15 A. Parts of the same line were.
- 16 Q. Well let's, let's go over just briefly,
17 there was a, a process flow chart that
18 was produced by you guys, Texas
19 Instruments, and it's Bates stamped 4431?
20 I'm going to call this Exhibit 3. Maybe
21 it's a good template to use to talk about
22 the manufacturing that was used -- that
23 was utilized on --
- 24 MS. SPEER: Mike, what was

1 that number again?

2 MR. JOLLY: Exhibit 3, 44 --
3 and it was Bates stamped 4431.

4 MS. SPEER: 4431?

5 MR. JOLLY: 31. It has a TI
6 Bates stamp.

7 Q. That is a schematic -- or why don't you
8 identify it for us? Tell us what that
9 is, Exhibit Number 3?

10 A. Exhibit Number 3 is a process flow chart
11 for the 77PSL2-1 and 2-3.

12 Q. All right. And that's the switches that
13 were installed on the Panther platform in
14 '92 and '93, right?

15 A. The 7 --

16 MR. CARTER: Objection,
17 form.

18 A. The 77PSL2-1 was the switch installed on
19 Panther Platforms, '92 - '93.

20 Q. Okay. And what, what's the L2-2 pressure
21 switch? What was that installed on?

22 A. I'm not sure..

23 Q. It was sold to Ford, though?

24 A. I don't know if 77PSL2-2 is a valid part

- 1 number.
- 2 Q. What, what does that mean up there on top
- 3 that says 77PSL2-1/2-3?
- 4 A. I assume that 2-3 means it's 77PSL2-3.
- 5 Q. Okay. And what kind of part number is
- 6 that? Is that a Ford part number or a TI
- 7 part number?
- 8 A. That's a TI part number.
- 9 Q. All right. What kind of -- what did that
- 10 pressure switch get installed on? Do you
- 11 know?
- 12 A. I don't know which vehicle.
- 13 Q. Do you know if it was going on Panther
- 14 platform vehicles after '92 - '93, or
- 15 some other vehicle line?
- 16 A. It would have been some other vehicle.
- 17 Q. But not a Panther platform vehicle?
- 18 A. No.
- 19 Q. But you don't know what kind of vehicle
- 20 that was?
- 21 A. No, I don't remember which one.
- 22 Q. You don't remember if it was light truck
- 23 or Taurus or SHO or Econoline?
- 24 A. No, I don't remember.

- 1 Q. Do any of those ring a bell?
- 2 A. I know there were brake -- TI brake
3 pressure switches on certain of those
4 vehicles. I don't remember the TI part
5 number specifically for which vehicle.
- 6 Q. Okay. But that schematic that's on
7 Exhibit Number 3, that -- is that a
8 typical schematic for the production of a
9 speed control deactivation switch at
10 Texas Instruments? Or, or pressure
11 switch at, at TI?
- 12 A. It looks like the basic schematic, or
13 process flow chart for the 77PS family.
- 14 Q. Is there, is there any difference between
15 that and the 57PS family?
- 16 A. Yes.
- 17 Q. Show us where the differences are in the
18 schematic between the 57PS production
19 line and the 77PS production line?
- 20 A. I'm not sure what all the differences
21 are. I'd have to have a, a process flow
22 chart for the 57PS in front of me to, to,
23 to show you all the differences. A
24 number of the differences, I imagine,

1 would be in the base assembly area, since
2 the bases are, are different.

3 Q. What part -- what's the base?

4 A. The base is the plastic piece where the
5 terminals are in.

6 Q. This part here?

7 A. Yes. This part's the base.

8 Q. Okay. And if you could show it up, you
9 know, lean it up so the camera can see
10 the inside? That's where the electrical
11 components are?

12 A. Yes.

13 Q. And that, that piece is manufactured, or
14 produced, on this line over here?

15 A. It's assembled in the base assembly area,
16 yes.

17 Q. Why don't you circle that whole area
18 where that piece is put together there at
19 TI and label the inside of that circle
20 whatever that's called?

21 A. It's labeled as base assembly.

22 Q. Okay. And that's the electrical
23 components, right?

24 A. Yes.

1 Q. All right. Why don't you put inside that
2 circle electrical components? Now, while
3 that's going on, there's simultaneously
4 another production line going, right?

5 A. Well, there's many production lines.
6 What, what do you mean?

7 Q. To put together the ultimate switch that
8 that base assembly is going to be mounted
9 to?

10 A. I, I don't understand the question.

11 Q. Like the right side of that document?
12 What's the right side of that document?

13 A. There's, there's a machine putting
14 together the sensor assembly.

15 Q. Okay.

16 A. Yes.

17 Q. And where -- and what does that have to
18 do with the sensor assembly?

19 A. It assembles the --

20 MR. CARTER: Objection,
21 form.

22 A. -- sensor assembly.

23 Q. Okay.

24 A. It assembles the sensor assembly.

- 1 Q. And that would be this component,
2 correct?
- 3 A. Yes. This part would be the sensor
4 assembly.
- 5 Q. All right.
- 6 A. For the 77PSL. The 77PS family.
- 7 Q. All right. And the 57PS, was the base
8 assembly assembled in the same way as a
9 77PS?
- 10 A. Not exactly the same way, no.
- 11 Q. All right. That's -- one of the
12 differences is it had a "S" shaped spring
13 arm, right?
- 14 A. The 57PS base has an "S" shaped spring
15 arm, when the 77PS has an "L" shaped
16 spring arm.
- 17 Q. Okay. Any -- does that make the
18 difference between the process production
19 flow chart, or was there any other
20 differences?
- 21 A. That impacts and drives differences. I'm
22 not sure whether there were other
23 differences or not.
- 24 Q. All right. The 57PS base assembly was

- 1 not automated, or was it automated?
- 2 A. I don't believe it was as automated as
3 the 77PS base. I'm not familiar with
4 exactly the level of automation the base
5 assembly had.
- 6 Q. The change in the spring arm from "S"
7 shape to "L" shape allowed TI to make a
8 more automated production of the base
9 assembly?
- 10 A. I'm not sure if it was just the design
11 change or if it had to do with the volume
12 of parts being shipped to Ford.
- 13 Q. Okay. At any rate, once the base
14 assembly is put together and once the
15 sensor assembly is put together, they
16 both go somewhere, and they're then
17 mated, correct, and crimped together?
- 18 A. Yes, in the final assembly area.
- 19 Q. And that's what is depicted at the
20 bottom?
- 21 A. Yes, bottom left hand side.
- 22 Q. It's called final assembly?
- 23 A. Yes.
- 24 Q. Any differences between that step and

- 1 those procedures that take place in the
2 final assembly between the 57PS and the
3 77PS?
- 4 A. I'm not sure if there are any differences
5 between those two.
- 6 Q. You're not sure?
- 7 A. Right. I don't know.
- 8 Q. Well it was crimped together -- the 57PS
9 was crimped together with a -- what's the
10 -- the crimp ring?
- 11 A. Yes.
- 12 Q. And so was the 77PS, right?
- 13 A. Yes.
- 14 Q. And was the crimp ring crimper an
15 automated process on both of those
16 switches, or was one manual and one
17 automated, or tell us what was going on
18 with that?
- 19 A. On the 57PS line, I believe it was a
20 manual load and then an automated crimp.
21 On the 77PS line it would have been
22 automatically fed into the crimper.
- 23 Q. Everything was automatic?
- 24 A. Well there were --

- 1 Q. As far as --
- 2 A. -- there were people involved on the
- 3 line, but the -- there is a dial table
- 4 that would load parts into the crimper
- 5 rather than an individual loading parts
- 6 into the crimper.
- 7 Q. Okay. And if we go back up to the sensor
- 8 assembly process flow chart, the, the
- 9 first thing there on that flow chart is
- 10 hexport feed. What is the hexport, if
- 11 you could point to it there with that
- 12 model?
- 13 A. This is the hexport here.
- 14 Q. That's --
- 15 A. The part with the hex nut and the thread.
- 16 Q. Okay. And the next step is gasket. What
- 17 is the gasket?
- 18 A. You can't see it in this part. It's
- 19 inside the device, and that seals the
- 20 pressure.
- 21 Q. All right. Could you show us that on the
- 22 schematic?
- 23 A. Sure.
- 24 Q. It's Exhibit Number 2?

- 1 A. Sure. This would be the gasket here,
2 labeled as gasket on that schematic.
- 3 Q. Okay. And then on top of the gasket is
4 placed what?
- 5 A. The Kapton.
- 6 Q. All right. It's just stacked in there,
7 right?
- 8 MR. CARTER: Objection,
9 form.
- 10 Q. The Kapton is just stacked in there, in
11 the hexport, right?
- 12 MR. CARTER: Objection to
13 form.
- 14 A. There are three layers of Kapton placed
15 on top of the gasket and the hexport.
16 The three layers are splayed so that with
17 continuity checks we can confirm that all
18 three layers were placed into the device.
- 19 Q. With a continuity check you can tell if
20 the Kapton, the three Kapton layers, are,
21 are properly splayed?
- 22 A. Yes.
- 23 Q. How do you do the continuity test to
24 determine if the Kapton layers are

- 1 properly splayed after you assemble --
- 2 A. Probe --
- 3 Q. -- the switch?
- 4 A. Probe comes down and -- where the two
- 5 probes per Kapton layer hits two corners
- 6 of the Kapton. If the Kapton is not
- 7 present, the probe will contact the metal
- 8 of the hexport, giving continuity. If
- 9 there's continuity, the part is
- 10 considered bad.
- 11 Q. Okay. So it happens fairly rapidly on
- 12 the assembly line, I guess, right? This
- 13 test?
- 14 A. It's an automated test.
- 15 Q. Right. And it happens before any other
- 16 components are placed on to or on top of
- 17 the Kapton on the assembly line?
- 18 A. Two layers of Kapton are placed, and we
- 19 then check for presence of those two
- 20 layers. The the third layer of Kapton is
- 21 placed, and we check for presence of the
- 22 third layer.
- 23 Q. Okay. And what the sensors that are on
- 24 the assembly line, the machinery knows if

- 1 the Kapton pieces aren't properly
2 splayed?
- 3 A. If the Kapton pieces are not present, if
4 the machine gets continuity to -- from
5 the pin to the hexport of the device,
6 then the rest of that device will not be
7 built.
- 8 Q. All right. What will happen if, at that
9 stage if there is a problem with the
10 splaying or positioning of the Kapton
11 layers?
- 12 A. Then the machine will continue to cycle,
13 but the rest of the components will not
14 be placed on that device.
- 15 Q. Okay. Okay. So after that test is done
16 on the machinery, the automated sensor
17 assembly machinery -- what do you call --
18 what does TI call that, that part of the
19 assembly on their line?
- 20 A. The machine itself?
- 21 Q. Yes, sir.
- 22 A. Call it the ANI machine.
- 23 Q. ANI?
- 24 A. ANI, A-N-I.

- 1 Q. Okay. Okay. So after the, the Kapton
2 placement is, is checked and tested, what
3 happens?
- 4 A. The washer and converter are fed in and
5 placed on top of the Kapton.
- 6 Q. All right. Does that happen in one step?
- 7 A. The washer and converter are mated
8 together separately and then brought
9 together and placed on the Kapton
10 together at one -- in one step.
- 11 Q. Okay. Is this sensor assembly, this AMI
12 machinery that Texas Instruments use --
13 uses for the sensor assembly, was this
14 same machinery in place to make the 57PS
15 series switches?
- 16 A. The, the front end of that sensor
17 assembly machine was, yes.
- 18 Q. What do you mean, the front end?
- 19 A. Everything labeled on here, sensor
20 assembly, was not in place for the 57PS.
21 I believe only through pre-crimp for the
22 57PS.
- 23 Q. Where does it say pre-crimp? I don't see
24 that?

- 1 A. That -- it's -- pre-crimp and crimp is
2 lumped together here in crimp assembly.
- 3 Q. Oh. Everything above crimp assembly was
4 in place at the -- on the 57PS --
- 5 A. Yes.
- 6 Q. -- line? Okay. Okay.
- 7 A. 57 -- the full 57PS line, some parts were
8 made on the sensor, that same sensor
9 assembly machine, but some parts were
10 manufactured on other similar machines.
- 11 Q. All right. But up to the point where
12 we're talking about right now, the washer
13 converter placement, that, that was
14 identical to the 57PS line?
- 15 MR. CARTER: Objection,
16 form.
- 17 A. It was manufactured on the same machine.
- 18 Q. Okay.
- 19 A. Or of one of the 57PS machines.
- 20 Q. All right. And then what comes after the
21 washer converter assembly?
- 22 A. The spacer is placed inside the
23 converter.
- 24 Q. And then on top of -- is that pretty much

1 the same between the 57PS and the 77PS?

2 MR. CARTER: Objection,
3 form.

4 Q. The spacer?

5 A. We use a spacer in both the 57PS and the
6 77PS.

7 Q. All right. Any differences between the
8 two spacers?

9 A. I don't think so.

10 Q. All right. Okay. Then after the spacer
11 goes the disc, correct?

12 A. Yes.

13 Q. Any testing going on on the assembly line
14 at this time, after you've done the
15 Kapton placement testing? Any other
16 testing going on on the assembly line?

17 A. After every operation, there's a check
18 for presence of that part.

19 Q. Okay.

20 A. So there's a check after the hexport is
21 fed, and there's a check after the
22 gasket. I already mentioned checks after
23 the Kapton.

24 Q. Right.

- 1 A. There's checks after the washer
2 converter. There's checks after the
3 spacer.
4 Q. Okay.
5 A. After each step, there's, there's checks
6 to confirm that that step was completed
7 -- correctly.
8 Q. All right. And then, then after the disc
9 is -- comes, comes the cup, right?
10 A. Yes.
- 11 THE VIDEOGRAPHER: This is
12 the video reporter. The time is 10:06.
13 We are going off the record.
14 (Recess.)
15 THE VIDEOGRAPHER: This is
16 the video reporter. The time is 10:19.
17 We are back on the record.
18 Q. Okay. We were talking a moment ago about
19 the sensor assembly at Texas Instruments
20 and the schematic that's depicted on
21 Exhibit Number 3. And I think we were
22 down to the cup, the installation of the
23 cup. Let's talk about the cup just a
24 little bit, because it, it can't just be

- 1 put on there because it's got a bend
2 that's in the way, right? And bend is --
3 it's bent after it's put on?
- 4 A. This part of the cup is crimped after
5 it's put on.
- 6 Q. Okay.
- 7 A. Initially, it's, it's not bending
8 straight so the cup can be put right on
9 the device.
- 10 Q. Right. The, the outsides that are
11 straight, right?
- 12 A. Yes.
- 13 Q. And the upper edge of it's bent over to,
14 to maintain it on the hexport?
- 15 A. And to compress the elastomer.
- 16 Q. And to --
- 17 A. To compress the elastomer.
- 18 Q. All right. And that's the internal seal?
- 19 A. Yes.
- 20 Q. Right? Okay. That -- is that a
21 automated step in the -- was that an
22 automated step on the 57PS switch
23 assembly?
- 24 A. The load of the part in, into that

1 crimper was not an automated step. The
2 load is manual. The crimping operation
3 itself is automated.

4 Q. Okay. And before the cup came over or is
5 placed on the sensor assembly, it looks
6 like it's got a few bends, bends and
7 contours to it. Where are those bends
8 and contours made on the cup before it's
9 placed on the sensor assembly?

10 MR. CARTER: Objection,
11 form.

12 A. Can, can you show me what bends and
13 contours you're referring to?

14 Q. Well, correct me if I'm wrong, but I'm
15 going to sort of outline what I think is
16 the cup, and, and it appears to be this
17 material that goes around here like this?
18 Is that right?

19 A. Yes, that's the cup.

20 Q. Okay. The bend that, that I'm drawing a
21 line from right now that I'm going to
22 call -- well, why don't you label that
23 for me, bend number 17. That's the bend
24 that's done -- that you were just talking

- 1 about by an automated crimper?
- 2 A. Yes. That's what we refer to as our
- 3 crimping process.
- 4 Q. All right. What about the other bends?
- 5 For example, this bend right here that
- 6 I'd like for you to label bend number 2?
- 7 A. That, that bend is done by the supplier.
- 8 Q. All right. Who's the, who's the
- 9 supplier?
- 10 A. I'm not sure who the supplier is for the
- 11 cup.
- 12 Q. You're not sure who the supplier is for
- 13 the cup that was installed on the 57PS
- 14 switch?
- 15 A. On the 57PS or the 77PS switch.
- 16 Q. Or the 77PS switch?
- 17 A. Right.
- 18 Q. And does TI still make this kind of
- 19 switch?
- 20 A. Yes, TI does.
- 21 Q. With a cup in it?
- 22 A. Yes.
- 23 Q. And you don't know where the cup comes
- 24 from?

1 A. I don't know --

2 MR. CARTER: Objection,
3 form.

4 A. I don't know which supplier's providing
5 TI the cup.

6 Q. All right. You have no idea, you can't,
7 I mean --

8 MR. CARTER: Objection to
9 form.

10 Q. What, what are the choices in your mind
11 if you're trying to guess who the cup
12 came from?

13 MR. CARTER: Objection,
14 form.

15 Q. Are there any? Anything come to mind?

16 A. I know, I know certain suppliers TI uses
17 for, for cups and stamp products, things
18 like that. I don't know which, which
19 supplier is providing the cup.

20 Q. All right. Okay. So bend number 2 is
21 done by the supplier?

22 A. Yes.

23 (Discussion off the record.)

24 Q. And where's the next bend? Is it right

1 here?

2 A. Yes.

3 Q. Why don't you take your pen and indicate
4 where the next band is and, and label it
5 bend number 3? And that is done by the
6 supplier also?

7 A. Yes.

8 Q. What about -- go to the next band and
9 label it the next consecutive number
10 there, and what is that, bend number 4?

11 A. Bend number 4.

12 Q. All right. And that's done by the
13 supplier also?

14 A. Yes.

15 Q. And what about that bump that's -- that
16 comes next? I -- well I call it a bump.
17 What do you -- what does TI call it?

18 A. A bump.

19 Q. All right. Who, who puts the bump on the
20 cup?

21 A. The supplier.

22 Q. All right. Why don't you label that
23 bump. That's what TI calls it. Is that
24 what TI calls it?

1 A. There may be other names. I've heard it
2 referred to as the bump, the cup bump.
3 There may be other names that, that
4 people at TI use to refer to that
5 feature.

6 Q. What is the feature for?

7 A. That the location of that bump will help
8 set the actuation pressure.

9 Q. Okay. What about the height of it?

10 A. The height of that bump will set the
11 pre-load of the disc during the assembly.

12 Q. What's the pre-load?

13 A. Any force that's put on the disc just
14 from the crimping process without any
15 pressure being applied.

16 Q. Is that something that's fairly
17 important, the pre-load?

18 MR. CARTER: Objection,
19 form.

20 A. Certain applications the pre-load's
21 important. Certain applications, it's
22 not.

23 Q. Okay. And then right after the bump
24 comes another bend, correct?

- 1 A. Yes.
- 2 Q. What are you going to call this one, bend
3 number 4, or is it -- does it have a
4 specific name?
- 5 A. It doesn't have a specific name. We've
6 labeled a different bend bend number 4,
7 so would you like the name of bend number
8 5?
- 9 Q. Okay. And that's -- that bend is also
10 made by the supplier of the cup?
- 11 A. Yes.
- 12 Q. And there's a aperture in the center of
13 the cup, correct?
- 14 A. Yes.
- 15 Q. And it's for the transfer pin?
- 16 A. Yes.
- 17 MS. SPEER: What did you say
18 at the end, Mike? It's for the what?
- 19 MR. JOLLY: Transfer pin.
- 20 MS. SPEER: Thank you.
- 21 Q. Okay. Who makes the aperture in the
22 center of the cup to accommodate the
23 transfer pin?
- 24 A. The supplier of the cup.

1 Q. All right. Who supplied the supplier of
2 the cup data, dimensions and
3 specifications about where the bends and
4 the size and shape of the bends for the
5 cup that was installed on the 77PS
6 switch?

7 MR. CARTER: Objection,
8 form.

9 A. Texas Instruments would have supplied to
10 the supplier print defining the
11 dimensions of the cup.

12 Q. All right. Did Ford have any input as to
13 the di -- the dimensions of the, the cup
14 and its bends and, and so forth?

15 A. TI would have designed the part based on
16 what the part needed to -- how it needed
17 to be designed to meet Ford
18 specifications.

19 Q. All right. And that, that would include
20 placement of the bump, or height of the
21 bump?

22 A. Yes.

23 Q. In order to perform or achieve a
24 actuation pressure?

1 A. Yes.

2 Q. All right. The 57PS switch had a similar
3 cup, right?

4 A. Yes.

5 Q. And any differences between the 57PS cup
6 and the 77PS cup?

7 A. I, I'm not sure. The bump location may
8 have been a little different. The bump
9 height may have been a little different.

10 Q. When I took Fred Porter's deposition on
11 one of these fire cases, he circled a --
12 the cup, and it's on Exhibit Number 2.
13 And he initialed it with his initials.
14 And he identified the cup in a specific
15 area of the cup where that arrow is
16 pointed to as a problem that may have
17 been causing some problems with the
18 Kapton and the pressure switches at issue
19 and the ultimate failure of those
20 switches. Did, did TI ever find anything
21 to, to show that?

22 MR. CARTER: Objection,
23 form.

24 A. I'm not aware of any problems with the

- 1 cup.
- 2 Q. Especially that part right there that's
- 3 pointed out?
- 4 A. Right here.
- 5 Q. Well, I'm telling you where, where --
- 6 A. So this part right here?
- 7 Q. Right. He has an arrow going through the
- 8 cup. It's in the -- pointed right there
- 9 to that area?
- 10 A. I'm not aware of any issues with the cup
- 11 in that area.
- 12 Q. Okay. Throughout the time that a, a
- 13 switch is developed at Texas Instruments,
- 14 there are weekly meetings held between
- 15 engineers who are in a specific
- 16 developmental group for different
- 17 switches?
- 18 A. It, it would vary depending on -- from
- 19 one development program to another. It's
- 20 fairly common for the team to meet
- 21 weekly.
- 22 Q. Have a weekly meeting, and someone takes
- 23 notes?
- 24 A. Yes.

1 Q. And do you remember a fellow by the name
2 of Stephen -- well, I'm going to just
3 spell his last name, 'cause I don't -- I
4 couldn't pronounce it right.

5 O-F-F-I-L-E-R?

6 A. Yes, Steve Offiler.

7 Q. And what is his capacity at Texas
8 Instruments?

9 A. Today?

10 Q. Yes, Sir.

11 A. He's no longer at Texas Instruments.

12 Q. And what was his capacity back in 1990
13 through 1992?

14 A. He worked in the pressure switch design
15 group as a design engineer.

16 Q. He was a design engineer?

17 A. Yes.

18 Q. Who was his supervisor?

19 A. During which time period?

20 Q. In 1990 to 1992?

21 A. Dave Czarn. I'm not sure the exact date
22 when Dave Czarn became a supervisor, but
23 it would have been in, in that time
24 frame..

- 1 Q. All right. And then who is Dave's
2 supervisor?
- 3 A. Tom Charboneau.
- 4 Q. Okay. Are you familiar with the -- with
5 documents that have a heading on them
6 called Highlights?
- 7 A. Yes.
- 8 Q. Is it typical for engineering groups at
9 TI to put together notes and minutes
10 about their weekly meetings?
- 11 A. That does happen. That's not what
12 Highlights are.
- 13 Q. Okay. What are Highlights?
- 14 A. High, Highlights are -- at the time in
15 1990 to '92, they were written weekly,
16 and they were a summary of activity going
17 on over the past week. Any issues or
18 concerns would be highlighted in those
19 documents. Theories postulated. Things
20 of that nature.
- 21 Q. Just a general discussion about what's
22 going on at Texas Instruments in that
23 group, correct? Engineering discussions
24 on how the switches and manufacturing or

1 development is going?

2 MR. CARTER: Objection to
3 form.

4 A. Highlights will have general discussions
5 and details of different things going on
6 as well as theories, future plans, things
7 that need to be looked at and evaluated.

8 Q. And the group that you're -- that you
9 oversee, does that group put together a
10 weekly set of notes similar to
11 Highlights? Or do you call it Highlights
12 also?

13 A. Today?

14 Q. Yes, sir.

15 A. We do write Highlights. We write them
16 once every two weeks.

17 Q. Once every two weeks, in your group?

18 A. Yes.

19 Q. In, in, in the group that made these --
20 the pressure switch group, are they still
21 making weekly notes entitled Highlights?

22 A. No, they do them once every two weeks.

23 Q. They do them once every two weeks now?

24 A. Yes.

1 Q. Do you know when they switched from a
2 weekly to a bi-weekly meeting?

3 MR. CARTER: Objection,
4 form.

5 A. Do you mean meeting or Highlights?

6 Q. Highlights?

7 A. It would have been sometime in the
8 nineties. I'm not sure exactly when we
9 switched.

10 Q. Okay. Do you usually -- is there a
11 meeting that takes place before the
12 document entitled Highlights is put
13 together?

14 A. No, there's not.

15 Q. Okay. Who, who is usually the person
16 designated to write Highlights at Texas
17 Instruments in your group?

18 A. All of the engineers and engineering
19 supervisors in my group write Highlights.

20 Q. All right. And on separate documents?

21 A. Separate documents.

22 Q. And are then they all put together as one
23 document?

24 A. No, they're not.

- 1 Q. All right. Are they then all circulated
2 between all the different engineers?
3 A. They'll circulate it to engineers working
4 on the same projects as them.
5 Q. Okay. And I guess a similar thing is
6 going on in the pressure switch area?
7 A. Well, the pressure switch area is under
8 my area.
9 Q. Well, for the vehicles?
10 A. What do you mean, for the vehicles?
11 Q. Well, like in 1990, for example.
12 A. I, I thought you were referring to
13 present day.
14 Q. Well, I was before, but now I'm talking
15 about 1990?
16 A. Okay. Can you repeat the question, then?
17 Q. In 1990, it was typical then for the
18 engineers -- or you tell me. What's your
19 understanding of how the Highlights were,
20 were put together in 1990 in the pressure
21 switch group?
22 A. The engineers would write their
23 highlights and hand a copy to their
24 supervisor and a copy to the Engineering

1 Manager.

2 Q. And then what would the supervisor do
3 typically with a, a specific engineer's
4 highlights?

5 A. He would read them and write his own
6 highlights based on inputs from the
7 different engineers in this group.

8 Q. And then there would be another document
9 created?

10 A. Yes, his own highlights.

11 Q. So there would be a subordinate engineer
12 write highlights, he would give it to a
13 supervisor, and the supervisor would
14 write comments or additional highlights,
15 or whatever?

16 A. It might be additional things. It may
17 summarize different information from
18 different engineers. You may have
19 multiple engineers working on the same
20 project --

21 Q. Uh hum.

22 A. -- where the supervisor would combine
23 some of the different things from those
24 highlights. Correct any mistakes in the

- 1 highlights. Things like that.
- 2 Q. Okay. And Steven Offiler -- did I say
- 3 that right?
- 4 A. Offiler.
- 5 Q. Offiler. There was other engineers in
- 6 his group, correct, that were his, his
- 7 equal?
- 8 A. They were his peers, yes.
- 9 Q. Right. And they were all creating their
- 10 own highlights?
- 11 A. Yes.
- 12 Q. And then each one of those engineers
- 13 would give their highlights to the
- 14 supervisor, Dave?
- 15 A. Dave Czern, yes.
- 16 Q. And then Dave would create his
- 17 highlights?
- 18 A. Yes.
- 19 Q. And write, and write stuff about whatever
- 20 he liked to write about that week?
- 21 A. Yes.
- 22 Q. Or bi-weekly?
- 23 A. Right.
- 24 Q. And then, and then would, would Dave then

- 1 put together a summary or anything like
2 that? Do you know?
- 3 A. He would write his own highlights. Some
4 of his own highlights would be a summary.
5 Some of it would be different things he's
6 doing. He would not include everything
7 that all of the engineers were working
8 on.
- 9 Q. Right. Let me ask you something. On, on
10 the Ford light truck pressure switches
11 that were being made, do you know if
12 those were brake pressure switches?
- 13 A. Which Ford light truck pressure switches?
- 14 Q. I don't know, the ones that were made in
15 1992?
- 16 A. That were made by Texas Instruments?
- 17 Q. Yes, sir.
- 18 A. Yeah, they were for a Ford brake system,
19 speed control deactivation switch.
- 20 Q. For the light truck division?
- 21 A. For light truck, yes.
- 22 Q. Okay. Do you remember what the part
23 number was for those?
- 24 A. The TI part number?

1 Q. Yes, sir.

2 A. It would be a 77PSL something. I don't
3 remember the exact part number.

4 Q. Okay. But all the internal components
5 are pretty close to the same as the --
6 except for maybe the components having to
7 do with actuation?

8 A. Yeah, that would be different components
9 -- or component variation to adjust for
10 different actuation pressures and all
11 these pressures and, and things like
12 that.

13 Q. Okay. Well, I'm going to, I'm going to
14 show you what we marked as Exhibit 1, and
15 these are the Highlights that were
16 written by Stephen Off --

17 A. Uh hum.

18 Q. And the top page is the most recent, and
19 the bottom page is the earliest.
20 Starting in October 5, 1990 and ending in
21 June 19, 1992. Do you know where Steve
22 is nowadays?

23 A. I know he still works in the
24 Massachusetts area. I don't know which

1 company he works at.

2 Q. Have you talked with him at all about
3 this issue that -- these allegations
4 about the 77PS switch in the Panther
5 platform vehicles catching fire?

6 A. Yes, I have.

7 Q. When's the last time you talked to him?

8 A. I think it was some time in 1999, I
9 believe. Late '99.

10 Q. Was it before your deposition in December
11 of '99?

12 A. Don't remember if the last time was
13 before or not. I had spoken to him
14 before my deposition, and I, I can't
15 remember the last time. It may have been
16 after in early '00. I don't remember.

17 Q. Do you know when Stephen left Texas
18 Instruments' employment?

19 A. I know it was in the mid nineties. I'm
20 not sure the exact year.

21 Q. Okay. But as far as you know -- well,
22 when you talked to him, did you talk
23 about where he was and get his address
24 and phone number or anything?

1 A. One of the engineers in my group is still
2 friends with him today, so that engineer
3 has his phone number.

4 Q. Okay.

5 A. So I didn't get it specifically myself.

6 Q. What did you talk with Stephen about in
7 particular?

8 A. Talked to him about his recollection of
9 any issues with the crimper during the
10 first production validation testing --

11 Q. Uh hum.

12 A. -- of the 77PSL2-1. We talked to him a
13 little bit about the Ford system in terms
14 of continuous power being applied to the
15 switch. We talked to him a little bit
16 about some of the development activities.
17 But mostly it, it was around any crimping
18 issues during the initial product
19 validation testing.

20 Q. Did he have a pretty good recollection
21 about the development of the 77PS switch?

22 MR. CARTER: Objection,
23 form.

24 A. We didn't talk to him about too much in

1 that area.

2 Q. Did you talk to him about the, the
3 Highlight notes that he had made during
4 that time period, the development of the
5 77PS switch?

6 A. When we spoke to him, he mentioned that,
7 that his Highlights would have a lot more
8 details and information.

9 Q. Okay. Do you remember what the 87PSL
10 switch goes on?

11 A. The 87PS would be a power steering
12 switch.

13 Q. Oh, okay. So that would have two Kepton
14 layers instead of three, right?

15 A. Right. It's possible there are some
16 87PSs that go on different applications
17 'cause there are several part numbers,
18 but the majority of the 87PS family is
19 for power steering pressure switches.

20 Q. Okay. Let's look at Exhibit Number 1,
21 and I'd like to start at the back and
22 work our way to the pr -- the most recent
23 present anyway. And talk about numerous
24 entries that are in these Highlights made

1 by Stephen during each one of these time
2 periods.

3 MR. MANSKE: And, Mike, if
4 you don't mind, just for those following
5 along, if you can refer to the TI Bates
6 number?

7 MR. JOLLY: I will, yeah.

8 MR. MANSKE: Thanks.

9 MS. SPEER: And perhaps also
10 the date that the --

11 MR. JOLLY: Yeah. I think
12 I'm going to do the Bates stamp and then
13 the date.

14 MS. SPEER: Thank you.

15 Q. The first one I'd like to look at is for
16 the week ending 10/5/90, and it's Bates
17 stamped, yeah, Bates stamped 4386 and,
18 and 87. I guess this is a -- this
19 Highlight was written by Stephen during a
20 period of development of the, of the 77PS
21 switch, correct?

22 A. Yes.

23 Q. Let me ask you something. Do you know
24 what the date was the first 77PS switches

1 were sold to Ford or, or given to Ford to
2 be installed on Panther platform
3 vehicles?

4 A. First samples or first production parts?

5 Q. The first samples.

6 A. Of 77PSL?

7 Q. Yes, Sir.

8 A. I don't know the exact date. There would
9 be different samples of different
10 configurations that would not be the
11 77PSL2-1 --

12 Q. Right, because they were switches -- they
13 were --

14 A. Being designed.

15 Q. -- made during development and you were
16 testing them?

17 A. Yes.

18 Q. Is that fair to say?

19 A. Can, can you repeat it?

20 Q. Because they were switches that were made
21 during development and you were just --
22 TI was testing them on Ford vehicles or
23 giving them to Ford to see if they
24 matched their -- or met their

- 1 specifications, right?
- 2 A. Well, I'm saying they, they would
3 probably have a different part number in
4 development. Typically we would have a
5 different part number --
- 6 Q. Okay.
- 7 A. -- for the parts, and they would be
8 different designs 'cause we're still
9 developing the switch and we would be
10 doing testing in-house as well as
11 providing samples to Ford for their
12 testing.
- 13 Q. Right. Do you remember what any of those
14 part numbers were in the development
15 stage, stages of the 77PS?
- 16 A. No, I don't. I think there were some
17 57PSs that we probably gave Ford for some
18 testing. I don't know other part
19 numbers.
- 20 Q. Okay. Do you remember the first date
21 that TI gave Ford production sw -- 77PS
22 switches to be installed on Panther
23 platform vehicles?
- 24 A. By production, do you mean fully

- 1 production approved?
- 2 Q. Yes, Sir.
- 3 A. And it's -- referring to 77PSL2-1 parts?
- 4 Q. Yes, Sir.
- 5 A. It would have been in probably either
- 6 late September or early October, probably
- 7 -- early October, 19 -- 1991. I think we
- 8 received approval from Ford in early
- 9 October, and it would have been after we
- 10 received approval from Ford. So I'm not
- 11 sure of the exact date, but it would have
- 12 been --
- 13 Q. Around October of '91?
- 14 A. It would have been around that time
- 15 period. Maybe in November, but around
- 16 that time period.
- 17 Q. Okay. October, November -- I don't want
- 18 to hold you as to any specific date, but
- 19 some time around those two months TI
- 20 delivered to Ford 77PS whatever pressure
- 21 switches to be used and installed on
- 22 Panther platform vehicles?
- 23 A. 77PSL2-1 pressure switches, yes.
- 24 Q. To be installed on Panther platform