

THE STATE OF SOUTH CAROLINA
In The Court of Appeals

APPEAL FROM CHARLESTON COUNTY
Court of Common Pleas

The Honorable J.C. Nicholson, Jr.

Appellate Case No. 2016-002209

Steven Newbern and Claudia Newbern,..... Appellants,

v.

Ford Motor Company,.....Respondent.

RECORD ON APPEAL VOLUME I

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SC Court of Appeals

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THE STATE OF SOUTH CAROLINA
In The Court of Appeals

APPEAL FROM CHARLESTON COUNTY
Court of Common Pleas

The Honorable J.C. Nicholson, Jr.

Case No. 2013-CP-10-2928

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OCT 31 2016

SC Court of Appeals

Steven Newbern and Claudia Newbern,.....
Appellants,

v.

Ford Motor Company,.....Respondent.

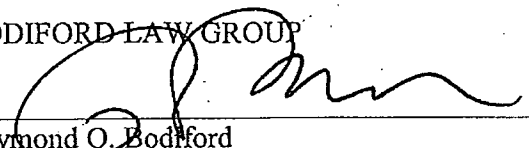
NOTICE OF APPEAL

Steven Newbern and Claudia Newbern ("Appellants") appeal the decision of the Honorable J.C. Nicholson, Jr., at trial granting Ford Motor Company's ("Respondent") motion for a directed verdict and the Order denying Plaintiff's Motion for a New Trial filed September 29, 2016. This notice includes any award of costs to Ford Motor Company. This Notice is timely filed. A copy of the Order appealed from is attached to this Notice. Appellants do not yet have a copy of the trial transcript reflecting the decision to grant Respondent's motion for a directed verdict but can supplement the notice if the Court so directs.

[Signature block appears on the following page.]

Dated: October 28, 2016

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STATE OF SOUTH CAROLINA COURT OF COMMON PLEAS
COUNTY OF CHARLESTON CASE NO.
2013-CP-10-2928

STEVEN NEWBERN AND)
CLAUDIA NEWBERN,)
PLAINTIFFS,) TRANSCRIPT OF RECORD
VS.)
FORD MOTOR COMPANY,) SEPTEMBER 16, 2016
CHARLESTON, SC
VOLUME 5 OF 5
DEFENDANT.

B E F O R E:

HONORABLE J.C. NICHOLSON, JUDGE, AND A
JURY.

A P P E A R A N C E S:

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RAYMOND BODIFORD, ESQUIRE
WILLIAM APPELEGATE, ESQUIRE

Attorneys for the Plaintiff

J. KENNETH CARTER, ESQUIRE
NICHOLAS GLADD, ESQUIRE
ROBERT WISE, ESQUIRE
CARMELO SAMMATARO, ESQUIRE
Attorneys for the Defendant

* * * * *

Ruth C. Weese, RDR
Official Court Reporter
Ninth Judicial Circuit

1 off. That's it. The design --

2 THE COURT: That's sort of a res ipsa
3 argument. We don't have that in South Carolina.

4 MR. VAN GAASBECK: Yes, but it's not
5 that because nothing would have been blown back
6 into his face. Either the bag would not have hit
7 his face or the glass would not have hit his face.
8 Nothing would hit his face. It is exactly the type
9 of injury that Mr. Krishnaswami said you have to
10 avoid by not deploying airbags including having a
11 coffee cup going back in your face which is the
12 exact scenario I gave him. He said yes, that is
13 one of the dangers in airbags. That's why you
14 don't deploy airbags when they are not needed. I
15 understand the Court's reservations.

16 THE COURT: Okay. I'm going to grant
17 the Defendant's motion for directed verdict on all
18 causes of action. Thank you all very much.

19 MR. GLADD: There was two EMTs here
20 under subpoena. Can they be released?

21 THE COURT: Yes. For the record, I'm
22 going to -- by stipulation of the parties if you
23 want to file the stipulation agreement and mark it
24 as Court's Exhibit No. 1. I'm going to seal
25 Defendant Exhibit's 50. Okay?

1 MR. CARTER: Yes, sir.

2 THE COURT: You got your stipulations
3 you can mark. I will mark it as Court's Exhibit
4 No. 1.

5 (COURT'S EXH. 1, stipulation, was
6 marked for identification.)

7 (These proceedings were concluded at
8 9:57 a.m., September 16, 2016, Charleston County,
9 South Carolina.)

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STATE OF SOUTH CAROLINA
COUNTY OF CHARLESTON
IN THE COURT OF COMMON PLEAS

FORM 4

JUDGMENT IN A CIVIL CASE

CASE NO. 2013-CP-10-2928

RECEIVED

OCT 31 2016

Steven Newbern and Claudia Newbern

Ford Motor Company

SC Court of Appeals

PLAINTIFF(S)

DEFENDANT(S)

Attorney for : ☐ Plaintiff ☐ Defendant
or
☐ Self-Represented Litigant

Submitted by:

DISPOSITION TYPE (CHECK ONE)

- ☐ **JURY VERDICT.** This action came before the court for a trial by jury. The issues have been tried and a verdict rendered.
- ☒ **DECISION BY THE COURT.** This action came to trial or hearing before the court. The issues have been tried or heard and a decision rendered.
- ☐ **ACTION DISMISSED (CHECK REASON):** ☐ Rule 12(b), SCRPC; ☐ Rule 41, SCRPC (Vol. Nonsuit); ☐ Rule 43(k), SCRPC (Settled); ☐ Other
- ☐ **ACTION STRICKEN (CHECK REASON):** ☐ Rule 40(j), SCRPC; ☐ Bankruptcy
☐ Binding arbitration, subject to right to restore to confirm, vacate or modify arbitration award; ☐ Other
- ☐ **DISPOSITION OF APPEAL TO THE CIRCUIT COURT (CHECK APPLICABLE BOX):**
☐ Affirmed; ☐ Reversed; ☐ Remanded; ☐ Other

NOTE: ATTORNEYS ARE RESPONSIBLE FOR NOTIFYING LOWER COURT, TRIBUNAL, ADMINISTRATIVE AGENCY OF THE CIRCUIT COURT RULING IN THIS APPEAL.

IT IS ORDERED AND ADJUDGED: ☐ See attached order (formal order to follow) ☒ Statement of Judgment by the Court: Plaintiff's Motion for a New Trial filed on September 26, 2016 is denied.

ORDER INFORMATION

This order ☒ ends ☐ does not end the case.
Additional Information for the Clerk:

INFORMATION FOR THE PUBLIC INDEX

Complete this section below when the judgment affects title to real or personal property or if any amount should be enrolled. If there is no judgment information, indicate "N/A" in one of the boxes below.

Judgment in Favor of (List name(s) below)	Judgment Against (List name(s) below)	Judgment Amount To be Enrolled (List amount(s) below)
N/A		\$

If applicable, describe the property, including tax map information and address, referenced in the order:
N/A

The judgment information above has been provided by the submitting party. Disputes concerning the amounts contained in this form may be addressed by way of motion pursuant to the SC Rules of Civil Procedure. Amounts to be computed such as interest or additional taxable costs not available at the time the form and final order are submitted to the judge may be provided to the clerk. Note: Title abstractors and researchers should refer to the official court order for judgment details.

Circuit Court Judge

2117
Judge Code

Date

9/28/16

STATE OF SOUTH CAROLINA
COUNTY OF CHARLESTON
STEVEN NEWBERN and CLAUDIA
NEWBERN,

Plaintiffs,

VS.

FORD MOTOR COMPANY and
STEPHEN RONALD MCGEE,

Defendants.

IN THE COURT OF COMMON PLEAS
FOR THE NINTH JUDICIAL CIRCUIT
C/A NO. 2013-CP-10-2928

**AMENDED CONSENT
SCHEDULING ORDER**

BY

JULIE J. ARMSTRONG
CLERK OF COURT

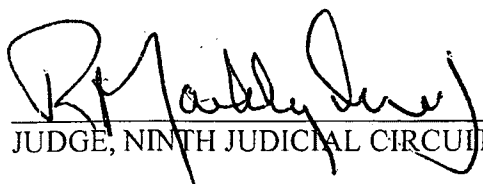
2015 JAN 22 PM 2:59

FILED

Pursuant to good cause shown, the Court hereby adopts the following Amended Consent Scheduling Order establishing appropriate discovery deadlines and setting a deadline for the trial of the above-captioned action.

1. Plaintiffs shall name their expert witnesses on or before January 29, 2015.
2. Defendants shall name their expert witnesses on or before March 16, 2015.
3. Plaintiffs' expert depositions shall be completed by April 30, 2015.
4. Defendants' expert depositions shall be completed by June 15, 2015.
5. The parties shall conduct mediation of this case on or before July 2, 2015.
6. All deadlines may be modified by written agreement of the parties or by order of the Court.
7. The trial of this case shall not occur before July 16, 2015.

IT IS SO ORDERED.


JUDGE, NINTH JUDICIAL CIRCUIT

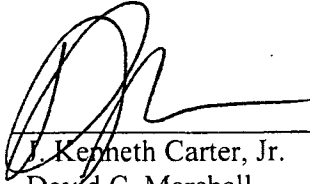
Charleston, South Carolina
January 13, 2015

RMD/b07

***Consent to Proposed Amended Scheduling Order
Newbern v. Ford, et al
Civil Action No. 2013-CP-10-2928***

WE SO MOVE AND CONSENT:

1-6, 2015

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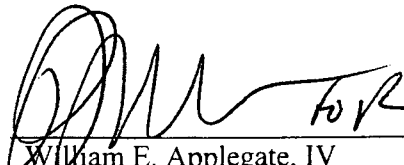
**ATTORNEYS FOR DEFENDANT
FORD MOTOR COMPANY**

Consent to Proposed Amended Scheduling Order
Newbern v. Ford, et al
Civil Action No. 2013-CP-10-2928

WE SO MOVE AND CONSENT:

1-6, 2015

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with
permission

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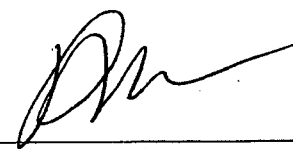
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ATTORNEYS FOR PLAINTIFFS

Consent to Proposed Amended Scheduling Order
Newbern v. Ford, et al
Civil Action No. 2013-CP-10-2928

WE SO MOVE AND CONSENT:

1-6, 2015

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WJM Permon

**ATTORNEYS FOR DEFENDANT
STEPHEN MCGEE**

FORM 4

STATE OF SOUTH CAROLINA
COUNTY OF CHARLESTON
IN THE COURT OF COMMON PLEAS

JUDGMENT IN A CIVIL CASE

CASE NO. 2013-CP-10-2928

Steven Newbern and Claudia Newbern

Ford Motor Company

PLAINTIFF(S)

DEFENDANT(S)

Submitted by:

Attorney for : ☐ Plaintiff ☐ Defendant
or
☐ Self-Represented Litigant

DISPOSITION TYPE (CHECK ONE)

- ☐ **JURY VERDICT.** This action came before the court for a trial by jury. The issues have been tried and a verdict rendered.
- ☒ **DECISION BY THE COURT.** This action came to trial or hearing before the court. The issues have been tried or heard and a decision rendered.
- ☐ **ACTION DISMISSED (CHECK REASON):** ☐ Rule 12(b), SCRPC; ☐ Rule 41(a), SCRPC (Vol. Nonsuit); ☐ Rule 43(k), SCRPC (Settled); ☐ Other
- ☐ **ACTION STRICKEN (CHECK REASON):** ☐ Rule 40(j), SCRPC; ☐ Bankruptcy; ☐ Binding arbitration, subject to right to restore to confirm, vacate or modify arbitration award; ☐ Other
- ☐ **DISPOSITION OF APPEAL TO THE CIRCUIT COURT (CHECK APPLICABLE BOX)**
☐ Affirmed; ☐ Reversed; ☐ Remanded; ☐ Other

NOTE: ATTORNEYS ARE RESPONSIBLE FOR NOTIFYING LOWER COURT, TRIBUNAL, OR ADMINISTRATIVE AGENCY OF THE CIRCUIT COURT RULING IN THIS APPEAL.

IT IS ORDERED AND ADJUDGED: ☐ See attached order (formal order to follow) ☒ Statement of Judgment by the Court: Defendant's Motion for Costs filed on 10/17/16 is denied.

ORDER INFORMATION

This order ☒ ends ☐ does not end the case.

Additional Information for the Clerk : _____

INFORMATION FOR THE PUBLIC INDEX

Complete this section below when the judgment affects title to real or personal property or if any amount should be enrolled. If there is no judgment information, indicate "N/A" in one of the boxes below.

Judgment in Favor of (List name(s) below)	Judgment Against (List name(s) below)	Judgment Amount To be Enrolled (List amount(s) below)
N/A		\$

If applicable, describe the property, including tax map information and address, referenced in the order:
N/A

The judgment information above has been provided by the submitting party. Disputes concerning the amounts contained in this form may be addressed by way of motion pursuant to the SC Rules of Civil Procedure. Amounts to be computed such as interest or additional taxable costs not available at the time the form and final order are submitted to the judge may be provided to the clerk. Note: Title abstractors and researchers should refer to the official court order for judgment details.

Circuit Court Judge

2117
Judge Code2/8/17
Date

STATE OF SOUTH CAROLINA)
)
COUNTY OF CHARLESTON)
)
STEVEN NEWBERN and CLAUDIA,)
NEWBERN,)
Plaintiffs,)
)
VS.)
)
FORD MOTOR COMPANY and)
STEPHEN RONALD MCGEE,)
)
Defendants.)
)

IN THE COURT OF COMMON PLEAS
FOR THE NINTH JUDICIAL CIRCUIT
C/A NO. 2013-CP-10- **2928**

COMPLAINT
Product Liability/Personal Injury Action
(JURY TRIAL DEMANDED)

FILED
2013 MAY 17 PM 3:00
JULIE ARMSTRONG
CLERK OF COURT

The Plaintiffs, Steven Newbern and Claudia Newbern, by and through their undersigned attorneys and complaining of the Defendants Ford Motor Company and Stephen Ronald McGee, would allege and show unto the Court the following:

JURISDICTION AND VENUE

1. Plaintiffs are citizens and residents of the County Charleston, State of South Carolina. Plaintiffs bring this action as a product liability and personal injury action for the injuries and damages sustained as a result of the collision that occurred on December 28, 2012.

2. Defendant, Ford Motor Company (hereinafter "Ford"), is a foreign corporation and, upon information and belief, at all times material conducts business in Charleston, Charleston County, South Carolina and maintains an agent in Columbia, Richland County, South Carolina. Defendant Ford is involved in the design, manufacturing, assembly, distribution, marketing, and sale of motor vehicles throughout the country and including the State of South Carolina

3. Defendant, Stephen Ronald McGee (hereinafter "McGee"), upon information and belief, was at all times a resident of the State of South Carolina.

4. This complaint arises out of a collision that occurred in Charleston County, South Carolina and Plaintiff's injuries occurred in Charleston County, South Carolina.

5. Upon information and belief, venue is proper in the County of Charleston, State of South Carolina.

6. Defendant Ford designed, manufactured, tested, assembled and placed in the stream of commerce and failed to recall that certain 2009 Ford Focus, VIN 1FAHP36N79W115116, that is the subject of this lawsuit.

7. On December 28, 2012, Plaintiff was the restrained, front-seated passenger in his 2009 Ford Focus, operated by his wife, Claudia Newbern.

8. On December 28, 2012, Plaintiffs were traveling west on Magwood Drive near the intersection at Ashley Crossing Drive in Charleston, South Carolina, when Plaintiffs were struck on the right passenger side by a 1989 Chevrolet driven by Defendant McGee. Defendant McGee, in failing to yield the right-of-way to the subject vehicle, collided with Plaintiffs' vehicle on the right passenger side, and the impact forced the Plaintiffs' and Defendant McGee's vehicles to collide head-on with a third vehicle driven by Roger Myers.

9. During the collision, the front passenger airbag system in Plaintiffs' Ford Focus failed to perform properly and upon impact, the front passenger airbag violently deployed and forcefully struck the Plaintiff's face with excessive force causing severe and traumatic injuries to his right eye which ultimately lead to the loss of his right eye.

10. That the Plaintiffs' vehicle described above was in substantially the same condition at the time of the collision that is the subject of this lawsuit as it was when it left the possession and control of Defendant Ford.

11. As a result of the actions of the Defendants as set forth herein, Steven Newbern suffered severe bodily injuries including, but not limited to, the loss of his right eye, which have caused Mr. Newbern, and will continue to cause him in the future, pain and suffering, permanent scarring and disfigurement, mental anguish and emotional distress, medical expenses, lost income and loss of earning capacity, impairment of health and bodily efficiency and loss of enjoyment of life.

12. Defendants owed Plaintiffs a duty to act with reasonable care and to follow the law imposed upon them by statute and common law. Defendants negligently and recklessly breached such duties as set forth herein.

AS A FIRST CAUSE OF ACTION
(Strict Liability as to Defendant Ford)

13. The allegations set forth in Paragraphs 1 through 12 above are repeated as if set forth herein verbatim.

14. Defendant Ford designed, manufactured, assembled, tested, distributed, and sold the subject vehicle, 2009 Ford Focus, in a defective condition unreasonably dangerous to persons using it for its foreseeable and intended purposes.

15. The Plaintiffs' vehicle was in substantially the same condition at the time of the accident as when it left the exclusive control of Defendant.

16. That the defective and unreasonably dangerous condition of the Plaintiffs' vehicle was the proximate cause of the injuries and damages of Plaintiff as above stated.

17. Pursuant to South Carolina Code § 15-73-10, et seq., the Defendant is strictly liable for the injuries and all damages caused by the defective condition of the Plaintiffs' vehicle.

AS A SECOND CAUSE OF ACTION
(Negligence as to Defendant Ford)

18. The allegations set forth in Paragraphs 1 through 17 above are repeated as if set forth herein verbatim.

19. That Defendant Ford was negligent, careless, and reckless in:

- a. failing to properly design the vehicle;
- b. failing to properly assemble the vehicle;
- c. failing to properly test the vehicle;
- d. placing a defective and unreasonably dangerous product into the stream of commerce;
- e. that the front passenger airbag failed to perform as it struck the Plaintiff in the fact resulting in loss of his right eye;
- f. that the airbag was overly aggressive and deployed with excessive force; and
- g. that the subject vehicle, 2009 Ford Focus, contained inadequate warnings about its defective and unreasonably dangerous condition.

20. The negligent and reckless acts and omissions of Defendant Ford were the direct and proximate cause of the injuries and damages suffered by Plaintiff as above stated.

21. That due to the negligent, grossly negligent, careless, wanton, and reckless acts and/or omissions of the Defendants, Plaintiff Steven Newbern is entitled to actual and punitive damages from Defendants in an amount to be determined by the trier of fact, and punitive damages in such an amount that would deter the Defendants from such activities in the future.

AS A THIRD CAUSE OF ACTION

(Negligence as to Defendant McGee)

22. The allegations set forth in Paragraphs 1 through 21 above are repeated as if set forth herein verbatim.

23. That Defendant McGee negligently operated and/or maintained the motor vehicle he was operating when he failed to yield the right-of-way to the Plaintiffs so that the motor vehicle Defendant McGee was operating collided with Plaintiffs' motor vehicle.

24. The negligent and reckless acts and omissions of Defendant McGee were the direct and proximate cause of the injuries and damages suffered by Plaintiff as above stated.

25. That due to the negligent, grossly negligent, careless, wanton, and reckless acts and/or omissions of the Defendants, Plaintiff Steven Newbern is entitled to actual and punitive damages from Defendants in an amount to be determined by the trier of fact, and punitive damages in such an amount that would deter the Defendants from such activities in the future.

AS A FOURTH CAUSE OF ACTION

(Breach of Implied Warranty of Merchantability)

26. The allegations set forth in Paragraphs 1 through 25 above are repeated as if set forth herein verbatim.

27. The Defendant, FORD, is a "merchant" with respect to vehicles and the airbags contained within these vehicles as defined in the South Carolina Commercial Code.

28. In selling the 2009 Ford Focus vehicle with its airbags, the Defendant, FORD, impliedly warranted that it was merchantable as set forth in South Carolina Code § 36-2-314.

29. The Defendant, FORD, did not exclude or modify the implied warranty of merchantability.

30. The Defendant FORD's implied warranty of merchantability flows to Plaintiff, Steven Newbern pursuant to South Carolina Code §.36-2-314.

31. The Defendant, FORD, has breached the implied warranty of merchantability in that the vehicle and its airbag system were, in fact, not merchantable, fit, suitable, or safe for use as set out above.

32. As a direct and proximate result of the Defendant, FORD's, breach of implied warranty of merchantability, Plaintiff Steven Newbern suffered the injuries described above.

33. Due to the Defendant, FORD's, breach of implied warranty of merchantability, Plaintiff, Steven Newbern, is entitled to recover actual and punitive damages as determined by a jury.

AS A FIFTH CAUSE OF ACTION
(Loss of Consortium against All Defendants)

34. The allegations set forth in Paragraphs 1 through 33 above are repeated as if set forth herein verbatim.

35. That Defendants owed a duty of care to Plaintiffs.

36. That Defendants breached this duty to the Plaintiffs.

37. As a direct, foreseeable, and proximate result of the aforesaid negligent, grossly negligent, careless, wanton, and reckless acts and/or omissions of the Defendants, Plaintiff Claudia Newbern has been forced to endure substantial losses of the marital rights to company, society, cooperation, affection, assistance, fellowship, aid, and relations with her spouse.

38. That due to the negligent, grossly negligent, careless, wanton, and reckless acts and/or omissions of the Defendants, Plaintiff Claudia Newbern is entitled to actual and punitive damages from Defendants in an amount to be determined by the trier of fact, and punitive damages in such an amount that would deter the Defendants from such activities in the future.

WHEREFORE, Plaintiffs pray for a trial by jury and for the following:

- i. Judgment against Defendants for actual and punitive damages in an amount to be determined by the jury;
- ii. For the costs of this action; and
- iii. For such other and further relief as this court deems just and proper.

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Local Counsel for Plaintiffs

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407-423-9728 office
Lead Counsel for Plaintiffs

5/17, 2013
Charleston, South Carolina

STATE OF SOUTH CAROLINA)
)
COUNTY OF CHARLESTON)
)
Steven Newbern and Claudia Newbern,)
)
Plaintiffs,)
)
vs.)
)
Ford Motor Company and Stephen Ronald)
McGee,)
)
Defendants.)

IN THE COURT OF COMMON PLEAS
Case No.: 2013-CP-10-2928

**DEFENDANT FORD MOTOR
COMPANY'S ANSWER TO
PLAINTIFFS' COMPLAINT**

(Jury Trial Demanded)

2013 JUL 12 PM 2:25
JULIA HENSTRONG
CLERK OF COURT
BY *[Signature]*

FILED

Defendant Ford Motor Company (hereinafter "Ford") hereby answers Plaintiffs' Complaint as follows. To the extent any numbered paragraph of Plaintiffs' Complaint contains allegations against multiple defendants, Ford answers only as to itself and not on behalf of any other defendant. Each and every allegation not hereinafter specifically admitted, qualified, or explained is denied.

FOR A FIRST DEFENSE

1. Ford is without knowledge or information sufficient to form a belief as to the truth of the allegations of Paragraph 1 and, therefore, denies said allegations.

2. Answering Paragraph 2, Ford admits only so much of these allegations that allege or can be construed to allege that Ford is a corporation organized and existing under the laws of a state other than South Carolina; that Ford's principal place of business is in a state other than South Carolina; that Ford does business in the State of South Carolina; and that Ford designs and manufactures, in part, and finally assembles certain vehicles, which are then sold by independent dealerships. Any allegations in addition to or inconsistent with the above response are denied.

3. Paragraph 3 is directed toward a defendant other than Ford, and, therefore, no response of Ford is required. To the extent the Court deems a response is required, Ford is without knowledge or information sufficient to form a belief as to the truth of the allegations set forth in Paragraph 3 at this time, and, therefore, denies said allegations.

4. Ford is without knowledge or information sufficient to form a belief as to the truth of the allegations of Paragraph 4 at this time and, therefore, denies said allegations.

5. Answering Paragraph 5, Ford responds that these allegations constitute legal conclusions to which no response is required. To the extent the Court may deem a response is required, Ford is without knowledge or information sufficient to form a belief as to the truth of the allegations of Paragraph 5 at this time and, therefore, denies said allegations.

6. Ford admits only so much of the allegations contained in Paragraph 6 that allege or can be construed to allege Ford designed, manufactured, tested, and assembled 2009 Ford Focus vehicles, including the subject vehicle. However, Ford denies that it designed, manufactured, tested and assembled every component utilized in the 2009 Ford Focus.. Any allegations in addition to or inconsistent with the above response are denied.

7. Ford is without knowledge or information sufficient to form a belief as to the truth of the allegations of Paragraph 7 at this time and, therefore, denies said allegations.

8. Ford is without knowledge or information sufficient to form a belief as to the truth of the allegations of Paragraph 8 at this time and, therefore, denies said allegations.

9. Ford is without knowledge or information sufficient to form a belief as to the truth of the allegations of Paragraph 9 at this time and, therefore, denies said allegations.

10. Ford is without knowledge or information sufficient to form a belief as to the truth of the allegations on Paragraph 10 and, therefore, denies said allegations.

11. Ford is without knowledge or information sufficient to form a belief as to the truth of the allegations of Paragraph 11 at this time and, therefore, denies said allegations.

12. Answering Paragraph 12, Ford responds that these allegations constitute legal conclusions to which no response is required. To extent Court deems a response of Ford is required, Ford admits any duty imposed by law but denies breach of any such duty and, therefore, denies the allegations against Ford set forth in Paragraph 12.

AS A FIRST CAUSE OF ACTION
(Strict Liability as to Defendant Ford)

13. Answering Paragraph 13, Ford incorporates by reference its answers to Paragraphs 1 through 12 of Plaintiffs' Complaint as fully and effectively as if set forth verbatim herein.

14. Ford denies the allegations against Ford set forth in Paragraph 14.

15. Ford is without knowledge or information sufficient to form a belief as to the truth of the allegations of Paragraph 15 at this time and, therefore, denies said allegations.

16. Ford denies the allegations against Ford set forth in Paragraph 16.

17. Ford denies the allegations against Ford set forth in Paragraph 17.

AS A SECOND CAUSE OF ACTION
(Negligence as to Defendant Ford)

18. Answering Paragraph 18, Ford incorporates by reference its answers to Paragraphs 1 through 17 of Plaintiffs' Complaint as fully and effectively as if set forth verbatim herein.

19. Ford denies the allegations against Ford set forth in Paragraph 19, including all subparts.

20. Ford denies the allegations against Ford set forth in Paragraph 20.

21. Ford denies the allegations against Ford set forth in Paragraph 21.

AS A THIRD CAUSE OF ACTION
(Negligence as to Defendant McGee)

22. Answering Paragraph 22, Ford incorporates by reference its answers to Paragraphs 1 through 21, including all subparts, of Plaintiffs' Complaint as fully and effectively as if set forth verbatim herein.

23. Paragraph 23 is directed toward a defendant other than Ford, and, therefore, no response of Ford is required. To the extent the Court deems a response is required, Ford admits the allegations of Paragraph 23 upon information and belief.

24. Paragraph 24 is directed toward a defendant other than Ford, and, therefore, no response of Ford is required. To the extent the Court deems a response is required, Ford admits the allegations of Paragraph 24 upon information and belief.

25. Paragraph 25 is directed toward a defendant other than Ford, and, therefore, no response of Ford is required. To the extent the Court deems a response is required, Ford, upon information and belief, admits the allegations of Paragraph 25 as to Defendant McGee. To the extent the allegations of Paragraph 25 allege fault against Ford, Ford denies the same and demands strict proof thereof.

AS A FOURTH CAUSE OF ACTION
(Breach of Implied Warranty of Merchantability)

26. Answering Paragraph 26, Ford incorporates by reference its answers to Paragraphs 1 through 25, including all subparts, of Plaintiffs' Complaint as fully and effectively as if set forth verbatim herein.

27. Answering Paragraph 27, Ford responds that these allegations constitute legal conclusions to which no response is required. To the extent the Court may deem a response is required, Ford denies the allegations set forth in Paragraph 27.

28. Answering Paragraph 28, Ford responds that these allegations constitute legal conclusions to which no response is required. To the extent the Court may deem a response is required, Ford denies the allegations set forth in Paragraph 28.

29. Ford denies the allegations set forth in Paragraph 29.

30. Answering Paragraph 30, Ford responds that these allegations constitute legal conclusions to which no response is required. To the extent the Court may deem a response is required, Ford is without knowledge or information sufficient to form a belief as to the truth of the allegations of Paragraph 30 at this time and, therefore, denies said allegations.

31. Ford denies the allegations against Ford set forth in Paragraph 31.

32. Ford denies the allegations against Ford set forth in Paragraph 32.

33. Ford denies the allegations against Ford set forth in Paragraph 33.

AS A FIFTH CAUSE OF ACTION
(Loss of Consortium against All Defendants)

34. Answering Paragraph 34, Ford incorporates by reference its answers to Paragraphs 1 through 33, including all subparts, of Plaintiffs' Complaint as fully and effectively as if set forth verbatim herein.

35. Answering Paragraph 35, Ford responds that these allegations constitute legal conclusions to which no response is required. To the extent the Court may deem a response is required, Ford admits any duty imposed by law but denies breach of any such duty and, therefore, denies the allegations set forth against Ford in Paragraph 35.

36. Ford denies the allegations against Ford set forth in Paragraph 36.

37. Ford denies the allegations against Ford set forth in Paragraph 37.

38. Ford denies the allegations against Ford as set forth in Paragraph 38, including the prayer for relief that follows.

FOR A SECOND DEFENSE

39. Ford submits that Plaintiffs' Complaint, in whole or in part, fails to state facts sufficient to constitute a cause of action pursuant to Rule 12(b)(6) of the South Carolina Rules of Civil Procedure.

FOR A THIRD DEFENSE

40. Ford submits that Plaintiffs' Complaint may fail for improper venue pursuant to Rule 12(b)(3) of the South Carolina Rules of Civil Procedure and the rule of law established in *Whaley v. CSX Transp., Inc.*, 362 S.C. 456, 609 S.E.2d 286 (2005) and S.C. Code Ann. § 15-7-30.

FOR A FOURTH DEFENSE

41. Ford submits that, at all times, the subject vehicle was designed, manufactured, and assembled in compliance with all applicable industry and governmental standards and regulations and, therefore, Plaintiffs cannot recover against Ford.

FOR A FIFTH DEFENSE

42. Ford submits that, at all times, the subject vehicle was designed, manufactured, and assembled in conformance with the prevailing industry customs and practices and, therefore, Plaintiffs cannot recover against Ford.

FOR A SIXTH DEFENSE

43. Ford submits that, at all times, the subject vehicle was designed, manufactured, and assembled in conformance with the state-of-the-art and did not present an unreasonable risk

of harm to Plaintiffs or other occupants or users of the subject vehicle and, therefore, Plaintiffs cannot recover against Ford.

FOR A SEVENTH DEFENSE

44. Ford submits that the injuries and damages for which Plaintiffs seek recovery may be due to, and proximately caused by, the modification or alteration of the subject vehicle, and, therefore, Plaintiffs may not recover against Ford.

FOR AN EIGHTH DEFENSE

45. Ford submits that the injuries and damages for which Plaintiffs seek recovery were due to, and proximately caused by, the abuse, misuse, or improper use of the subject vehicle, and therefore, Plaintiffs may not recover against Ford.

FOR A NINTH DEFENSE

46. Ford submits that South Carolina Code Ann. § 15-73-20 may serve as a bar, in whole or in part, to this action.

FOR A TENTH DEFENSE

47. Ford pleads the doctrines of comparative negligence and comparative fault and alleges that the negligence and/or fault of Plaintiffs were greater than any negligence or fault, if any, which may be established against Ford and, therefore, Plaintiffs are barred from recovery. Ford further alleges that any injury and damage sustained by Plaintiffs were due to and caused by the negligence and/or fault of Plaintiffs, combining, concurring, and contributing with the negligence and/or fault, if any, on the part of Ford, and that any amount of recovery awarded to Plaintiffs for the alleged injuries and damage shall be reduced by the Court based on the percentage of negligence and/or fault attributed to Plaintiffs.

FOR AN ELEVENTH DEFENSE

48. Ford submits that the injuries and damages for which Plaintiffs seek recovery were due to, and proximately caused by, the negligence, recklessness, willfulness, wantonness, and criminal acts of a party or parties other than Ford in the operation, maintenance, repair, or use of the subject vehicle. Plaintiffs' claims against Ford, therefore, should be barred or reduced by the amount of such negligence, recklessness, willfulness, or wantonness.

FOR A TWELFTH DEFENSE

49. Ford submits that the injuries and damages for which Plaintiffs seek recovery were due to, and proximately caused by, the intervening negligence, recklessness, willfulness, wantonness, criminal acts, and fault of a party or parties other than Ford. Such intervening negligence, recklessness, willfulness, wantonness, criminal acts, and fault are the sole cause of the injuries and damages for which Plaintiffs seek recovery, and, therefore, Plaintiffs may not recover against Ford.

FOR A THIRTEENTH DEFENSE

50. Ford would show that the injuries and damages for which Plaintiffs seek recovery were due to, and proximately caused by, the sole negligence, recklessness, willfulness, wantonness, criminal acts, and fault of third parties for whom Ford is not liable. Therefore, the acts or fault of third parties are the real, efficient, direct, and proximate cause of the injuries for which Plaintiffs seek recovery, and, therefore, Plaintiffs cannot recover against Ford.

FOR A FOURTEENTH DEFENSE

51. Ford would show that the damages for which Plaintiffs seek recovery were due to and proximately caused by Plaintiffs' voluntary actions taken in full knowledge of any associated risk, of which one, in the exercise of due care, should have known or appreciated and,

therefore, this voluntary assumption of the risk is a complete bar to this action; or, in the alternative, a facet of comparative negligence or fault.

FOR A FIFTEENTH DEFENSE

52. Ford submits that Plaintiffs are barred from recovery because Plaintiffs may have failed to utilize the safety restraint system provided in the subject vehicle, which is relevant to both proximate causation and the defect alleged by Plaintiffs.

FOR A SIXTEENTH DEFENSE

53. Ford affirmatively pleads all defenses, which are or may become available to it under *Restatement (Second) of Torts* § 402A and the comments thereto, as codified by S.C. Code Ann. § 15-73-30.

FOR A SEVENTEENTH DEFENSE

54. Ford submits that Plaintiffs' claims for breach of warranty are barred because: such warranties are expressly excluded, disclaimed, and limited by the agreements between the parties and by Ford's limited written warranty that accompanied the initial sale of the subject vehicle to its original purchaser; any warranties expired prior to the incident date; Plaintiffs failed to give timely notice of any alleged breach of warranty; and Plaintiffs' recovery for breach of warranty is limited to those remedies set forth in the limited written warranty that accompanied the initial sale of the subject vehicle to its original purchaser. Ford craves reference to and incorporates herein by reference the terms, limitations, disclaimers, and exclusions of any warranties or other documents issued with the sale of the vehicle at issue.

FOR AN EIGHTEENTH DEFENSE

55. Ford submits that Plaintiffs' claims, in whole or in part, are expressly or impliedly preempted by federal law, including, but in no way limited to, the National Traffic and Motor

Vehicle Safety Act and the Federal Motor Vehicle Safety Standards, as well as the rule of law established in *Geier v. Am. Honda Motor Co.*, 529 U.S. 861 (2000); *Buckman Co. v. Plaintiffs' Legal Committee*, 531 U.S. 341 (2000); *Priester v. Cromer*, 401 S.C. 38, 736 S.E.2d 249 (2012); *Jamison v. Ford Motor Co.*, 373 S.C. 248, 644 S.E.2d 755 (Ct. App. 2007), *writ of cert. dismissed*, 385 S.C. 238, 683 S.E.2d 803 (2009); and other relevant statutory and common law authority.

FOR A NINETEENTH DEFENSE

56. To the extent Plaintiffs seek punitive damages against Ford under strict liability or breach of warranty causes of action, those claims are barred because punitive damages are not recoverable under strict liability or breach of warranty causes of action.

FOR A TWENTIETH DEFENSE

57. Ford submits that it is entitled to a set off or credit for any amount paid to Plaintiffs by any third party as compensation for the injuries and damages for which Plaintiffs seek recovery herein.

FOR A TWENTY-FIRST DEFENSE

58. Ford denies Plaintiffs' prayer for punitive damages. An award of punitive damages under South Carolina law violates the Fifth, Sixth, and Fourteenth Amendments of the United States Constitution and Article I, Section 3 of the South Carolina Constitution in that:

- a. The judiciary's ability to correct a punitive damage award only upon a finding of passion, prejudice or caprice is inconsistent with due process guarantees;
- b. Any award of punitive damages seeking a compensatory function is inconsistent with due process guarantees;
- c. Any award of punitive damages based upon the wealth of the defendant violates due process guarantees;

- d. The jury's unfettered power to award punitive damages in any amount it chooses is wholly devoid of meaningful standards and is inconsistent with due process guarantees;
- e. Even if it could be argued that the standard governing the imposition of punitive damages exists, the standard is void for vagueness;
- f. Plaintiffs' claim for punitive damages violates the equal protection clause of the Fourteenth Amendment of the United States Constitution and Article I, Section 3 of the South Carolina Constitution in that the amount of punitive damages is based upon the wealth of the defendant; and
- g. Any award of punitive damages for conduct or activity of Ford outside the State of South Carolina or directed to non-parties is inconsistent with the interest of federalism, and violates the governing authority of *State Farm Mut. Auto. Ins. Co. v. Campbell*, 538 U.S. 408 (2003), and *Philip Morris USA v. Williams*, 549 U.S. 346 (2007).

Ford further submits that Plaintiffs' claims for punitive damages violate the federal doctrine of separation of powers and Article I, Section 3 of the South Carolina Constitution for the reason that punitive damages are a creation of the judicial branch of government, which invades the province of the legislative branch of government. Ford submits that like provisions of governing foreign state law may likewise violate constitutional guarantees, including those established under the Constitution of the one of the various States and the United States Constitution.

FOR A TWENTY-SECOND DEFENSE

59. Ford submits that Plaintiffs' claims for punitive damages fail because (1) Plaintiffs failed to plead any ultimate facts to support such a claim as required by Rule 8(a), SCRPC, and instead only asserts legal conclusions, and (2) there is no clear and convincing evidence of willful, wanton, or reckless conduct by Ford at the time the subject vehicle was

manufactured, and thus, Plaintiffs cannot satisfy the requisite burden of proof pursuant to S.C. Code Ann. § 15-33-135.

FOR A TWENTY-THIRD DEFENSE

60. Ford submits that the vehicle described in Plaintiffs' Complaint was not in essentially the same condition at the time of the events, accident, injuries, and damages alleged in the Complaint as when it left the custody and possession of Ford and, therefore, any recovery by Plaintiffs are barred.

FOR A TWENTY-FOURTH DEFENSE

61. Ford pleads applicability of The Economic Development, Citizens and Small Business Protection Act of 2005, effective July 1, 2005, which amended S.C. Code Ann. §§ 15-38-15 [joint and several liability], 15-7-30 [venue], 15-7-100 [venue], 36-2-803(B) [jurisdiction], and other pertinent statutory sections, and invokes the remedies and procedures provided therein.

FOR A TWENTY-FIFTH DEFENSE

62. To the extent there has been any spoliation of evidence, Ford submits that such spoliation prevents Plaintiffs from satisfying their burden of proof and prevents Ford from adequately preparing a defense to Plaintiffs' allegations. Ford further submits that it has been irreparably prejudiced by Plaintiffs' spoliation of evidence and, therefore, Plaintiffs' recovery in this matter should be barred.

FOR A TWENTY-SIXTH DEFENSE

63. Ford has not had an opportunity to conduct a complete investigation or to engage in adequate discovery regarding the circumstances of Plaintiffs' allegations. Ford intends to fully explore and investigate the pertinent facts and prevailing circumstances surrounding any reported injury or damage as alleged in the Complaint, and gives notice of its intent to assert any

further affirmative defenses that its information gathering process may indicate are supported by fact and law. These defenses may include, but are not limited to, a defense that the action is barred in whole or in part by any applicable statute, contract, release, covenant, and the doctrine of laches. Ford thus reserves the right to amend this Answer and assert such defenses.

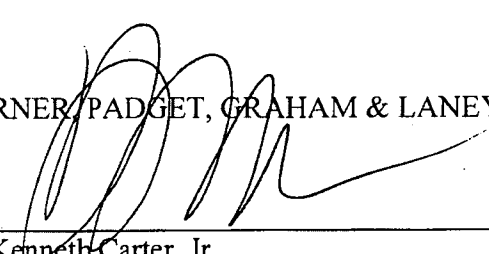
WHEREFORE, having fully answered Plaintiffs' Complaint, Ford prays that the Complaint be dismissed, with prejudice, and for such other and further relief as the Court may deem just and proper.

Jury trial demanded.

July 10, 2013

By:

TURNER, PADGET, GRAHAM & LANEY, P.A.



J. Kenneth Carter, Jr.
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Columbia, SC 29202
Phone: (803) 254-2200
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**ATTORNEYS FOR DEFENDANT
FORD MOTOR COMPANY**

STATE OF SOUTH CAROLINA)
)
COUNTY OF CHARLESTON)
)
STEVEN NEWBERN,)
)
Plaintiff,)
)
VS.)
)
FORD MOTOR COMPANY,)
)
Defendant.)
_____)

IN THE COURT OF COMMON PLEAS
NINTH JUDICIAL CIRCUIT
CIVIL ACTION NO.: 2013-CP-10-2928

AMENDED COMPLAINT
Product Liability/Personal Injury
(JURY TRIAL DEMANDED)

TO THE DEFENDANTS NAMED ABOVE:

THE PLAINTIFF ALLEGES:

1. He was at all times resident of the State of South Carolina. That this action is a product liability and personal injury action for the injuries and damages he sustained from the accident on December 28, 2012.
2. That the defendant, Ford Motor Company (FORD), is a foreign corporation and at all times material doing business in South Carolina and Charleston County and maintains an agent in Columbia, Richland County, South Carolina.
3. Defendant, FORD, designed, manufactured, tested, assembled and placed in the stream of commerce and failed to recall that certain 2009 Ford Focus, VIN 1FAHP36N79W115116, that is the subject of this lawsuit.
4. That on December 28, 2012, Plaintiff was the belted, front passenger in his 2009 Ford Focus, the subject vehicle, operated by his wife, Claudia Newbern.
5. Plaintiff was traveling west on Magwood Drive near the intersection with Ashley Crossing Drive in Charleston when his vehicle was struck on the right passenger side by a 1989

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CLERK OF COURT
BY _____

Chevrolet. The driver of the 1989 Chevrolet failed to yield the right-of-way to the subject vehicle and the impact forced the subject vehicle and 1989 Chevrolet into a third vehicle head on.

6. The front passenger airbag system did not function properly in the Ford Focus the Plaintiff, Steven Newbern, was traveling in. Upon impact, the front passenger airbag deployed and violently struck the Plaintiff's face with excessive force resulting in severe and traumatic injuries to his right eye ultimately leading to the loss of his right eye, a fractured sternum, fractured facial bones and fractured nose.

7. That the subject vehicle described above was in substantially the same condition at the time of the accident that is the subject of this lawsuit as it was when it left the possession and control of Defendant, FORD.

8. As a result of the actions of the Defendants as set forth herein, Steven Newbern suffered damages in the nature of:

- a. pain and suffering;
- b. mental anguish and emotional distress;
- c. permanent disfigurement and disability;
- d. medical expenses;
- e. lost income and loss of earning capacity;
- f. impairment of health and bodily efficiency; and
- g. loss of enjoyment of life.

FIRST CAUSE OF ACTION
STRICT OF LIABILITY OF FORD MOTOR COMPANY

9. Defendant, Ford Motor Company, designed, manufactured, assembled, tested, distributed, and sold the subject vehicle, 2009 Ford Focus, with a defective airbag system which was unreasonably dangerous to persons using it for its foreseeable and intended purposes. It

deployed unnecessarily, it deployed late, and its airbag deployment characteristics were dangerous in both path and excursion.

10. The subject vehicle and airbag system was in substantially the same condition at the time of the accident as when it left the exclusive control of Defendant.

11. That the defective and unreasonably dangerous condition of the subject airbag system was the producing and proximate cause of the injuries and damages of Plaintiff as above stated.

SECOND CAUSE OF ACTION
NEGLIGENCE OF FORD MOTOR COMPANY

12. That Defendant, FORD, was negligent, careless, and reckless in
- a. failing to properly design the airbag system;
 - b. failing to properly test the airbag system;
 - c. placing vehicle with a defective and unreasonably dangerous airbag system into the stream of commerce;
 - d. that the utilizing a front passenger airbag failed to perform safely due to its deployment characteristics which allowed it to strike the Plaintiff during its deployment phase, in the face resulting in loss of his right eye, fractured sternum, fractured nose and facial bone fracture;
 - e. that the airbag was overly aggressive and deployed with excessive force due to its deployment characteristics and late deployment;
 - f. The airbag should not have deployed in this collision;
 - g. that the subject vehicle, 2009 Ford Focus, contained inadequate warnings about its defective and unreasonably dangerous condition. Specifically, Ford was aware that it designed the Ford Focus airbag system to deploy the

airbag in collisions that it was not needed. It failed to warn that unnecessarily deploying the airbag in minor collisions could cause serious and permanently disabling injuries. It failed to warn that its owners manual instructions were false and misleading.

13. As a direct and proximate result of the Defendant's negligence, the Plaintiff has been injured and damaged as above stated.

WHEREFORE, the Plaintiff prays for judgment against the Defendants for actual damages in a sum sufficient to compensate him for his injuries in an amount to be ascertained by a jury, for the costs and disbursements of this action and for such other and further relief as may appear just and proper.

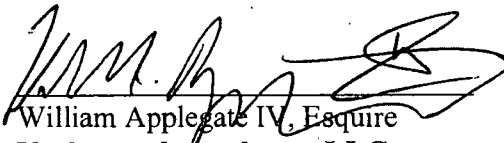
Signature page to follow.

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ATTORNEYS FOR THE PLAINTIFF

March 29, 2016
Charleston, South Carolina.

STATE OF SOUTH CAROLINA

COUNTY OF CHARLESTON

Steven Newbern,

Plaintiff,

vs.

Ford Motor Company,

Defendant.

IN THE COURT OF COMMON PLEAS

Case No.: 2013-CP-10-2928

**DEFENDANT FORD MOTOR
COMPANY'S ANSWER TO
PLAINTIFF'S AMENDED
COMPLAINT**

(Jury Trial Demanded)

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CLERK OF COURT
BS

Defendant Ford Motor Company (hereinafter "Ford") hereby answers Plaintiff's Amended Complaint as follows. Each and every allegation not hereinafter specifically admitted, qualified, or explained is denied.

FOR A FIRST DEFENSE

1. Upon information and belief, Ford admits that Plaintiff is a resident of South Carolina. Ford submits the remaining allegations of Paragraph 1 constitute legal statements or conclusions to which no response is required. To the extent a response is required, Ford denies the remaining allegations of Paragraph 1.

2. Answering Paragraph 2, Ford admits only so much of these allegations that allege or can be construed to allege that Ford is a corporation organized and existing under the laws of a state other than South Carolina; that Ford's principal place of business is in a state other than South Carolina; that Ford does business in the State of South Carolina. Ford denies any allegations of Paragraph 2 that are different or inconsistent with these specific admissions.

3. Ford admits only so much of the allegations contained in Paragraph 3 that allege or can be construed to allege Ford designed, manufactured, tested, and finally assembled 2009

Ford Focus vehicles, including the subject vehicle. However, Ford denies that it designed, manufactured, tested and assembled every component utilized in the 2009 Ford Focus vehicle.. Any allegations in addition to or inconsistent with the above response are denied.

4. Upon information and belief, Ford admits the allegations of Paragraph 4.

5. Answering Paragraph 5, Ford admits that an accident occurred on December 28, 2012 involving the subject vehicle and a 1989 Chevrolet Caprice vehicle driven by Stephen McGee; that McGee failed to yield the right of way, thereby causing the accident; and that McGee's vehicle struck the right front of the subject vehicle.

6. Answering Paragraph 6, Ford admits only that the airbags in the subject Ford Focus deployed in the accident, but deny all other allegations of Paragraph 6.

7. Ford is without knowledge or information sufficient to form a belief as to the truth of the allegations on Paragraph 7 and, therefore, denies said allegations.

8. Ford denies the allegations set forth in Paragraph 8, including all subparts.

FOR A FIRST DEFENSE TO
THE A FIRST CAUSE OF ACTION
(Strict Liability)

9. Ford denies the allegations set forth in Paragraph 9.

10. Ford is without knowledge or information sufficient to form a belief as to the truth of the allegations of Paragraph 10 at this time and, therefore, denies said allegations.

11. Ford denies the allegations against Ford set forth in Paragraph 11.

FOR A FIRST DEFENSE TO
THE SECOND CAUSE OF ACTION
(Negligence)

12. Ford denies the allegations set forth in Paragraph 12, including all subparts.

13. Ford denies the allegations set forth in Paragraph 13, including the prayer for relief that follows.

FOR A SECOND DEFENSE

14. Ford submits that Plaintiff's Amended Complaint, in whole or in part, fails to state facts sufficient to constitute a cause of action pursuant to Rule 12(b)(6) of the South Carolina Rules of Civil Procedure.

FOR A THIRD DEFENSE

15. Ford submits that, at all times, the subject vehicle was designed, manufactured, and assembled in compliance with all applicable industry and governmental standards and regulations and, therefore, Plaintiff cannot recover against Ford.

FOR A FOURTH DEFENSE

16. Ford submits that, at all times, the subject vehicle was designed, manufactured, and assembled in conformance with the prevailing industry customs and practices and, therefore, Plaintiff cannot recover against Ford.

FOR A FIFTH DEFENSE

17. Ford submits that, at all times, the subject vehicle was designed, manufactured, and assembled in conformance with the state-of-the-art and did not present an unreasonable risk of harm to Plaintiff or other occupants or users of the subject vehicle and, therefore, Plaintiff cannot recover against Ford.

FOR A SIXTH DEFENSE

18. Ford submits that the injuries and damages for which Plaintiff seeks recovery may be due to, and proximately caused by, the modification or alteration of the subject vehicle, and, therefore, Plaintiff may not recover against Ford.

FOR A SEVENTH DEFENSE

19. Ford submits that the injuries and damages for which Plaintiff seeks recovery were due to, and proximately caused by, the abuse, misuse, or improper use of the subject vehicle, and therefore, Plaintiff may not recover against Ford.

FOR AN EIGHTH DEFENSE

20. Ford submits that South Carolina Code Ann. § 15-73-20 may serve as a bar, in whole or in part, to this action.

FOR A NINTH DEFENSE

21. Ford pleads the doctrines of comparative negligence and comparative fault and alleges that the negligence and/or fault of Plaintiffs were greater than any negligence or fault, if any, which may be established against Ford and, therefore, Plaintiff is barred from recovery. Ford further alleges that any injury and damage sustained by Plaintiffs were due to and caused by the negligence and/or fault of Plaintiff, combining, concurring, and contributing with the negligence and/or fault, if any, on the part of Ford, and that any amount of recovery awarded to Plaintiff for the alleged injuries and damage shall be reduced by the Court based on the percentage of negligence and/or fault attributed to Plaintiff.

FOR A TENTH DEFENSE

22. Ford submits that the injuries and damages for which Plaintiff seeks recovery were due to, and proximately caused by, the negligence, recklessness, willfulness, wantonness, and criminal acts of a party or parties other than Ford, including but not limited to Stephen McGee. Plaintiff's claims against Ford, therefore, should be barred or reduced by the amount of such negligence, recklessness, willfulness, or wantonness.

FOR AN ELEVENTH DEFENSE

23. Ford submits that the injuries and damages for which Plaintiff seeks recovery were due to, and proximately caused by, the intervening negligence, recklessness, willfulness, wantonness, criminal acts, and fault of a party or parties other than Ford, including but not limited to Stephen McGee. Such intervening negligence, recklessness, willfulness, wantonness, criminal acts, and fault are the sole cause of the injuries and damages for which Plaintiff seeks recovery, and, therefore, Plaintiff may not recover against Ford.

FOR A TWELFTH DEFENSE

24. Ford would show that the injuries and damages for which Plaintiff seeks recovery were due to, and proximately caused by, the sole negligence, recklessness, willfulness, wantonness, criminal acts, and fault of third parties for whom Ford is not liable, including but not limited to Stephen McGee. Therefore, such acts or fault of third parties are the real, efficient, direct, and proximate cause of the injuries for which Plaintiff seeks recovery, and, therefore, Plaintiff cannot recover against Ford.

FOR A THIRTEENTH DEFENSE

25. Ford would show that the damages for which Plaintiff seeks recovery were due to and proximately caused by Plaintiff's voluntary actions taken in full knowledge of any associated risk, of which one, in the exercise of due care, should have known or appreciated and, therefore, this voluntary assumption of the risk is a complete bar to this action; or, in the alternative, a facet of comparative negligence or fault.

FOR A FOURTEENTH DEFENSE

26. Ford submits that Plaintiff is barred from recovery because Plaintiff may have failed to utilize or misused the safety restraint system provided in the subject vehicle, which is relevant to both proximate causation and the defect alleged by Plaintiff.

FOR A FIFTEENTH DEFENSE

27. Ford affirmatively pleads all defenses, which are or may become available to it under *Restatement (Second) of Torts* § 402A and the comments thereto, as codified by S.C. Code Ann. § 15-73-30.

FOR A SIXTEENTH DEFENSE

28. Ford submits that Plaintiff's claims, in whole or in part, are expressly or impliedly preempted by federal law, including, but in no way limited to; the National Traffic and Motor Vehicle Safety Act and the Federal Motor Vehicle Safety Standards; as well as the rule of law established in *Geier v. Am. Honda Motor Co.*, 529 U.S. 861 (2000); *Buckman Co. v. Plaintiffs' Legal Committee*, 531 U.S. 341 (2000); *Priester v. Cromer*, 401 S.C. 38, 736 S.E.2d 249 (2012); *Jamison v. Ford Motor Co.*, 373 S.C. 248, 644 S.E.2d 755 (Ct. App. 2007), *writ of cert. dismissed*, 385 S.C. 238, 683 S.E.2d 803 (2009); and other relevant statutory and common law authority.

FOR A SEVENTEENTH DEFENSE

29. Ford submits that it is entitled to a set off or credit for any amount paid to Plaintiff by any third party as compensation for the injuries and damages for which Plaintiff seeks recovery herein.

FOR AN EIGHTEENTH DEFENSE

30. Ford submits that the vehicle described in Plaintiff's Amended Complaint was not in essentially the same condition at the time of the events, accident, injuries, and damages alleged in the Amended Complaint as when it left the custody and possession of Ford and, therefore, any recovery by Plaintiff is barred.

FOR A NINETEENTH DEFENSE

31. Ford pleads applicability of the 2005 Tort Reform Statutes, S.C. Code Ann. §§ 15-38-15; 15-7-30, -100; 36-2-803(B), and other pertinent statutory sections, and invokes the remedies and procedures provided therein. Ford specifically pleads entitlement to a proper apportionment of total fault among all potential joint tortfeasors, including but not limited to nonparties such as Stephen McGee.

FOR A TWENTIETH DEFENSE

32. To the extent there has been any spoliation of evidence, Ford submits that such spoliation prevents Plaintiff from satisfying his burden of proof and prevents Ford from adequately preparing a defense to Plaintiff's allegations. Ford further submits that it has been irreparably prejudiced by Plaintiff's spoliation of evidence and, therefore, Plaintiff's recovery in this matter should be barred.

FOR A TWENTY-FIRST DEFENSE

33. Ford has not had an opportunity to conduct a complete investigation or to engage in adequate discovery regarding the circumstances of Plaintiff's allegations. Ford intends to fully explore and investigate the pertinent facts and prevailing circumstances surrounding any reported injury or damage as alleged in the Amended Complaint, and gives notice of its intent to assert any further affirmative defenses that its information gathering process may indicate are

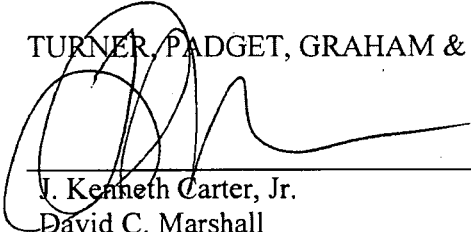
supported by fact and law. These defenses may include, but are not limited to, a defense that the action is barred in whole or in part by any applicable statute, contract, release, covenant, and the doctrine of laches. Ford thus reserves the right to amend this Answer and assert such defenses.

WHEREFORE, having fully answered Plaintiff's Amended Complaint, Ford prays that the Amended Complaint be dismissed, with prejudice, and for such other and further relief as the Court may deem just and proper.

Jury trial demanded.

April 13, 2015

TURNER, PADGET, GRAHAM & LANEY, P.A.

By: 

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**ATTORNEYS FOR DEFENDANT
FORD MOTOR COMPANY**

STATE OF SOUTH CAROLINA
COUNTY OF CHARLESTON

IN THE COURT OF COMMON PLEAS

Civil Action No.: 2013-CP-10-02928

Steven Newbern,

Plaintiff,

vs.

Ford Motor Company,

Defendant.

**DEFENDANT'S CONSOLIDATED
MOTION TO EXCLUDE
AND MOTION *IN LIMINE***

FILED
2016 SEP 12 PM 12:54
JULIE J. ARMSTRONG
CLERK OF COURT
BY _____

COMES NOW the Defendant Ford Motor Company ("Ford") and files its Consolidated Motion to Exclude and Motion *in Limine*, and respectfully shows the Court as follows:

INTRODUCTION AND STATEMENT OF FACTS

This automotive products liability action involves a three car collision in Charleston County, South Carolina on December 28, 2012. Plaintiff was injured when the 2009 Ford Focus in which he was the front passenger collided with a 1989 Chevrolet Caprice. Plaintiff suffered an injury during the collision, which ultimately led to the loss of his right eye. Plaintiff brought suit against Ford for the actual damages sustained as a result of this injury, which he alleges was caused by the late deployment of the passenger airbag. Ford filed a timely answer denying Plaintiff's allegations and raising numerous substantive defenses.

Defendant requests a pretrial ruling excluding certain evidence and moves *in limine* before the voir dire examination of the jury panel has begun, before any opening statements are made to the jury, and before the introduction of any evidence, for an order instructing Plaintiff and all of Plaintiff's witnesses to refrain from making any mention through interrogation, voir dire examination, opening statement, arguments, presentation of evidence or otherwise, either

directly or indirectly, concerning any of the matters hereinafter set forth, without first approaching the bench and obtaining a ruling from the Court outside the presence and hearing of all prospective jurors and the jurors ultimately selected to try this case. These matters are as follows:

1. Excluding all post-manufacture and/or post-distribution evidence.

The subject vehicle is a 2009 Ford Focus that was manufactured and finally assembled by Ford on or about August 20, 2008. To support Plaintiff's claims in this lawsuit, Ford anticipates Plaintiff may attempt to introduce and rely upon testimony and/or evidence of design changes, conduct, incidents, tests, and events that occurred subsequent to Ford's manufacture and distribution of the subject vehicle. Ford therefore moves *in limine* to prevent Plaintiff from introducing any such post-manufacture or post-distribution evidence at trial on the grounds set forth herein. Generally, Ford seeks the exclusion of such evidence, and any testimony or reference thereto, based on the substantive law of South Carolina specifically prohibiting the introduction of post-distribution evidence in product liability actions, as well as pursuant to Rules 402, 403, and 407 of the South Carolina Rules of Evidence.

As defined by the Supreme Court of South Carolina, "post-distribution evidence is evidence of facts neither known nor available at the time of distribution." *Branham v. Ford Motor Co.*, 390 S.C. 203, 227, 701 S.E.2d 5, 17-18 (2010). As noted by the Supreme Court, "[w]hen assessing liability in a design defect claim against a manufacturer, the judgment and ultimate decision of the manufacturer must be evaluated based on what was known or 'reasonably attainable' at the time of manufacture." *Id.* In this regard, "the use of post-distribution evidence to evaluate a product's design through the lens of hindsight is improper." *Id.* See also *Bragg v. Hi-Ranger, Inc.*, 319 S.C. 531, 462 S.E.2d 321, 331 (Ct. App. 1995) ("A

product must be measured against a standard existing at the time of sale.... Hindsight opinions by experts suggesting that more should have been done ... are insufficient to discredit the conclusion that the manufacturer met the standard of care.”) (citing *Sexton v. Bell Helmets, Inc.*, 926 F.2d 331, 337 (4th Cir. 1991); *Doe v. Miles Laboratories*, 927 F.2d 187, 193 (4th Cir. 1991)).

Policy reasons support the exclusion of evidence that post-dates the manufacture, distribution, and sale of a product in cases like this. As note by the Supreme Court:

It is good when a manufacturer continues to test and evaluate its product after initial manufacture. As additional information is learned, changes may be made that improve product safety and function. As a matter of policy, the law should encourage the design and manufacture of safe, functional products. In holding manufacturers accountable for unreasonably dangerous products pursuant to a fair system, products liability law serves that goal. Moreover, the law should encourage manufacturers to continue to improve their products in terms of utility and safety free from prior design decisions judged through the lens of hindsight.

Branham, 390 S.C. at 229-30, 701 S.E.2d at 19. Thus, the Court concluded in *Branham*: “Whether the 1987 Ford Bronco II was defectively designed and in a defective condition unreasonably dangerous must be determined as of the 1986 manufacture date of the vehicle. Ford’s 1986 design and manufacture decision should be assessed on the evidence available at that time, not the increased evidence of additional rollover data that came to light after 1986.”

Accordingly, the Supreme Court held “Ford was prejudiced by [plaintiff’s] unrelenting pursuit of post-distribution evidence on the issue of liability,” and “[g]iven the extent of the improper post-distribution evidence introduced, the error cannot be considered harmless.” *Id.* at 226, 701 S.E.2d at 17. For the same reasons, all evidence post-dating the manufacture of the subject 2009 Ford Focus should be excluded from the trial of this case.

2. Excluding Crash Test 15950 for purposes of passenger airbag deployment and interaction with the occupant.

Ford seeks to exclude Crash Test 15950 for purposes of passenger airbag deployment and interaction with the occupant because it is neither representative nor substantially similar to the subject crash and thus, not admissible for those purposes under Rules 401, 402 or 403 SCRE.

For evidence to be relevant it must have "any tendency to make the existence of any fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence." Rule 401, SCRE. Further, evidence that is not relevant is not admissible. Rule 402, SCRE. Likewise, evidence that is otherwise relevant may still be inadmissible if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury. Rule 403, SCRE.

Crash Test 15950 is very different from the subject crash in three important ways. First, Crash Test 15950 contains a 5th percentile female crash dummy. Second, Crash Test 15950 shows the dummy seated in the full forward position. Third, Crash Test 15950 contains a developmental model passenger airbag that has substantial physical differences with the production model passenger airbag found in the subject vehicle.

In the subject collision, Plaintiff was over six feet tall and weighed in excess of 180 pounds. This stands in stark contrast to a 5th percentile smaller crash dummy, which is nearly a foot shorter and nearly eighty pounds lighter. Both the seated height and the weight as it relates to occupant velocity and excursion serve to differentiate the two crashes. Both differences would have dramatic effect on occupant interaction with the airbag.

Additionally, in the subject crash, Plaintiff was in a rearward position on the seat track. This is much different than the full forward position of the smaller crash dummy. Again, the different seat positions combined with the different occupant sizes would dramatically affect

interaction with the airbag.

Furthermore, the subject crash included a production model passenger airbag. There are substantial differences between that airbag and the developmental model passenger airbag included in Crash Test 15950. The developmental model passenger airbag is physically larger and shaped differently. Further, it contains a different tethering scheme. These differences combine to produce a deployment which differs significantly from the production model passenger airbag in the subject crash. Both Plaintiff's expert, Mike Nranian,¹ and Ford's expert, Ram Krishnaswami² agree: this is not the same airbag nor is it substantially similar.³

Thus, Crash Test 15950 and the subject crash are so different that the former is irrelevant and unhelpful in demonstrating either passenger airbag deployment or occupant interaction in the latter. Further, drawing a comparison between the two for those purposes would only serve to confuse and mislead the jury. Therefore, Crash Test 15950 should be excluded for purposes of demonstrating passenger airbag deployment and occupant interaction with that airbag.

3. Excluding all reference to *Wickersham v. Ford*

Ford moves to exclude all evidence, testimony, and argument referencing or regarding trial of *Wickersham v. Ford* held in August of 2016 in Charleston before Judge David Norton in the United States District Court for the District of South Carolina. The *Wickersham* case involved an alleged defect in the driver's side airbag in a 2010 Ford Escape. This case involves a passenger side airbag in 2009 Ford Focus. Moreover, the *Wickersham* case involved a wrongful death claim arising from a suicide. The two cases are not similar in any meaningful

¹ Mike Nranian opined that he did not think this was a production bag. See Nranian Dep., Ex. A, p. 175 l. 14-18.

² Ram Krishnaswami agrees. See Krishnaswami Affidavit attached hereto, Ex. B.

³ Mike Nranian testified that it included "tethers" and "crazy venting." Nranian Dep., Ex. A, p. 175 l. 17-18.

way.

No part of that trial, its verdict, or any of the evidence therein would have any probative value whatsoever on the case at bar. Any mention of that case would only serve to prejudice Ford. Accordingly, Ford moves to exclude all evidence, testimony, and argument referencing or regarding the *Wickersham* case.

4. Excluding any reference, testimony, opinions, evidence, or argument concerning alleged defects and/or opinions not timely and properly disclosed by Plaintiff.

Ford moves to exclude all reference, argument, testimony, opinions, and evidence regarding any alleged defects that were not previously set forth in Plaintiff's pleadings or timely and properly disclosed in response to the parties' specific and detailed discovery requests. Further, Ford seeks exclusion of all previously undisclosed expert opinions that may be proffered by Plaintiff for the first time at trial.

Specifically, Ford moves to exclude any new expert theories related to:

- a) The Single Front Crash Sensor. Plaintiff has heretofore failed to disclose any expert testimony regarding any alleged defect resulting from the change from a dual front crash sensor to a single front crash sensor on the 2009 Ford Focus. None of Plaintiff's experts have opined on this subject. Thus, Plaintiff should be barred from offering this testimony at trial.
- b) The Seat Belt, Pretensioner, or Load Limiter. Plaintiff has heretofore failed to disclose any expert opinion regarding any alleged defect in the subject vehicle's seat belt, pretensioner, or load limiter. Thus, Plaintiff should be barred from offering this testimony at trial.

- c) Glass as an Injury Mechanism. Plaintiff has heretofore failed to disclose any expert opinion that glass was an injury mechanism for the injuries sustained in the subject crash. Rather, in their depositions, Plaintiff's experts specifically refute this theory and cling to the theory that the injury was caused by the passenger airbag.⁴ Thus, Plaintiff should be barred from offering expert testimony at trial claiming glass either did or may have caused the eye injury sustained.

The South Carolina Rules of Civil Procedure provide for the orderly prosecution and defense of lawsuits, and the rules specifically require that a party supplement his responses to discovery to include the subject matter on which an expert is expected to testify. Rule 26(e)(2), S.C. R. Civ. P. Accordingly, the admission of any new or changed opinions held by previously identified experts would violate the Rules and unduly prejudice Ford's ability to investigate and evaluate the new defect theories or opinions, rebut such evidence through testimony or evidence of its own, and defend this case as a whole. Thus, Plaintiff should be precluded from making any reference or argument through evidence or testimony to any claims, allegations, defects, and opinions not timely and properly disclosed during discovery.⁵

5. Excluding any reference to or evidence, testimony, or argument concerning failure to warn, recall, and/or retrofit the vehicle at issue.

The Court should exclude any reference to and all evidence, testimony, or argument suggesting that Ford had a duty, subsequent to the sale and delivery of the vehicle in question, to notify or publicize to purchasers or vehicle occupants, or to warn purchasers or vehicle occupants, of the alleged need for an alternative design or other post-delivery modification, or

⁴ See Lewis Dep., Ex. C, p. 101-104; Nranian Dep., Ex. A, p. 181-184.

⁵ See attached email from Steve Van Gaasbeck dated 9/2/2016, Ex. D. (Noting Plaintiff's expert's opinions have been "merely confirmed, not materially changed.")

that Ford had a post-sale duty to warn, update warnings, send consumer reminders, or issue a recall subsequent to delivery of the vehicle in question.

Under South Carolina law, “[a] manufacturer ... has no duty to notify previous purchasers of its products about later developed safety devices or to retrofit those products if the products were nondefective under standards existing at the time of the manufacture or sale.” *Bragg v. Hi-Ranger, Inc.*, 319 S.C. 531, 548-49, 462 S.E.2d 321, 331 (1995). Instead, “a product must be measured against a standard existing at the time of sale or against reasonable customer expectations held at the time of the sale. Hindsight opinions by experts suggesting that more should have been done ... are insufficient to discredit the conclusion that the manufacturer met the standard of care.” *Id.* (internal quotations and citations omitted). *See also Branham*, 390 S.C. at 227, 701 S.E.2d at 17-18.

6. Excluding improper references to defense counsel, experts, and arguments made in other cases.

Ford moves to exclude all evidence, testimony, and argument referencing or regarding the attorneys for Ford in this case as those that regularly represent this or other defendants, manufacturers, corporations, or insurance companies in lawsuits; that the attorneys specialize in product liability cases or cases involving the automotive industry; that the attorneys have represented Ford across the country in other lawsuits “similar to” or “just like” this one; that the attorneys are supervising, coordinating, regional, or national counsel for Ford or some other automotive manufacturer; the number of attorneys who are members of the firms in which Ford’s attorneys practice, or the number of attorneys or firms who have appeared on behalf of Ford in this case; the cities in which counsel have offices or the residences of any counsel representing Ford in this lawsuit. All such evidence, testimony, or argument would be irrelevant to the issues in this case, improper, and highly prejudicial, and therefore should be excluded. Rules 401, 402,

403, SCRE. *See also Howard v. State Farm*, 316 S.C. 445, 449, 450 S.E.2d 582, 585 (1994) (cautioning South Carolina's bar that argument or reference to the defendant's lawyers as "one of the biggest law firms in South Carolina" and "the biggest, baddest law firm in the State ... should be avoided and may constitute grounds for a new trial").

Plaintiff's motivations for these comments would be to cast Ford as a "big, bad, wealthy corporation," to insinuate that Plaintiff are tantamount to "David" and Ford is "Goliath" in this litigation, and to inflame the jury's sympathies and unduly prejudice Ford. Clearly, such comments have no tendency to prove or disprove the disputed issue of consequence in this action: whether the subject vehicle was defective and proximately caused Plaintiff's injuries as alleged. Rules 401 & 402, SCRE. In addition, statements or demonstratives by Plaintiff's counsel characterizing Ford's counsel or experts as "the Ford Airbag Team," "hired guns," "a traveling road show" or "circus," "a dog and pony show," or other similar derogatory remarks are unfounded and would be highly prejudicial under Rule 403, SCRE.

Finally, the admission of defense counsel's arguments in other cases, involving different facts, different products, different alleged defects, and often different legal standards would be improper and would only serve to confuse the jury and unduly lengthen the trial by requiring Ford's counsel to explain and respond to such out-of-context remarks. Accordingly, all such evidence, testimony, or argument should be excluded as irrelevant and prejudicial. Rules 401, 402, 403, SCRE. *See also Simpson v. Moore*, 367 S.C. 587, 613, 627 S.E.2d 701, 715 (2006) (Pleicones, J., dissenting) ("Counsel's closing argument is not evidence.") (citing *State v. Charping*, 333 S.C. 124, 508 S.E.2d 851 (1998)); *Morrissey v. William Morrow & Co., Inc.*, 739 F.2d 962, 968 (4th Cir. 1984) ("argument of counsel is not evidence"); *Mosser v. Fruehauf*, 940 F.2d 77, 82 (4th Cir. 1991) (noting that jury charges to the effect that "arguments of counsel are

not evidence” are so common in this Circuit as to amount to a “boiler-plate” charge); *Heniford v. American Motor Sales Corp.*, 471 F.Supp. 328, 337 (D.S.C. 1979) (while they remain a part of the case, “statements by counsel are not evidence”).

7. Excluding any reference to or evidence, testimony, or argument concerning persons in the courtroom assisting counsel or the absence or identity of a corporate representative at trial.

Ford moves to exclude any reference to persons present or not present in the courtroom at any time during trial, including observers of the trial, or inquiries regarding the identity of any observers. Any reference to the fact that Ford may or may not have a representative at trial at any particular time, or to Ford’s choice of a corporate representative as not being the appropriate person to respond to Plaintiff’s allegations, is non-evidentiary and has no bearing upon any issue to be decided by the jury. Instead, it asks the jury to infer liability or conscious indifference from something unrelated to the subject vehicle’s design, manufacture, or sale. Accordingly, this evidence should be excluded because it is entirely irrelevant to any material issue in this case, and would only prejudice Ford by misleading and inflaming the jurors. *See* Rules 401, 402, 403, SCRE; *Howard v. State Farm*, 316 S.C. 445, 449, 450 S.E.2d 582, 585 (1994).

8. Excluding any questioning of defense experts regarding the nature and amount of monetary fees previously paid by Ford, or other automotive manufacturers, in other unrelated cases involving other accidents and allegations.

Ford seeks to exclude any reference to the amount of money previously paid by Ford and/or other automotive manufacturers in other unrelated cases, regardless of the claims and issues involved therein, the subject and nature of the experts’ work and testimony therein, and the remoteness in time of the previous cases. Such information is not relevant to any issue in dispute in this case, and the probative value, if any, of such information is substantially

outweighed by the danger of unfair prejudice, confusion of the issues, and prolongation of trial that its admission into evidence would cause. *See* Rules 401, 402, 403, SCRE.

Alternatively, if the Court finds that such evidence has probative value (which Ford expressly disputes) and allows Plaintiff's counsel to inquire of such issues in front of the jury, then fairness dictates that Ford likewise be allowed to offer similar evidence regarding Plaintiff's experts regarding the amount of money they have been paid, by Plaintiff's counsel or other plaintiff's counsel, in other cases against Ford and/or other automobile manufacturers. Further, if the Court allows such evidence, Ford requests that Plaintiff's experts be ordered to provide such information prior to testifying at trial so as to prevent them from avoiding such questioning during their testimony. However, Ford again notes that the fairness considerations inherent with the admission of such evidence illustrate the Rule 403 concerns created by such testimony, and again argue that all such evidence should be excluded.

9. Excluding any reference to or evidence, testimony, or argument concerning statements regarding "consumer safety" as the purpose of this lawsuit.

Any reference, either directly or indirectly, used to argue, state, or infer that this case is one brought to establish standards of consumer safety or to enforce consumer safety principles, or that the reason for bringing this lawsuit is based on a desire to enhance consumer safety, or any similar statement, should be specifically excluded from trial. Any such statement is misleading and irrelevant in that this suit is one brought to collect money damages and not for injunctive relief on behalf of consumers or for the purposes of establishing consumer safety.

Therefore, announcing or claiming that enhancing consumer safety or enforcing safety standards is the goal of this litigation does not logically, naturally, or by reasonable inference establish any material, disputed fact in this case. Such self-serving pronouncements or references are simply unfounded and irrelevant, and, thus, inadmissible. Rule 402, SCRE.

These statements by Plaintiff's counsel would also be inflammatory and calculated to prejudice the rights of Ford and improperly create bias and sympathy in favor of Plaintiff. *Hoeffner v. The Citadel*, 311 S.C. 361, 366, 429 S.E.2d 190, 193 (1993) ("arguments by counsel which invite the jury to base its verdict on considerations not relevant to the merits of the case are improper"). Not only are references to improving consumer safety as Plaintiff's purported mission in this litigation irrelevant, but also any ostensible probative value it could possibly have is be greatly outweighed by undue prejudice to Ford. Rule 403, SCRE. Accordingly, all such evidence, testimony, and argument should be excluded.

10. Excluding any reference to or evidence, testimony, or argument referring to Plaintiff as "victims."

The Court should exclude any reference to and all evidence, testimony, or argument that Plaintiff in this case is a "victim." The use of the term "victim" has criminal connotations and incorrectly implies the existence of a criminal legal proceeding against Ford. Further, the term "victim" serves only to improperly inflame members of the jury to violate their oath not to let bias, sympathy, or prejudice play any role in their deliberations, and should therefore be prohibited. Rule 403, SCRE. The terms "injured party" and "plaintiff," or even using Plaintiff's names, are viable alternatives which do not have this highly prejudicial concern.

11. Excluding all testimony and argument that the subject vehicle failed to comply with any Federal Motor Vehicle Safety Standard(s).

Ford anticipates Plaintiff or his experts may attempt to introduce, through evidence, testimony, or argument, the notion that the subject vehicle did not comply with the "spirit" or "purpose" of the various FMVSS standards promulgated by the United States Department of Transportation. Any evidence or testimony to this effect would be wholly improper, unfounded,

irrelevant, prejudicial, and certainly only lead to the confusion of the issues for the jury. *See* Rules 401, 402, 403, SCRE.

The fact is, the 2009 Ford Focus at issue in this action was required to meet or exceed all applicable FMVSS standards before its production. More importantly, in most instances, because of Ford's own internal standards, the vehicle exceeded the minimum requirements of the applicable FMVSS standards. Indeed, Plaintiff cannot proffer any credible evidence tending to show that the subject vehicle did not fully comply with all applicable FMVSS standards, and the admission of any evidence or testimony to that effect would undoubtedly lead to a situation where the jury will be mislead and prejudiced as to the real issues in dispute. Such information and evidence is irrelevant and highly prejudicial and should be excluded.

12. Excluding other accidents, incidents, claims, complaints or lawsuits

Ford moves to exclude any reference to any prior or subsequent accidents, incidents, claims, complaints or lawsuits involving Ford vehicles that are not substantially similar to the accident and vehicle at issue in this case, particularly where Plaintiff attempt to use these other incidents to prove defect, causation, or "notice" to Ford. Ford moves to exclude the testimony of any and all offered "other similar incident" or "OSI" witnesses, as well as any additional reference to or evidence, testimony, or argument concerning any other accidents, incidents, complaints, and lawsuits involving Ford vehicles that are not substantially similar to the accident and vehicle at issue in this case.

Ford makes this motion on the following grounds:

- (1) Details of other accidents, actions, and claims are irrelevant and immaterial to the issues in this case;
- (2) Any probative value of evidence of details of other accidents, actions, and claims may have is substantially outweighed by the prejudice, confusion, and prolongation of the trial that their admission into evidence would cause; and,

- (3) Allegations made in other accidents, actions, and claims constitute inadmissible hearsay. While Plaintiff may claim that these other incidents provided "notice" to Ford of defects in the 2009 Focus, this only highlights the hearsay problem: other accidents, complaints, and lawsuits only provide Ford such notice if one assumes the truth of the matters asserted by those prior litigants, exactly what the hearsay rules prohibit. Before attempting to introduce evidence of other accidents, incidents, complaints, and lawsuits, Ford requests that Plaintiff first provide notice to the Court and Ford, and make a foundational showing of "substantial similarity" outside the presence of the jury.

13. Excluding all other verdicts, judgments, settlements or settlement offers.

Other settlements, verdicts, judgments and/or orders against automobile manufacturers, including Ford, are completely irrelevant because they do not tend to prove or disprove any disputed fact in this case. Rules 401, 402, S.C.R.E. In particular, the circumstances surrounding the accidents that underlie other settlements, verdicts, judgments, or orders will be substantially different from the circumstances underlying the accident in this case. For example, other settlements, verdicts, judgments or orders likely involve vehicles other than the 2009 Ford Focus at issue in this case. Therefore, reference to other settlements, verdicts or judgments against automobile manufacturers clearly has no bearing whatsoever on the issues of alleged defects and causation that are present in this case.

In addition, reference to other settlements, verdicts, judgments, or orders would serve no legitimate purpose other than to confuse the jury about the issues and evidence in this case, and to encourage the jury to enter a verdict against Ford. As such, references to the other settlements, verdicts, judgments, or orders would severely prejudice Ford's defense in this action. Rule 403, S.C.R.E. Finally, if Plaintiff seeks to introduce particular evidence of this type, Ford requests a preliminary hearing outside the jury's presence pursuant to Rule 104, S.C.R.E.

14. Excluding evidence, testimony, or argument concerning Ford's state of mind or knowledge and excluding alleged "document historians" for lack of foundation.

Ford moves to exclude testimony by individuals who attempt to interpret Ford documents as evidence of Ford's "state of mind." For example, Ford anticipates Plaintiff's expert, Mike Nranian, will attempt to testify regarding Ford's purported state of mind based on language contained in Ford documents.

Ford also moves to exclude Plaintiff's witnesses from testifying about the meaning or contents of Ford documents that are inadmissible or have not been admitted into evidence, or that can be understood by the jury without expert assistance. The analysis of such proffered testimony under Rules 402, 403, 702 and 703 S.C.R.E. makes it clear that unsupported conjecture and speculation would not be helpful to the trier of fact and would therefore be inadmissible. *Green v. State*, 351 S.C. 184 (2002).

The Ford documents discuss subjects that are easily grasped by the average layperson. The documents are written in plain English and, if admitted, would be easily understood by the jury. Therefore, the jury would not require assistance in determining their meaning.

15. Excluding reference to failure to call witnesses equally available to the parties.

Ford moves to exclude any reference to the failure of either party to call a witness equally available to both parties. Quite simply, if both parties fail to call a witness who was equally-available to them both, then fairness dictates that neither party should be permitted to argue or make an inference to the jury that the other party did not call the witness due to some presumed detrimental testimony he/she would have provided.

16. Excluding any reference to or evidence, testimony or argument concerning questions of ethical or moral obligation.

Any questions about or reference to any ethical or moral obligation on the part of Ford or Ford's employees is intended only to arouse the passions of certain jurors and ask that they disobey the Court's instructions to let no part of passion, sympathy or prejudice play a part in their decision. Rules 401, 402 and 403, SCRE.

17. Excluding any testimony of Plaintiff's Expert Mike Nranian outside the limited scope of his expert designation.

Ford moves to limit Mr. Nranian from straying into the expert areas of occupant kinematics and injury causation. Nranian was specifically not identified in those areas of expertise. Nranian was identified pursuant to Rule 26:

Michael Nranian is an expert in the fields of engineering, automobile crashworthiness, component design, occupant restraint systems, including airbag systems.

See Plaintiff's Expert Designations.

Despite this specific identification, Nranian attempts to provide testimony regarding occupant kinematics and injury causation in the Newbern crash without being designated or qualified in those areas. In the same expert designations, Plaintiff's identified and presented Paul Lewis in the specific areas of occupant kinematics and injury causation. Any additional testimony in those areas by Nranian would be outside the limited scope identified in discovery, outside of his qualifications and cumulative. (E.g., Nranian admits that he does not know the requisite amount of force required to fracture the facial bones as sustained by Mr. Newbern and he is relying on Mr. Lewis for that work. *See Nranian Dep., Ex. A, p. 94, l. 15 – p. 95, l. 3.*)

Ford moves to exclude references to potential and baseless injuries from airbags. For example, Nranian gratuitously adds statements to answers during his deposition testimony that a

bag will “snap” someone’s neck. However, he admits that he is unaware of any such injury during a 2009 Ford Focus collision with airbag deployment. *Id.*, p. 94, l. 15 – p. 95, l. 3.

Furthermore, Ford moves to exclude Crash Test 15890 as the basis of any opinion of lack of late deployment in the subject crash. Crash Test 15890 is a 12 m.p.h. center pole crash test which is, admittedly by Nranian, “different” from the subject crash. *Id.*, p. 104, l. 20-23. Moreover, the 118.7 millisecond deployment, in Crash Test 15890, identified by Nranian relates to pretensioner and unbelted Stage 1 airbag deployment. *See Id.*, p. 97, l. 9-21. The subject crash, in contrast, involves a belted occupant. Accordingly, Crash Test 15890 is irrelevant and should be excluded for the purposes relied upon by Nranian. SCRCF 401, 402, 403.

18. Excluding both the lay opinions of Plaintiff and Claudia Newbern as to airbag defects and any internet research they conducted on airbags and airbag litigation.

Ford anticipates Plaintiff and/or his spouse may attempt to offer testimony at trial relating to post-accident internet research regarding vehicle crash testing, as well as opinion testimony regarding improper tethering of the airbags installed in their 2009 Ford Focus vehicle. Such testimony should be excluded, however, on the basis that Plaintiff and his spouse are lay witnesses who admittedly lack any expertise in the design, manufacture, and testing of vehicles or vehicle restraint systems. Moreover, this testimony relates to post-manufacture evidence and more likely than not constitutes inadmissible and unduly prejudicial hearsay. For all of these reasons, it should be excluded from the trial of this matter.

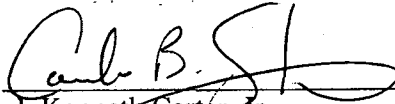
Despite a stipulated lack of any expertise in the design, manufacture, and testing of automobiles and automotive restraint systems, Plaintiff nevertheless attempted to opine during his deposition in this case that an airbag was not warranted in the subject accident. (Plaintiff’s Dep., Ex. E, p. 40, lines 12-15; p. 47, line 24 – p. 48, line 1 (“I was gonna say. . . it goes without

saying we're not gonna offer him as an expert. . . .")) He bases this opinion on internet research he did after the accident regarding crash test videos involving Fords and other vehicle makes and models. (*Id.*, p. 40, line 16 – p. 41, line 23) When pressed on the exact nature of his research, Plaintiff responded "it was just more of a curiosity search on the internet. . . ." Like her husband, non-party Claudia Newbern lacks any expertise in the area of vehicle restraints. (C. Newbern Dep., Ex. F, p. 113, lines 19-20 ("I promise she won't be an expert in this case.")) Nevertheless, she also conducted internet research after the collision at issue. In her deposition, Mrs. Newbern testified she conducted a Google search but could not recall any specific websites she visited to conclude that there is a design flaw with the airbag tethers. (*Id.*, p. 74, line 16 – p. 76, line 13)

TURNER, PADGET, GRAHAM & LANEY, P.A.

September 8, 2016

By:



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ATTORNEYS FOR DEFENDANT

STATE OF SOUTH CAROLINA)
)
COUNTY OF CHARLESTON)
)
STEVEN NEWBERN,)
)
Plaintiff,)
)
VS.)
)
FORD MOTOR COMPANY,)
)
Defendant.)
_____)

IN THE COURT OF COMMON PLEAS
FOR THE NINTH JUDICIAL CIRCUIT
C/A NO. 2013-CP-10-2928

FILED
2016 SEP 12 AM 8:57
JULIE J. ARMSTRONG
CLERK OF COURT
BY S

STATE OF MICHIGAN)
)
COUNTY OF WAYNE)

AFFIDAVIT OF RAM KRISHNASWAMI

PERSONALLY appeared before the undersigned Notary Public, Ram Krishnaswami, who upon being duly sworn did depose and say as follows:

1. I am over the age of eighteen (18) years, have personal knowledge of the facts stated herein, and am competent to make this affidavit.

2. I am employed by Ford Motor Company ("Ford"), and have been since 1993, either as a consulting engineer or product design engineer. My current position is as a Design Analysis Engineer.

3. I received my Bachelor of Engineering in Mechanical and Production Engineering from Annamalai University, India in 1990, and my Master of Science in Material Science and Engineering from Wayne State University, Detroit in 1992, and my Master of Science in Engineering and Management from the Massachusetts Institute of Technology, Cambridge in 2006. I have been employed by Ford since 1993, either as a consulting engineer or product design engineer. During my employment at Ford, I have worked as an engineer. My

responsibilities included working on various systems like Body—Exterior and Interior, Chassis, and Fuel Systems. I have provided feedback to vehicle engineering teams during vehicle development. Currently, and as stated above, I am a Design Analysis Engineer. I have been in my present position since October, 2007. Design Analysis is part of Ford's Automotive Safety Office.

4. I am familiar with supplemental restraint systems in Ford vehicles and the crash tests performed by Ford during the design, development and certification of Ford vehicles.

5. From my review of materials in this case and based on my vehicle inspection, I understand that this case involves a 2009 Ford Focus. I further understand that the accident giving rise to this lawsuit occurred in Charleston County, South Carolina ("the Newbern Crash").

6. I am familiar with Ford Crash Test 15950. Crash Test 15950 utilizes a 5th percentile female Anthropomorphic Test Device (ATD) in the test. That ATD is seated in the full forward position and it interacts with a nonproduction passenger side airbag.

7. A 5th percentile female ATD is 59" tall and weighs 108 lbs.

8. I am also familiar with the accident facts and crash mode involved in the Newbern Crash.

9. There are numerous differences between Crash Test 15950 and the Newbern Crash. I will identify three main differences. First, unlike the 5th percentile ATD, Mr. Newbern, at the time of his crash, was over 6' tall and weighed in excess of 180lbs. Mr. Newbern's height and weight was identified in medical records shortly after the crash.

10. Second, the passenger seat in Crash Test 15950 is in the full forward position, which means it is adjusted all the way forward on the seat track placing the ATD as close to the airbag module as possible. The passenger seat in the Newbern Crash was adjusted rearward,

meaning the seat was located towards the rear of the seat track.

11. Thirdly, the passenger airbag in Crash Test 15950 is not the same as the passenger airbag in the 2009 Ford Focus involved in the Newbern Crash.

12. Because of these differences, there is no sound engineering basis to claim or suggest that Crash Test 15950 is similar to the Newbern Crash regarding either the passenger airbag deployment or interaction with the occupant.

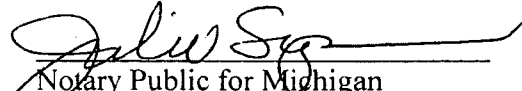
FURTHER THE AFFIANT SAYETH NOT.

September 8th, 2016


RAM KRISHNASWAMI

SWORN to before me this

8th day of September 2016.


Notary Public for Michigan
My Commission Expires: _____
(SEAL)

JULIE SZYMANSKI
Notary Public - Michigan
Wayne County
My Commission Expires 8-6-2020

STATE OF SOUTH CAROLINA	)	IN THE COURT OF COMMON PLEAS
	)	NINTH JUDICIAL CIRCUIT
COUNTY OF CHARLESTON	)	CIVIL ACTION NO.: 2013-CP-10-2928

STEVEN NEWBERN and CLAUDIA NEWBERN,	)

Plaintiffs,	)

vs.	)

FORD MOTOR COMPANY	)

Defendants.	)

MOTION FOR A NEW TRIAL

2016 SEP 26 PM 3:30
JILLIE J. ARMSTRONG
CLERK OF COURT

FILED

Comes now, Plaintiff Stephen Newbern, who presents this Motion for a New Trial in the above styled and numbered cause and would show as grounds therefore the following:

1. The Court erred in granting Defendant Ford Motor Company's motion for a directed verdict.
2. Ford's motion alleged that Mr. Newbern had not presented evidence of alternative design or causation to support his allegations of strict liability design defect and negligent design allegations.
3. Newbern states that all elements of the strict liability and negligent design allegations were supported by sufficient evidence for the case to go forward to the jury.

FACT STATEMENT

I. The Ford Airbag Caused Mr. Newbern's Injury

Newbern offered detailed testimony from his biomechanic's expert Paul Lewis establishing that Mr. Newbern had three injuries in the accident. By reasonable biomechanical engineering certainties, all three injuries were caused by the airbag. They were to his face (eye, nose, sinus, orbit), his chest, and his thighs. It was established that the only mechanism that could injure all

three of these areas on his body was the airbag. It was also established that the alternative chest injury mechanism (the seatbelt) could not have caused the sternum fracture by itself. This was proven through the testimony of Paul Lewis who used Ford's own Litigation Sled Test to demonstrate that the forces on the chest exerted by the seatbelt were insufficient.

Ford ran the Litigation Sled Test using the Event Data Recorder (EDR) data from Newbern's vehicle in order to create a test which closely approximated the decelerations and deployment timing of the Newbern collision. It used an instrumented dummy to approximate Mr. Newbern, a vehicle test buck with a production airbag and the passenger seat in the reported position of Mr. Newbern's seat (both seatback angle and seat track position). (Ford's Opening Statement, Krishnaswami, Page 6, Line 4 through Page 8, Line 9, Paul Lewis testimony). Ford did this in an attempt to show that the seatbelt would develop enough force on the dummy chest to break a human sternum. This was critical to Ford's position because it could not explain Mr. Newbern's chest injuries with drinking glass (a drinking glass simply would not injure both the sternum and cause the extensive facial injuries Mr. Newbern suffered.) However, the Litigation Sled Test disproved Ford's theory that the seatbelt caused the sternum injury, thus leaving the airbag as the only mechanism of injury that would explain all of the injuries. Mr. Lewis went into this in detail.

Both parties allege that the airbag caused the eye and facial injuries. The Plaintiff does though through his proof that the airbag injured the face by direct contact. Mr. Lewis demonstrated through use of Ford's Litigation Sled Test that the dummy face would be injuriously struck by the airbag had a point a little more than 100 ms after the airbag algorithm enabled. Ford on the other hand changed its long-standing theory on the day of trial to allege that the airbag propelled a heavy drinking glass into Mr. Newbern's face, thereby causing his injuries.

Under either theory, it is the deployment of the airbag which caused Mr. Newbern's injury.

II. Newbern's Airbag Deployed Unnecessarily

The jury was provided with overwhelming evidence that Mr. Newbern's airbag deployed unnecessarily in this collision. Most vehicles airbags, including Ford's, distinguish between unbelted and belted occupants. *See* Exhibit C, Testimony of Ram Krishnaswami, Page 45, Line 16 through Page 47, Line 16 and Exhibit 50, not attached. In the same collision, a 2009 Ford Focus airbag may deploy for an occupant who is unbelted and not deploy for an occupant who is belted. Newbern introduced evidence that the Ford crash test which was most like the Newbern collision was Crash Test 15978, a 25 mph collision into a 30° angled nondeformable barrier. (*See* Exhibit C, Testimony of Ram Krishnaswami, Page 29 Line 16 through Page 30, Line 7). The impact speed is the same, the angle of the impact is the same and the vehicle crush is identical.

Ford introduced the Final Calibration Report for the 2008.5 Ford Focus. (Exhibit 50, not attached) through Mr. Krishnaswami.

An airbag sensor system needs to be calibrated correctly in order to perform its function of deploying the airbag when it should deploy, not deploy the airbag when it should not deploy and deploy it timely when it does deploy.

Ford conducts numerous methods of analysis, including crash tests, sled test, static tests, computer simulations and relies upon its lengthy experience in airbag system design in order to determine the type of collisions the airbag system would need to deploy in and the types it would not want to deploy them in. When it is done with this process Ford identifies a set of requirements for deployment timing and for "must fire" and "no fire" crashes. Mr. Krishnaswami testified that this process provided Ford with a high degree of confidence in its calibration requirements. These calibration requirements are provided to the airbag sensor supplier and the supplier must calibrate

the system to meet those requirements. The suppliers are actually provided with the sensor deceleration data in order to perform these simulations by Ford.

After much circular testimony, Mr. Krishnaswami finally admitted that the Final Calibration Report requirement for 15978 was to not deploy the airbag for a belted passenger such as Mr. Newbern. But the non-deploy requirement for this crash was not met. In fact, the Final Calibration Report reveals that the calibration failed so badly that it deployed in every iteration of the calibration simulations for that crash test. The report substantiates the non-deploy requirement for belted passenger's and demonstrates that the calibration failed this requirement. *See Exhibit D, Exhibit 50 Calibration Excerpt.* The reasons for its failure are addressed later herein.

Further evidence that the airbag should not have deployed was provided by reference to the Event Data Recorder (EDR) severity measurements compared to the severity measurements for Crash Test 15978. The maximum deceleration G's in Mr. Newbern's EDR data was 25 G's whereas the maximum deceleration in 15978 was 69.4 G's. The maximum acceleration in Mr. Newbern's vehicle was 8 G's, while in 15978 it was 56 G's. This demonstrates that the severity of Mr. Newbern's crash was actually much less than the severity of Crash Test 15987 and therefore there was even less reason to deploy Mr. Newbern's airbag in his collision. (*See Exhibit C, Testimony of Ram Krishnaswami Page 60, Line 3 through Page 60 Line 11; Page 61, Line 3 through Page 61, Line 23*).

Finally, Ford's Litigation Sled Test proved that the airbag in Mr. Newbern's crash provided absolutely no benefit to him at all. Paul Lewis testified that by reasonable biomechanical engineering certainty, the airbag did not provide occupant restraint for Mr. Newbern.

III. Unnecessary Airbag Deployments Are Unreasonably Dangerous

The deployment of Mr. Newbern's airbag in a collision in which it was not needed was defective and unreasonably dangerous. Airbags should not deploy in accidents in which they offer no benefit. This is agreed to by Ford's Corporate Representative and by Paul Lewis. (*See Exhibit C, Testimony of Ram Krishnaswami Page 62, Line 2 through Page 63, Line 13*).

Deploying air bags unnecessarily can cause serious injuries, including eye injuries, arm injuries, facial injuries and soft tissue injuries. Additionally, if Ford deploys an air bag in a minor collision which is part of a multiple impact collision, the occupant will not have the airbag available for more severe collisions in that accident event. Further, an unnecessary airbag deployment can cause a driver to lose control thus causing a much more severe collision in which the occupants would not have the benefit of their airbags. (*See Exhibit C, Testimony of Ram Krishnaswami (Page 62, Line 4 through Page 65, Line 14)*).

In fact, both Ford and the National Highway Traffic Safety Administration (NHTSA) agree that an airbag should not deploy unless it is needed. (*See Exhibit C, Testimony of Ram Krishnaswami, Page 43, Line 8 through Page 44, Line 11*).

Additionally, in testifying about the "two accident" physics in an automobile collision, Mr. Krishnaswami testified that the first accident is the vehicles coming together and the second accident is the occupant making contact with the vehicle interior, including the airbag. He admitted that the airbag can cause injuries in that second collision; that it was Ford's responsibility to assure that would not happen; and that Ford had to be careful about when and where to deploy an air bag. (*See Exhibit C, Testimony of Ram Krishnaswami, Page 38, line 5 to Page 39, Line 6, P35, L25 to P 40, L12*).

Both the Plaintiff's expert, Paul Lewis, and Mr. Krishnaswami testified that it is unreasonably dangerous to deploy an air bag when it is not necessary. (*See Exhibit C, Testimony*

of Ram Krishnaswami, Page 162, Lines 19 - 23).

Additionally, Mr. Krishnaswami agreed that a “reasonably responsible” airbag sensor design would be to assure that it would not deploy in collisions in which it is unnecessary. (See Exhibit C, Testimony of Ram Krishnaswami, Page 63, Lines 7 - 13).

It is clear from the foregoing that an airbag which deploys in collisions in which it does not benefit the occupant is defective and unreasonably dangerous because it will not help the occupant in the collision and has a potential to injure the occupant either directly or by creating the conditions in which the airbag is unavailable for a more severe collision. Further, it is a reasonable inference that an unnecessary airbag deployment can cause a loss of control resulting in a more severe accident, with injuries to even more people and damages to even more property.

IV. Defective Design

Ford knowingly accepted a defective airbag calibration. It accepted one which violated its own requirement to not deploy air bags unless they are needed. It accepted a Final Calibration which violated specific requirements to not deploy air bags in collisions such as the one Mr. Newbern was in. It did so knowing that deploying air bags unnecessarily can lead to serious individual injuries and even create more serious collisions on the highway, with the attendant injury to additional persons and an increase in the amount of property damaged.

Ford ignored the National Highway Traffic Safety Administration’s position that an airbag should not deploy unless it is needed in order to accept this defective calibration.

Ford’s corporate representative at trial initially attempted to argue that no “Requirements” were violated. Instead, he attempted to portray the very last set of requirements given to Bosch (the calibration supplier) as mere “soft targets”.

However, it must be remembered Mr. Krishnaswami is a professional witness working for

Ford in its litigation support group (*See Exhibit C, Testimony of Ram Krishnaswami, Page 5, Line 2 through Line 5*). He is aware that it is unacceptable to violate "Calibration Requirements", so he was careful to redefine the Requirements as "soft targets". However, his testimony provided evidence from which the jury can properly infer that the true terminology is "Requirement" because, in lengthy question and answering with Ford's own counsel, he slipped and use the term "Requirements". (*See Exhibit C, Testimony of Ram Krishnaswami, Page 100, Lines 6 through 24*).

Additionally, Mr. Krishnaswami excused this violation of the basic principle to not deploy air bags when they are not needed by claiming that Ford reviewed the Final Calibration Results and found that they were acceptable. In other words, deploying the airbags in collisions in which they were not needed was "acceptable". However, this is extremely misleading. If not examined carefully, someone could mistake this cover story as meaning that Ford reviewed the non-deploy requirements for various crashes that were violated, and then determined that the airbags were actually needed for the occupants in those types of crashes. This is not what happened.

On the contrary, Ford did not change its determination that the airbags needed to be deployed in those crashes for the benefit of the occupants. Instead, Ford determined that it could not deploy air bags in other crashes unless it deployed the airbags in crashes in which they are not needed. (*See Exhibit C, Testimony of Ram Krishnaswami, Page 48, Line 13 through Line 20*.) There was never a determination that deploying air bags for the persons in the "non-deploy" crash situations would be benefited by the deploying air bags. (*See Exhibit C, Testimony of Ram Krishnaswami Page 45, Line 16 to Page 47, Line 25*). Instead all of the hazards of deploying the airbags created for those occupants and to other persons on the highway remained.

Also, simply referring to the Final Calibration Report reveals that the airbag was allowed

to deploy in the crash that was similar to Mr. Newbern's because Bosch could not get it to deploy in another crash. (See Exhibit E, Exhibit 50 Exceptions Excerpt). Report reveals that there were 5 crash tests in which there were non-deployment requirements that Ford was violating. In fact, Ford was deploying the airbags in five non-deploy crashes by using the ploy of creating "exceptions" to its requirements. Additionally, there were 4 crash test scenarios in which airbags did not deploy when they were listed as required to deploy, for which Ford also made "exceptions". In other words, Ford accepted non-deployments in situations where, based upon all of Ford's preliminary crash testing, sled testing and computer testing and its vast airbag experience had determined that the airbag should deploy.

Considering the foregoing, the jury had ample evidence to determine that Ford utilized a defective sensor calibration which it knew would deploy air bags in situations in which they were not needed. It did so knowing that an airbag which deploys in situations in which it is unneeded is unreasonably dangerous.

V. Alternative Design

In order to understand the alternative design which would have prevented the utilization of this defective calibration, it is necessary to understand what the proper procedure is when a calibration fails to meet its requirements.

Mr. Krishnaswami, in answer to questions from Ford's counsel, went into detail about the timing involved in the process of designing a new vehicle. He went on to describe the process of receiving the suppliers' calibration results.

Q. So then the rest of that 12 months out, how do they finally get to a fully calibrated vehicle?

A. Once this process is done, and once, like if we meet targets, we don't meet targets, and like we see how far we are, if a redesign is needed after the crash test we go back and we redesign the part. We add more parts. We check into

these parts and see whether it meets our goals and if it doesn't what design change can be made. We go back and check on that. And then once we are satisfied with all these results we provide the opportunity to sign off on this vehicle saying that it is ready to be sold, it met the market requirements, we are satisfied with the Ford requirements and we tell the clients.

(See Exhibit C, Testimony of Ram Krishnaswami, Page 100, Line 6 through 20).

Mr. Krishnaswami made it clear that the proper calibration process when the calibration does not meet the requirements is to redesign the part or add parts and retest them to see if they meet the requirements, and if it doesn't, they go back and redesign it again. Ford did not follow this process. Instead it elected to create dangerous exceptions to its requirements and release an unreasonably dangerous and defective airbag sensor calibration to be incorporated in the 2009 Ford Focus.

However, Ford was rushing to implement the single upfront sensor airbag sensor system. It had not been able to produce it for the 2008 model and so Ford instituted a 2008.5 model. Job one for that model was just a couple months away from the time that Bosch presented its Final Calibration Report. So instead of going through the process which Mr. Krishnaswami described for Ford's counsel, Ford skipped that process altogether. (See Exhibit C, Testimony of Ram Krishnaswami Page 21, Line 17 through Page 25, Line 1).

Another failing on Ford's part was that when it ran its crash test series, it only tested the three sensor positions which it had previously identified as being locations where Ford planned to locate the upfront sensors. It did not test any other locations for the upfront sensors. So when the time came to run calibration simulations for alternative positions, Ford could not do it without running additional crash test. Ford elected to not run additional crash test to test additional sensor locations, and instead chose to accept an unreasonably dangerous and defective Sensor Calibration.

From Mr. Krishnaswami's answer to Ford's own counsel alone, a jury would be justified

in inferring that alternative designs did exist and that there would have been no problem redesigning the sensor system to allow a sensor system calibration that would deploy the airbags when needed, and not deploy the airbag when not needed.

But the jury was not limited to just this information. Mr. Krishnaswami also admitted that as an alternative to accepting the defective and unreasonably dangerous Sensor Calibration, Ford could have resolved the calibration failings by utilizing different up front crash sensor positions to get coverage for the failed crash test and/or creating reinforced crash paths between the upfront sensors and the back sensor (RCM). (See Exhibit C, Testimony of Ram Krishnaswami Page 21, Line 17 through Page 24, Line 16).

Mr. Krishnaswami was even more specific about the available technology when discussing whether or not they had the technology to suppress the deployment of the airbag for the belted passenger in Crash Test 15978, the following was elicited:

Q. And you have the technology to not deploy the airbag for a belted person, yes?

A. We do have the technology to set it to a higher threshold.

(See Exhibit C, Testimony of Ram Krishnaswami, Page 46, Line 24 through Page 47, Line 2.)

So Mr. Krishnaswami identified an alternative design which would set the calibrations deployment requirement for the belted occupant at a higher threshold.

Furthermore, Mr. Krishnaswami admitted that in 2009 Ford had the technology to economically design airbag systems that would deploy the airbag when it was needed and not deploy the airbag when it was not needed. (See Exhibit C, Testimony of Ram Krishnaswami, Page 64, Line 24 through Page 65, Line 13).

VI. Mr. Krishnaswami

Mr. Krishnaswami is an accomplished automotive engineer with airbag system design experience. He is also placed in a trusted position by Ford to represent it in depositions and at trial regarding defective airbag systems. And he has the secondary duty of providing litigation support for Ford's attorneys in product defect litigation.

A. Ford's 30(b)(6) Corporate Representative

It is important to note that Mr. Krishnaswami was designated as the corporate representative for responding to the Newbern's 30(b)(6) deposition notice for the following topics:

"Air Bag Induced Eye Injury" with many subtopics including "the potential for air bag induced eye injury and Ford's knowledge thereof", and; "The purpose, design, development, validation, calibration and performance of the restraints sensor system in the 2005 - 2012 Ford Focus". It included "the specifications for the sensor system; the design processes; the testing performed, the sensor output data used for all sensor calibration simulations; the results of all sensor calibration simulations for every crash type simulated, including frontal, offset, angled, underride, pole testing; changes made in the sensor system requirements, calibrations, hardware and software; and Ford's mounting guidelines for the upfront sensors and RCM.

(See Exhibit A, Excerpt from Deposition Notice and Exhibit C, Testimony of Ram Krishnaswami, Page 2, Line 17 through Page 3, Line 7).

B. Ford's Trial Expert Witness on Air Bag Design

Additionally, Mr. Krishnaswami was disclosed as Ford's expert "in the areas of airbags, airbag sensing systems and vehicle crashworthiness for Ford Focus vehicles. This will include the design, development, Computer Aided Engineering (CAE), crash testing and sensor testing of the Ford Focus." (See Exhibit B, Excerpt Ford's Expert Disclosures, and Exhibit C, Testimony of Ram Krishnaswami, Page 3, Line 9 through Line 13).

C. Ford's Corporate Representative at Trial

Ford also designated Krishnaswami as its Corporate Representative at trial in Open Court. Attached as Exhibit C is the testimony of Mr. Krishnaswami.

ARGUMENT AND AUTHORITIES

I. Testimony Evaluation Standard for Directed Verdict

Ford's motion for directed verdict was based upon the claim that there was no evidence of an alternative design. In evaluating whether there is no evidence of an alternative design, the court must judge all of the evidence in the light most favorable to Mr. Newbern. The court must also indulge all reasonable inferences from the evidence in the light most favorable to Mr. Newbern. Any inference which is capable of ambiguous interpretation, must be interpreted in favor of Mr. Newbern. Additionally the court is obligated to not judge the credibility of the evidence or resolve conflicts in the testimony. Any conflicts or inferences must be resolved in favor of Mr. Newbern.

"When ruling on a motion for a directed verdict, the trial court must view all evidence and all reasonable inferences in the light most favorable to the nonmoving party, and if the evidence is susceptible of more than one reasonable inference, the trial court should submit the case to the jury." *Unlimited Servs., Inc., v. Macklen Enters., Inc.*, 303 S.C. 384, 386, 401 S.E.2d 153, 154 (1991), *Roddey v. Wal-Mart Stores East, LP*, 784 S.E.2d 670 (S.C. 2016).

"When considering directed verdict motions, neither the trial court nor the appellate court has authority to decide credibility issues or to resolve conflicts in the testimony or evidence." *Kelley v. Wren*, 782 S.E.2d 406 (S.C.App. 2016).

II. Alternative Design - Admissions and Testimony

Ford relies upon *Branham v. Ford Motor Co.*, 390 S.C. 203, 225, 701 S.E.2d 5, 16 (2010) as its authority to support the claim that there was no evidence on alternative design.

However, Ford's argument that there is no evidence of alternative design is based upon case law which assumes that the alternative design element in a product defect case had not been admitted by the manufacturer. In *Branham*, there was no claim that Ford admitted the element of alternative design. *Branham* cites the Third Restatement of Torts in holding that alternative designs are part of the elements of a product defect claim.

"A product . . . is defective in design when the foreseeable risks of harm posed by the product could have been reduced or avoided by the adoption of a reasonable alternative design by the seller or other distributor, or a predecessor in the commercial chain of distribution, and the omission of the alternative design renders the product not reasonably safe." Restatement (Third) of Torts: Products Liability § 2(b) (1998).

Any element of a Plaintiff's case can be admitted by the defendant without the need for further evidence. This principle is explicit in the rule regarding Request for Admissions (Rule 36, SCRCPP).

The design flaw in Mr. Newbern's case was that Ford knowingly accepted a sensor calibration which allowed the airbag to deploy in several crash scenarios in which it was not needed and Ford knew that doing so created an unreasonable danger to the occupants.

Ford's corporate representative and designated airbag system expert testified in response to Ford's own attorneys' questions that Ford could design a system that met its calibration requirements by merely redesigning parts or changing its parts to meet Ford's calibration requirements. There was no qualification to this admission that could lead a jury to believe that Ford did not have available alternative designs which would have reduced or avoided the dangers caused by a sensor calibration which deploys air bags when they are not needed.

If "we don't meet targets, and like, we see how far we are, if a redesign is needed after the crash test we go back and we redesign the part. We add more parts. We check into these parts and see whether it meets our goals and if it doesn't, what design change can be made. We go back and check on that. And then once we are satisfied with all these results we provide the opportunity to sign off on this vehicle saying that it is ready to be sold, it met the market requirements, we are satisfied

with the Ford requirements and we tell the clients.’
(See Exhibit C, Testimony of Ram Krishnaswami, Page 100, Line 10 through 23).

This testimony was reconfirmed with Mr. Krishnaswami’s testimony that Ford had the choice of correcting the defective calibration by changing sensor positions and/or creating reinforced crash signal paths from the sensors at the front of the vehicle back to the sensor in the occupant compartment.

Mr. Krishnaswami identified another alternative that would prevent air bag from deploying in collisions in which it is not needed for a belted passenger was to simply raise the deployment threshold for a belted passenger.

The jury would also know that Ford elected to NOT engage in the available redesign process when Final Calibration was presented for approval. This was not because alternative designs did not exist or were not possible. The evidence in the record was that Ford decided to merely create “exceptions” to its requirements which allowed airbags to deploy when not needed for at least 5 crash modes. When viewed in the light most favorable to Newbern, a jury had the evidence to determine, and to also reasonably infer, that alternative designs existed which would have prevented the airbag from deploying when it should not. The jury also had sufficient evidence that proves and reasonably infers, that Ford’s decision to do so was based upon the desire to meet an already delayed “Job 1” target, not that Ford did not have adequate alternatives to the defective calibration.

Additionally in Mr. Newbern’s case, Ford’s Corporate Representative for trial admitted in *open court* from the witness stand under oath that alternative designs existed in 2009 that would have deployed the airbag in cases in which it is needed and would not deploy the airbag in cases in which it was not needed. He also testified that this technology was economical. Newbern proved both the existence of unreasonable danger inherent in a sensor calibration which deploys

airbag when not needed and the foreseeability of that danger. These are the elements of alternative design. Having been admitted by Ford's corporate representative at trial, in person and under oath, the element of alternative design required no additional proof in the same manner as any issue admitted in a Request for Admissions response would require no additional proof. The above testimony qualifies as admissions by Ford that alternative designs existed, thus obviating the need to prove a specific alternative design.

They also provide a strong evidence of alternative designs which would be sufficient to correct the defective calibration. Mr. Krishnaswami's admission that the system could have been made to not deploy the airbag for a belted passenger's when not needed could have been accomplished by merrily increasing the deployment threshold is a specific alternative design in and of itself.

III. Admissions

Ford's argument in support of its motion for directed verdict was that Krishnaswami's testimony regarding alternative design was not the testimony of an expert, and because an expert's testimony is needed to prove an alternative design, his testimony amounts to no evidence.

Ford did not address Newbern's position that when Mr. Krishnaswami gave his testimony at trial, he was giving it in the capacity of Ford's corporate representative at trial. They rose to the level of admissions of the element of alternative design. Mr. Krishnaswami's testimony qualifies as admissions which bound Ford.

It is a long recognized legal tenet that a party's statements may be used against them as admissions. Kenneth S. Broun et al., *McCormick on Evidence* § 254 (6th ed. 2009).

Mr. Krishnaswami's testimony qualifies as an Admission of a Party Opponent. As defined by South Carolina law, an admission by a party opponent is one which is "offered against a party",

and is "the party's own statement in either an individual or a representative capacity" or is "a statement by the party's agent or servant concerning a matter within the scope of the agency or employment, made during the existence of the relationship." Rule 801(d) SCRE.

Mr. Krishnaswami's testimony qualifies as admissions of a party opponent under both capacities because he was the declared Corporate Representative at Trial and as Ford's designated expert on the very issues in which he testified about.

Rule 801(d) amplifies the significance of the admission of a corporate representative by taking it out of the realm of hearsay, so that even if the admission is made outside of court it is admissible against the corporation. In this case, testimony was offered in open court, live and under oath from the witness stand.

Mr. Krishnaswami's testimony was an admission that Ford had the technology to produce an airbag sensor system for which the calibration could deploy the airbags in situations in which they were needed and not deploy the airbags in situations in which they were not needed.

As a corporate representative he did not need to be qualified as an engineer to make the statements. An evidential admission, regardless of its source, is not rendered inadmissible because the subject of the admission is not based on the personal knowledge of the party or because it is a legal or factual conclusion that the party may not be qualified as an expert to make. *McCormick on Evidence* (2d Ed.1972) §§ 263, 264, pp. 631-33. For example, it is not doubted that a party's counsel can make a statement in open court which binds that party as a judicial admission. The attorney's statement could be about something as esoteric as a proton collider, of which he knows nothing, but is still authorized to make such statements.

We do not have that problem here because Mr. Krishnaswami wore many hats in this case, all of them related to air bag issues. He was the corporate representative on these issues for

purposes of a 30(b)(6) deposition, he was the corporate representative at trial without limitation, and he was the expert designated by Ford at trial.

It must be noted that Mr. Krishnaswami attempted to qualify his admissions. For example, when asked if Ford had the technology to economically design an airbag system in 2009 that would deploy air bags when they should deploy and not deploy them when they should not deploy, he admitted that they did and then added, as a good professional witness would, the statement “and I believe we did that here”.

Under the evidence before the jury, Mr. Krishnaswami’s statement was simply not true and the jury would be well within its right to disregard that. The evidence is clear that Ford made a calculated decision to put its occupants at risk by accepting a calibration which admittedly allowed the airbags to deploy in situations in which they were not supposed to deploy and that decision was not made for the benefit of the occupants of the vehicle in those crash modes.

IV. Risk - Utility

The evidence is overwhelming that there was no benefit or utility for deploying the airbag in Mr. Newbern’s crash. Both he and his wife were belted. The airbag would still deploy for persons who were not belted even if the sensors were moved, a reinforced crash path was used or the threshold for deploying the passenger airbag for a belted passenger’s was raised.

The evidence is extensive that there are considerable risks for serious injuries, including injuries to persons not even involved in the initial accident when an airbag deploys unnecessarily. Additionally, Ford’s own sled test; Mr. Krishnaswami’s testimony about the known dangers of deploying air bags when they are not needed; his testimony that airbag is unreasonably dangerous if it deploys air bags when they are not needed; Mr. Lewis’s testimony that the airbag in Mr. Newbern’s collision was the source of his injury; and that it provided no benefit to him in the crash

by reasonable biomechanical certainties, are all proof that the risk of deploying the airbag when it should not deploy outweighed its utility.

Ford has claimed in the past that the proponent of an alternative design needs to prove that it would have prevented the product from being unreasonably dangerous in all foreseeable collisions. In a case involving an alternative design for a door latch, Ford complained that the evidence did not show that the "cable linkage system as a whole was a good design for all reasonably foreseeable crashes." The court disagreed holding:

"However, the law of crashworthiness does not require the Estate to prove its alternative design would have prevented the door from opening in every foreseeable collision. Instead, the law required the Estate to prove (1) the design of the rod system in Riley's PN96 " created an unreasonable risk of injury" that was " readily foreseeable as an incident to the normal and expected use of [the] automobile," *Mickle v. Blackmon*, 252 S.C. 202, 228, 232, 166 S.E.2d, 173, 184, 186 (1969), and (2) the cable system " would have prevented the product from being unreasonably dangerous." *Branham*, 390 S.C. at 225, 701 S.E.2d at 16. We find the Estate met these requirements.

Riley v. Ford Motor Co. 757 S.E.2d 422 (S.C.App. 2014)."

CONCLUSION

When viewed in the light most favorable to Newbern and construing all inferences from the evidence in the light most favorable to Newbern, the plaintiff presented sufficient evidence to show that the 1) airbag defect existed; 2) it was unreasonably dangerous; 3) it caused Mr. Newbern's injury; 4), it prevented no injury; 5) and Ford had the ability to use alternative designs which were readily available and by following a process which its own witness testified was the proper process to follow in order to correct defective airbag sensor calibrations: 6) is chose not to use an alternative design for scheduling purposes, not because they were not available and feasible.

WHEREFORE, this Court should grant Mr. Newbern a new trial.

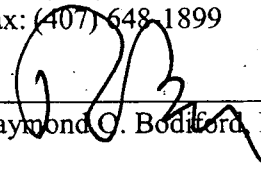
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September 26, 2016

Attorneys for the Plaintiffs

EXHIBIT A

Krishnaswami Deposition Notice

STATE OF SOUTH CAROLINA	)	IN THE COURT OF COMMON PLEAS
	)	NINTH JUDICIAL CIRCUIT
COUNTY OF CHARLESTON	)	CIVIL ACTION NO.: 2013-CP-10-2928
STEVEN NEWBERN and CLAUDIA NEWBERN,	)	
	)	
Plaintiffs,	)	AMENDED NOTICE OF VIDEOTAPED
	)	30b(6) DEPOSITION OF FORD
vs.	)	MOTOR COMPANY'S CORPORATE
	)	REPRESENTATIVE
FORD MOTOR COMPANY and STEPHEN RONALD MCGEE,	)	(amended as to time only)
	)	
Defendants.	)	
	)	

TO: DAVID MARSHALL, ATTORNEY FOR FORD MOTOR COMPANY

PLEASE TAKE NOTICE that the Plaintiffs, by and through their undersigned attorneys and pursuant to South Carolina Rules of Civil Procedure 30(b)(5) and 30(b)(6), will take the deposition of the FORD MOTOR COMPANY corporate representative with the most knowledge regarding:

Subject Matter 1: Airbag Induced Eye Injury. This subject includes the following:

- a) The potential for airbag induced eye injury and Ford's knowledge thereof;
- b) Ford's testing to develop eye injury criteria;
- c) Ford's method of testing airbag systems to determine the potential for airbag induced eye injury in general and for the Ford Focus specifically;
- d) Allegations that airbags in the Ford Focus have caused eye injury;
- e) The sensors used to measure the potential for eye injury in the deployment of airbags in the Ford Focus;
- f) The eye injury criteria used to measure the potential for eye injury in the deployment of airbags in the Ford Focus;

- g) The methods utilized by Ford to detect, measure and quantify the potential of the front passenger's airbag in the Ford Focus to strike the face of a properly seated passenger;
- h) Ford's warnings to owners and occupants of the Ford Focus related to the potential for eye injury to the right front passenger due to airbag deployment; and
- i) The potential for the right front passenger's side airbag to strike and injure the occupants face and eyes.

Subject Matter 2: The purpose, design, development, validation, calibration and performance of the restraint sensor system in the 2008-2011 Ford Focus. This includes:

- a) All design processes and testing performed, including computer assisted design and testing;
- b) The sensor output data used for each iteration of all sensor calibration simulations. This encompasses the results of each iteration of all sensor calibration simulations for every crash type simulated, including frontal, offset, angles, under ride, pole, animal strike, rough road, abused and side impact testing;
- c) The identifications of each crash type that was eliminated from the final calibration simulation and the reasons therefore;
- d) The specifications and performance requirements for the RCM, the upfront sensors and the sensor wiring, harness and connectors;
- e) The sequencing and timing of the deployment of the pretensioners and different airbag inflator stages. This specifically includes "time to fire" requirements for all test modes;

- f) Any changes made in the sensor system, including requirements, calibrations, hardware and software. Software includes, but is not limited to, operating systems and algorithms;
- g) The technical functioning of the front sensors and RCM;
- h) The identities, duties and performance of persons participating in the design, developments, calibration and validation process for the sensor system. This includes the division of responsibilities and obligations of each company participating the process;
- i) The sequencing and timing of the diagnostic, crash sensing, algorithm enable and data writing functions of the RCM. This includes the threshold for the full enablement of the deployment algorithm, whether termed as "algorithm enable", "algorithm on", "algorithm alert", "algorithm wake up" or otherwise;
- j) Ford's mounting guidelines, rules, standards and policies for the upfront sensors and RCM. This includes the connector location;
- k) The mounting guidelines, rules standards and policies for the upfront sensors and RCM provided by their supplier. This includes the connector location;
- l) Deployment suppression requirements for the driver and passenger airbags based upon considerations related to seat track position; occupant position; belted status; occupant size, age or weight; or late deployment considerations;
- m) The Failure Mode and Effects Analysis used to evaluate the performance of each component in the occupant restraint sensor system;

- n) The complementary nature and interrelationship of the occupant restraint system components such as the sensor system, airbags, seatbelts, pretensioners and passenger compartment interior structure.

Subject Matter 3: The crash testing, sled testing, computerized testing and static testing of the 2008-2011 Ford Focus which were utilized in the design, development, validation and performance evaluation of the 2008-2011 Ford Focus vehicles. This includes, but is not limited to, developmental testing, compliance testing, NCAP testing, sensor testing, crash cage integrity testing, pretensioner testing, seat track testing, immunity testing, seatbelt testing and seat testing. It includes crash tests which may have been performed for purposes other than restraint evaluation but which show the parameters such as crush, vehicle movement, ATD movement, and component contact. This includes test requests, results, reports, electronic data, films, videotapes and electronic images. The subject matter includes the following:

- a) The care, custody, control, cataloging, indexing and storage of all test requests, test results, test reports, photographs, videotapes, film and all other methods of electronic imaging for testing;
- b) The company policies for protecting and retaining crash, sled test, computer test and static test documentation.
- c) The results of the testing, including all vehicle and occupant parameters;
- d) The purpose of the testing;
- e) The documentation from all crash and sled testing provided to any supplier for restraint systems in the 2008-2011 Ford Focus, including seatbelts, pretensioners, airbags and airbag sensors.

EXHIBIT B

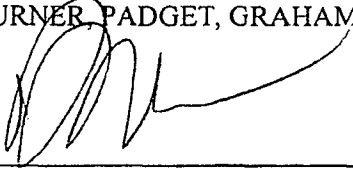
KRISHNASWAMI

EXPERT DISCLOSURES

is also expected to respond to the opinions of Plaintiff's experts. His CV is attached hereto and marked as Exhibit "D".

TURNER, PADGET, GRAHAM & LANEY, P.A.

March 16, 2015

By: 

J. Kenneth Carter, Jr.
David C. Marshall
Andrew W. Kunz
Post Office Box 1473
Columbia, SC 29202
Phone: (803) 254-2200
Fax: (803) 799-3957

**ATTORNEYS FOR DEFENDANT
FORD MOTOR COMPANY**

Dr. Scott is expected to have expert opinions and testify in the areas of biomechanics, occupant kinematics, occupant protection, injury causation, statistical injury analysis and injury mechanism. It is expected that he will analyze the forces acting on the vehicle occupant during the accident as well as the occupants' response to those forces. Dr. Scott will testify that the subject vehicle was reasonably safe, crash worthy, and compliant with all governing codes and standards, including Federal Motor Vehicle Safety Standards. Dr. Scott may also respond to issues raised by Plaintiffs' experts. His opinions are based upon, but are not limited to, his training, education, experience, testimony and discovery of fact witnesses and other expert witnesses, relevant documents, photographs and analysis and his inspection of the subject vehicle. His CV is attached hereto and marked as Exhibit "C".

4. Ram Krishnaswami
Design Analysis, Ford Motor Company
WHQ Bldg., 114-B3
One American Road
Dearborn, MI 48126

Mr. Krishnaswami will testify in the areas of airbags, airbag sensing systems and vehicle crashworthiness for Ford Focus vehicles. This will include the design, development, Computer Aided Engineering (CAE), crash testing and sensor testing of the Ford Focus. Mr. Krishnaswami will testify that the airbag and airbag sensing systems are not defective as alleged by Plaintiff and that the accident was not caused by any alleged defect. Mr. Krishnaswami will testify that Ford's internal goals, guidelines and testing, including the abuse and misuse testing for airbag system, follows sound system engineering principles and helps promote the design and development of safe airbag systems. Mr. Krishnaswami will testify that the Focus is reasonably safe for its intended use with state of the art frontal advanced airbag systems. Mr. Krishnaswami

EXHIBIT C

TESTIMONY OF RAM KRISHNASWAMI

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STATE OF SOUTH CAROLINA COURT OF COMMON PLEAS
COUNTY OF CHARLESTON CASE NO.
2013-CP-10-2928

STEVEN NEWBERN,	)	
	)	
PLAINTIFF,	)	EXCERPT OF RECORD
	)	
VS.	)	
	)	
FORD MOTOR COMPANY,	)	SEPTEMBER 13-14, 2016
	)	CHARLESTON, SC
	)	
DEFENDANT.	)	

B E F O R E:
HONORABLE J.C. NICHOLSON, JUDGE, AND A
JURY.

A P P E A R A N C E S:
STEVE VAN GAASBECK, ESQUIRE
RAYMOND BODIFORD, ESQUIRE
WILLIAM APPLGATE, ESQUIRE
Attorneys for the Plaintiff
J. KENNETH CARTER, ESQUIRE
NICHOLAS GLADD, ESQUIRE
ROBERT WISE, ESQUIRE
CARMELO SAMMATARO, ESQUIRE
Attorneys for the Defendant

* * * * *

Ruth C. Weese, RDR
Official Court Reporter
Ninth Judicial Circuit

1 *****BEGINNING OF EXCERPT*****

2 THE CLERK: Please state your first and
3 last name and spell your last name loudly and
4 clearly into the microphone.

5 DIRECT EXAMINATION

6 BY MR. VAN GAASBECK:

7 Q. Are you ready, sir?

8 A. Yes, sir. He asked me to state my
9 name. My name is -- I go by -- my full name is
10 Ramaniyam Krishnaswami. I go by Ram Krishnaswami.

11 THE COURT: Can you spell your last
12 name, please, sir?

13 THE WITNESS: Yes, sir.
14 K-R-I-S-H-N-A-S-W-A-M-I, Krishnaswami.

15 THE COURT: Thank you very much.

16 BY MR. VAN GAASBECK:

17 Q. Mr. Krishnaswami, I believe your
18 deposition has been taken in different capacities
19 in this case three times?

20 A. Yes, sir.

21 Q. So one was as a corporate
22 representative; do you recall that?

23 A. Yes. I don't know exactly what time,
24 but we have spoken before.

25 Q. And I will not hold you to remember

1 everything that we said.

2 A. Thank you.

3 Q. In that having been a couple years ago.
4 Also in that respect you were called as a corporate
5 representative and you understood that to mean that
6 you were speaking for the corporation on certain
7 subject matters; is that correct?

8 A. Yes, sir.

9 Q. Thank you. Then you were also
10 designated to be an expert witness in this case; is
11 that correct?

12 A. Yes, sir, related to airbag sensors and
13 things of that nature.

14 Q. In both of those capacities you have
15 had the opportunity to look at many of the exhibits
16 in this case and address many of the issues that
17 are in this case?

18 A. Yes, sir, and typically that's the
19 process. Lawyers such as yourself want to find out
20 details related to engineering matters and the
21 company produces witnesses such as myself because
22 of our familiarity with engineering matters and we
23 try to assist you in trying to understand them.

24 Q. And also I think you also gave another
25 deposition as a corporate representative regarding

1 owner's manuals declarations?

2 A. Yes. You had some questions regarding
3 our owner's guide, our owner's manual that is
4 provided in the vehicles. And I spoke to you quite
5 recently I believe in the last two or three months.

6 Q. Well, thank you. Let me go on then to
7 let everyone know who you are. You have worked
8 with Ford in an engineering capacity; is that
9 correct?

10 A. Correct.

11 Q. And how long were you working as an
12 engineering -- when did you start working?

13 A. Well, I graduated with a master's in
14 engineering from Wayne State University in Detroit.
15 In 1993 I became a consulting engineer at Ford
16 Motor Company. And I became an employee since
17 1999.

18 Q. And at some point did you move to a
19 segment or division of Ford which is called design
20 analysis?

21 A. Yes. And that would be in October of
22 2007. My department -- the department I work for
23 is called design analysis engineering. Design
24 analysis engineering is a portion within our
25 automotive safety office and that's the division

1 that I work for.

2 Q. Is at least one of the responsibilities
3 or one of your job duties to support litigation
4 support for Ford in lawsuits?

5 A. Correct. Our job is primarily you
6 could say field performance of our vehicles and in
7 matters such as this whenever there is litigation
8 matters and lawyers such as yourself who want to
9 understand the technical nature of our documents,
10 Ford would afford our services through depositions
11 or through inspections and things of that nature.
12 We also consult with our product development
13 activities and other activities within the company
14 on advanced product and future design of vehicles,
15 things of that nature.

16 Q. Thank you. In the opening statements
17 -- were you here for the opening statements made by
18 Ford's attorney, Mr. Carter?

19 A. This morning, yes.

20 Q. What is your understanding you were
21 supposed to be describing from his opening
22 statement?

23 A. How the airbag functions, how the
24 sensing system functions generally, so those were
25 the things I understood.

1 Q. You also know what the other experts
2 opinions are? You have taken part, have you not,
3 in consultation or meetings with them?

4 A. I have not with respect to this matter.
5 The only thing I assisted Mr. Pearson who is one of
6 our experts in this matter and we conducted a sled
7 test I believe that was shown earlier this morning.
8 So I assisted in that. And I did consult
9 specifically our reconstructionist Mr. Toomey to
10 understand the crash forces, the principals, so in
11 that regard yes, but can you please verify like
12 what with regard -- I consulted them, yes.

13 Q. And so one of the people you worked
14 with was Mr. Pearson?

15 A. Correct.

16 Q. And you worked with him on putting
17 together this sled test we saw --

18 A. Yes.

19 Q. -- today. Also have you worked with
20 Mike Scott, the biomechanic, in any way?

21 A. With respect to this matter? Not
22 directly, no, sir, I haven't talked to him. I
23 don't remember talking to him directly about it.

24 Q. Well, it's been a long case.

25 A. Yes.

1 Q. You take part in legal engineering
2 conferences, LECs?

3 A. Yes. I'm not even sure that one -- I
4 participated in one in this matter.

5 Q. All right. Thank you. I want to --
6 can you tell us what this sled test we saw during
7 the opening was supposed to be representative of?

8 A. Well, a sled test, if you allow me I
9 would like to describe it.

10 Q. You can.

11 A. A few more details. It is an
12 engineering tool that we in the crash development
13 area, use quite frequently. Crash tests, everybody
14 knows, they have seen films, movies or
15 documentaries on crashes. You take a vehicle, you
16 hit it against another car, or you hit it against a
17 wall and you record forces of crash. We have
18 instruments all over the vehicle that records the
19 crash forces as the vehicle is impacting the other
20 object.

21 Also placed in this vehicle sometimes
22 are crash test dummies. And these crash test
23 dummies are also instruments that sometimes record
24 forces and things of that nature. And instead of
25 conducting impact into a wall, once if you know

1 what the forces are going to be in a crash, you
2 could simulate it on a subsystem and we call that a
3 sled. Where we have the vehicle interior, which is
4 a Ford Focus here, we have the vehicle interior and
5 a vehicle interior has seats, instrument panel,
6 steering wheel and things of that nature, the seat
7 belts. And what you do is in a crash, in any
8 crashes, there is a physics to this crash.

9 Q. Sorry?

10 A. There is a physics to this crash.

11 Q. Thank you.

12 A. There is crash one and crash two in
13 every crash. The first crash is between the
14 vehicle and the surrounding. The body of the car
15 and the surrounding. The second crash is from the
16 occupant into the interior of the vehicle. So the
17 first crash as I said is when we impact another
18 car, another pole, another side impact, whatever
19 the case may be. The second crash is as the
20 vehicle comes to a stop suddenly the human body
21 which was in a constant state of motion up to that
22 point in time is suddenly stopped and it moves in
23 the vehicle towards the front of the instrument
24 panel and things like that.

25 In the sled since we know what the

1 first crash is going to be, we know how quickly a
2 vehicle is going to come to a stop, since we know
3 that, we are able to impart those forces and see
4 what is going to happen in the second crash which
5 is the occupant with the interior. This is a way
6 to study occupant motion, occupant kinematics and
7 the airbags or the safety belt or knee bolster or
8 the seats in a controlled environment. That's what
9 a sled test is.

10 Q. Okay. Thank you very much. I
11 appreciate that. You were talking about crash
12 tests and sled tests. Now, are these generally run
13 for the purposes of determining what you're going
14 to demand from -- at least in some respects from
15 your certain system?

16 A. In a certain way, yes, like a sensor
17 system is a tunable parameter as you well know.
18 And the process of tuning the sensor system is
19 called calibration. Now, we can see from the sled
20 test if we were to deploy an airbag, let's say
21 20 milliseconds into the commencement of collision
22 like now and I would like to -- if you would afford
23 me I would like to explain a little bit about start
24 of crash two.

25 Q. I don't want to stop you from

1 explaining the way you think it needs to be done.

2 A. Thank you, sir. And what it is is that
3 let's say times zero is the commencement of crash
4 and somehow we are able to capture times zero and
5 from that let's say I believe Mr. Carter's talk
6 about the fractions of seconds it takes to deploy
7 an airbag. The entire moderate to high speed
8 collision, the entire collision is over in about
9 let's say hundred milliseconds. That's one-tenth
10 of a second. One-tenth of a second is hundred
11 milliseconds.

12 People say that depending on how fast
13 you blink your eye, it's about 200 to
14 250 milliseconds to blink an eye. The crash event,
15 which is basically the crash vehicle hitting the
16 wall and the crash, the occupant loading the airbag
17 and starting to unload the airbag and coming back
18 in is over in hundred milliseconds,
19 150 milliseconds. So having that as the big time
20 budget that you are working with, let's say the
21 commencement of crash is zero milliseconds. The
22 airbag let's say is triggered -- is commanded to
23 trigger at 25 milliseconds in a sled test or 30 or
24 40, whatever we are studying, that is when we say
25 that when are deploying an airbag at 40

1 milliseconds it means that after the commencement
2 of crash that's when the signal to fire an airbag
3 is provided.

4 And then we determine how the airbag
5 unfolds, how the occupant moves towards the airbag,
6 how the belt is restraining the airbag, those are
7 all the things that it is designed to study. So a
8 sled test in a sense to answer your question is
9 basically to go back and understand and verify that
10 sensor fire times and its behavior on airbags and
11 things like that.

12 Q. Well, thank you. Actually my question
13 was more a little more limited than that. But I do
14 appreciate elaborating on the methodology. But
15 prior to Ford determining what its requirements are
16 that it is going to give to a supplier that they
17 have to meet for their sensor system, Ford does
18 quite a bit of work, does it not?

19 A. Yes.

20 Q. So it runs hundreds of crash tests
21 according to Mr. Carter?

22 A. Correct. And some of that also comes
23 from our prior history. Like we have a long
24 history of collecting crash tests over decades. So
25 engineers such as myself rely on the reliability of

1 crashes and the data that we have accumulated
2 internally in order to come up with starting
3 locations or initial targets as we would call them
4 and we also use a lot of computer simulation to
5 come up with those initial starting positions.

6 Q. So one of the things that is considered
7 before a set of requirements is set and given to
8 for example, Bosch in this case, would be the
9 history that Ford has the experience with crashes,
10 right?

11 A. Correct. And we are -- we have a good
12 understanding of the full system knowledge and from
13 the full system knowledge we give them component --
14 they are the component suppliers for in this case
15 Bosch is airbag sensing systems maker. So we buy
16 the airbag sensors from Bosch to put into our
17 vehicles.

18 Q. So the experience that you have gained
19 over many years is brought to gain in creating the
20 requirements for Bosch. Hundreds of crash tests
21 that were performed with for example, the Focus are
22 part of what makes you determine what your
23 requirements are and including also sled tests?

24 A. Yes, sled test is another available
25 tool.

1 Q. And some sled tests and then static
2 deployments? Do you do static deployments?

3 A. Yes, and that is more to study the
4 airbag itself. As I said, Bosch is the sensor
5 supplier. We have another supplier for airbags.
6 And the air safety belt supplier for this vehicle
7 is another company called TRW. They are expert in
8 making airbags, airbag components as well as safety
9 belts.

10 Q. But one of the things that go into your
11 requirements to make the decision as to whether or
12 not an airbag should deploy, whether it should not
13 deploy, those type of things, you have to take in
14 effect the extension and deployment path of the
15 airbag; is that right?

16 A. Correct. And let me also clarify that.
17 We have -- and again, the process of designing a
18 car is not instantaneous. And it is a very long,
19 drawn-out process. Takes as long as four years to
20 design a brand new car. And we generally know
21 initially we have a system maker. Ford is the
22 systems supplier. So we know what car we want to
23 make, we want to make a small car, a midsize car, a
24 large car, a pickup truck, SUV, so we have the
25 internal dimensions of the car. We have a general

1 idea of the theme and how the interior is going to
2 look and how it is going to perform.

3 So based on that we have some initial
4 assumptions that we develop based on our years of
5 experience, knowledge and testing. We have some
6 initial assumptions and we say we know that this
7 kind of an interior should require a certain size
8 airbag. So in that regard, I think you are right
9 we have a good starting position, but I must
10 caution you that that does not set in stone or it
11 is not a confirmed position. Because to a certain
12 extent while we know the volume of the airbag is
13 somewhat static, meaning we know that we want only
14 a certain hundred liter airbag on the passenger
15 side, we also need -- as the system develops we
16 would like to modify the shape of the airbag. Like
17 the profile of the airbag. For lack of a better
18 word we call it a cushion, the airbag cushion.

19 Q. That's acceptable.

20 A. And the airbag cushion, the shape when
21 you look at it from the side, it has to have a
22 certain profile. So that as the occupant moves
23 into the airbag we know which portions to be
24 restrained. To control the airbag we add side
25 panel, tethers, vent holes where the gas can

1 escape, all that is tunable parameters that keep on
2 evolving as the design evolves. However, we only
3 have a starting position to begin with.

4 Q. I appreciate your answer. I would --
5 basically I am asking do you also look at the bag
6 deployment characteristics, such as how far it
7 goes, how it stretches?

8 A. Yes, we monitor that.

9 Q. If you wish to elaborate upon some of
10 the reasons why, my question was do you do it? My
11 next question if I want to know why I would ask you
12 why. And we could keep this quicker, but --

13 A. Sure.

14 Q. I certainly don't have a problem with
15 Mr. Carter coming and asking well, why did you do
16 that. Okay? Thank you. So did it also include
17 computer simulations?

18 A. Yes. And I have personally performed
19 numerous computer simulations.

20 Q. What computer program have you used for
21 that?

22 A. For airbag development and occupant
23 interior development we use a package called
24 Marimor, mathematic dynamic molding. That's what
25 it stands for.

1 Q. Thank you. So a lot of effort, very
2 experienced technological and highly developed
3 effort went into developing a set of requirements
4 for that airbag as to timing, deployment, whether
5 or not an airbag should deploy and was then given
6 to Bosch and Bosch then was asked make us a system
7 that does that?

8 A. It's not as simple as that. And the
9 thing is we provide some initial targets and
10 initial guidelines to them and as we gather more
11 data through our crash test we also ask them to
12 participate in the test and provide them with all
13 that information. And they go back and since they
14 hold the algorithm, which is the mathematics behind
15 the computer that controls the airbag, they come up
16 with several iterations of it. And this is the
17 first iteration, second iteration, this is 20, 25,
18 whatever the case may be. Over the period of the
19 program development and at every iteration we study
20 the results and provide feedback to them.

21 Q. And you are talking about an algorithm;
22 is that what you said?

23 A. No. Algorithm is basic, but what I
24 meant is what executes the algorithm, the
25 calibration. The calibration which is unique to a

1 vehicle which is what controls the airbag
2 deployment or non-deployment.

3 Q. Thank you. I just wanted to be sure
4 the word was algorithm.

5 A. Yes. Sorry. You have to pardon my
6 part English and part Indian accent.

7 Q. You do better than I do in India, so
8 don't worry about it. Let me ask you, sir, in the
9 process of development of the Ford Focus you
10 finally reached the point where you weren't giving
11 them any more crash tests?

12 A. Instead of saying not giving them any
13 more crash test we would say -- I would rather say
14 that we accepted the final calibration that was
15 provided to us.

16 Q. And you didn't make any changes to the
17 requirements when you gave it to them after
18 performing all the tests that you did? You did not
19 make changes to the requirements at the point that
20 you finally gave it to them and said give us a
21 final report?

22 A. Well, you got to be specific when you
23 say the requirements because there are requirements
24 that govern the hardware, the electronics of it.
25 That's the restraint system specification that is

1 based for the hardware from the electronic aspect
2 of it. If you are talking about requirements with
3 respect to target fire times, yes, we have an
4 initial fire time that we give and then we review
5 that. In that respect finally we deliver a
6 calibration -- finally they deliver a calibration.
7 We accept that deployment time of the calibration
8 and we study it further and we approve any
9 exceptions as the case may be.

10 Q. So sometimes after you have done all
11 the work that you have done to prepare for and give
12 what seems to be a well thought out set of
13 requirements the supplier will come back with a
14 calibration that might not meet all those
15 requirements?

16 A. Well, that's why I think I even used
17 the word soft targets to them because in a way to
18 design the end result for us is occupant injury
19 values as measured as recorded in crash test
20 dummies. Using that as the hard target as the
21 regular requirement as the case may be, we go back
22 and we see, we accept the fire time only if it
23 satisfies our several robust criteria including at
24 the component and at the subsystem level. Only
25 after satisfying ourselves do we approve of those

1 exceptions.

2 Q. Now, my question is, though, in this
3 particular case then, the Ford Focus, Bosch came
4 back with a version of calibrations that did not
5 meet the requirements that were given to them
6 initially?

7 A. I wouldn't say didn't meet the
8 requirements. It was an initial starting point of
9 the target and as I explained to you before, the
10 very fact that we signed it and received it means
11 that we accepted the end results.

12 Q. Yes. After they came back to you with
13 a calibration that did not meet the written
14 requirements you then went over that and said well,
15 we are going to make exceptions and we are going --
16 to our requirements and we are going to accept this
17 calibration?

18 A. Well, again, you keep using the word
19 requirements. I wouldn't call them requirements.
20 I would call them as initial starting point. We
21 call them starting targets. And going in we do not
22 know -- see again, the debate is chicken or the
23 egg, which came first, right? So the thing is we
24 have to start somewhere and based on our years of
25 experience we know a starting point and have no

1 approximation of the system. We have no idea what
2 the system is going to look like especially with
3 respect to design details. This is 30 months
4 before the vehicle is produced. That's why those
5 targets are starting points. Once that starting
6 point, whatever they have given back to us, we go
7 back, we study it, we go back and study it further.
8 And only then accept it. It is not our practice to
9 keep changing the targets, the original value as
10 and when more data comes in. If we do that, we
11 won't have a basis to come back. This is like
12 moving the goal post. No. It is not. So we don't
13 want to do that so that we can go and compare well,
14 based on our first principals we have this
15 approximate target that we provided. Now let's go
16 back and study it further and further and further
17 and see how we compare.

18 So I won't accept your notion that it
19 is a requirement.

20 Q. Let me accept then you do not like the
21 word requirement so we don't have to go back over
22 that and explain that you think it is a starting
23 point. I will accept that's what your position is.

24 A. Correct.

25 Q. What is the name of the document?

1 A. It is called the calibration report.

2 Q. Excuse me?

3 A. The calibration report. Or calibration
4 summary report.

5 Q. What's the name of the document that's
6 given to Bosch with what you call starting points?

7 A. It is that sheet of -- it's columns of
8 data which we specify various crash tests and what
9 the desired initial deployment time is for let it
10 be pretensioner or let it be airbag.

11 Q. It is not part of the specification?

12 A. The engineering specification is a
13 different document. That's a system design
14 specification that governs another set of data
15 which is basically the electronic hardware, the
16 function, spec and things like that.

17 Q. So let's say the targets then that you
18 selected and determined were appropriate for this
19 vehicle, when they don't meet those targets you
20 have two choices, then you could start another
21 calibration run, is that correct?

22 A. There would be multiple calibration
23 runs.

24 Q. Right. Or three actually. You could
25 go back and change those things which the

1 exceptions are having to be made to cover. For
2 example, you could move a sensor position to get a
3 better coverage for something, you could change a
4 -- you can add for example, reinforcement for a
5 crash path, get the signal to a place, these are
6 things which are possible, can be done?

7 (A) And we do all that and we continue to
8 do that through all the design process, through all
9 the development process and that's why we call it
10 development so we test and retest and over multiple
11 scenarios.

12 (Q) But in the end Bosch came back and said
13 here is our attempt at a calibration to meet your
14 targets, we didn't meet the target on this, this
15 and this. Instead of in this case creating a
16 different crash path towards a sensor for example,
17 or moving the sensor positions, Ford decided to
18 look at the targets that were not met and make
19 exceptions for them?

20 (A) No. It is not that simple.

21 (Q) Can we stop and ask you this? Instead
22 of doing -- instead of actually going back, I don't
23 want to object to nonresponsive.

24 MR. GLADD: The objection was that he

25 --

1 THE COURT: Overruled. He hasn't
2 finished the question before he interrupted the
3 question. Let me say something, okay? Listen to
4 the question. A lot of these questions you can
5 answer yes or no, I don't know, I don't understand.
6 And then you can give an explanation. But please
7 answer the question. Otherwise we are going to be
8 here all day with him asking the question in
9 different ways. And you give whatever expert
10 explanation you want to give. You may not want to
11 answer yes or no, but please answer the question
12 and then give your explanation rather than start
13 with your explanation and don't interrupt the
14 lawyer. Let him finish before you answer it.

15 THE WITNESS: Yes, sir.

16 THE COURT: Please proceed.

17 BY MR. VAN GAASBECK:

18 Q. Thank you. I know it is difficult, Mr.
19 Krishnaswami. When Bosch finally came back with
20 its -- what it made, its end product and said --
21 did say we can't meet this target, this target,
22 this target and this target. Several targets it
23 said it couldn't meet in its calibration report, is
24 that correct?

25 A. I don't think they came back and said

1 that.

2 (Q) Well, were there targets that they were
3 supposed to meet that they did not meet?

4 (A) Yes, they did not -- they were not able
5 to achieve the initial targets, yes.

6 (Q) Now, did Ford then at that time for the
7 final release say or do anything like okay, we are
8 going to move our sensors about or create a
9 different, a reinforcement that would get the crash
10 signal in the front to the back, crash path, or did
11 Ford say let's look at these ones which don't meet
12 the soft targets and see if we can accept them?

13 (A) Well, that process of packaging that
14 you are talking about happens much earlier than the
15 second process you are talking about when the
16 targets start coming.

17 (Q) So Ford then decided to take the
18 exception, take the ones that didn't meet, evaluate
19 them and determine if they were acceptable?

20 (A) Correct, within all the other
21 requirements or guidelines or targets that we set
22 forth.

23 (Q) All right. Are those called
24 exceptions?

25 (A) There are, yes, there will be some

1 exceptions to the original targets.

2 Q. For this particular vehicle -- with
3 this particular vehicle what was the -- what's the
4 job one for this one?

5 A. I think job one was sometime in 2007
6 calendar year, around June, July time period I
7 believe for a 2008 model year. And job one denotes
8 the launch of production.

9 Q. Sorry?

10 A. The launch of production, commencement
11 of production of a vehicle in Ford's internal
12 designation is called job one.

13 Q. Thank you. So was there a job one for
14 2008?

15 A. Yes, there was. And I have to refresh
16 my memory.

17 Q. Then there was a job one for 2008
18 and-a-half?

19 A. Yes, there was a running change during
20 2008 and yes, there was a running change in 2008.

21 Q. And was that change then made because
22 the 2008 had two up front sensors and Ford wanted
23 to move to one sensor up front?

24 A. Yes. Actually the original target was
25 let's see if we can make the system work with one

1 sensor and as a backup let's see if you can do two
2 sensors up front. So during the design phase they
3 were testing three different locations for sensors,
4 two on the outside and one in the center.

5 Q. And ultimately -- were they ultimately
6 the same positions that were used when they came to
7 the production vehicles, for example, the two on
8 the outside were the ones that were in the 2008 and
9 then the one that was in the center was on the
10 2005 -- 2008.5?

11 A. About a few months into production,
12 yes.

13 Q. Thank you. So what was job one for
14 2008.5?

15 A. It's just a few months later. It was
16 considered a running change because the two system
17 sensing system and the one sensor system were
18 considered equal so it is called a running change.
19 There is no set date when it transitions.

20 Q. So didn't Ford then have time between
21 job one in 2008.5 to go back and do a little more
22 work on moving the sensors around or adding
23 reenforcement or crash paths to try to eliminate
24 the exceptions that you would accept rather than to
25 just go forward?

1 A. Well, the exceptions are accepted --
2 the moment we accept an exception means that we are
3 satisfied with that exception and it meets the
4 overall target. So it was not necessary to do
5 that.

6 Q. Did one of those exceptions include
7 allowing an airbag to deploy in a crash in which
8 Ford knew it did not need a deployment?

9 A. Well, can you please tell me what crash
10 test you are talking about?

11 Q. Well, let's -- there are several, but
12 I'll talk about some of them. There is a 1598 --
13 15978 which we had a 30 degree right front barrier?

14 A. What was the speed, do you know?

15 Q. Twenty-five miles per hour, 24 to 25
16 into a right oblique angle barrier?

17 A. Okay. I have to look at the
18 calibration report.

19 Q. I will get it up. And I know you are
20 not being evasive. I know how hard it is to look
21 at that.

22 A. Because there is a lot of data there.

23 Q. Yes, sir. Let's look at the
24 calibration report then. Can you see it, sir?

25 A. Yes, I can.

1 THE COURT: Should be right in front of
2 you. Is it in front of you? Okay.

3 THE WITNESS: Yes, sir.

4 THE COURT: Can you see it again?

5 THE WITNESS: Yes, I can see it okay.
6 I just need to figure out how to move, scroll the
7 screen.

8 BY MR. VAN GAASBECK:

9 Q. I got it. If you are going to touch it
10 you are going to mark it.

11 THE WITNESS: Looks like I marked it.

12 THE COURT: If you want to touch
13 something it will mark it. James, show him how to
14 release the mark if you would, please. You can
15 mark it and then he will show you how to release
16 it. Do you understand how it operates?

17 THE WITNESS: Yes, sir.

18 THE COURT: Thank you so very much.

19 BY MR. VAN GAASBECK:

20 Q. Now, I will go through this. I am not
21 going to ask you to try to figure out and tell us
22 what each part means, but I will ask you about it.
23 First let's take a look at the -- I don't want to
24 mark it either. On the left-hand side in black and
25 white you can see a certain number of items. Are

1 those the crash tests that were run to calibrate
2 this system?

3 A. Yes.

4 Q. So to calibrate this system I am seeing
5 21 crash tests; is that correct?

6 A. Yes.

7 Q. So one, two, three, four, five, six,
8 seven, eight, like that, we are looking at right
9 there that's them, they are listed and identified
10 as to what they are. So for example, let's look at
11 the -- for example, showing you how this thing
12 works, crash tests. The one that I was talking to
13 you about would be No. 13; do you see that?

14 A. Yes, sir.

15 Q. So that's 15978, 25 miles an hour 30

16 degree right angle. What kind of crash is that?

17 A. Well, that would be at 25 miles per

18 hour and the vehicle is propelled at 25 miles an

19 hour into a rigid wall that is angled at

20 30 degrees. So if I were to propel this car into a

21 rigid wall, this wall is angled at 30 degrees. And

22 the car comes slightly into it.

23 Q. That's a nondeformable barrier?

24 A. Correct.

25 Q. So it doesn't bend or crack or squish

1 or crush?

2 A. No.

3 Q. So if we were to follow #3 across then
4 to this next box, and let me ask you then, you can
5 see up here it's labeled pretensioner performance?
6 Is that right?

7 A. Correct.

8 Q. So that would be in the belt and you
9 could fire -- you could require that pretensioner
10 to deploy with the same type of gasses expansion
11 squid that would then tighten your belt. What's
12 the purpose of that?

13 A. The aim of the pretensioner if you are
14 belted is to remove slack that would be generally
15 present let's say if you are wearing an overcoat,
16 and when you are wearing a safety belt on top of
17 it, it makes the safety belt performance efficient
18 by firing micro gas generator and pulling the --
19 cinching the belt and make the safety belt
20 efficient. That's the function of the
21 pretensioner.

22 Q. So in this particular car, you could
23 just fire the pretensioner?

24 A. There are some crashes where you could
25 just fire the pretensioner and it is sufficient.

1 You do not need to fire an airbag. .

2 Q. That gives you better performance on
3 your seat belt when you do that?

4 A. It is to make the overall seat belt
5 function efficiently in a frontal impact.

6 Q. Thank you. So does Ford have the
7 ability to say wait a minute, this guy is not
8 wearing a beat, why would I do that?

9 A. Yes. We do have an ability to do that.

10 Q. And did you do that in this case?

11 A. Yes.

12 Q. So the technology is pretty advanced
13 for things you want to do?

14 A. Correct. That's why it's called
15 advanced restraints.

16 Q. So taking 13 across we can see there is
17 a pretensioner performance and we see a section
18 which says no fire percentage right down the
19 center. Can you see that?

20 A. Correct.

21 Q. I'm going to make it a little bit
22 bigger so it may be easier for people to see. So
23 there is -- and that first section then on the
24 right in the gray, there's a section says target;
25 do you see that?

1 A. Yes.

2 Q. So on target that lists actually a
3 timing target; is that correct?

4 A. Correct.

5 Q. So if there's -- if you don't want it
6 to fire the target is going to be zero?

7 A. Yes.

8 Q. So when we look at the first three of
9 those crashes, one is an eight mile per hour
10 undercarriage, ten mile an hour bumper override, an
11 eight mile an hour into a wall, Ford didn't see a
12 need for those pretensioners to fire and so it gave
13 a zero target for it?

14 A. Correct. And those are all lower speed
15 impacts where we do not need to fire any
16 pyrotechnic devices to offer any occupant
17 protection.

18 Q. That was confirmed by that list of
19 things that we have just talked about that that
20 would be the target?

21 A. Correct.

22 Q. So then you can see that it met that
23 target, did it not, because just to the left of
24 there that's actually the performance, it's all
25 black for those three; do you see that?

1 A. Yes.

2 Q. What does all black mean?

3 A. That we are not deploying any devices,
4 that particular device in that event.

5 Q. So in that case -- you touched it.

6 A. Oh. Sorry.

7 Q. I am just teasing you. There is one
8 little red dot there. So below that, though, we
9 have actual performance and ones where we would
10 want it to fire; is that correct?

11 A. Correct.

12 Q. So on the left-hand side we can see the
13 columns of what the actual performance is. And we
14 see one that says normal; is that right?

15 A. Yes, nominal.

16 Q. What does norm nominal mean?

17 A. Nominal means that's what we expect
18 most of the time. And based on statistical studies
19 or distribution of these designs, all of it or
20 majority of the time that's what is going to
21 happen. And min max means that at the extremes
22 this is what you can see.

23 Q. What sort of various or fluctuations is
24 that attempting to take care of when you say mid or
25 max versus normal? What is the actual fluctuation

1 that you are trying to deal with?

2 A. Fluctuations in signals for the sensor
3 to discriminate or discern that could arise from
4 the electronics as well as the physical domain.

5 Q. Thank you. So then you will mark in
6 yellow those places where the timing did not meet
7 the target; is that correct?

8 A. Correct. And those are the highlighted
9 items and if you will allow me, and these are the
10 targets that we talked about --

11 Q. Yes.

12 A. -- a few minutes back.

13 Q. This is what you referred to as a soft
14 target and I refer to it as a requirement?

15 A. Yes.

16 Q. Fair enough?

17 A. Yes.

18 Q. Thank you. Let's take No. 13 across
19 and see where we go. If a person was -- hard to
20 follow.

21 A. That is 13.

22 Q. All right. Let's take it then to the
23 first potential there where the driver and
24 passenger is unbelted in a stage one deployment.
25 You know what I am talking about? You can draw it

1 there. I don't mind. Sounds like a good idea.

2 A. If you want me to.

3 Q. You might just put an arrow to where it
4 is.

5 A. (Witness complies with request.)

6 Q. I know how hard it is to draw that
7 line.

8 A. (Witness complies with request.)

9 Q. Have you touched it?

10 A. I thought I did. I see the arrow here.

11 THE COURT: Hold on a second here. He
12 will show you.

13 Q. Do you see that 24.3 nominal?

14 A. Yes.

15 Q. Is that -- does that relate then to our
16 crash test we are looking at?

17 A. Yes.

18 Q. Why don't we go ahead and mark this.

19 A. That's why I put the line in there or
20 let's do this. The monitors on the screen are a
21 little thick.

22 Q. Yes.

23 A. Let's just place a dot there.

24 Q. Thank you. I will tell you what I will
25 do. Let's go over to that spot right there. That

1 30, do you see above the zero? Is the crash test
2 that we are talking about just below that dot?

3 A. Yes, it's right there.

4 Q. That part that says 24.3, that is our
5 25 miles an hour 30 degree angle barrier?

6 A. Correct.

7 Q. So for an unbelted person there is a
8 target for deployment; is that correct?

9 A. Correct.

10 Q. That would be 28 milliseconds?

11 A. Correct.

12 Q. That's what is it supposed to do and
13 then it shows that it did that?

14 A. Correct.

15 Q. There might have been some a little
16 late, at least they did deploy for that?

17 A. Yes.

18 Q. And is it proper then in that situation
19 to deploy the airbag for somebody who is not
20 wearing a belt and deploy at the first stage?

21 A. Correct. And we cannot confuse the
22 pretensioner with the airbag deployment here
23 because the pretensioner is available only when you
24 are belted. And the airbag where you just marked
25 right now is for unbelted person.

1 Q. So first stage for an unbelted person
2 means the first stage airbag and there are
3 different stages. So why do we have different
4 stages?

5 A. Again, we did not explore why there are
6 multiple stages of airbags yet, but these are
7 called as dual stage airbag systems. They have
8 stage one and stage two. They are also called as
9 primary stage and secondary stage. Primary stage
10 is let's say the inflator capacity or the gas
11 generator capacity for an airbag is under four
12 percent. The primary stage is about 65 to 70
13 percent. The second stage is that rest of the
14 portion.

15 In a collision when you are in low to
16 moderate severity type collision, you will need
17 only to deploy primary stage airbag. You do not
18 need a more powerful airbag. Remember I said crash
19 one and crash two. Crash two is for the occupant.
20 Airbag itself is introducing a lot of energy into
21 an energy situation in that crash. So that being
22 said, the primary stage is about 70 percent. The
23 secondary stage is used in conjunction with the
24 primary stage when you are in a high severity
25 collision. Like for example, 35 miles per hour

1 into a rigid wall. That is when you use the
2 primary plus secondary stage in quick conjunction
3 so that you have enough energy to restrain the
4 occupant.

5 Q. Thank you. And you said about crash
6 one and crash two. That's a -- Ford understands
7 the principal between those two; the difference
8 between the two?

9 A. Meaning the occupant to the interior
10 and the vehicle to the surrounding, yes.

11 Q. So you can have a crash, the first
12 crash is the vehicles coming together.

13 A. Yes.

14 Q. The second crash is the occupant
15 impacting something inside that car?

16 A. Yes.

17 Q. One of the things an occupant could
18 impact is an airbag?

19 A. Or the steering wheel.

20 Q. Or the steering wheel?

21 A. Or the IP.

22 Q. And any one of those under the wrong
23 conditions can cause an injury, including an
24 airbag?

25 A. Yes. That's why we have to look at

1 occupant kinematics and design it carefully.

2 Q: So in the second collision Ford is
3 aware that airbags can actually cause injuries and
4 it does not want that to happen unnecessarily?

5 A: In the general sense, yes, we have to
6 be careful on how and where we deploy.

7 Q: Question has been asked on statements
8 have been made in opening as to the cause of the
9 crash. So let me ask about that. Let's ask about
10 the first crash. The cause of the first crash in
11 this case is as you have studied it would be that
12 fellow that turned in front of the vehicle, his
13 action, is that correct?

14 A: Yes.

15 Q: Okay. Now, because he turns in front
16 of that vehicle, there is ultimately going to be a
17 second crash?

18 A: Oh, meaning for the occupant into the
19 -- in that regard, yes, every crash, big picture,
20 crash has one for the vehicle and one for the
21 occupant.

22 Q: And Ford knows when it makes its airbag
23 systems that they are going to actually many, many
24 times have to operate in a condition in a
25 circumstance where somebody else caused the crash?

1 A: Yes.

2 Q: In that circumstance does Ford say
3 well, look, because other people negligently run
4 into cars, we don't have a responsibility to
5 provide protection for the second crash?

6 A: I don't think that's our intent to say
7 that, no.

8 Q: In fact, you do intend to say even
9 though there is a crash that causes a safety device
10 to work, that the safety device still has to work
11 properly, and it is Ford's responsibility to do
12 that?

13 A. Yes, and I would agree with that.

14 Q. So the next set on the crash No. 13 --

15 THE COURT: Mr. Van Gaasbeck, before
16 you start on this next we have been going for a
17 good hour and-a-half. We will take a break at this
18 time.

19 MR. VAN GAASBECK: Yes, sir. Thank
20 you.

21 THE COURT: Ladies and gentlemen of the
22 jury, if you will leave your pads in the chair and
23 hopefully you won't have all that confusion
24 swapping all the books around. We will take an
25 afternoon break. Ladies and gentlemen, if you need

1 anything let the bailiffs know. Don't discuss the
2 case among yourselves.

3 (Thereupon, the jury exited the
4 courtroom at 4:00 p.m.)

5 THE COURT: Mr. Krishnaswami, do not
6 discuss the case during the break with anybody if
7 you don't mind please, sir.

8 THE WITNESS: Definitely, Your Honor.

9 THE COURT: We will take about a 15 or
10 20-minute break.

11 (A recess transpired.)

12 THE COURT: Is the Plaintiff ready to
13 proceed?

14 MR. VAN GAASBECK: Yes, sir, I am.

15 THE COURT: Defense ready?

16 MR. GLADD: Yes, Your Honor.

17 THE COURT: Bring the jury, please.

18 (Whereupon the jury entered the courtroom at 4:24
19 p.m.)

20 THE COURT: Yes, sir.

21 BY MR. VAN GAASBECK:

22 Q. So when we look at No. 13 and we get to
23 a belted passenger crash No. 13, which is the
24 25 mile an hour and 30 degree angle, okay, can you
25 tell us whether or not it should deploy by this set

1 of targets for that crash for a belted passenger?

2 A. This -- it will deploy for this -- this
3 calibration for a belted passenger at 25 miles per
4 hour angle, that's the result.

5 Q. Twenty-five miles an hour 30 degree
6 angle?

7 A. Correct, yes.

8 Q. Where is that?

9 A. Let me help you. I think the
10 magnification shifted a little bit when the screen
11 went dark, so that would be right there.

12 Q. Right there?

13 A. Yes.

14 Q. Where it says 00?

15 A. Right.

16 Q. What's the target?

17 A. The original target. If you were belted
18 was airbag suppression.

19 Q. Airbag what?

20 A. Suppression.

21 Q. Meaning no airbag?

22 A. No airbag. But after the calibration
23 after we went through the entire suite of
24 calibration it was decided to deploy the airbag
25 nominally around 45 milliseconds.

1 Q. Well, this calibration actually shows
2 that in trying to meet the no fire target or
3 requirement it didn't meet it and, in fact, it
4 deployed the airbag at 46.3 for max, 42.6 for
5 minimum, and 44.7. That's what it actually did
6 before you even accepted it?

7 A. No.

8 Q. (Sorry. Am I right that you did not
9 meet the target with this calibration?)

10 A. (You are right in that sense that we
11 didn't meet the target, the starting target, yes.)

12 Q. (And then instead of going ahead and
13 making a new crash path or changing the sensors
14 around, you looked at it, you said well, you know,
15 that's not too bad, is that right?)

16 A. (Actually, no. We say in fact, it is
17 good.)

18 Q. (Good. All right. So now what happens
19 -- why is it that people that -- first of all,
20 would you agree that Ford, NHTSA and about
21 everybody else says that you don't deploy an airbag
22 unless you need one?)

23 A. (Well, that's the thing. By NHTSA you
24 are meaning National Highway Traffic Safety
25 Administration.)

1 Q. Right, National Highway Traffic Safety
2 Administration?

3 A. That is abbreviated.

4 Q. For among other things airbags?

5 A. Yes, for automotive manufacturers.

6 Q. And there is plenty of rule making which
7 -- in which everybody agrees that you don't want to
8 deploy airbags unless they are necessary, is that
9 fair?

10 A. Correct. And that is a fair statement.
11 however, I would like to explain that a little bit.

12 Q. You are right. Please do. You have a
13 right to do that.

14 A. What is it is we try to preserve the
15 airbag when you need it. And what do I mean by
16 that? Is that there are certain severity crashes,
17 low severity crashes where you don't need this
18 airbag and moderate severity crashes where you may
19 or may not need the airbag depending on your
20 occupant position. So we have to take the system
21 as a whole.

22 For example, when we -- a passenger may
23 not need a bag, but a driver would need an airbag
24 because of the proximity to a steering wheel. We
25 don't have devices where we can suppress the airbag

1 for the passenger and deploy the airbag for the
2 driver for similar occupant sizes. That technology
3 does not exist. Therefore, we have to consider the
4 system as a whole and also what we also term as
5 abuse and immunity where you go over a pothole,
6 curb impact, things like that. Those are the
7 conditions where we don't want to have an airbag.
8 We try to minimize the suppression when you see
9 those.

10 So we consider everything in order to
11 make our decisions.

12 Q. Thank you. Now, you and I have talked
13 about this a couple of times; fair to say?

14 A. I think you and I have talked about
15 this quite a bit.

16 Q. So when you and I talked about this
17 particular crash test, and why they decided that it
18 was good to deploy the airbag for this crash, it
19 wasn't because it was going to help anybody in this
20 crash, was it?

21 A. Well, again, in this crash meaning in
22 this crash test?

23 Q. Yes, sir, correct.

24 A. In this crash test, initially if you
25 are belted, you do not see an occupant moving.

1 (towards it. The thing is, if you delay the airbag
2 for a certain crash mode you may end up delaying
3 for other modes, too. That's why the system has to
4 be optimized. Then we go back and study is it okay
5 or is it absolutely okay to deploy an airbag in
6 this crash mode based on the studies and tests and
7 then we accept it.)

8 Q: So I want to make it clear, though,
9 that when Ford went back and said okay, we are
10 going -- it's okay to deploy this airbag in this
11 crash, it wasn't because Ford looked at it and said
12 looks like we do need it for that crash, right?

13 A: Well, we do need it if you are
14 unbelted.

15 Q: Yes, and that was a must deploy, right?

16 A: Yes. If you see the previous several
17 columns initially it had all things being equal in
18 that crash test, if you are unbelted in that
19 25-mile per hour angle of impact you definitely
20 need an airbag. That's why we deploy an airbag.

21 Q: So for an unbelted person you could
22 deploy the airbag?

23 A: Yes.

24 Q: And you have the technology to not
25 deploy the airbag for a belted person, yes?

1 (A) (We do have the technology to set it to
2 a higher threshold.)

3 (Q) (And, in fact, over here on the
4 left-hand side we see unbelted and we see that it
5 actually did have a target of what looks like
6 28 milliseconds. In other words, to deploy for
7 that unbelted person?)

8 (A) (Yes.)

9 (Q) (So you didn't under your initial soft
10 targets or requirements you, and I am talking about
11 Ford. I know this isn't you, Ford did not recognize
12 it was still not needed for the first stage airbag
13 to deploy. So deployment for the belted first
14 stage person doesn't do anything for the unbelted
15 person because they are already going to get a
16 deployment, right?)

17 (A) (Yes.) On the contrary we would not have
18 deployed it -- suppressed it for the unbelted
19 person and deployed it for the belted person.

20 (Q) (So it did not matter to anybody in the
21 car, did not help. The selection was we are going
22 to deploy this airbag for a different reason. It
23 wasn't because that somebody in that car that's
24 belted needed it, right?)

25 (A) (Right.)

1 Q. Okay.

2 A. If you allow me, as I just said, you
3 got to -- you cannot look at one crash test in
4 isolation and that's what I was trying to say.
5 What you do in one crash affects other crashes
6 because the system is tied together. One crash
7 mode is not independent of another crash mode. The
8 signal pattern, even though it varies, it is very
9 important to bring all the data together and look
10 as a system as a whole. And that's why we would
11 deploy in some modes where the initial target was
12 not to deploy to begin with.

13 Q. Okay. Accepting that the reason for
14 deploying the airbag for a belted person is not
15 because that belted person needs it, there is
16 another reason and that was because you could not
17 deploy it in another type of crash?

18 A. Yes. And because how do we know which
19 exact crash an occupant is going to be in, so the
20 whole system has to be considered.

21 Q. Absolutely. All these crashes -- by
22 the way, you just said you can't take any one of
23 them in isolation; is that correct?

24 A. Yes.

25 Q. And in other words, for a person who is

1 going to criticize this crash system or evaluate
2 this crash sensor system, it is proper for them to
3 evaluate all of the tests that are in that
4 calibration crash test?

5 A. For calibration purposes, yes. For
6 comparison purposes, that's a different story.

7 Q. Thank you. Now, you might wonder why
8 we have chosen a 25 mile an hour crash instead of a
9 70 mile per hour crash. Some people might wonder
10 that. Were you in here when Mr. Carter talked
11 about and actually gave his opening statement?

12 A. Mr. Carter was talking about closing
13 speeds, not initial speeds.

14 Q. Thank you. Can you blank my screen,
15 let me use this? Thank you. All right. So if we
16 have two cars at each other, one at 43 miles an
17 hour, say the other at 27 miles an hour, that would
18 be a closing speed of 70 miles an hour, right?

19 A. Correct, total closing speed.

20 Q. Now, as far as an engineer looks at
21 this, what is the actual decrease of velocity, the
22 actual velocity of the crash measured by decrease
23 of velocity of this crash. Is it a 70 mile an hour
24 crash, or is it something different?

25 A. Well, you use the word decrease in

1 velocity. That has specific meaning for an
2 engineer. Basically how quickly the vehicle comes
3 to a stop. That's what decrease in velocity means.

4 Q. And what would you call the decrease in
5 velocity when two vehicles of the -- the same --
6 just two vehicles made by the same company, same
7 car, and all that run into each other at 70 miles
8 an hour? Just for purposes of demonstrating the
9 process. What is the actual severity of that
10 crash?

11 A. It depends on other factors, too.

12 Q. And --

13 A. Stiffness and things like that. The
14 decrease in velocity for this car is for 40 miles
15 per hour to zero. And the decrease in velocity for
16 this car is 27 miles to zero.

17 Q. So are you saying that this is -- I am
18 sorry. Do you understand the concept that if two
19 vehicles run into each other that are exactly the
20 same, they are the same surface, hit each other
21 exactly right, that the actual -- that that is
22 actually a 30 mile an hour barrier collision?

23 A. Yes. And can I explain that concept to
24 you?

25 Q. You can.

1 A. Okay. Basically what you are trying to
2 say is let's say if a vehicle at 35 is hitting a
3 rigid wall at 35 miles an hour, it's the same as
4 approximately two vehicles going at each other of
5 same mass, same stiffness, same size, at 35 miles
6 an hour each. Or one vehicle going at 70 and the
7 other vehicle is stopped.

8 Q. And --

9 A. Of equal shape and size and things like
10 that.

11 Q. Would this one here be a closing speed
12 of 70 miles an hour?

13 A. Correct.

14 Q. Thank you. Can you close that, please.
15 Thank you. Now, you know a little bit about the
16 facts of this collision, don't you?

17 A. Yes.

18 Q. So you know that this is two cars
19 running into each other head to head at 35 miles an
20 hour or at I am sorry 43 and 27. You know that's
21 not really what happened here, is it?

22 A. Well, it was -- I think the
23 reconstructionists are basically going to come and
24 talk about specifics on the details of this crash,
25 but I think they have estimated to be about 43.7 I

1 think.

2 Q. Yes, not 70?

3 A. No, 70 is the total. It's no car --
4 let me explain this. No car in this accident
5 individually was traveling at 70 miles an hour.

6 Q. And you can put together the end result
7 and the barrier equivalent was 30 something?

8 A. Yes. The barrier equivalent would be
9 about --

10 Q. Well actually less than that?

11 A. Yes, the Delta v was about 25, 26 miles
12 an hour.

13 Q. The decrease in velocity for our client
14 was 20 some miles an hour. That is why I have
15 chosen this crash test because it's a 25 miles per
16 hour crash test and also it's an angle off to the
17 right. That would be pretty close, as close as we
18 can get to our crash?

19 A. Okay.

20 Q. So if we look then there are some still
21 shots of that taken of the 1597 or whatever that
22 is. Is that one of those still shots?

23 A. Correct. And the crash number is right
24 here.

25 Q. If you look at that, you can see that

1 the damage is mostly on the passenger side of the
2 vehicle, yes?

3 A. Yes, because it was directed to be hit
4 at the passenger side.

5 Q. And --

6 MR. GLADD: Your Honor, can I get an
7 exhibit number?

8 BY MR. VAN GAASBECK:

9 Q. That's absolutely -- I am sorry. Look
10 for Exhibit 47. 47 will be the compilation of all
11 the crash tests report, the photographs and the
12 video of that particular crash test. There is
13 another little component you can see from the
14 damage of this car and that is the wrinkling of the
15 right front quarter panel; do you see that?

16 A. Right front fender, yes.

17 Q. Yes. Thank you. Isn't this a pretty
18 close approximation to what happened in the
19 photograph that you see -- you have seen from Mr.
20 and Mrs. Newbern's car?

21 A. Well, we are just looking at the
22 overall damage, but we always have to look at the
23 underlying data.

24 Q. Yes. Right now we have the 25 mile per
25 hour barrier equivalent for decrease of velocity we

1 want to say for this car and we also have
2 photographs of this car and we now can compare them
3 to those of Mr. Newbern's car and that's one of the
4 things you would do?

5 A. Yes. I believe we at Ford have done
6 that, too. We took several of the crashes in this
7 suite of crashes and we have compared it to the
8 accident data from this accident.

9 Q. So when you did that which crash test
10 did you think it looked more like?

11 A. I believe there was a vehicle to
12 vehicle about 32 and also at 25 miles per hour from
13 the barrier that it was close to.

14 Q. So the offset to deformity barrier,
15 meaning a softer --

16 A. Initially softer.

17 Q. And whereas the barrier that we are
18 looking at there is not ever going to be soft,
19 right?

20 A. Yes. It's a rigid barrier.

21 Q. Now, in the past you and I have talked,
22 you have instructed me as to what Ford uses as a
23 measure of crash severity; do you recall that?

24 A. Yes.

25 Q. One of the things that we have agreed

1 on is that crash severity is judged by the
2 decelerations, not the loss of Delta v?

3 A. Yes. Let me clarify if you allow me.
4 You said deceleration. Basically the word
5 deceleration is not in physics. It's a term of
6 art, but what you mean by that is acceleration on
7 the negative data sheet basically as the vehicle
8 comes to a stop. Decelerations over time from
9 which you can compare velocity. I believe that's
10 what I have told you in several of my depositions.

11 Q. So when you look at the decelerations
12 you are looking at the Gs, that's the same thing,
13 isn't it?

14 A. No. What I meant is decelerations, the
15 unit of measure for decelerations is Gs.

16 Q. So in this particular crash right here
17 that we see, the crash test, which is a non-deploy?

18 A. The initial target, yes.

19 Q. Yes. It's a non-deploy for the initial
20 target, not deployed for a belted passenger or
21 driver, okay, so when we look at the Gs, the crash
22 pulse of this crash, the deceleration and I am
23 showing the quad from that and would we look at the
24 longitudinal?

25 A. Yes, because that's the data sheet we

1 are interested in.

2 Q. So let me now -- are we looking at the
3 longitudinal decelerations?

4 A. Yes.

5 Q. So what's the maximum severity of this
6 crash according to that? Where does it reach its
7 maximum G level?

8 A. Yes. So thanks for clarifying. You
9 used initially the word maximum severity that I
10 wasn't going to accept it. But the maximum
11 magnitude is about 50 Gs that you see.

12 Q. How many Gs?

13 A. 50 Gs and it transfers to about 75 Gs.

14 Q. Now I am looking at longitudinal?

15 A. Yes.

16 Q. And I see minimum is 58.34 degrees -- I
17 mean Gs at 53 milliseconds?

18 A. Actually the graph actually helps you.
19 They have -- I have placed two dots up front. It's
20 the max and what the min is. So it goes from 52 --
21 56.16 to negative 68.4.

22 Q. It's the negative Gs that I am looking
23 at.

24 A. Okay.

25 Q. Do you know why?

1 A. Yes, but that is the harmonics which we
2 cannot exclude.

3 Q. Right. There's no -- at some point it
4 increases and sometimes that's decreasing in a
5 crash. Things are bending and breaking and bending
6 and breaking in a crash faster than any of us can
7 see, but they are happening. When they do slow
8 down, that's what we are seeing is bobbing up and
9 down?

10 A. That's the harmonics I'm talking about.

11 Q. Then we are looking at the
12 decelerations, the types of things which harm
13 people when they come to a quick stop? No?

14 A. No, I don't agree with that.

15 Q. What Gs then would you say are the Gs
16 that matter to a person in the car and why?

17 A. Well, before the force acting on the
18 body which is basically decelerations, the human
19 body has some tolerance. Three or four Gs, but
20 crash forces of much larger 20, 30 Gs, when you
21 filter the data and if you are belted person and
22 you are going to experience all that stuff.
23 However, to equate momentary Gs that are recorded
24 in very high frequency instrumentation data to what
25 happens to an airbag for severity is not right.

1 Q. Let's -- try to keep with -- stay with
2 me on this for a second. When I look at one of
3 these and for years have done so, I always look at
4 the lower part below zero to determine what this
5 crash severity is. Are you saying that we really
6 should be looking at the one above?

7 A. The total magnitude, no, I am not
8 saying that. In fact, this is only data point.
9 What we take is the interval of this, the derived
10 quantities from this data, which is the rate of
11 change of velocity over time which by definition is
12 acceleration. That's what we look at more closely.

13 Q. So when the event data recorder, that's
14 the event data recorder, but the RCM is deciding
15 whether to deploy an airbag, what -- it is doing so
16 from a certain position in the car; is that right?

17 A. Yes. It is able to do that yes, it is
18 located in the RCM.

19 Q. And this data plot actually comes from
20 that very same spot?

21 A. Yes.

22 Q. Yes. So the Gs that are appearing are
23 the Gs that are actually being used to determine
24 whether or not the airbag is going to deploy?

25 A. I would agree with that only up to a

1 point.

2 Q. Right, because there are other things
3 which you have to factor in. Are you belted for
4 example, are you a child and your airbag has been
5 suppressed, you have some others?

6 A. Yes. Basically those are sensors, but
7 what is more important as I just said, the Gs are
8 then computed and decisions made in real time on
9 the computer values to make the decision.

10 Q. But the two big things which are being
11 looked at are time and Gs. Those are the two
12 factors that I would think you are looking at?

13 A. Time and Gs are recorded initially,
14 yes, but it is not the only quantity that can be
15 looked at. If we just use Gs to decide whether to
16 deploy, we will come up with a lot of erroneous
17 results. In fact, if you have a hammer strike you
18 can have higher Gs than that.

19 Q. But this is not a hammer strike, this
20 is actually a crash for the purpose of determining
21 what the severities are in this crash and then
22 making decisions about whether or not to deploy the
23 airbag? That's what this is, right?

24 A. No.

25 Q. Did this data result in the deployment

1 or non-deployment of an airbag?

2 A. This data is used, yes, it resulted in
3 the deployment of an airbag, but this data alone is
4 not used.

5 Q. So let's look at the -- let us -- can
6 you tell me what the deceleration is on this, the
7 maximum deceleration and the maximum acceleration?

8 A. If you are talking about positive and
9 negative quantities, the maximum negative quantity
10 is negative 69.4. And the maximum quantity is
11 positive for 56.16.

12 Q. So you have also looked at the download
13 and we talked about it. That's Exhibit 72. Is
14 that also the data which is -- that is recorded in
15 the data recorder from the same sensor that we are
16 looking at -- same sensor location, same RCM?

17 A. The same sensor location, but it's not
18 the same data.

19 Q. This would not be the same data?

20 A. Yes, because the frequency on the data
21 gathering is lower density compared to the
22 instrumentation data you were showing me from a
23 crash test.

24 Q. I was showing you the wide band, was I
25 not?

1 A. Yes, but that frequency is like 4000
2 hertz. It's a very high frequency.

3 Q. (And when I asked you at some point
4 about what of the -- which of the plots that you
5 would look at, different types of plots, I was
6 given, did you not tell me that it is the wide band
7 that you looked at?)

8 A. (Along with the computations from the
9 wide band data which is velocity.)

10 Q. (If you were to look now at the -- tell
11 us then, what is the very maximum deceleration in
12 the Gs in this crash?)

13 A. (In this filter data it's about here.
14 Maximum negative data sheet would be about 25 Gs.)

15 Q. (Twenty-five Gs for the deceleration
16 versus 68.5?)

17 A. (Correct.)

18 Q. (And the Gs for the acceleration, what
19 are they?)

20 A. (That's about eight Gs.)

21 Q. (Compared to 56?)

22 A. (Right. And that's the reason why we
23 can't use Gs.)

24 Q. (Why) don't you deploy airbags when they
25 are not needed?

1 A. I don't understand the question.

2 Q. Why don't you deploy an airbag when it
3 is not needed?

4 A. We try to, as I said, I believe we try
5 to preserve the airbag for the event where you need
6 it.

7 Q. So when you say you try to preserve the
8 airbag, it means, am I correct, that you're saying
9 that sometimes you are in a crash where you don't
10 need it, but you go on in the same period of time
11 and same event and run into something that you do
12 need it? That's one reason?

13 A. Yes. I remember you also mentioning
14 that in your opening statement.

15 Q. But remember, that's not evidence.
16 That's just me talking. Today it is you talking
17 and it matters more. So in that respect when I ask
18 you is it not one of the reasons to not deploy the
19 airbag because if you deploy the airbag in a minor
20 impact you might have something more severe right
21 after that that you need the airbag?

22 A. Yes. But you also have to put into
23 context that all these are one use systems. So we
24 have to weigh.

25 Even if there are multiple events in a

1 long duration accident each event has to be weighed
2 in its own merit. Because the sensor does not know
3 that a more severe accident is waiting to happen
4 down the line. So let me wait for that accident to
5 happen and let me not deploy in the earlier
6 accident or event, we cannot do that.

7 Q So the design of -- reasonably
8 responsible design. It is designed to offer
9 reasonable protection, would be to not deploy the
10 airbag when it is not needed because there is going
11 to be a time maybe that you will need it?

12 A Well, yes, and that's why we weigh
13 individual event in its own merit.

14 Q Thank you. And then are there other
15 ways that an airbag can injure you by the fact that
16 it deploys other than the fact that it might lead
17 you into another crash?

18 A Yes.

19 Q Like what are those?

20 A There are soft tissue injuries that can
21 happen from airbag deployment.

22 Q Would eye injuries be some of those?

23 A Yes, it is possible soft tissue injury.

24 Q Is it then possible that there are
25 people in cars that drive to work with like mugs of

1 coffee?

2 (A.) Well, hopefully it is closed.

3 (Q.) You don't want it to get cold and you

4 don't want to have an accident?

5 (A.) Yes.

6 (Q.) And other things that normally are in

7 cars can be thrown back into people's faces for

8 example? How about an arm? Can an arm be thrown

9 back in someone's face?

10 (A.) It could.

11 (Q.) How about if you have an arm and you

12 turn your steering wheel and it goes off, is that

13 going to be a bad thing for that driver?

14 (A.) Well, it could and that's why we also

15 consider the steering wheel turn 90 degrees and

16 180 degrees in our airbag design and evaluation.

17 (Q.) And somebody puts their hand out when

18 they are getting ready to see a crash, they might

19 have some injuries even if the crash is minor just

20 because of the airbag?

21 (A.) Correct. Actually what I would agree

22 with you is there is no injury proof vehicle. I

23 would completely agree with you.

24 (Q.) So you got to do the best you can to

25 not deploy airbags when they shouldn't, would you

1 agree with that?

2 A. Yes, and we got to also deploy the bags
3 when you need it.

4 Q. Right. And you do that by making a
5 good system which actually you can do both, not
6 deploy it when it isn't needed and deploy it when
7 it is needed?

8 A. Yes. I would agree with that and we
9 have it here.

10 Q. Is Ford capable of doing that, was it
11 capable of doing that technologically and
12 economically in 2009?

13 A. Yes. And I believe we have done it
14 here.

15 Q. Thank you. I'm going to try to shut
16 this down, sir. I'm going to let you go pretty
17 soon. I need to get back here though. Could we
18 blank my screen? We had a talk -- we were talking
19 a little bit about time budgeting. The one second
20 is a thousand milliseconds; is that right?

21 A. Yes.

22 Q. That's my best circle. So we worry
23 about time because you don't want late deployment,
24 that's one thing, you want the airbag out in time
25 to help? You don't want the airbag to come out and

1 quickly deploy and nothing happen for them, right?
2 So timing matters quite a bit?

3 A. Yes.

4 Q. Let me just talk about the late
5 deployment aspect, okay? So late deployment is --
6 what is that -- what -- in terms of a danger posed
7 by an airbag what is a late deployment?

8 A. It depends.

9 Q. So I will be happy to hear all of them,
10 but let's start with one of them.

11 A. Well, it depends on the occupant
12 kinematics and let me try to be as general and so
13 that I try and I will also try to be brief.

14 Q. Actually I know what you are saying.
15 Let me see if I can make it quicker. If I am
16 leaning forward to get something, and an airbag
17 goes off and hits me, that's not a late deployment,
18 is it? It is timely, could be timely?

19 A. Well, yeah, I think you are mixing
20 apples and oranges here, but let me see where you
21 are going.

22 Q. I just want to say if you get injured
23 by a late deployment it is because you're inside
24 the path of the airbag when it is deploying, right?

25 A. Correct.

1 Q. And an airbag doesn't come out as a
2 cushion. It actually comes out first and has to
3 forcefully in order to then fill quickly and work
4 with the time budget?

5 A. Correct. And that's why we test for
6 those conditions, too.

7 Q. So you get -- because of the inevitable
8 extra forces added to a crash by that punching it
9 out, by that coming out quickly, then bouncing back
10 to the cushion, somebody that's in that area under
11 several different mechanisms can receive an injury?

12 A. I don't think so, not with these new
13 bags. That's why we do the out of position test
14 where we place a dummy on top of the airbag and
15 deploy the airbag to insure that this type of punch
16 out and membrane loading are minimized.

17 Q. Well, for example, you don't have --
18 you are not checking for eye injuries, are you?

19 A. We don't have the mechanism to check
20 for eye injuries in the hybrid three dummies. But
21 the more serious head, neck, chest injuries are
22 measured.

23 Q. Yes. If you just -- if you have a
24 dummy that you're deploying the airbag on their
25 chest, that operates on the chest, right?

1 A. Yes, that's the primary contact point
2 when it begins to come out of the module.

3 Q. So when you are further back if you get
4 hit by an airbag square in the head, not the chest,
5 a head can be moved backwards, can't it?

6 A. Yes. And that would be neck extension
7 issues like if a bag unfolds in front of a dummy's
8 face.

9 Q. So even though you are deploying into
10 the chest, somebody laying on top of an airbag,
11 that's one type of getting hurt, orbit problem, for
12 example, I think you said you don't have -- you are
13 not causing real serious injuries when you're
14 draped over the -- with your chest over the open
15 airbag?

16 A. Yes.

17 Q. Is that what you said? But when you
18 are further back somewhat and you get hit, and your
19 head is taken backwards, you have a possibility of
20 having a neck injury, don't you?

21 A. Yes. That's why you cushion the bag
22 appropriately.

23 Q. And then the other thing is that if the
24 bag comes out while you are inside of it because
25 you have moved forward in the crash, because of the

1 forces in the crash your body is moved forward, you
2 get hit in the face by the airbag, that's another
3 known way of causing injuries?

4 A. Yes. And but those deployments are
5 considered in our development process.

6 Q. Yes. Thank you. So Ford knows that
7 can happen, that a late deployment can cause an
8 injury?

9 A. Well, yes. Again, what is late?
10 Depends on occupant kinematics.

11 Q. Right. But you actually have created
12 targets for what is timely and when you're -- if
13 you exceed those that is not timely?

14 A. No, I would not agree with that.

15 Q. When does it become late?

16 A. Depends on the occupant kinematics.

17 Q. So your time requirements are really
18 not related to getting the airbag out at a certain
19 time?

20 A. Yes. The end result is occupant
21 kinematics.

22 Q. After you work with the system you end
23 up with a system that it should deploy and if it
24 deploys later than that, that can cause an injury?

25 A. Again, it all depends on occupant

1 kinematics.

2 Q. So now in the budget of things the 1000
3 seconds -- milliseconds in a second, 250, right?

4 A. Yes.

5 Q. 125. So crashes, not many of them are
6 longer than 125?

7 A. Yes. Because under 125 would be lower,
8 mostly much lower speed crashes, moderate speed
9 crash is 125 to 150, and high speed crash are over
10 150.

11 Q. So now we are working with this range.
12 It is not up on yours. I don't know what happened.
13 It is on mine.

14 A. You went off chart. Let me see if I
15 can help you here.

16 Q. Let's get off of this circle because
17 it's more useful. Let's go to the line now.

18 A. Okay.

19 Q. 125, zero. So in this point of time
20 how much time is there for you to actually deploy
21 an airbag, get it out, have it come back into the
22 full cushion in time for the person to move into
23 it? What are we looking at there?

24 A. The driver bag about 30 milliseconds,
25 passenger bag about 40 milliseconds. So 30 to 40

1 milliseconds is the time you have to fully inflate
2 the airbag.

3 Q. And in that crash test that we are
4 looking at it had a 43 millisecond time to fire?
5 What it actually did do, right?

6 A. I don't remember, but I take your word
7 for it.

8 Q. Here is this. Let's say that a time to
9 fire is 43 milliseconds. So all this over here is
10 kind of immaterial to the time you get the airbag
11 out. Everything to the right of that we are not
12 worried about the airbag at that time?

13 A. If you are comparing to that exact
14 crash I would like to see the duration of the
15 pulse, maybe it extends a little more than 125 to
16 140 or something like that, but it again depends on
17 that.

18 Q. Understanding that, working with what
19 you and I have come up with just getting an idea of
20 what a ten millisecond difference is when you are
21 dealing with a 47 millisecond total.

22 So if you had a difference in ten
23 milliseconds that would be almost, what,
24 20 percent?

25 A. Yes.

1 Q. Twenty percent difference?

2 A. Twenty-five if it is --

3 Q. So even though ten milliseconds sounds
4 small, for the budget that you are working with it
5 is 25 percent of the budget?

6 A. Yes.

7 Q. In this circumstance. And you're
8 working with a computer that can do that. Has
9 speeds that can do that?

10 A. Yes, the computation speed is there.

11 MR. VAN GAASBECK: I think I will pass
12 the witness.

13 THE COURT: Finished with your
14 questions?

15 MR. VAN GAASBECK: Thank you, sir.

16 THE COURT: Any cross-examination?

17 MR. GLADD: May I approach, Your Honor.

18 (Off-the-record conference.)

19 THE COURT: Ladies and gentlemen of the
20 jury, at this time the Defendant would have an
21 opportunity to cross-examine the witness, but it is
22 ten minutes after 5:00. Rather than starting and
23 have to come back in the morning, we will break for
24 the day. If you will be in the jury room in the
25 morning at 9:30 we will get started. I understand

1 passes have been given to you to park upstairs in
2 the parking lot so you won't have that parking
3 problem three or four blocks away. Does everybody
4 have a pass to park in?

5 THE BAILIFF: They will have, sir.

6 THE COURT: They will give you a pass
7 to park in the top floor of the parking garage.
8 The bailiff will show you where to come and how to
9 come into the courthouse tomorrow and it will be a
10 different way to come the front door. Okay?

11 Please don't discuss the case among yourselves.
12 Don't do any electronic monitoring or any
13 electronic examination about seat belt restraint
14 system in automobiles. You make the decision on
15 what you hear in the courtroom, not what you found
16 outside the courtroom. See you tomorrow at 9:30.

17 (Thereupon, the jury exited the
18 courtroom at 5:12 p.m.)

19 THE COURT: Mr. Krishnaswami, don't
20 talk to anybody about your testimony overnight,
21 please, sir.

22 THE WITNESS: Yes, sir.

23 THE COURT: Okay?

24 THE WITNESS: Yes, sir.

25 THE COURT: Anything from the Plaintiff

1 before we break?

2 MR. VAN GAASBECK: Not from me, sir.

3 THE COURT: Anything from the
4 Defendant?

5 MR. CARTER: No, sir.

6 THE COURT: We will adjourn until 9:30
7 in the morning.

8 (These proceedings were adjourned at
9 5:12 p.m., September 13, 2016.)

10 * * * * *

11 (The following proceedings were had
12 September 14, 2016.)

13 THE COURT: You were sworn yesterday so
14 I won't swear you today. Please have a seat and
15 would you state your name, please.

16 THE WITNESS: Yes, sir. Ram
17 Krishnaswami, last name is spelled
18 K-R-I-S-H-N-A-S-W-A-M-I.

19 THE COURT: Thank you, Mr.
20 Krishnaswami. Cross-examination.

21 MR. GLADD: May it please the Court.

22 CROSS-EXAMINATION

23 BY MR. GLADD:

24 Q. This may sound a little delayed, but
25 Mr. Krishnaswami, where were you born and raised?

1 A. Good morning. I was born in India. I
2 was raised in India in South India in a city called
3 Madras, now renamed Chennai.

4 Q. And where were you educated?

5 A. Well, I did my high school and primary
6 school in India. I had my undergraduate in India
7 as well. I went to a university similar to the
8 university here. I had my undergraduate in
9 mechanical and production engineering. I graduated
10 from there 1990. I came to this country in 1990 to
11 receive my master's in engineering. I went to
12 Wayne State University in Detroit and got a master
13 of science and engineering. I graduated from that
14 program in 1992. After that, I worked for a local
15 company in the area of automotive structure
16 analysis starting in early 1993. I continued that
17 employment and through them I was employed at Ford
18 Motor Company for several years. And I became a
19 Ford Motor Company employee in 1999. During my
20 work at Ford Motor Company I was able to go back to
21 school and got another master's degree in
22 management and engineering from MIT in Cambridge,
23 Massachusetts.

24 Q. What year was that?

25 A. That was in January of 2006 I graduated

1 from that program. From 2004 to 2006. It was a
2 two-year master's program.

3 Q. I should have asked, but where do you
4 live now?

5 A. I live in the suburbs of Detroit. I
6 live in a city called Wixom, Michigan.

7 Q. You live with your family?

8 A. Yes. I live there with my family. My
9 wife and I have a son, a college going son, and I
10 have a daughter in high school.

11 Q. Your son just started college?

12 A. Yes, he did. He started three weeks
13 back.

14 Q. Now, when did you first start with Ford
15 Motor Company, what year?

16 A. I was placed at Ford in 1993 as a
17 consulting engineer to work in the crash safety
18 area. That's when I physically started working for
19 Ford Motor Company at their offices. I became an
20 employee in 1999.

21 Q. You are an engineer with Ford?

22 A. Yes.

23 Q. So tell me -- let's go through your
24 different jobs that you have had with Ford and your
25 positions.

A. Yes. Again, my area of expertise is mechanical engineering and within mechanical engineering there are various subspecialities. The areas where I specialize is in numerical analysis, computation analysis. Basically as the name sounds such as using computer and computer technology to perform many of the analysis tasks. And an area that was developing at this time was mechanical engineering and use of computational analysis as computers were becoming more prevalent. Powerful computers were becoming more prevalent so it was natural for engineers like myself at the time to gravitate towards that. That's what I chose and that was -- those techniques were also adopted by many manufacturing companies, let it be aerospace companies, let it be automotive companies or any structural engineering companies.

And in the automotive area the techniques that were used were also being used to design automotive body structures in the area of crash safety so that we can perform these crash safety simulations like a car hitting a wall, car hitting another car, and things like that so that we can drive the design process more efficiently and when we start testing it we have high

1 confidence in the test results. So that's the area
2 that I started working in.

3 Q. Specifically in restraint and crash
4 worthiness safety?

5 A. The same areas that was being used for
6 structural were also used for restraint system
7 development. When you use the word restraints it
8 typically refers to airbags, seat belts and the
9 sensor system that include these systems. So the
10 same techniques were also used for simulation in
11 those areas as well.

12 Q. Regarding the actual components in
13 vehicles, what area were you working on in your
14 time as an engineer with Ford, which you still are,
15 what components, what were you doing with airbags?

16 A. Specifically with respect to the
17 airbags later in the 90's when we were doing the
18 design of airbags, we had to come up with the shape
19 of the airbag, size of the airbag, trying to
20 understand what shape and size of airbag is usually
21 required to be placed for the various conditions
22 for which it is being used.

23 And then as the design progresses
24 through the shapes and sizes as we get more
25 information to simulation and testing. So those

1 were the kind of tasks I did and once the system
2 gets mature and things like that, we would
3 interface with the suppliers of these materials to
4 insure that they are packaged in an appropriate
5 manner. For example, the folding of the airbag is
6 essential. Even though it is a fabric it has to be
7 folded in a very precise manner. It has to be
8 folded in a certain repeatable manner.

9 What I mean by is that is we have a
10 paper napkin here. You see it is folded in an
11 accordion manner here. The airbag is also
12 similarly folded in this type of a manner and the
13 side panels are also accordion and this whole
14 airbag is then placed in the pack called a cushion
15 pack. And the way it is also folded, it is also
16 tucked just like how you tuck a shirt inside. What
17 this tucking does is initially when they unfold
18 they are designed to unfold in a certain way
19 towards the sides radially before they come out.
20 This type of process is called a bias folding. So
21 this is also called engineer folds within the
22 industry. So those kinds of details we start
23 getting into and we start setting up the airbag
24 lines to accommodate for things like that.

25 Q. That's really specific, folding,

1 tucking the airbags, is that the engineering?

2 A. Yes.. That is engineering. Engineering
3 is just not related to electronics. It is just not
4 related to sheet metal or hard objects. Even soft
5 objects like fabric have to be engineered. The way
6 we fold them, we package them, so they unfold in a
7 repeatable manner, they unfold in a set pattern and
8 the lines are able to repeat this process over and
9 over and over again is all engineering. And there
10 are many supplier companies with whom we work who
11 have patented this folding technology because so
12 much time and effort goes into the process of
13 engineering these folds.

14 Q. This is just one -- regarding the
15 folding, the tucking, the engineering on that, is
16 that just one hat that you have worn in this crash?

17 A. One hat that I have worn and then we
18 work with our instrument panel engineers to insure
19 that there's a cover on top of airbag. That's a
20 part you can cover. It has what we call as a seam,
21 it is a scribe or a line on the instrument panel so
22 that when the airbag cover opens or on the driver's
23 side on the steering wheel we have when the airbag
24 cover opens, it opens in a prescribed manner. That
25 is also engineering. And we have to insure that

1 the covers open and at the same time from a styling
2 perspective we don't see lines bleed through so
3 they are not -- they are aesthetically appealing so
4 that we want don't lines going across your
5 instrument panel so that there are a set of
6 engineers who look into that aspect of it. So
7 there are multiple specialities and engineers that
8 work on multiple components.

9 Q. What about -- so that's folding the bag
10 how the bag comes out. What about the sensors that
11 go into determining whether to deploy an airbag?
12 Have you worked with sensors?

13 A. Yes, I have worked extensively with
14 sensors over several programs at Ford, and sensing
15 systems like airbag systems became electronic in
16 nature, fully electronic in nature at Ford during
17 late 90's or in 2000. And these sensors again with
18 advancement in electronics, they are being relied
19 on for recognition of crash events and more
20 importantly suppression when you are hitting a curb
21 or going over a pothole, things like that. So the
22 sensor is relied upon extensively to determine when
23 to fire and when not to fire an airbag.

24 Q. As in all the sensors, folding the bag,
25 the covers, many other components that go in

1 airbags, has there been a history, a development
2 history of how they have come to -- where they
3 started to where they are today?

4 A. Definitely. And early airbags were
5 placed in experimental fleets in the early 70's and
6 then through 90's. So they became more prevalent
7 in passenger cars and as sensing technology was
8 available more airbags were placed in cars not only
9 for front impact protection, airbags were placed
10 for side impact protection. Airbags were placed
11 for rollover protection when vehicles roll over in
12 a crash. So airbags have come a long way.

13 Q. What about the power of airbags? Say
14 in the early 90's what was the power of the airbags
15 versus what they are now?

16 A. Well, in the early 90's the bags today
17 -- we call the 90's airbags power airbags. The
18 airbags in the 90's came out with more power than
19 the airbags that we have in our car today and there
20 was a reason for that. And the reason for that is
21 the early laws, the regulatory laws to which the
22 vehicles have to comply to were skewed towards an
23 unbelted occupant, an occupant who was not wearing
24 a belt and if they are in a crash they needed it
25 for the safety. So an unbelted occupant moves into

1 the restraint system with more energy, restraint
2 system in the airbags with more energy than a
3 belted occupant because the belt does the majority
4 of the work in a belted condition. In order to
5 restrain the unbelted occupant the airbag had to
6 come out much quicker and with much more energy to
7 withstand the forces.

8 Q. Do they come out with that same energy
9 today?

10 A. No, they do not. And that is why we
11 call today's airbags as depowered because the
12 unintentional harm from these early power bags were
13 that even in the mid to late 90's showed that these
14 bags were hurting kids and killing kids in the
15 front seat and hurting adults. So the industry
16 petitioned the regulatory agencies to depower these
17 airbags so that we can have -- we can avoid these
18 field incidents. And in order to reduce the power
19 of the airbag the laws regulating these airbags had
20 to change. So the regulatory agencies went towards
21 more belted tests in the barrier and did away with
22 unbelted tests for the barrier condition for when
23 you hit the wall.

24 Q. And the regulatory agency you mentioned
25 a couple of times, did we hear that name yesterday?

1 A. Yes, we did. It is called an acronym
2 NHTSA, National Highway Traffic Safety
3 Administration. And the rules that they made that
4 govern the vehicle for crash safety are listed
5 under another acronym FMVSS, Federal Motor Vehicle
6 Safety Standards.

7 Q. So we started with maximum power in our
8 airbags throughout its history, then depowered
9 airbags. What came about in the early 2000's?

10 A. In the early 2000's they changed,
11 NHTSA, the rules further and decided to use model
12 size dummies or different size occupants. They
13 introduced testing where you had small stature
14 persons sitting close to the steering wheel, close
15 to the instrument panel. They included artifact
16 tests in some unbelted occupant tests, but at the
17 lower speed, not at the higher speed like we had
18 before. Because they didn't want to get back to
19 the old condition of power airbags. In order --
20 plus they also introduced what we call in the
21 industry as out of position test to insure that the
22 bag does not cause any injuries.

23 So those were the kinds of things that
24 they could introduce and they introduced more tests
25 and more conditions under which we needed to be

1 tested. More importantly, they wanted us to
2 suppress the airbag on the passenger side if you
3 detected a child seat in that right front occupant.
4 So if someone put a child seat there and if they
5 were going to cinch it we had to be able to
6 recognize it using sensors to suppress the airbag
7 deployment if there was a child seat. And even if
8 you choose to deploy with a booster seat we have to
9 prove that the airbag was not harming.

10 Q. Is that just one of the examples of
11 smart technology, the weight sensors?

12 A. Correct, yes.

13 Q. Early 2000's what about dual stage
14 airbags? What are we talking about there?

15 A. It is the same technology. In order to
16 meet these conditions we had to come up with dual
17 stage airbags. For most of the crashes we use as I
18 said yesterday a primary stage or first stage and
19 in some crashes, in some high severity crashes we
20 use a combination of a primary and a secondary
21 stage, what we also call as first and second stage
22 which are fired in very short intervals in the
23 order of ten milliseconds to deploy in a high
24 severity crash so the airbag has more energy to
25 perform its job.

1 Q. Two stages. In stage one, stage two is
2 there a difference in the power of the airbag?

3 A. Yes, there is.

4 Q. So stage one versus stage two, which
5 has more power?

6 A. Stage one by itself. Let's say if you
7 have stage one and stage two being fired close to
8 one another, that is called a full power. And
9 stage one by itself has about 70 percent, 65 to 70
10 percent of that power.

11 Q. Of the full power?

12 A. Approximately, yes.

13 Q. Just for perspective, if it is 65 to
14 70 percent of the full power, what's that
15 65 percent of the full power versus a 1990 airbag?

16 A. Oh, maybe about half of it.

17 Q. So in the history of the airbags to
18 where we are today, is there a term in the industry
19 regarding today's advanced airbags that we use?

20 A. Yes. As I just said I think, it is
21 advanced dual stage airbags.

22 Q. And then and what we described there,
23 stage one, stage two, does it depends on the
24 severity of the crash what airbag you are going to
25 get?

1 A. Correct.

2 Q. All right. And then how is that
3 determined? Is it -- how -- what does Ford use to
4 determine what you are going to get in a crash?

5 A. Based on the crash tests that we do,
6 extensive crash tests we do from low speed to
7 moderate to high speed crashes.

8 Q. Yesterday -- we will get to it in a
9 minute, but there was the long graph that was put
10 up. It said pretension stage one, unbelted stage
11 two. What are those called, those five mode
12 categories?

13 A. Those categories are called different
14 thresholds. Basically as I said yesterday,
15 threshold meaning if you are belted if you want
16 only the pretensioners, so that's a pretensioner
17 issue. Then you would have and followed by that if
18 you are unbelted you need a bag sooner than when
19 you are belted so you would come into an unbelted
20 threshold. Then you would follow into a belted
21 threshold. And that's how you progress all the way
22 to the belted high severity crashes.

23 Q. Could be like a ladder?

24 A. Oh, yes, it can be like a ladder, like
25 a step.

1 Q. Okay. So the higher the severity of
2 the crash the higher you will go up the ladder?
3 The last one would be the stage two?

4 A. Belted stage two if you are belted.

5 Q. Okay. And the lowest one being what?

6 A. Just the pretensioner if you are
7 belted. If you are unbelted you would skip the
8 pretensioner stage and go to the second step there.

9 Q. Let's talk about that again. Describe
10 what a pretensioner is for the jury?

11 A. Well, a pretensioner is also a
12 pyrotechnic device. In the case of the Ford Focus
13 it is like a pipe that has got a cable, a micro gas
14 device attached to it. It is placed on the side of
15 the seat right where you buckle. It is placed at
16 the end of the buckle of where you would place the
17 metal object called the latch plate into the buckle
18 when you wear your safety belt.

19 That pretensioner has wires attached to
20 the sensors. The role of the pretensioner is the
21 moment an electrical signal is -- first of all,
22 when it is recognized that you are belted, because
23 we have sensors inside the buckle to tell us
24 whether you are buckled or unbuckled. So when the
25 latch plate is placed inside the buckle and if you

1 are in a crash initially the pretensioner is
2 deployed. When the pretensioner is deployed the
3 micro gas generator has some energy to it, it will
4 push, it will fire, it will -- what it will do is
5 push to which a cable is attached so the buckle
6 head is pulled down. So if I am sitting like that,
7 it pulls down on my safety belt.

8 The moment it pulls down on the safety
9 belt any slack in the system of the safety belt,
10 because the safety belt itself is fabric. It is
11 nylon fabric and it is wound on a Phillips spool
12 and it is stored inside the retractor which is in
13 the area. So as it pulls down it pulls up any
14 excessive slack in the system that may arise if you
15 are like riding in an overcoat, things like that.

16 What it does is it makes the seat belt
17 efficient in case you get into a crash because that
18 slack in a frontal impact would reduce the
19 efficiency of the safety belt. So we want the
20 safety belt to be cinched during crash and that's
21 why it pulls down.

22 Q. If I am in a crash and I have a seat
23 belt on it is going to make the belt get tighter to
24 me?

25 A. Yes.

1 Q. How quickly does that happen?

2 A. That happens in the first few
3 milliseconds of the crash and we are talking in
4 terms of milliseconds. The pretensioner's job is
5 over in five or six milliseconds. Once it starts
6 to fire by the time it completes its job it is five
7 or six milliseconds.

8 Q. The 2009 Ford Focus that's involved in
9 this case, does it have a pretensioner?

10 A. Yes, it does.

11 Q. For both the driver and the passenger?

12 A. Yes, it does.

13 Q. So going up this ladder pretensioner,
14 that's the first thing, is that the first thing you
15 are going to get?

16 A. If you are belted, yes.

17 Q. What's the next threshold? Are you
18 going to get all these necessarily? Depends on how
19 you're seated?

20 A. It depends on how you are seated.

21 Q. What's the next threshold?

22 A. The next threshold would be the
23 unbelted stage one.

24 Q. Again, stage one means?

25 A. The primary stage of the airbag.

1 Q. An airbag. What's the next threshold?

2 A. Belted stage one.

3 Q. And then the fourth threshold, please?

4 A. Unbelted stage two.

5 Q. Okay. So we see the ladder, it depends
6 on the intensity of the crash how high you go up
7 the ladder; is that right?

8 A. Yes.

9 Q. Why does unbelted come before belted?

10 A. You get an unbelted, if you are
11 unbelted you would need an airbag in a lower
12 severity crash than if you were belted. That's why
13 it comes before.

14 Q. In restraints what's the primary
15 restraint device in your vehicle?

16 A. Safety belts.

17 Q. Do airbags supplement your belt?

18 A. Yes. And they are called a
19 supplemental restraint device.

20 Q. Now, yesterday there was a discussion
21 about calibration?

22 A. Correct.

23 Q. What is calibrated, calibrate what?

24 A. Calibrate the sensor, basically the
25 algorithm that is used in determining the logic or

1 firing an airbag or deploying a pretensioner, that
2 needs to be implemented in a vehicle. So you need
3 to calibrate the sensors, teach the sensors pretty
4 much what the different crash for that vehicle
5 structure and then determine, implant calibration
6 into that electronics so that it recognizes
7 different crashes and it's able to perform.

8 Q. What are we actually calibrating?
9 What's the -- is there a software that we are
10 calibrating?

11 A. Calibration by itself is basically a
12 task and what comes out of this task is a software
13 and that software is implanted into the electronic
14 clips that are in the restraints controlled module.
15 This is a small aluminum covered box placed between
16 the front seats and in the center area and that is
17 the location where this box is fixed and it
18 communicates with other sensors that we have in the
19 car. We have a sensor up in the radiator area. We
20 have a sensor on the doors, on the side doors, on
21 the front door as well as the rear door and for
22 side impact purposes and it communicates with all
23 these sensors.

24 It also communicates with the buckle
25 sensors to see whether you are buckled or not. It

1 communicates with the occupant classification
2 sensor on the right front seat to see who is
3 sitting and how heavy they are, if there is a child
4 seat, things like that. And it also communicates
5 on the driver's side with the sensor, which we
6 place on the seat track so that we know if a person
7 is going to be sitting away from the steering wheel
8 because they have long legs or if a person is going
9 to be sitting closer to the steering wheel because
10 they are shorter in stature and they can reach the
11 pedals easily. So we can determine how far an
12 occupant is sitting on that seat track.

13 Q. If calibrated is the software -- what
14 is the program that it's run? Is there a supplier
15 involved here?

16 A. Correct. There is the supplier
17 involved. And they have their own -- the
18 calibration is their propriety knowledge. However,
19 we know the conditions. We provide them the
20 conditions it has to operate. And they are the
21 ones doing the calibration process. They are the
22 ones who own the software. They own the
23 proprietary software and that goes into the
24 hardware that we purchase from them, too.

25 Q. Who is the supplier of the calibration

1 for the 2009 Ford Focus?

2 A. It's an automotive supplier by the name
3 of Bosch, B-O-S-C-H.

4 Q. Is the calibration for the 2009 Ford
5 Focus, is it unique to that vehicle?

6 A. Yes, it is.

7 Q. Do other Ford vehicles have different
8 calibrations that are unique to those vehicles?

9 A. Yes, because the crash signature is
10 unique to the different vehicles because shape,
11 size, weight, all that matters in the amount of
12 energy that the vehicle is going to dissipate to
13 the airbag. Since it is unique to a vehicle the
14 calibration is unique to a vehicle.

15 Q. Have you ever participated in the
16 calibration of the restraint sensing system for a
17 Ford vehicle?

18 A. Yes, I have participated in the
19 calibration process on many vehicles.

20 Q. Specifically what vehicles have you
21 calibrated a system on?

22 A. Well, from a calibration -- the
23 calibration aspect is done by the supplier. But I
24 work with them in executing some of the targets and
25 I am part of the team that develops the initial

1 targets for these suppliers. So I work with them
2 so that they help me. I have done that on the
3 Explorer Sport Trac program, I have done it on the
4 Ranger program, I have done it on the F-150 truck
5 programs.

6 Q. Are you describing this calibration, is
7 it a process?

8 A. It's a process. It's a drawn out
9 process. Takes anywhere from 30 months or so as I
10 said yesterday.

11 Q. Since you have been involved in that
12 process can you describe for the jury what -- if
13 it's 30 months tell us what happens just generally?
14 At least what happens in that 30-month process?

15 A. Well, I will try to be brief. We don't
16 have 30 months. But the thing is usually we have
17 to understand what the vehicle is. As designers we
18 want to know whether it is going to be a passenger
19 car or light truck, what is its size, and from
20 there we try to determine what market we are going
21 to sell in, things like that.

22 Why is it important to know what market
23 we sell in is because each market individually has
24 its own requirements. In North America they have
25 their own requirements. In Europe they have their

1 own requirements. In Japan they have their own
2 requirements. Asia Pacific they have their own
3 requirements. The regulatory agencies design these
4 requirements to reflect the market usage of their
5 product. For example, in Europe pedestrian
6 protection is important in cars. So the design of
7 front bumper. Naturally in Europe there are very
8 small countries with a lot of pedestrians on the
9 road unlike in North America. So that regulations
10 they are ahead in some of the pedestrian regulation
11 than us.

12 In North America we have our own unique
13 requirements. We have high speed frontal impacts,
14 high speed rear impacts, high speed side impacts
15 based on the traffic pattern and usage in this
16 country. So we perform those type of -- and that's
17 what the regulatory agencies do. That's why it is
18 important for us to understand where we are going
19 to sell the vehicle.

20 Then Ford has its own internal
21 guidelines that we place on top of the vehicle. We
22 like to see some guidelines placed for example,
23 related to airbags or related to steering wheel and
24 things like that. So we have those guidelines. So
25 as an engineer, safety engineer working on these

1 products on each of the programs it is very
2 important for me to understand what these
3 regulatory requirements, internal guidelines are,
4 things like that. Based on that we have an idea,
5 very rough idea of what this vehicle is going to
6 do.

7 Q. So you mentioned steering wheel. Does
8 the steering wheel matter in all this process, the
9 instrument panel, everything that's inside the
10 cockpit?

11 A. Everything inside a car matters. And
12 everything outside the car matters.

13 Q. Is that because that's where the
14 occupant is seated?

15 A. Correct.

16 Q. That's what right in front of them?

17 A. Correct. And then once we get that
18 these are all rough estimates and dimensions and
19 stuff. Then we are able to perform some computer
20 simulations, rough computer simulations based on
21 prior past experiences from cars and trucks. Okay,
22 this is what these are going to be, so let's see
23 where this goes. Just like in a house, the
24 basement gets built first and then the outside
25 structure and roof and then you go about doing the

1 interior of the house.

2 Same way in cars. The underbody gets
3 done first. We first decide what kind of engine,
4 what kind of power train, what kind of wheelbase
5 and chassis. That gets done first. And once that
6 is decided now those hard points are fixed, we are
7 able to develop the body. We are able to build the
8 body on top of it. And then comes the interior.
9 It is about this time when the early testing would
10 be rough estimates of the underbody with some
11 prototype level upper body and those are the
12 testing that are done. And now we try to see how
13 close or how far our simulation is with some
14 physical testing.

15 Q. How far out, you talked about 30
16 months, how far out are we now?

17 A. We are still about like 24 months into
18 the process and things like that. And this is
19 about the time when we also have an estimated
20 target and that's some of the gray cells that you
21 saw in the report yesterday. So those get filled
22 in by engineers such as myself and we have an idea
23 what we need. We have rough estimate of the
24 airbag, rough estimate of the safety belt, rough
25 estimate of the occupant interior and based on that

1 we come up with these early targets. And we
2 provide it as anything else with more testing, more
3 analysis and more simulation and cross reference as
4 the system gets mature.

5 By about 14 to 10 months before we are
6 ready to launch production more and more testing is
7 done and that's when because the prototypes have
8 developed and the body structure is more certain
9 now we are able to extract crash signatures by
10 crashing these cars into walls and these signatures
11 are provided. These crash signatures are provided
12 to our supplier of these sensor systems to start
13 working and fixing these signatures and coming out
14 with a calibration based on some algorithm that
15 they own.

16 Q. So you saying during that process you
17 have got other design engineers at Ford working on
18 other parts of this vehicle simultaneously?

19 A. Yes. We don't wait for one person to
20 complete his job and then hand it over to another.
21 We will be doing many things in parallel. It is
22 more efficient to do things in parallel. As some
23 engineers are working on the calibration process,
24 other engineers are working on the airbag to
25 determine the shape and size. Other engineers are

1 working on their wiring. Certain others are
2 working on the body structure. So multiple teams
3 are running in parallel and exchanging information
4 at the same time and they come and narrow down the
5 solutions.

6 Q. So then the rest of that 12 months out,
7 how do they finally get to a fully calibrated
8 vehicle?

9 A. Once this process is done, and once
10 like if we meet targets, (we don't meet targets, and
11 like we see how far we are, if a redesign is needed
12 after the crash test we go back and we redesign the
13 part. We add more parts. We check into these
14 parts and see whether it meets our goals and if it
15 doesn't what design change can be made. We go back
16 and check on that. And then once we are satisfied
17 with all these results we provide the opportunity
18 to sign off on this vehicle saying that it is ready
19 to be sold, it met the market requirements, we are
20 satisfied with the Ford requirements and we tell
21 the clients. Meanwhile the clients are also
22 getting ready to do the tooling and the tooling
23 fixtures, things like that. We tell them we are
24 ready to go.

25 Q. May I approach, Your Honor?

1 THE COURT: Yes, sir.

2 Q. Mr. Krishnaswami, I'm going to pass you
3 an exhibit. Can you identify what that exhibit is?

4 A. This is the calibration report, final
5 calibration report that was published and accepted.
6 Published by our supplier Bosch and accepted by
7 Ford engineers and the team saying that they are
8 satisfied with the sensor performance with respect
9 to firing time and suppression times of airbags and
10 pretensioners.

11 Q. You have looked at that document. That
12 document relates to the 2009 Ford Focus and the
13 calibration of that?

14 A. Yes.

15 Q. Is that a document that is -- that --
16 we talked about the 30-month process. Is that a
17 document that is at the end of that process?

18 A. Yes.

19 MR. GLADD: Your Honor, I'm going to
20 move to enter Defense Exhibit 50 which is the front
21 calibration report.

22 THE COURT: Any objection?

23 MR. VAN GAASBECK: No, sir.

24 THE COURT: 50 is admitted without
25 objection.

1 (DFT. EXH. 50 in evidence.)

2 BY MR. GLADD:

3 Q. Specifically at the top that's titled
4 what?

5 A. Front calibration report.

6 Q. That means it is only related to
7 airbags in the front of the vehicle?

8 A. Correct.

9 Q. Did this vehicle also have other
10 airbags?

11 A. Yes. It has side airbags.

12 Q. Are those included in that calibration
13 report?

14 A. There would be a separate side
15 calibration report. So for side airbag purposes we
16 would go through the same process and determine the
17 side calibration, whether to deploy, not deploy the
18 side airbags, so we go through the extensive
19 process for that airbags. And there is a separate
20 process in case if you have a roll activated airbag
21 that comes down from the roof, things like that.
22 So we have a separate process and very extensive
23 for that, too.

24 Q. Now, rollover, would this car be
25 outfitted with rollover?

1 A. No, not this car. This car had a side
2 curtain and that also deployed in this crash I
3 believe, but it is activated upon impact on the
4 side.

5 Q. Those rollover airbags, that's got
6 another name that I have seen, is that canopy
7 airbags?

8 A. Yes. Canopy is a trademark name under
9 Ford and that specifically says side curtain that
10 gets deployed during a rollover.

11 Q. Okay. Each of those depending on the
12 types of airbags have their own calibration process
13 interval?

14 A. Yes.

15 Q. Can we pull up BUZ40899, please. Mr.
16 Krishnaswami, is this a document that is inside
17 that large report that we just made an exhibit?

18 A. Yes. And this was shown to me
19 yesterday. This is about four or five pages down.
20 I believe it's four pages down into this set.

21 Q. It's inside the report?

22 A. Yes, it is.

23 Q. We talked about -- you were asked about
24 these numbers one through 21. What are those one
25 through 21?

1 A. Those are the different crash tests
2 that we conduct for the calibration process, but I
3 must caution those are not the only crash test we
4 do.

5 Q. You just mentioned literally hundreds
6 of crash tests?

7 A. Correct.

8 Q. Do each of these calibration tests have
9 a different mode?

10 A. Yes, they are unique mode so that we --
11 because each crash test is going to have a unique
12 signature to it. That's why we call them unique
13 mode because the crash signature is based on what
14 you hit, how you hit it, where you hit it, all that
15 is very important. So that's why there are
16 multiple modes that are being tested.

17 MR. GLADD: May I approach, Your Honor?

18 THE COURT: Yes, sir.

19 BY MR. GLADD:

20 Q. Mr. Krishnaswami, pass you another one
21 page of --

22 THE COURT: What number is this?

23 MR. GLADD: 134, Your Honor.

24 MR. VAN GAASBECK: No objection.

25 THE COURT: No objection. 134 admitted

1 without objection.

2 (DFT. EXH. 134 in evidence.)

3 BY MR. GLADD:

4 Q. If we could pull that up. Mr.
5 Krishnaswami, regarding modes, what does this
6 document show, exhibit, excuse me.

7 A. These are basically illustrations of
8 that table that we saw just a while back. So when
9 we are talking about different crash modes this is
10 what we are performing. So what this shows is we
11 hit the car against the rigid barrier, we hit the
12 car in the front against a pole. We hit it on an
13 angle barrier. The angle barrier may be faced
14 angle towards the right. And if I may draw here it
15 can be also be faced like this.

16 Q. The other way?

17 A. The other way. We call it left and
18 right angle barrier. And then comes this test
19 which is the offset deformable barrier and what is
20 being illustrated here is that we have a steel
21 backing plate out here and in front of which we
22 have a honeycomb-type material. This was a testing
23 pioneered by the Insurance Institute for Highway
24 Safety in North America.

25 So they have these aluminum honeycomb

1 material which is supposed to have a certain
2 stiffness to it to represent the stiffness of front
3 ends of cars and things like that, the soft
4 structure of the cars. So they place it so that
5 initially there is not much resistance to the
6 impact and then once the car bottoms out on this
7 honeycomb material you can go into the hard
8 structures like the engine, cradle, things like
9 that and that's what the backing plate is supposed
10 to represent. So that's another test we do.

11 And then this is self-explaining. We
12 hit the car into another stationary car of equal
13 mass and size to gather signatures. Then we also
14 have what we call as our dynamic suppression tests
15 which are like undercarriage type test where the
16 car misses, is designed to miss the front bumper,
17 underrides the front bumper and this is a steel
18 structure like a steel pole that tries to impact
19 the engine cradle and really if you by accident go
20 over the curb or hit a tree trunk we want to
21 suppress the airbag so you don't have airbag in
22 those. So a test like this is done.

23 And we also have a bumper override
24 condition where we try to miss the bumper and
25 impact only the front portion of the car about ten

1 miles an hour. Let's say if you have -- you are
2 behind a truck in the back where you miss that
3 bumper and the bumper of the truck which has a
4 higher ride and gets into the car. And if it's a
5 low speed you do not want airbags in those
6 conditions. So you test that condition.

7 Q. So some of these tests are run at
8 different speeds?

9 A. Correct.

10 Q. Does the government require some of
11 these tests?

12 A. No.

13 Q. Are these industry?

14 A. These are industry standard tests.

15 Q. Okay. And for this vehicle, like every
16 vehicle manufactured, it would have been crashed at
17 these modes and other modes?

18 A. Correct.

19 Q. Would Ford have videoed those crashes?

20 A. Yes. We video these crashes both in
21 the real time and we also video in high speed. It
22 is the high speed cameras that because the crash is
23 over in a very short duration of time. We are
24 talking about milliseconds, right, so the running
25 joke is do not blink, the crash test is going to be

1 over. So we use high speed cameras to capture
2 frame by frame by frame so these cameras are that
3 1,000 milliseconds so they take a frame every
4 second and these such -- and remove this frame by
5 frame by frame to understand what is happening in
6 every frame. So these high speed cameras are
7 either placed around the vehicle and sometimes
8 inside the vehicle during the crash to gather the
9 data.

10 THE COURT: Let me interrupt. We are
11 going to take a break. Ladies and gentlemen of the
12 jury, leave your note pads on your chairs. Please
13 don't talk about the case with anyone and among
14 yourselves. We will take our morning break.

15 (Thereupon, the jury exited the
16 courtroom at 11:28 a.m.)

17 (A recess transpired.)

18 THE COURT: Bring us the jury, please.
19 (Whereupon the jury entered the courtroom at 12:00
20 p.m.)

21 THE COURT: Thank you very much. You
22 may continue cross.

23 MR. GLADD: Thank you, Judge.

24 BY MR. GLADD:

25 Q. Before the break, Mr. Krishaswami, we

1 were talking about crash modes and that all -- some
2 of those -- all those crashes are videoed; is that
3 right?

4 A. Yes, sir.

5 Q. Okay. Your Honor, without objection,
6 we would like to play an assortment of crash tests
7 which are Defendant's Exhibit 82.1 through .9.

8 THE COURT: 82.

9 MR. GLADD: Since there's multiple 82's
10 we will call them 82.1 through .9.

11 THE COURT: Which ones are we talking
12 about?

13 MR. GLADD: Defense Exhibit 82.

14 THE COURT: Says crash report.

15 MR. GLADD: We are going to do some
16 videos from that large exhibit and we will
17 specifically call those 82.1 through 82.9.

18 THE COURT: Y'all putting in all of 82
19 which is six pages of crash test report?

20 MR. GLADD: No, Your Honor. I think we
21 are coddling those down to 82.1 and the video we
22 will describe.

23 THE COURT: Let me show you.

24 (Off-the-record conference.)

25 THE COURT: 82.1 through 82.9 admitted

1 without objection; is that correct?

2 MR. VAN GAASBECK: Yes, sir. Your
3 Honor.

4 THE COURT: Thank you very much.

5 (DFT. EXH. 82.1-82.9 in evidence.)

6 BY MR. GLADD:

7 Q. Mr. Krishaswami, we are going to look
8 at some clips now. If you could walk us through
9 those clips. Would you press play?

10 A. Well, the crash test number is listed
11 up front and this is a 90 degree into a rigid
12 barrier.

13 Q. Just for reference, all these crashes
14 were on the long list of the 21 crashes that we saw
15 earlier?

16 A. Correct. These are some of the crashes
17 from the list.

18 (Video played.)

19 So this is a real time video. That's
20 into a rigid wall. This would use an unbelted
21 dummy into the wall.

22 Q. Some of these are belted dummies, some
23 of these are unbelted dummies?

24 A. Correct. So this is another 90 degree
25 frontal, but this is a high speed impact. This is

1 done at 35 miles an hour. And these are belted
2 dummies. And as you can see, that's into a rigid
3 wall and now affords us a much closer look at it
4 when you perform a high speed film analysis how the
5 bag is coming out, how it is loading and things of
6 that nature. That's important to us.

7 Q. Is that the same crash, just different
8 video perspective?

9 A. Correct. That's high speed film. What
10 you saw early on was real time video. And the next
11 one was a high speed film and we place
12 instrumentation on these cars and these wires are
13 dragged by the car and there are boxes recording
14 the data as we go into the wall during the time.
15 And that's the data that is later on used for the
16 calibration process.

17 Q. This one, 15978, you were asked about
18 this one yesterday on the stand; is that right?

19 A. Yes.

20 Q. What type of crash mode is that?

21 A. This is a front angle right. That's
22 what the acronym FRA stands for and that's a front
23 angle right, and the angle barrier is located at 30
24 degree. Instead of hitting it straight up it hits
25 into a right angle.

1 Q. Regarding this one were you asked about
2 the Gs that were recorded?

3 A. Correct.

4 Q. Are Gs recorded on some of that
5 instrumentation you are talking about?

6 A. Yes. That's the data that records the
7 -- that's the acceleration as it is happening into
8 the wall that we recorded and units are measured as
9 Gs.

10 Q. Was there an exception in the
11 calibration report? Was there an exception for
12 15978 for a belted occupant in the calibration
13 report?

14 A. Just give me a moment. You said belted
15 occupant.

16 Q. Right.

17 A. No, I don't see that. Let's take a
18 look at that.

19 (Video played.)

20 The second would be the real time
21 video. And you see the rotation in the very end
22 and while testing this car we used an unbelted
23 dummy, an unbelted occupant in this test mode and
24 we can use the structural data for both belted and
25 unbelted occupant. It is not -- as I said, a test

1 is done for multiple purposes. For design purposes
2 of airbags and things like that and also structural
3 purposes so that we can extract the data in each
4 crash test and take it individually and analyze it.
5 This is the same video, but now at a higher speed
6 and you can see the occupant loading into it and
7 you can see a bunch in the windshield because of
8 the loading.

9 Q. And again, those dummies are unbelted
10 in that?

11 A. Correct. And this is high speed offset
12 deformity. Remember I said that we use honeycomb
13 material in front of the barrier so that it
14 represents front end of a passenger car. So it is
15 that test that is reflected in this video.

16 (Video played.)

17 If you can pause it for me. So this is
18 what I was talking about. If I am allowed to mark
19 here. So that is the honeycomb material and it has
20 a certain depth to it, about three or four feet of
21 depth, has a bumper-type material up front. And
22 then it has the steel backing plate so it is
23 allowed to deform initially and then mark a
24 different color here, that is basically the steel
25 backing plate behind the honeycomb material that

1 represents the stack up after the initial crash is
2 done. Let me clear that. And if you can pause it.

3 And this is a higher speed crash. And
4 as you can tell this is a belted occupant on the
5 driver side. This is a test pioneered by the
6 insurance institute as I mentioned early on. And
7 we try to see what the occupant performance, also
8 structural performance are with respect to sensing
9 and airbags.

10 Q. What was the number on that test, sir?

11 A. 15949.

12 Q. Are we showing every test here or just
13 some of the tests?

14 A. We are just showing some of the tests.

15 Q. Is this a slowed down version so we can
16 see?

17 A. Correct.

18 Q. Is this another one?

19 A. This is another one. This is a full
20 impact test. Remember I said that we gather
21 signatures in different impact modes like hitting
22 another car, hitting a rigid wall, hitting a pole
23 and there are principals behind hitting a rigid
24 wall. It's just like nobody would go drive their
25 car into a rigid wall. The principal behind

1 hitting a rigid wall is, I believe I explained that
2 briefly yesterday, is that it is equivalent to
3 impacting another vehicle of equivalent mass, size
4 and stiffness head on into each other. So when
5 doing crash tests we need objective data and in
6 order to remove the variations that can arise from
7 crash to crash and crash test we try to do some
8 repeatable test. Otherwise we do not know whether
9 we are designing for an artifact of the test or
10 really forwarding some issues to design.

11 So in order to do that when we hit the
12 rigid wall let's say 25 miles an hour, and let me
13 just plot it here, when you are hitting a rigid
14 wall at 25 miles per hour, it is the same as
15 hitting -- mark this as stationary car, of
16 equivalent mass and stiffness at about 50 miles an
17 hour. So that is the principal behind it.

18 And variations can happen in the crash
19 test. That's why we put a rigid wall in front of
20 it and impact it. And if it is completely aligned.
21 So that's the principal behind it.

22 Q. How about this question: Can you crash
23 every single type of real world crash out there?

24 A. It is not --

25 Q. Test for it?

1 A. It is not possible because there are
2 numerous modes and numerous things. So we try to
3 capture a wide variety of these signals through
4 repeatable objective test and that's why we do
5 this. And here we are using pole because we need
6 to get the pole signature. Initially the pole is
7 going to hit the bumper and it is going to be soft
8 initially until it bottoms out on the engine.
9 That's why we do a pole test and which has to
10 recognize it in a timely fashion to do it.

11 Q. So this is a whole different crash
12 mode?

13 A. Correct. See the pole up there? And
14 it is like hitting into a center pole and --

15 Q. That could be a power line pole?

16 A. Correct, tree or a pole.

17 Q. Okay. Then just as another example
18 what is this?

19 A. Oh, this is a cart test. This is a
20 real impact test. The same sensors are used to
21 signal, let's say if you are in an impact or impact
22 condition the sensors want to cut off the fuel to
23 the engine in case of crash. So they want to shut
24 off the fuel motor in order to do a crash. Let's
25 say if you are hit in the back a frontal airbag is

1 not going to afford any benefit. This is not a
2 calibration for the frontal airbags. However, this
3 is a calibration for the sensing system because the
4 same sensor, it can sense if you are hit in the
5 back and can send a signal to cut off the fuel feed
6 to the engine. So that is why we do a high speed
7 sensor on this impact mode. So that that action of
8 impact is important to the sensor, too. So it is
9 in order to determine those directions we do these
10 high speed tests.

11 Q. So this will be a Ford Focus being hit
12 from the rear?

13 A. Correct.

14 Q. You wouldn't expect the front airbags
15 to deploy --

16 A. No.

17 Q. -- into the rear. Can we play the
18 video, please.

19 (Video played.)

20 And then I think we may be getting
21 close to the end. What's this?

22 A. This is -- as I said we have rigid
23 barrier impact, angle barrier impact, also
24 deformable barrier impacts, car to car impacts and
25 this is the car to car impact. We saw the pole

1 impact. And this is hitting another car where you
2 have only a small overlap between the two cars,
3 25 percent or so. And this is that test done at
4 25 miles an hour.

5 (Video played.)

6 Here standard size passenger car like a
7 Ford Taurus is present. And you're hitting it with
8 moving Ford Focus and you're overlapping it only a
9 little bit.

10 Q. Okay.

11 (Video played.)

12 A. So again the signatures are gathered
13 here. The front crash sensors, the center down
14 sensors and this is done.

15 Q. Now, are there also some tests that you
16 run just representative where you don't want to get
17 -- you want to show you are not going to get an
18 airbag?

19 A. Correct. And this illustration ties
20 into that. Those are the two modes that we
21 initially saw at the bottom. And what this is is
22 we had a bumper override test about ten miles an
23 hour where you miss the bumper and you load at the
24 front sensors because there are front crash
25 sensors. That's going to see a lot of signal, but

1 the RMC or the center tunnel sensor is not going to
2 pick up that much of a signal. So you don't want
3 the sensors to make a decision based on just one
4 remote sensor somewhere out there. You want the
5 system to behave in unison. You want the system to
6 get data from the front crash sensor, compare to the
7 data that it is receiving and based on the
8 comparison of data check with the calibration that
9 we have coded in the box and make the determination
10 whether to fire or suppress an airbag.

11 This concept, actually I am glad you
12 brought this up, here is called multiple point
13 sensing. It is quite different from what we had in
14 the previous generation of sensors which were
15 called a single point sensing meaning you had only
16 some sensor inside the cockpit inside between the
17 occupants. And decisions were made only off that
18 sensor. This is multiple point sensing so now you
19 have a lot of data up front and no data in the
20 back. How is the sensor going to behave? That is
21 why this test mode is done.

22 Q. While we are talking about the whole
23 process, it being predictive, is that important in
24 the airbag system?

25 A. Definitely. The sensor does not have

1 the luxury of waiting until the crash is over in
2 order to perform its job. It has to monitor real
3 time what is happening, how it is happening, how
4 quickly the crash is happening. And based on
5 existing data points it extrapolates or moves, it
6 knows based on the calibration based on the signal
7 type if it is going to start out this way this is
8 how it is going to end. That's why it makes a
9 decision to fire or suppress an airbag.

10 So in that regard the sensor is
11 predictive because remember, I believe counsel
12 touched on the time budget in a crash. As it is
13 very little time budget and you need 30 to 40
14 milliseconds for an airbag to inflate. That's why
15 the systems have to be predictive in nature. It
16 needs to do its job before the airbag can inflate,
17 right, so that's why it is predictive in nature.

18 Q. Is a -- being predictive is it based on
19 all those different crash tests, the experience and
20 history that --

21 A. Exactly. That's why you do all those
22 crashes so that we can teach the sensor to be
23 predictive. That is the calibration.

24 Q. While we're on that issue there was a
25 discussion yesterday about isolation. Can you

1 isolate one crash, change something for it and
2 expect to have no effect on the rest of the system?

3 A. No. It is tied together.

4 Q. If you change one it is going to have
5 an effect somewhere else?

6 A. Exactly. Sorry. I paused this crash.
7 And we touched on a couple of the topics.

8 Q. Let's look at this bumper override.
9 This is low speed?

10 A. Yes. This is a lower speed. As you
11 can see, the barrier is raised up so that the
12 vehicle can underride. And if you can further
13 pause it there here which is basically you load.
14 We have sensors up here which is a front crash
15 sensor and that is being -- that is seeing a lot of
16 energy; however, the center tunnel sensor inside
17 the cockpit is not going to see any significant
18 energy. So the sensor compares data from here and
19 data from here and then we make the decision.

20 Q. There was some discussion about that
21 yesterday. Up in the front two sensors versus one
22 crash sensor. There was also a discussion used to
23 be three crash sensors. What error -- era of
24 airbag history was three crash sensors used
25 typically?

1. A. Well, it depends on the manufacturer.
2 Each manufacturer have their choice, but the three
3 crash sensors were a point in time where we had
4 mechanical sensor which were more prevalent. You
5 had three sensors up front here mostly and then
6 there were other diagnostic sensors sometimes
7 placed in the cowl area or the bottom of the area.
8 That was a 90's technology, early 90's technology.
9 But as electronic sensing became prevalent through
10 the late 90's you started having sensors only at
11 this location which is what I call a single point
12 sensing.

13 More recently in the decades of 2000's
14 what manufacturers are able to do is they have
15 sensor in the center tunnel area and sensors up
16 front, too. This up front sensor can either be one
17 or two. So that's the practice.

18 Q. Have you looked at -- so this Ford
19 Focus did have two and then went to one. Have you
20 looked at the calibration for both of those?

21 A. Yes.

22 Q. Was there any comparable differences
23 between two and one?

24 A. No.

25 Q. Does one perform better than the other?

1 A. No. They are equivalent.

2 Q. I think we are -- let's go to the next
3 one. What is this one?

4 A. This is the undercarriage mode and
5 that's the other mode I talked about. This is to
6 simulate a curb hit or simulate a tree stump when
7 you are going over it. Remember I told you the
8 previous test value you saw, you saw condition
9 where the front sensor is being loaded excessively
10 and there was no loading in the center tunnel
11 sensor. Now you will see the opposite of it. The
12 center tunnel sensor is going to be loaded
13 excessively and the front sensor is going to miss
14 completely. So now we see what that data is so
15 that we can teach the sensor that you not make a
16 decision based on just a single data point. That's
17 why this test is being done.

18 Q. I understand. You said teaching the
19 system, is that --

20 A. That's a calibration, sorry.

21 Q. Let's see -- in real life what is this
22 meant to sort of duplicate?

23 A. Like if you are hitting a curb, or like
24 in a parking lot you hit a block by mistake, like
25 if your tires miss the side and hit a block or tree

1 stump, when you are going on gravel road you pull
2 over on the side, you hit a tree stump or
3 something. You miss the bumper, but you hit the
4 undercarriage and the cradle significantly. That's
5 what this is supposed to be.

6 Q. Let's take a look.

7 A. Just if you can rewind a little bit,
8 please.

9 (Video played.)

10 There is the stump that I am talking
11 about. That's iron. That's a steel block. That
12 sticks out of the ground. That's about nine inches
13 tall. And it is designed to skip the bumper and
14 hit the first structural member. And the first
15 structural member is likely the engine cradle. And
16 that's around this point of the location. The
17 significance of that is it is very near the
18 restraint control module. So it's like taking a
19 huge, huge hammer weight of this car, like 3,000
20 pounds, a 3,000 pound moving hammer and whacking it
21 right there.

22 Q. So let's take a look.

23 A. Now you get the signal where you load
24 this excessively. There's zero loading here. And
25 now because it has to compare the data, we want to

1 suppress an airbag in this mode. An occupant does
2 not need an airbag for protection in this type of
3 accident. So we want to suppress the airbag here.
4 Now you have the signal. You impart the signal to
5 see how the difference is going to be and code it
6 or calibrate it into the system.

7 Q. So the system is engineered, taught
8 when and what types to look for, what types of
9 crashes to deploy, what types of crashes not to
10 deploy, right?

11 A. Yes.

12 Q. Going back to this chart it also has to
13 determine which level, correct?

14 A. Yes. And that's why you run it all the
15 way up to 35 miles per hour into a rigid wall. You
16 test at the low end, you test at the moderate end
17 and you test at the high end.

18 Q. This crash test they would have -- Ford
19 would have recorded the energy, the forces, the G
20 traces, all with this crash test?

21 A. Yes. And that's why you see wires
22 running all along here and there is a cable that is
23 being dragged along like the back. That's the
24 instrumentation that is recording all the data
25 here.

1 Q. This crash test was 15886. Can I
2 approach, Your Honor?

3 THE COURT: Yes, sir.

4 BY MR. GLADD:

5 Q. Mr. Krishaswami, what does that appear
6 to be related to crash test 15886?

7 A. Yes. I can see this number here. And
8 I can see the tracing back. We are gathering the
9 data.

10 MR. GLADD: Your Honor, we move into
11 evidence Exhibit 76.

12 MR. VAN GAASBECK: No objection..

13 MR. GLADD: Point one, it will be crash
14 test 15886 under 76.

15 THE COURT: 15886?

16 MR. GLADD: Yes, Your Honor.

17 THE COURT: Admitted without objection.

18 (DEF. EXH. 76.1 in evidence.)

19 BY MR. GLADD:

20 Q. I think this is the last topic that was
21 covered yesterday, Your Honor -- I am sorry, Mr.
22 Krishaswami. Let's pull up the bottom only.
23 Yesterday there was a discussion about the
24 longitudinal trace?

25 A. Yes.

1 Q. --From a particular crash test, 15978?

2 A. Yes, I remember counsel was describing
3 the G forces recorded in the sensor.

4 Q. Were G forces recorded in that last
5 test?

6 A. Yes, it is. That's why you see the
7 unit Gs.

8 Q. What was the G trace, what were the G
9 forces that were recorded in that?

10 A. We looked at a maximum and a minimum.
11 The maximum is 31.09. That refers to the value up
12 here. And the minimum is up here. And basically
13 because you are decelerating so it is the direction
14 of the Gs are obviously important. So you see
15 about close to four to six Gs when you go over the
16 curb that -- and by the way, this test is that last
17 test I think you just showed me which is basically
18 you have a tree stump and you're whacking it, going
19 into it about eight miles an hour hitting just the
20 engine cradle at that speed.

21 Q. So even at eight miles an hour if you
22 hit a curb, some sort of concrete stump or tree
23 stump it's going to be a big G hit right there
24 localized, right?

25 A. Right.

1 Q. Is that what that is showing?

2 A. Yes.

3 Q. Do you want an airbag in that?

4 A. No.

5 Q. So is it proper to base the decision
6 that being predictive in the decision to fire an
7 airbag based on a G tracing alone?

8 A. No.

9 Q. Okay. Your Honor, Ford's limited its
10 topics to yesterday. We'd like to preserve the
11 opportunity to call Mr. Ram Krishaswami back to the
12 stand the during its case.

13 THE COURT: Any redirect?

14 MR. VAN GAASBECK: Yes, sir, there will
15 be. It will be a while just to inform the Court.

16 THE COURT: Move on with it.

17 REDIRECT EXAMINATION

18 BY MR. VAN GAASBECK:

19 Q. I believe that you were saying that
20 part of your responsibility was to create computer
21 simulations; is that correct?

22 A. Yes, I was doing that for several
23 programs.

24 Q. And that that would be one of the
25 things that you would bring to bear when deciding

1 whether or not what your soft targets will be or
2 what I call requirements would be?

3 A. Yes.

4 Q. And that you would -- they would
5 actually give you a high degree of confidence in
6 the correctness of your original targets, does it
7 not?

8 A. It does. It does afford us decision
9 making, too.

10 Q. And so one of the other things I was
11 wondering about, because it was mentioned some of
12 the work that you had done. What kind of work have
13 you done with the 2009 Ford Focus in designing its
14 crash sensor system?

15 A. I was not personally involved in the
16 2009 sensor at that time. I was -- when that
17 design process was happening I worked on other
18 programs. But the processes we use are similar
19 across multiple vehicles lines. So I am quite
20 aware of how the team did it.

21 Q. And if you recall we had some
22 discussion about how the calibration was that Bosch
23 came back with trying to meet Ford's targets. Some
24 of them were not met; do you recall that?

25 A. Yes. Initially they didn't match the

1 initial targets and that's when we go back.

2 Q. Do you recall that?

3 A. Yes, I do.

4 Q. Thank you. And so when -- in going
5 back and looking at that, you mentioned that there
6 were some evaluations to determine whether or not
7 you could accept the results that Bosch gave you
8 versus the initial targets; do you recall that?

9 A. Yes.

10 Q. Did you take part in that process?

11 A. No, I did not. My colleagues who were
12 working on the other program -- on that program.
13 They were the ones who took part in that process.

14 Q. So you are not the one who participated
15 in the decision to allow the airbags to deploy in a
16 crash in which it was not necessary?

17 A. Well, it was -- I was not involved in
18 the process, but I would disagree with the latter
19 half of the question.

20 Q. In that it was not necessary?

21 A. Yes.

22 Q. It was not necessary for the occupants
23 in that vehicle and in that crash to deploy them.
24 We still agree with that, don't we?

25 A. Initially only I would agree with that.

1 But you have got to look at the system as a whole.
2 That's why I would disagree with that.

3 Q. Right. But between us, the decision to
4 deploy the airbag in a crash which you've
5 identified as being very similar to this crash,
6 that was not made to help the people in that? It
7 was made to help people in another crash, right?

8 A. Yes. And I would agree with that
9 statement given what I just said previously.

10 Q. Give me a moment, please. I want to
11 pull up that. I can't use theirs. I have to pull
12 mine up, the calibration. So in the calibration
13 for the first crash sensor system, did that keep
14 the same team as the one that worked on the -- I
15 guess the 2008.5? Was that the same team?

16 A. Mostly, yes. I believe calibration
17 engineers and the crash engineers from the Ford
18 perspective are the same people.

19 Q. All right. Can we activate my screen,
20 please.

21 THE COURT: Mr. Carter, do y'all have
22 the one he is looking for?

23 MR. CARTER: I'm not sure which one he
24 is looking for.

25 THE COURT: How about see if you have

1 got it if you can pull it up.

2 MR. VAN GAASBECK: It's the calibration
3 No. 2.

4 THE COURT: You got it?

5 MR. VAN GAASBECK: Yes.

6 THE COURT: Thank you.

7 BY MR. VAN GAASBECK:

8 Q. Is there a sign off page for that that
9 has the names of the people who actually worked on
10 this system?

11 A. Yes. There are some of my colleagues
12 here.

13 Q. And does it have the names of the
14 people?

15 A. Yes, it does. It has the crash
16 supervisor. It has the sensor supervisor, Todd
17 Clark. It has Don Sullivan who was one of the
18 calibration engineers and did some of the vehicle
19 simulations. So those are the people that you list
20 here. Plus you also see people from the supplier
21 like Ken Century from Bosch whose the supplier who
22 signed and these are all Ford people who signed.

23 Q. All right. So which of those people
24 still work at Ford?

25 A. Mr. Sullivan works at Ford, Mr. Carter

1 works at Ford, if-you scroll up, Mr. Clark works at
2 Ford. They all work at Ford.

3 Q. So the people who actually made the
4 decision on how to -- on whether or not you should
5 accept the performance of the crash testing which
6 you deployed an air bag in the initial target of
7 non-deploy, those are the people who would have
8 made that decision?

9 A. Yes. That's a team decision and the
10 team, I consulted with them to familiarize myself
11 even at the time of our deposition.

12 Q. And you said they still work for Ford?

13 A. Yes, sir.

14 Q. Now, I see a sign off date there.
15 Let's say by Mr. Ken Century up there, 11-2-07; do
16 you see that?

17 A. Yes.

18 Q. And so then that was for the single
19 sensor system; is that correct?

20 A. I'm not sure. You will have to show me
21 another page.

22 Q. Because this is the second sign off
23 page. There's the original, wouldn't this be for
24 the single?

25 A. Yes. There would be for the single.

1 Q. So --

2 A. It appears to be.

3 Q. So was the -- I guess then it was
4 finally approved on 11-2-2007 for the 2008
5 and-a-half?

6 A. Yes.

7 Q. So when was job one for 2008
8 and-a-half?

9 A. There was not a specific job one for
10 2008 and-a-half. It was a running change because
11 the two sensor system -- two front crash sensor
12 system and the one front crash sensor sytem were
13 running in parallel. That's why. There is no
14 particular job one, but in talking to some of the
15 hardware engineers, they said that it was a running
16 change anywhere from three to six months after
17 launch we made that change.

18 Q. Three to six months after launch for
19 2008?

20 A. For 2008 which would have happened
21 maybe around June, July of 2007 and then probably
22 later in the year towards December they may have
23 changed.

24 Q. So I guess what I am trying to figure
25 out is when did they start producing then the

1 2008.5?

2 A. See that's -- there was no specific
3 2008.5 type program since it was a running change.
4 Once parts ran out and once this part was ready it
5 is phased in because the systems are equal.

6 Q. So that's what happened then, they ran
7 out of the old parts, then just switch to the new
8 ones?

9 A. When the electrical system is ready.
10 The reason why they waited is the wiring system for
11 a single crash sensor was not ready at the time of
12 launch. So they waited for the wiring system to be
13 ready and then they phased that in. But during the
14 testing phase they were checking in parallel two
15 and one sensor system.

16 Q. So when did Ford want this implemented?

17 A. We wanted it implemented if we could by
18 June of that year.

19 Q. June of?

20 A. 2007.

21 Q. So we are already behind that for the
22 one point sensor when these guys are signing off on
23 11-2?

24 A. Yes, that's when we had the data, but
25 we couldn't finish the product until the wiring was

1 ready. That's why they waited a few months.

2 Q. And was the purpose to reduce from a
3 two sensor system to a single sensor system for
4 cost?

5 A. Well, there would be a reduction in
6 cost, but not cost as in profits. Definitely we
7 had to make sure that the performance was same
8 between two and one. And once that is assured
9 that's when you make the change.

10 Q. But the answer is the reason you went
11 from two to one was cost?

12 A. Cost was one of the factors, but
13 definitely performance was not compromised.

14 Q. And I heard you say that performance
15 was not compromised. So have you seen -- taken a
16 look then at the original calibration with the two
17 sensor system?

18 A. Yes.

19 Q. Are there any timing time to fire
20 changes?

21 A. There will be very small time to fire
22 changes, but especially for a belted stage one
23 exception they were exactly similar between the two
24 systems.

25 Q. We have a copy of it here. We will

1 probably introduce it in just a moment. Pull it
2 out. So there were -- when we talk about timing,
3 time relates to the question of timing deployment
4 and that relates to late deployment; is that
5 correct?

6 A. Well, what you meant by timing you
7 describe late deployment and I think my answer
8 yesterday was you cannot look at it in isolation.
9 You have to determine with respect to occupant
10 movement.

11 Q. Yes. Thank you. We are talking about
12 the depowered airbag. Can you tell us when the
13 airbags began to be less powerful?

14 A. Around the 1997, 1998 model year
15 vehicles. That's when the depowering began.

16 Q. So those depowered bags, initial ones,
17 though, are the ones which are still -- in 1997 are
18 not dual stage?

19 A. No. They had only one stage of
20 inflation. What the industry did was they took the
21 power bags and reduced some of the propellants in
22 the gas generator and it was about 80, 70 percent
23 of the original power. So that's how they
24 deployed.

25 Q. You know NHTSA performed its evaluation

1 as to whether or not this depowering was actually
2 needed; do you recall?

3 A. Yeah, that's why they went into the
4 depowering.

5 Q. You don't recall that Ford actually --
6 NHTSA actually said that it tested the old models
7 against the new models, the new models against the
8 old standards and that new models actually passed
9 the old standard?

10 A. You lost me there like what is old,
11 what is new. You jumped there twice.

12 Q. Got you. Are you aware that NHTSA
13 tested the new depowered airbags against --

14 A. Single stage.

15 Q. Yes, sir. Against the old standard and
16 that they passed the old standard?

17 A. Well, they could have. I'm not sure.

18 Q. You don't know that I guess?

19 A. No.

20 Q. Because that would matter as to Ford's
21 -- Ford actually complained that it had to make a
22 more powerful airbag, didn't it, because the
23 government made it do it, right?

24 A. Well, yes, and I talked to our
25 technical experts at that time, Dr. Prasad and

1 others who were involved in some of the depowering
2 exercise.

3 Q. I have, too. But in reality you never
4 had to do that? NHTSA said that it did test
5 against the old standard and they passed?

6 A. Well, there were serious injury in the
7 field that was happening and that's why the
8 industry responded to it. My understanding is
9 about over 150 children were killed in some of
10 these deployments. That is why we went into some
11 of the suppression technology like that.

12 Q. And that's why you did suppression
13 technology and you still do suppression technology
14 even for today's airbags, don't you?

15 A. Yes, but before we have the suppression
16 technology ready the immediate answer was
17 depowering.

18 Q. Actually the immediate answer was put
19 the kids in the back seat?

20 A. That is also recommended practice, but
21 that is the suggested practice to put kids in the
22 back seat.

23 Q. So regardless of depowered airbags or
24 not depowered airbags if this airbag in this car
25 were to go off and hit somebody in the face, is

1 there a potential of an injury to the eye?

2 A. Well, there is a potential injury to
3 eye from a deploying airbag.

4 Q. Powered or not?

5 A. Powered or not and we are aware of it.
6 That's why we take all these efforts in designing
7 these deployments.

8 Q. And I don't doubt that you feel that
9 way. I have never doubted it at all that you feel
10 that way. But you have not -- you didn't do this
11 car?

12 A. Yes, I was not -- I did not sign off
13 like that, but as you see their signatures here I
14 have participated in numerous programs that
15 followed exactly same practices where I have signed
16 off.

17 Q. And then you talked a little bit about
18 suppression?

19 A. We talked about it, yes.

20 Q. So I am interested about that. It may
21 come up in this matter. I am pretty familiar with
22 this suppression system and want to ask you am I
23 correct that -- that you have different
24 classifications for suppression?

25 A. Yes.

1 Q. So I have seen indeterminate as one of
2 the classifications. Have you seen that?

3 A. Yes, we have seen indeterminate as a
4 classification. And I can explain to you how that
5 happens.

6 Q. It's all right because it doesn't
7 matter at this point, but if you feel like you want
8 to go into that later.

9 THE COURT: He didn't ask you to
10 explain it, okay? Go ahead. Ask the next
11 question.

12 Q. Is there another classification called
13 child seat or child restraint seat?

14 A. Yes, there is.

15 Q. And then is there another
16 classification relating to the small child,
17 56 pounds or less?

18 A. Yes, there is.

19 Q. And there's another one called large,
20 that means everything that's above what the small
21 child is?

22 A. No. That is not. That is a small
23 classification and everything above then the next
24 classification would be large.

25 Q. Yes. So indeterminate child seat small

1 for a child, about small anything, small anything,
2 under 50 some pounds?

3 A. No, no. About hundred, standing weight
4 of about 105 pounds.

5 Q. So you are going to go with the fifth
6 percent female below that?

7 A. Correct.

8 Q. Anything over that you would still
9 agree that the classification is large?

10 A. No. Large is another class that is
11 available over that.

12 Q. But it is a classification, right?

13 A. It is a classification.

14 Q. One where you don't suppress the
15 airbag; is that correct?

16 A. Yes.

17 Q. So that if we were to look at the
18 different classifications, those which do suppress,
19 those that don't, they would be child seat, small
20 child and large person?

21 A. Yes.

22 Q. Thank you. And --

23 A. That is generally in the industry that
24 was available, but it is not available in this car
25 actually. There is no classification called large

1 in this particular car, Focus.

2 Q. Does it have any suppression feature?

3 A. It has a suppression feature and the
4 suppression feature would be indeterminate is one
5 class. Then it will have empty. Then it will have
6 child and it will have small.

7 Q. But there is a classification, those
8 are all for non-deployed?

9 A. Yes. Small is not for suppress. Small
10 is for deploying an airbag.

11 Q. That's -- do you have any documents
12 which actually say that?

13 A. No. It is three states and we have
14 that so it is not small as in small passenger.
15 What that actually means is you see in the EDR
16 download is that anybody over a certain standing
17 weight of 105 pounds is going to get the same level
18 of airbag depending on impact severity. That's all
19 it means. It doesn't mean that we are suppressing
20 for somebody based on how they were sitting, where
21 they are sitting. I don't want you to confuse
22 that.

23 Q. You are talking about seat track?

24 A. No, no. On the seat weight sensor.

25 Q. Honestly can you tell me that you have

1 seen anybody, including Ford's, other than what you
2 say is happening here in the Focus, that does not
3 include an occupant classification status for
4 what's called large to take the position of anybody
5 that's over the weight of the fifth percentile
6 female?

7 A. Yes, it is a three state occupant
8 classification sensor. So therefore there was no
9 need to classify a large occupant. That's why it
10 is small and above. So small and above gets the
11 same level of airbags. That's what it means.

12 Q. I appreciate your observations. And so
13 you have never actually seen the large
14 classification in an event data recorder?

15 A. I have if it is a five state OCS
16 meaning five separate states where the deployment
17 threshold is going to be different between a small
18 occupant and a large occupant, then there is
19 necessary to specify that in the vehicle that has
20 it. So those may have that distinction.

21 (Q) Thank you. So who is it that decides
22 where the sensors are located?

23 (A) The team along with the prior teams
24 decide where the sensors are located.

25 Q. So in this case, wasn't the sensor --

1 Bosch was provided with the locations that they
2 were supposed to use for the up front sensors?

3 A. Correct. They would have also been
4 involved. They would understand where it is
5 located.

6 Q. Well, Ken Century from Bosch, are you
7 saying that Ken Century would come in here and he
8 would say that they chose where this sensor was?

9 A. No, not by themselves, no. It will be
10 in unison with Ford.

11 Q. So how many were tested, how many
12 positions up front for the Focus system were
13 tested?

14 A. To my knowledge three positions were
15 tested. Two outboard locations and one center
16 location in the radiator area plus what we call a
17 ride along at different areas in the front area
18 like a little bit above or a little bit below the
19 radiator, hood latch location.

20 Q. You might have for example, a sensor
21 position here and you will have a sensor there and
22 you might even put one on top of it?

23 A. Yes, close to it or somewhat nearby.

24 Q. Well, in this case how many actual
25 sensor positions were actually tested during these

1 crash tests for the three up front sensors and I
2 thought you said three?

3 A. Yes, there were three up front sensors.
4 Those were the primary locations that were tested,
5 but at the prototype stage they may have monitored
6 other locations.

7 Q. That's what I am trying to figure out.
8 How many alternative positions were tested?

9 A. Well, I think there were -- I have seen
10 some early development reports where there were
11 ride along sensors a little above or below the
12 radiator area. But not too far from that general
13 vicinity. So the general vicinity of the radiator
14 was still the same.

15 Q. Thank you. That was Ford's choice as
16 to the number of different possible locations up
17 front that you could put those sensors?

18 A. Yes, I would agree with that.

19 Q. So if it comes back, calibration comes
20 back and it says you know what, we are firing this
21 in a case where we don't want to fire it, we are
22 doing it because we want to be able to fire in this
23 one, and if we don't let it fire here it is going
24 to have -- it won't fire here and this is
25 important. You get a situation like that, none of

1 the things you could have done is to go and look at
2 other sensor positions and what that data showed
3 and then run that back through the calibrations and
4 maybe you could find a better system that would do
5 both, not deploy when you don't need it and deploy
6 it when you do. Isn't that an option?

7 A: That is an option only when the
8 calibration separation is too much. But if the
9 calibration signals are close to one another, then
10 it would not make much benefit to look for
11 alternate locations.

12 Q: But if you have only tested three
13 locations and those are the three you are going to
14 use ultimately, either in the single or two, you
15 really don't have an alternate to go look at?

16 A: Well, yes. And if those three satisfy
17 the existing conditions what's the point in looking
18 at the alternate?

19 Q. If they don't, then you have to make an
20 exception and allow an airbag to deploy in a 20
21 mile per hour 30 degree barrier crash that the
22 person doesn't need?

23 A. Well, 25 mile per hour 30 degree
24 barrier was not an exception for belted stage one.

25 Q. Yes. It wasn't?

1 A. There is an exception. You are talking
2 about front. It was not an exception.

3 Q. I am sorry. We are talking about
4 25 mile per hour, yes.

5 A. Yes, 25 mile per hour front angle.

6 Q. Front angle. And your memory is that
7 yesterday we looked at that and it was that the
8 target was not -- to not fire?

9 A. The initial target was not to fire.

10 Q. So once again, we are going back to the
11 initial target and that's why we are talking about
12 exceptions. We certainly wouldn't be talking about
13 exceptions if it did meet the initial target,
14 right?

15 A. Correct. And that exception is a
16 separate location in the calibration report that
17 calls out exceptions.

18 Q. It's in there?

19 A. Yes. And this 25 mile per hour front
20 angle barrier is not listed characteristically as
21 an exception. That's because the overall system is
22 deemed optimized, that's why.

23 Q. I think we have said that in different
24 ways. But the point is it is not for them, it is
25 for someone else. It is for a different crash?

1 (A) Yes. And my answer to that was you
2 cannot separate the crashes.

3 (Q) So my point is that if in order to keep
4 from accepting non-deployment that you don't -- if
5 instead of accepting a deployment in a crash if you
6 do not want the airbag to deploy and if you have
7 other places that you have tested up front,
8 alternative places that you have tested to put the
9 sensors up front, you could go to those and may
10 possibly find a way to make the thing actually work
11 across the board, yes?

12 (A) Yeah, and you are now extrapolating
13 into architectural issues. I don't see that here
14 at all.

15 Q. You talked about regulations including
16 the Federal Motor Vehicle Safety Standards; is that
17 correct?

18 A. Yes.

19 Q. I want to make sure that you don't want
20 the jury to think that if you pass the Federal
21 Motor Vehicle Safety Standards your car is not
22 defective?

23 A. Well --

24 MR. GLADD: Objection, Your Honor.
25 That is outside the scope of what he talked about,

1 passing regulations, outside the scope of direct.

2 THE COURT: Overruled. Go ahead.

3 THE WITNESS: Well, the federal -- you
4 have to comply with those standards to meet -- to
5 sell the vehicles in the market.

6 BY MR. VAN GAASBECK:

7 Q. Right. But you're not here to say that
8 if it passes the Federal Motor Vehicle Safety
9 Standards it's not defective?

10 A. No, that's not my opinion here.

11 Q. Okay. No additional crash tests were
12 performed when they -- in order to determine
13 whether or not to make an exception in response to
14 the soft target goal not being met?

15 A. Yes. That's why we do more simulation.
16 Now we have the primary data. We can take it to
17 the sled test. We can take it to computer
18 simulation.

19 Q. I think you were looking at -- showing
20 you 15979 crash test; do you recall that?

21 A. That's the front angle, right?

22 Q. I think so. I think 15979 and it
23 appears to be a left barrier. I was hoping you
24 knew which one it was. 15797. Thank you. It's a
25 calibration. Which one is that?

1 MR. GLADD: 25.

2 Q. That's the 90 degree barrier?

3 A. Okay.

4 Q. Do you have it?

5 A. I have not memorized the number. I
6 will take your word for it.

7 Q. All right. Can I ask you if you can
8 tell us whether or not that the airbag in that was
9 actually fired by the sensors?

10 A. No. Many of these early tests were
11 fired remotely because the calibration is not
12 available. It is this data that is gathered and
13 taken back and we use this data to calibrate. The
14 airbags will be fired remotely based on the
15 engineers decision, the teams decision so that as I
16 said the crash is done for multiple purposes. It
17 is run in parallel. Teams are running in parallel.
18 And they do it for multiple purposes. You can fire
19 the airbag remotely without the calibration.

20 Q. So in this case when you crash this and
21 the airbag comes out, the airbag is not coming out
22 because it is told to by the sensors, or even in a
23 time that it would be told to by the sensors, it's
24 coming out by a predetermined preset just basically
25 programmed in when it is going to fire?

1 A. Correct. And that is the standard
2 industry practice.

3 Q. I understand that. I don't think that
4 you're -- that that's fooling anybody. It's
5 whether or not --

6 A. No, no. It is fired remotely I agree
7 with you and it is not a sensor in the vehicle. At
8 that time the sensor is still being designed. It
9 is not a sensor having it to deploy.

10 Q. When we start looking at whether or not
11 the occupant kinematics are right and bag
12 deployment is right and all that, we really need to
13 look at the time when it actually did fire?

14 A. Correct.

15 Q. So let's see if we can look at it for a
16 second. Can we go ahead and activate my screen?
17 So what I have keyed up the portion of it which is
18 closest to the passenger and you have selected a
19 crash test that has -- is that a five percent
20 female?

21 A. Appears to be, but -- appears to be.

22 Q. Okay. Do you have your test report?

23 A. I don't have it in front of me. I just
24 have this. I don't have it with me at the stand
25 now.

1 Q. If there's anything that you need to
2 look at in the report I have no problem you telling
3 me I need to see the report.

4 A. Okay. Thank you.

5 Q. I need to -- so I'm going to try to
6 make it go forward a bit from the angle of the
7 position of now. What are we seeing here?

8 A. We see the very initial stages of
9 airbag. You see the time, 28 milliseconds, and you
10 see the bag coming out.

11 Q. Let's go all the way to the other side.
12 Do you see?

13 A. That's the driver side.

14 Q. Actually the driver's side appears to
15 be further along in the deployment than the
16 passenger side, that little green dot I put there;
17 is that right?

18 A. Appears to be, but the camera is not
19 square to where it is and you have -- the big
20 differences if I may --

21 THE COURT: The question was did it
22 appear to be, okay? Yes or no.

23 THE WITNESS: Yes, it appears to be,
24 but depends on the placement of where it is out
25 there.

1 THE COURT: Next question.

2 BY MR. VAN GAASBECK:

3 Q. You would agree, though, that driver
4 airbag usually goes quicker than the passenger
5 airbag?

6 A. Yes, because it is a smaller volume,
7 but you cannot confuse that as placed in the
8 vehicle. The passenger bag is further front of the
9 vehicle because of the IP.

10 Q. Thank you. So am I looking at right
11 here, the passenger bag?

12 A. Yes. You have marked it.

13 Q. Okay. So what I want to look at is how
14 far -- how close to the face in this crash test
15 that bag gets. Are you ready for me to move it?

16 A. Please. You are asking the questions.

17 Q. Gets to the face?

18 A. Yes, but you are seeing the side panel
19 here cover the side of the face. It's appearing up
20 to the face.

21 Q. Yes. You can't see the center part?

22 A. Yes. There is an over the shoulder
23 view you will be able to see it clear.

24 Q. So do you think that this bag is
25 hitting -- you don't think the bag is hitting this

1 person in the face?

2 A. It may be. I can't tell. But this
3 dummy or this test dummy is sitting full forward in
4 the seating position. It is not sitting mid or
5 rear.

6 Q. And in the car that Mr. Newbern was in
7 sometimes a woman can sit in it, that's a fifth
8 percentile female and sits close to it also, right?

9 A. Full forward, yes. That's why you have
10 the seat track and bag contact the face doesn't
11 mean that the bag is hitting the face. And it
12 depends on loading the face. That's what it is.
13 It is unfolding on top of the face.

14 Q. So if you deploy the bag for a fifth
15 percentile female in this crash, looks pretty much
16 like they are going to get hit in the face?

17 A. Well, it is going to load the head for
18 sure and it is desired in occupant kinematics to
19 load the head first because you have to stabilize
20 the neck during the crash process. You have to
21 catch the head to make sure that the neck forces
22 are also low in the crash. That is part of the
23 occupant kinematics.

24 Q. But you don't want to subject anybody
25 to be hit in the face by an airbag if you don't

1 have to? If the airbag would not have helped them
2 you don't want to do that to them, do you?

3 A. No, I would disagree with that.

4 Q. You would want to do that to them even
5 if it didn't help?

6 A. Yes, because I don't agree with the
7 fact that this is hitting a face.

8 Q. Let's assume it is just for the moment.

9 Would you agree with me that you do not want to
10 deploy an airbag for somebody that doesn't need it
11 that might actually might hit them in the face when
12 it deploys in a normal seated position?

13 A. In a normal seated position which means
14 are you sitting full forward or full back?

15 Q. Any normal seated position a human
16 being is likely to be in, which includes a fifth
17 percentile female, a teenager, a tall man, short
18 man, whatever, you don't want to deploy it if that
19 can hit them at the beginning, right, at the
20 beginning as it punches out?

21 A. Yes. And this is not punch out.

22 Q. I understand that punch. You have a
23 term for punch out, which I agree. But I'm talking
24 about -- you sat in during our opening statements;
25 is that correct?

1 A. Yes.

2 Q. So you see where I discussed the point
3 that airbag moves forward towards somebody
4 initially as it starts to deploy as it is filling,
5 trying to get out there quickly and then pulls back
6 to the cushion?

7 A. Yes, because it is tethered.

8 Q. That's not an area that you want
9 anybody to be in when the airbag deploys?

10 A. Yes. And that's why it is filling
11 sideways.

12 Q. One thing that didn't happen in this
13 crash is nobody put the brakes on, right?

14 A. I don't think so, but you got to ask
15 the reconstruction expert.

16 Q. In this crash test?

17 A. In the crash test. Yes. This is going
18 right into the wall. There's no braking here.

19 Q. So does Ford have an opinion what
20 happens if somebody is driving 25 miles an hour and
21 your brakes are put on, what happens to their
22 bodies?

23 A. Their bodies would move forward because
24 you are braking, but at the same time your seat
25 belt is also going to lock because of the brake and

1 it going to hold you back.

2 Q. Well, it's going to hold the chest
3 back?

4 A. It will hold the chest back.

5 Q. But your head will still come forward?

6 A. Your head will swing based on your neck
7 trajectory.

8 Q. Right. So a head can actually be
9 closer because of braking than one who is not to
10 the airbag as it deploys?

11 A. Yes. The neck is going to come
12 forward. The head is going to come further forward
13 than the chest.

14 Q. As you said you are supposed to be
15 designing these for a whole set of people --

16 A. Yes.

17 Q. -- in the car. I believe you were
18 talking about eight mile an hour crash, kind of
19 seemed to me like a crash, it's a crash test where
20 we are basically hitting an undercarriage. Now,
21 there's a bunch of sensors that are placed in these
22 vehicles when you are doing testing, some of them
23 are actually on engine mounts?

24 A. Correct. On the engine mount area.

25 Q. So when they ran that eight mile an

1 hour and you got 34 Gs on it, that was even --
2 that's 34 Gs when it hits the engine mount, right?

3 A. I don't think it hits the engine mount.
4 It hits the cradle on which the engine is
5 supported.

6 Q. And do you know -- sometimes we misuse
7 the term mount, but the cradle is actually the
8 thing that the engines sits right on?

9 A. You could say that.

10 Q. So it's actually hitting the cradle
11 where there are sensors?

12 A. That could be.

13 Q. The reason I ask that is that that was
14 I believe you said 34 Gs?

15 A. 46, depending on -- 34 Gs positive, 46
16 Gs negative.

17 Q. 46 deceleration. Okay. Thank you.
18 That's a non-deployment?

19 A. Right. That's why the point was we
20 cannot use the Gs alone.

21 Q. Well, you can use the Gs to say you
22 don't deploy it in that, right?

23 A. No, you cannot use Gs alone. That was
24 the point.

25 Q. Well, what were the Gs in the crash.

1 that Mr. Newbern was in?

2 A. Well, that was 23 Gs. That's why you
3 cannot use the Gs to calibrate the entire system.

4 Q. Not the entire system, but there's only
5 two pieces of information that go in? Aside from
6 the belt sensor there is two items of information,
7 deceleration and time?

8 A. Yes, but deceleration and time are not
9 the only deciding factors. As I said yesterday,
10 the right quantity from these Gs and time which
11 help us make decisions.

12 Q. So the two factors that we look at are
13 Gs and time?

14 A. That is the first gathered fact, yes.

15 Q. I notice that you had this offset and
16 you call it IIHS crash test. That's because IIHS
17 actually has its own standard and if you don't meet
18 it Ford will not get a good rating with them; is
19 that right?

20 A. They have their own internal rating,
21 yes.

22 Q. And in that one they are only looking
23 at a belted driver; is that right?

24 A. Correct.

25 Q. When I looked at the test where you

1 actually crashed the test -- crashed the car into
2 that deformable barrier, I looked for a passenger
3 in it.

4 A. There is no passenger in that test
5 protocol.

6 Q. It is not required by IIHS, right?

7 A. Correct.

8 Q. Because they only test for the driver?

9 A. Yes.

10 Q. Why didn't Ford get more information
11 about how this system works, put another instrument
12 dummy right there in this seat?

13 A. Well, we developed it for that standard
14 protocol. We do another test at 25 miles per hour
15 which is a government test and that we place both
16 driver and passenger in those tests.

17 Q. Well, did Mr. Newbern -- talking about
18 airbags and whether they are needed, when they are
19 needed and all that. You also took part in a sled
20 test that had our decelerations in it. Would you
21 agree that that sled test shows that airbag was not
22 needed for Mr. Newbern?

23 A. No. How can I say it is not needed
24 because what if you're sitting somewhat closer to
25 that seat track?

1 Q. Well, sir, will you shut my screen off.

2 MR. GLADD: I have an objection, Your
3 Honor. This would be outside the scope of the
4 direct regarding --

5 THE COURT: I don't know what he's
6 bringing up.

7 MR. VAN GAASBECK: I am bringing up the
8 sled test that they ran that duplicates this crash.

9 THE COURT: I don't think you went into
10 that on cross.

11 MR. VAN GAASBECK: Your Honor, my
12 thought was is that's talking about the 25 mile an
13 hour.

14 THE COURT: Well, you didn't go into it
15 on cross.

16 MR. VAN GAASBECK: Okay. Then I won't.
17 I will not, sir.

18 THE COURT: Okay.

19 BY MR. VAN GAASBECK:

20 Q. I just want to after all the testimony
21 that you have given in answer to Mr. Gladd's
22 questions, I want to be sure, though, do you still
23 agree that Ford has the technology to make sure
24 that airbags don't deploy when they are not
25 supposed to?

1 A. Yes. That's this technology.

2 Q. And it had it for the 2009 Ford?

3 A. Yes.

4 Q. And the Ford Focus?

5 A. Yes.

6 Q. And do you agree that Ford has a
7 responsibility to provide safe sensing devices, I
8 mean occupant restraint devices in its vehicles?

9 A. I do.

10 Q. So after this -- all the calibrations
11 have been done and it has all been -- the
12 exceptions have been made and all that, do you
13 agree that according to your own policy in the test
14 that you are trying to do, do you agree that you do
15 not want to deploy an airbag when it is not
16 necessary and when you do you would not want to
17 deploy it late?

18 A. Yes. That is the consideration here.

19 Q. Would it be unreasonably dangerous to
20 provide a person with a system that will deploy
21 airbags when they are not needed?

22 A. Yes. Depends on the occupant
23 kinematics.

24 Q. And also to deploy one late, that would
25 be unreasonably dangerous?

1 A. Yes. And you got to look at the
2 occupant kinematics.

3 MR. VAN GAASBECK: Thank you.

4 THE COURT: You may step down. Thank
5 you very much.

6 *****END OF EXCERPT*****
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1 CERTIFICATE OF REPORTER

2
3 I, Ruth C. Weese, Registered Diplomat
4 Reporter for the State of South Carolina at Large,
5 do hereby certify that the foregoing transcript is
6 a true, accurate, and complete record.

7 I further certify that I am neither related
8 to nor counsel for any party to the cause pending
9 or interested in the events thereof.

10 Witness my hand, I have hereunto affixed my
11 official seal this 22nd day of September, 2016 at
12 Charleston, Charleston County, South Carolina.

13
14 *Ruth C. Weese*

15 _____
16 Ruth C. Weese
17 Registered Diplomat
18 Reporter
19
20
21
22
23
24
25

EXHIBIT D

EXHIBIT 50 - CALIBRATION EXCERPT

Exhibit D

To Plaintiff's Motion for a New Trial

Calibration Report Excerpt

Filed under seal pursuant to the Court's June 7, 2017 Order

EXHIBIT E

EXHIBIT 50 - EXCERPT EXCEPTIONS

Exhibit E

To Plaintiff's Motion for a New Trial

Calibration Report Excerpt Exceptions

Filed under seal pursuant to the Court's June 7, 2017 Order

STATE OF SOUTH CAROLINA COURT OF COMMON PLEAS
COUNTY OF CHARLESTON CASE NO.
2013-CP-10-2928

STEVEN NEWBERN AND)
CLAUDIA NEWBERN,)
PLAINTIFFS,) TRANSCRIPT OF RECORD
VS.)
FORD MOTOR COMPANY,) SEPTEMBER 12, 2016
CHARLESTON, SC
VOLUME 1 OF 5
DEFENDANT.

B E F O R E:

HONORABLE J.C. NICHOLSON, JUDGE, AND A
JURY.

A P P E A R A N C E S:

STEVE VAN GAASBECK, ESQUIRE
RAYMOND BODIFORD, ESQUIRE
WILLIAM APPELEGATE, ESQUIRE

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* * * * *

Ruth C. Weese, RDR
Official Court Reporter
Ninth Judicial Circuit

I N D E X

Page

VOIR DIRE

3

JURY SELECTION

80

1 (The following proceedings were held
2 September 12, 2016, Charleston County, South
3 Carolina, @ 2:02 p.m.)

4 (The following proceedings were held
5 outside the hearing of the venire.)

6 THE COURT: Anything from the Plaintiff
7 before we bring the jury panel?

8 MR. VAN GAASBECK: Nothing, Your Honor.
9 Thank you.

10 THE COURT: From the Defendant?

11 MR. CARTER: No, Your Honor.

12 THE COURT: Bring us the jury, please.

13 (Whereupon the jury entered the
14 courtroom at 2:14 p.m.)

15 THE COURT: Ladies and gentlemen of the
16 jury, I am Judge Nicholson. I will be drawing a
17 jury in this particular case from -- how many do we
18 have?

19 THE CLERK: Sixty-three.

20 THE COURT: Sixty-three. From you 63
21 jurors. I'm going to tell you very briefly a few
22 facts about the case. I'm going to have the
23 lawyers introduce themselves and then I'm going to
24 ask you certain questions to see if you qualify for
25 serving on this jury.

1 This is a case brought by Steven
2 Newbern, the Plaintiff, versus Ford Motor Company.
3 Steven Newbern is the Plaintiff and the Plaintiff
4 is the person that brings the lawsuit. The
5 Defendant in the case is Ford Motor Company.
6 That's who the lawsuit is brought against. And
7 this is concerning a collision between a vehicle,
8 Mr. Newbern's Ford, 2009 Ford Focus, and it
9 occurred on December 28th, 2012, on Magwood Drive
10 near the intersection of Ashley Crossing Drive in
11 Charleston County, South Carolina.

12 The Plaintiff alleges that the airbag
13 in the Ford Focus was defective and did not
14 function properly. The Defendant, Ford Motor
15 Company, denies those allegations.

16 It's the Plaintiff's burden in a civil
17 suit to prove those allegations, legal allegations,
18 by the preponderance of the evidence and I will
19 explain the preponderance of the evidence to you in
20 the charge at the end of the case.

21 So I'm going to ask you certain
22 questions and see if you qualify. The first thing
23 I'm going to do is call out a list of names. I'm
24 going to ask you if you know those individuals or
25 are related by blood or marriage, or have any type

1 of contact with the individual. When I say
2 marriage, I'm talking about past marriages as well
3 as present and possible future marriages.

4 The first name is Steven Newbern. Is
5 Mr. Newbern in the courtroom? Would you stand and
6 face the jury, please, sir.

7 (The Plaintiff stood.)

8 THE COURT: Thank you, Mr. Newbern.
9 You may have a seat. Thank you very much. Is
10 there anybody related by blood or marriage to Mr.
11 Steven Newbern or does anybody know Mr. Newbern or
12 had any contact with Mr. Newbern? If so, please
13 stand.

14 (No response from jury.)

15 The next name is Claudia Newbern. If
16 you will stand and face the jury, please,
17 ma'am.

18 (The Plaintiff stood.)

19 THE COURT: Thank you so very much. Is
20 there anybody related by blood or marriage to
21 Claudia Newbern? Does anybody know Claudia
22 Newbern? If so, please stand.

23 (No response from jury.)

24 The next name is George Blofeld. He's
25 from Charleston County. B-L-O-F-E-L-D. Is there

1 anybody related by blood or marriage or does
2 anybody know Mr. Blofeld? If so, please stand.

3 (No response from jury.)

4 The next name is Susanna Trammell. Is
5 anybody related by blood or marriage or does
6 anybody know Susanna? If so, please stand.

7 (No response from jury.)

8 The next name is Stephen Riddle. Is
9 anybody related by blood or marriage or know
10 Stephen Riddle? If so, please stand.

11 (No response from jury.)

12 The next name is Brandon Hinton. Is
13 anybody related by blood or marriage or does
14 anybody know Brandon Hinton? If so, please stand.

15 (No response from jury.)

16 The next name is Andrew Eiseman, eye
17 doctor here in Charleston; is that correct?
18 Charleston?

19 MR. VAN GAASBECK: Yes, sir.

20 THE COURT: Anybody related by blood or
21 marriage to Dr. Eiseman or does anybody know Dr.
22 Eiseman or been treated by Dr. Eiseman? If so,
23 please stand.

24 (No response from jury.)

25 The next name is Dr. Waring, also in

1 Charleston who is an M.D., an eye doctor. Is there
2 anybody related by blood or marriage or does
3 anybody know Dr. Waring? If so, please stand.

4 (No response from jury.)

5 The next name is Paul Lewis, a
6 biomechanic from Atlanta, Georgia. Anybody know
7 Paul Lewis or is anybody related by blood or
8 marriage to Paul Lewis? If so, please stand.

9 (No response from jury.)

10 The next name is Andrew Webb who is
11 from Raleigh, North Carolina, accident
12 reconstructionist. Anybody related by blood or
13 marriage or anybody know Andrew Webb? If so,
14 please stand.

15 (No response from jury.)

16 The next name is Michael Nranian,
17 N-R-A-N-I-A-N. He's a design expert. Is anybody
18 related by blood or married to Mr. Nranian or does
19 anybody know Mr. Nranian? If so, please stand.

20 (No response from jury.)

21 The next name is Dan Toomey from
22 Dearborn, Michigan. Is anybody related by blood or
23 marriage or does anybody know Dan Toomey? If so,
24 please stand.

25 (No response from jury.)

1 The next name is Dr. Mike Scott from
2 San Antonio, Texas. Anybody related by blood or
3 marriage or anybody know Dr. Mike Scott? If so,
4 please stand.

5 (No response from jury.)

6 The next name is Jeff Pearson from
7 Detroit, Michigan. Is anybody related by blood or
8 marriage or anybody know Jeff Pearson? If so,
9 please stand.

10 (No response from jury.)

11 The next name is Ram Krishnaswami.
12 Ford engineer from Detroit, Michigan. Is he in the
13 courtroom?

14 MR. CARTER: He is not right this
15 second, Your Honor.

16 THE COURT: Anybody related by blood or
17 marriage to Ram Krishnaswami? If so, please stand.

18 (No response from jury.)

19 THE COURT: Mr. Van Gaasbeck, if you
20 will stand and introduce yourself, please, sir.

21 MR. VAN GAASBECK: Thank you, Your
22 Honor. My name is Stephen Van Gaasbeck. I'm an
23 attorney. I am a solo practitioner and I'm from
24 San Antonio, Texas, so you don't know me. My
25 associate is Ray Bodiford. He is also a solo

1 You can bring your phones, but you will
2 not be taking them in the jury room with you.
3 Please don't discuss the case with anyone. I will
4 see you in the morning at 10:00. When you come to
5 the courthouse come straight to the jury room. The
6 bailiff will show you where to come. If you will
7 follow the bailiffs they will show you where to
8 come in the morning at 10:00. See you in the
9 morning. Have a good evening.

10 (Thereupon, the jury exited the
11 courtroom at 4:25 p.m.)

12 MR. VAN GAASBECK: Your Honor, could we
13 have just a short break? Can I approach the bench?

14 THE COURT: Yeah. Do you want to take
15 a break? That's fine. We will take a break. How
16 much time do you need?

17 MR. VAN GAASBECK: When you get to be
18 68 as I have, sometimes --

19 THE COURT: That's fine. We will take
20 a break.

21 MR. VAN GAASBECK: Thank you. About
22 five minutes.

23 THE COURT: How about ten minutes? We
24 will take a ten-minute break.

25 (A recess transpired.)

1 MR. WISE: I am Rob Wise of Ford Motor
2 Company. Would you like to proceed with No. 1 or
3 run through ours and then they respond?

4 THE COURT: Does the Plaintiff have any
5 preference? I would listen to you on one, because
6 a lot of them are different.

7 MR. VAN GAASBECK: Yes, sir, one to
8 one.

9 MR. WISE: Thank you, Your Honor. Our
10 motion in limine we filed a -- I am taking this up
11 as what we call an omnibus motion in limine. It's
12 Defendant's consolidated motion to exclude and
13 motion in limine. That's the one you referred to
14 that has 18 parts to it. So the first issue that
15 we have is a motion to exclude all post manufacture
16 or post distribution evidence. I believe South
17 Carolina law is clear on that this the analysis is
18 based on the date of distribution of the vehicle,
19 that that's the time frame in which the jury should
20 evaluate the propriety of the design, the state of
21 the art, all of those issues go as to the date of
22 distribution. We have got an August 20, 2008,
23 build date here.

24 THE COURT: August what?

25 MR. WISE: August 20, 2008, build date

1 or distribution date rather. And that's the date
2 we believe should be in general the cut off for
3 evidence offered by the Plaintiff. There's
4 different types of evidence they may try to offer,
5 whether it's a learned treatise or other incidents
6 or claims, things like that. We believe there
7 should be a set rule that nothing after the date of
8 distribution should be admissible. We met and
9 conferred on all these motions. On this one we
10 understood the Plaintiff to say that they think
11 there might be reasons why they would come in, they
12 thought our motion was too broad. We didn't have
13 any further elaboration so I guess I will let
14 Plaintiff respond to that.

15 THE COURT: Well, I guess my question
16 is what was the standard in the industry at the
17 time of distribution?

18 MR. WISE: That's what we believe it
19 is, yes, Your Honor.

20 THE COURT: Have you -- what does their
21 expert say concerning that issue? In other words,
22 are they planning on doing what you have said? I
23 guess I need to ask the Plaintiff that. Are you
24 planning on offering any post -- anything post
25 distribution or post design?

1 what the expert says. You don't know what he is
2 going to say. I'm sure Plaintiff's counsel thinks
3 he knows what he is going to say, but we will see.

4 MR. WISE: That's why I think --

5 THE COURT: I will just take it under
6 advisement unless there is something else you want
7 to enlighten me with before I do that.

8 MR. WISE: Not in terms of
9 enlightenment, but what I would request then is
10 that we are not going to be hearing about these
11 unless and until we have that in camera discussion
12 with Your Honor.

13 THE COURT: Well, I think Plaintiff's
14 attorney said three times he wasn't going to do
15 that.

16 MR. VAN GAASBECK: That's correct.

17 MR. WISE: Thank you, Your Honor.

18 THE COURT: He told me that three
19 times. I take him at his word. If he does do it
20 then I will stop him and we will correct it.

21 MR. WISE: Very good, Your Honor.
22 Thank you.

23 THE COURT: What's the next motion?

24 MR. SAMMATARO: Your Honor, we are sort
25 of trading off depending on what the topic of the

1 motion is, so Sam Sammataro. Our next is No. 2 on
2 the omnibus motion and that has to do with
3 excluding crash test 15950. Starts page 4 of the
4 omnibus motion.

5 THE COURT: Why do you want to bring in
6 this crash report, Mr. Van Gaasbeck, test 15950?
7 Why do you think it is relevant? What's it say?

8 MR. VAN GAASBECK: It is of the maybe
9 hundred crash tests that Ford would have run, they
10 have selected a certain number of types of crashes
11 that they think that they need to meet to perform
12 and for this calibration to say that they are
13 performing them correctly. In other words, to
14 calibrate them so that the sensor does do what they
15 want it to do. So they have selected certain
16 number of crashes for that purpose.

17 THE COURT: What's the time frame on
18 the crashes?

19 MR. VAN GAASBECK: The crash test here
20 would have been --

21 THE COURT: I don't see the date in
22 what they gave me. What's the time frame?

23 MR. VAN GAASBECK: Usually the crash
24 test series are run two years before the
25 calibration. You run them about all the way up to

1 two years and sometimes they even run them
2 afterwards.

3 THE COURT: So this would have been
4 done in '06?

5 MR. SAMMATARO: This is pre. I am
6 sorry to interject. This is premanufacture. This
7 is a test that was done before the manufacture.

8 THE COURT: '06, '05.

9 MR. SAMMATARO: Roughly, yes.

10 THE COURT: Why do you think that is
11 not admissible?

12 MR. SAMMATARO: It has to do with
13 substantial similarity. This isn't one where we
14 are saying it's post manufacture. There's some
15 significant differences with regard to this test
16 that make it so distinctly different from Mr.
17 Newbern's crash that it should be inadmissible.
18 And I can give you the background of the test.

19 THE COURT: What's -- why do you think
20 it is not similar? What's your reason for saying
21 it is not similar?

22 MR. SAMMATARO: Right. So 15950, Your
23 Honor, was a test that was performed by Ford when
24 it was working on calibrating the sensors on a
25 particular platform of the Focus vehicle. What

1 they did in 15950, you have a fifth percentile
2 female dummy which means the dummy was about five
3 feet tall and weighed about 108 pounds. Now, with
4 regard to Mr. Newbern's medical records from the
5 time of the injury it puts him, I don't think there
6 is any dispute, at about six feet and weighed
7 anywhere from between 180 to 200 pounds.

8 THE COURT: Did you all do a crash
9 panel of a 180-pound man?

10 MR. SAMMATARO: I don't know that we
11 did, but it wasn't in this test, Your Honor.

12 THE COURT: This is the test you gave.
13 Did you all do it on a 180-pound man?

14 MR. SAMMATARO: Yes, we did.

15 THE COURT: Did you give him that test?

16 MR. SAMMATARO: I think we gave him all
17 the tests. We gave him all the crash testing that
18 are part of the sweep. This one, though, doesn't
19 have anything to do with the crash. It is not like
20 the crash. So I have already told Your Honor about
21 the dummy being the wrong size; also in the test
22 the dummy was in the full forward position which
23 means the seat runs along the seat tracks and so
24 the seat was as far forward on the tracks as they
25 could get it for this test. And the other thing

1 that's different is the bag. I will get to that in
2 just a second.

3 In the Newbern crash you will hear
4 testimony from Mr. Newbern either live or in
5 deposition testimony that gets played or whatever,
6 his seat was as far back as he could get it on the
7 seat track because it was a smaller vehicle and he
8 liked to be as far back as he could get on the seat
9 track so he had plenty of legroom.

10 So that's distinction No. 2. In the
11 crash test the dummy is as close to the airbag
12 module as she can get, and in the Newbern accident
13 Mr. Newbern is seated as far back on the seat track
14 and so away from the module.

15 Now, the third difference in this crash
16 test 15950 is this was not a production level
17 airbag. This was an airbag that was different in
18 the way that it deployed. It was tethered
19 differently. It is not the airbag that ultimately
20 went into the 2009 Focus that he was in. And so
21 there's some pretty significant differences, Your
22 Honor, and why they shouldn't be able to rely on
23 those -- the crash test to show interaction between
24 the dummy's face and the back.

25 THE COURT: If his position is I think

1 I remember, maybe I am misquoting, I'm sure you can
2 correct me, is that it deployed too soon, shouldn't
3 have deployed because the G forces, what difference
4 would it make on the weight that the seat position,
5 how far the bag came out and the design of the bag
6 may affect the seat position. As far as the G
7 forces, what difference does it make as far as
8 weight is concerned? I think you really got a
9 valid point on the it is not the same airbag that
10 was in the Focus. I think that's significant, but
11 as far as seat position and weight, so what?

12 MR. SAMMATARO: Well --

13 THE COURT: If he is saying they needed
14 a second sensor, he's saying that the second G
15 forces were designed wrong or set wrong, what
16 difference do those things make?

17 MR. SAMMATARO: Well --

18 THE COURT: G forces on the body, the
19 weight is not going to make any difference on the
20 body, whether you weigh 100 or 200 pounds. Same G
21 forces exerted on the body.

22 MR. SAMMATARO: Well, Your Honor, I
23 will respectfully disagree because it's all about
24 the biodynamics.

25 THE COURT: If you weigh 220 pounds and

1 got a big gut, you are pulling eight Gs in an F-4
2 you can probably withstand it. If you're pulling
3 eight Gs and you weigh a hundred pounds you can't.
4 But the forces itself will be the same.

5 MR. SAMMATARO: I think --

6 THE COURT: F-16 sits back at a
7 horizontal angle. The G forces -- you can stand a
8 lot more G forces in the F-16 than you can in the
9 F-4.

10 MR. SAMMATARO: I am not a biomechanic
11 so I can't disagree with that point.

12 THE COURT: I'm not either, but I have
13 flown both of them.

14 MR. SAMMATARO: You have an advantage
15 on me, Your Honor. But the position of the body,
16 human body or the position of the dummy in the
17 crash test does make a difference because proximity
18 to the bag, how the restraints fit.

19 THE COURT: I agree with proximity, but
20 as far as G forces and when it should have been
21 deployed time wise, what's that have to do with
22 anything, the deployment on the time?

23 MR. SAMMATARO: I'm not sure I
24 understand the question. I think what you are
25 saying is the forces are the same whether you weigh

1 a hundred pounds or whether you weigh --

2 THE COURT: What I am trying to say, if
3 I am wrong correct it, Mr. Van Gaasbeck said that
4 one of his problems was the defect when it was
5 deployed it deployed too early. So my question to
6 you is what difference does it make if it was
7 deployed too early whether you weighed 100 pounds
8 or 200 pounds. That's my question.

9 I think you are right about the G
10 forces, okay, and the body weight. I agree with
11 you on that. I will back off of that, okay?

12 MR. SAMMATARO: Okay. Just getting
13 down to the nugget of why we filed this particular
14 motion, Mr. Van Gaasbeck we believe wants to show
15 this video of the crash test to the jury to show
16 interaction between the dummy's face and the
17 airbag. That's the whole theory -- actually, the
18 bag deployed too late or it shouldn't have deployed
19 at all is the way I understand what he said about
20 the theory.

21 Anyway, what they want to do is show
22 that the bag and the face interacted and therefore
23 the bag can certainly cause the kind of injuries
24 that Mr. Newbern unfortunately sustained. And the
25 whole point of the dummy being forward in the

1 deployment zone, it's just a different -- the jury
2 shouldn't be confused by that video to believe that
3 the circumstances in the crash test are the same
4 circumstances and that Mr. Newbern's body was
5 reacting the same way biodynamically because he's
6 taller, heavier, and seated in an entirely
7 different position than getting a bag that's a
8 production level bag that wasn't installed in the
9 device which is used in the crash test. That's the
10 nugget of this motion.

11 THE COURT: Okay. Sorry. I didn't
12 mean to cut you off. Anything else?

13 MR. SAMMATARO: Well, I think Mr. Van
14 Gaasbeck might be concerned we are trying to get
15 rid of the whole test or exclude the whole test.

16 THE COURT: Let me hear what you got to
17 say. I will let you reply to it.

18 MR. VAN GAASBECK: Well, they have
19 described some similarities, dissimilarities. What
20 they did not do and have not done is explained how
21 those similarities would change an opinion or
22 dissimilarities. So I will go over what the
23 similarities and dissimilarities are. The
24 dissimilarity in this particular case, one of them
25 is called venting. An airbag has holes in it.

1 When your airbag comes out and you fall into it and
2 you start to move forward in order to make that
3 process there is -- there are vent holes. Those
4 holes let the gas start to vent. And so you will
5 ride down the airbag to where it's a gentle
6 deceleration. That is immaterial in this case
7 because everything that we had happen to us
8 happened before ride down. The venting has nothing
9 to do with the characteristics of the airbag in our
10 case. They say the airbag is larger. But what
11 they don't say is that our airbag, production
12 airbag extends actually even further towards the
13 occupant than this one does.

14 THE COURT: How can I allow you to show
15 a video of a crash test with an airbag that's not
16 the same airbag that was in this actual crash on
17 the Ford Focus? How can I allow that?

18 MR. VAN GAASBECK: I understand why you
19 would be disturbed by that so I am trying to
20 explain that. I will accept the Court's opinion
21 without second-guessing, as if I could, but the --

22 THE COURT: I will be glad for you to
23 second-guess. I don't mind that.

24 MR. VAN GAASBECK: Nothing going to
25 happen if I do. Is that the differences do not

1 matter because all of those difference which
2 occurred are occurring after our injuries occurred.
3 The extension of the airbag hitting our client is
4 because of the direct, it is not up and down
5 deployment, it's a straight deployment. Both of
6 these airbags regardless of the tethering,
7 regardless of the venting, are straight deployment
8 toward the face of the occupant.

9 They are also -- the production bag
10 actually goes further than the nonproduction bag.
11 So this is actually a more conservative estimate as
12 to what that airbag can do.

13 THE COURT: Do you have a crash test
14 with this actual airbag?

15 MR. VAN GAASBECK: The problem is that
16 they never could find the video for that particular
17 1606 rating.

18 THE COURT: It just disappeared.

19 MR. VAN GAASBECK: It is gone.

20 THE COURT: The dog ate it.

21 MR. VAN GAASBECK: I don't know. But
22 honestly, Your Honor, the most important thing
23 about the similarities, this particular car was one
24 of the chosen, I think 10 or 15 chosen crash tests
25 to be in the calibration, of all the hundreds of

1 the crash tests they chose this one to help
2 calibrate this crash with. So that's why we have
3 to work this one.

4 THE COURT: They chose this one to
5 calibrate.

6 MR. VAN GAASBECK: Yes, sir. So it was
7 at least similar enough for them to make choices
8 about their deployment values and whether or not
9 the airbag would get out to help you in time. So
10 whatever they thought about the airbag they didn't
11 think it was so bad that they -- so dissimilar that
12 they decided not to use it in accident -- creating
13 the very thing that determines when it fires and
14 whether it fires.

15 This probably is one of the situations
16 as I have been reminded that if I have overstepped,
17 if it looks like I'm overstepping I lose in front
18 of the jury. If the jury thinks that yeah, they
19 used it for a calibration, yes, they used it to
20 determine injury potential, they did all that, but
21 we still don't think they should have used it and
22 they can bring in Mr. Krishnaswami who is an
23 excellent advocate to explain what the differences
24 were and why they really do matter in this and
25 cross-examine.

1 THE COURT: Anything you want to say
2 very briefly? Let me say my thoughts real quick,
3 okay? My thoughts are let me listen to this
4 expert, see what he says and how he explains the
5 similarity and dissimilarities and the purpose if
6 they want to show it. He is saying its purpose is
7 entirely different from what you're saying. I
8 don't know what the expert is going to say.

9 MR. SAMMATARO: Your Honor --

10 THE COURT: When we do it in camera I
11 will listen to it and see what he has to say and I
12 will make a decision.

13 MR. SAMMATARO: Because he just made
14 the unringing the bell argument correcting things
15 to the jury, but if we are going to have this
16 discussion and have a ruling in camera before --

17 THE COURT: I just said that.

18 MR. SAMMATARO: We can live with that,
19 Your Honor.

20 THE COURT: That's what I just said I
21 will do.

22 MR. VAN GAASBECK: I am not bringing
23 that in front of the jury until you tell me.

24 THE COURT: When we do it camera I'll
25 listen to it. I will make a decision because I

1 don't know what he is going to say. I'm sure the
2 Plaintiff thinks -- I'm going to listen to it in
3 camera and I will make a decision. Let me say
4 this, Mr. Van Gaasbeck. My gut reaction is if it
5 is not the same airbag my gut reaction is probably
6 going to exclude it.

7 MR. VAN GAASBECK: That's a fair
8 observation.

9 THE COURT: Okay? Unless there is some
10 particular reason that you want to show it for some
11 particular reason. And the reason is relevant.

12 MR. VAN GAASBECK: I will do my best.

13 THE COURT: I'm going to defer to the
14 expert and listen to him and you in camera and make
15 a final decision.

16 MR. VAN GAASBECK: I will do my best to
17 try to change your mind.

18 THE COURT: What's next?

19 MR. WISE: The next one on the list is
20 there was a trial two weeks ago in federal court
21 here.

22 THE COURT: We are not going into it.
23 I am not going to let you go into that trial.

24 MR. VAN GAASBECK: I agree with that.
25 We are not going to.

1 MR. SAMMATARO: Not on design defect.
2 They have got to pick a horse and ride it. And
3 that's all we are trying to get them to do here.
4 You heard Mr. Van Gaasbeck in his 20 minute
5 discussion on our motion to limit post manufacture
6 evidence identify about three or four different
7 defects. Which one is it, which one are we
8 supposed to face in this trial and defend against?

9 THE COURT: Which one is in his
10 complaint?

11 MR. SAMMATARO: I think it's the late
12 deployment is in the complaint.

13 THE COURT: Did the expert testify
14 about that area?

15 MR. SAMMATARO: Yes.

16 THE COURT: What did he say in his
17 deposition?

18 MR. SAMMATARO: He said it deployed
19 late.

20 THE COURT: What's the theory now?

21 MR. SAMMATARO: Well, I think I heard
22 him say if it's not deployed late --

23 THE COURT: Has your theory changed?

24 MR. VAN GAASBECK: Not at all, Your
25 Honor. In fact, it was disclosed in the

1 deposition. Mr. Nranian had no problem saying this
2 airbag should never had deployed.

3 THE COURT: You are saying -- he said
4 you either got to say it should have never deployed
5 or it was late deploy. Which is it? He said you
6 can't have both.

7 MR. VAN GAASBECK: That's silly. The
8 defect isn't that it deployed late or it should not
9 have deployed. The defect is the system that would
10 allow it to do that. That's the defect. We are
11 attacking the system that when it deployed -- it
12 deployed when it shouldn't and when it deployed it
13 deployed late. Those are two things which follow
14 each other and I cannot even imagine why this is a
15 question.

16 THE COURT: Did he explain that in his
17 deposition?

18 MR. VAN GAASBECK: Yes, Your Honor. He
19 said this should never have deployed. He also said
20 and they could have moved it, worked with these,
21 spent more time on the dual -- not the dual
22 sensors, the two up front sensors. He said if you
23 want to solve those problems you can also use a
24 different airbag. Those are the three things that
25 he said. Yes, he said that.

1 Now, we have already told them we don't
2 think the load limiter is defective. We have told
3 them it wasn't the load limiter, it was the
4 pretensioner, which are two different things.

5 So I don't know why it is here. But,
6 Your Honor, as far as I am concerned, I think it's
7 -- as far as -- I don't know any law in any juris
8 prudence anywhere that follows English juris
9 prudence that says you can't prove that a defect
10 has two effects, that it deployed an airbag when it
11 shouldn't and when it did, it was even worse
12 because it deployed late.

13 THE COURT: I don't know what he said
14 in his deposition. Is that basically what he said
15 in his deposition? You all took it for two days.

16 MR. SAMMATARO: He was deposed twice,
17 Your Honor.

18 THE COURT: Is that what he said?

19 MR. SAMMATARO: It's been a while since
20 I looked at it, but my recollection is he talked
21 about a late deployment. I don't remember him
22 saying no deployment. Now I am getting confused.

23 THE COURT: He said the defect was
24 No. 1, it shouldn't have deployed at all, but since
25 it did it was late. What's wrong with that? If

CERTIFICATE OF REPORTER

I, Ruth C. Weese, Registered Diplomat
Reporter for the State of South Carolina at Large,
do hereby certify that the foregoing transcript is
a true, accurate, and complete record.

I further certify that I am neither related
to nor counsel for any party to the cause pending
or interested in the events thereof.

Witness my hand, I have hereunto affixed my
official seal this 16th day of December, 2016 at
Charleston, Charleston County, South Carolina.

Ruth C. Weese

Ruth C. Weese
Registered Diplomat
Reporter

STATE OF SOUTH CAROLINA COURT OF COMMON PLEAS
COUNTY OF CHARLESTON CASE NO.
2013-CP-10-2928

STEVEN NEWBERN AND)
CLAUDIA NEWBERN,)
PLAINTIFFS,) TRANSCRIPT OF RECORD
VS.)
FORD MOTOR COMPANY,) SEPTEMBER 13, 2016
CHARLESTON, SC
VOLUME 2 OF 5
DEFENDANT.

B E F O R E:

HONORABLE J.C. NICHOLSON, JUDGE, AND A
JURY.

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* * * * *

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Official Court Reporter
Ninth Judicial Circuit

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1 (The following proceedings were held
2 September 13, 2016, Charleston County, South
3 Carolina, @ 9:02 a.m.)

4 (The following proceedings were held
5 outside the presence of the jury.)

6 THE COURT: In looking at your motions
7 in limine let me just go through and summarize to
8 make sure the ones we have covered and the ones we
9 haven't. No. 1, listen to it in camera and make a
10 decision. No. 2, same, No. 3, I think they said
11 they were not going, but as far as the record is
12 concerned that motion is granted by Wickersham v.
13 Ford. No. 5, No. 4, you have settled the issues
14 about the seat belt with pretensioner or the single
15 front crash sensor. I think I denied that unless
16 y'all can show me something on your -- the
17 depositions. No 5, that's granted. No. 6, I don't
18 remember what we did on 6. So address No. 6.

19 MR. WISE: No. 6, Your Honor, that was
20 the one -- the Ford airbag team. I believe
21 everything in there about not --

22 THE COURT: I thought No. 5 was the
23 airbag team.

24 MR. WISE: No, No. 5 is regarding
25 reference testimony, arguments concerning the

1 deployment. We asked about the late deployment.
2 He doesn't have an opinion. Then this letter says
3 we still have a late deployment theory. That's
4 what doesn't make sense, Your Honor.

5 THE COURT: Motion denied. What else?

6 MR. CARTER: Two things really quick.
7 In the courtroom, and I told you I would introduce
8 him, this is Ram Krishnaswami. He's the design
9 engineer for Ford. He's going to be here at trial.

10 THE COURT: He is welcome to sit up
11 there.

12 MR. CARTER: We are awfully crowded in
13 here.

14 THE COURT: If you want to pull up a
15 chair for him.

16 MR. CARTER: Thank you, Judge.

17 THE COURT: Welcome to come and sit
18 behind the lawyers.

19 MR. CARTER: The other thing deals with
20 my opening and it follows the discussion that we
21 had yesterday and again this morning and I want to
22 bring it to your attention before saying it. In
23 addition to what we talked about these three EMTs,
24 what they did, what they saw, and then ultimately
25 they would like to offer an opinion and we are very

1 clear on Your Honor's ruling on that. That's not
2 going to happen.

3 In addition, the testimony from EMT
4 Riddle is going to be that Mr. Newbern told me the
5 glass hit him in the eye multiple times.

6 THE COURT: That's fine if that's what
7 he said. He can testify to that.

8 MR. CARTER: Okay. I don't want --

9 THE COURT: If that's what he told her,
10 yeah, that's admissible.

11 MR. CARTER: I didn't want to ring that
12 bell and get claimed by not being able to unring
13 it..

14 THE COURT: If that's what he said I
15 have no problem with that.

16 MR. CARTER: Other than that I don't
17 have anything else, Your Honor.

18 THE COURT: Okay. Let me ask you one
19 question. You asked me yesterday you were going to
20 show something on the screen about the
21 intersection. What are you planning on saying
22 anything about this collision other than it
23 occurred?

24 MR. CARTER: That the speed --

25 THE COURT: Are you planning on going

1 into causation or the comparative negligence issue
2 at this point in time?

3 MR. CARTER: No, sir, not in my
4 opening.

5 THE COURT: I'd rather you not do that
6 until I can rule on those issues, okay?

7 MR. CARTER: Absolutely.

8 THE COURT: I don't have a problem with
9 you telling this is what happened.

10 MR. CARTER: He was going this fast, he
11 was going this fast, they hit, but that's all I am
12 going to say.

13 THE COURT: Okay. Anything from the
14 Plaintiff before we bring them in?

15 MR. VAN GAASBECK: The only thing is
16 that since they are going to be showing something
17 during their opening, I am going to want to show
18 their litigation sled test which they performed to
19 show that -- support their position. I want to
20 show that to the jury.

21 THE COURT: Show what now?

22 MR. VAN GAASBECK: Litigation sled
23 test, the video of a litigation sled test they
24 performed to try to explain their position on how
25 this occurred.

1 THE COURT: Okay. Do you have any
2 objection?

3 MR. CARTER: I don't have any objection
4 to him showing it. I do have objection to him
5 talking about what it shows and the very detailed,
6 it's a slow motion, thousand frame per second
7 camera with watching what happened with this dummy
8 in a -- you understand what we say when we say sled
9 test?

10 THE COURT: Yes. I see them on
11 advertisements on television.

12 MR. CARTER: Well, it is not a wreck
13 into a wall. What they do is they take the car and
14 take a pneumatic ram and shoot it backwards. So
15 they don't wreck the car, but they recreate the
16 accident. So they use the car again. Then you
17 watch inside what happens to the occupant. Goes
18 forward, airbag goes off. As far as showing that,
19 we intend to show that, but I don't know what he
20 intends to say about what he believes that the
21 opinions that will come from it.

22 THE COURT: I guess the only thing I
23 can tell you, Mr. Van Gaasbeck, in South Carolina
24 opening statement is not designed for arguments,
25 okay? I won't allow you to argue what that sled

1 Once the case is over and you start your
2 deliberation I will allow you to take your notes
3 with you to the jury room.

4 In the meantime, the notes will stay
5 under the control of the clerk of court. All
6 right. After that false alarm, Mr. Van Gaasbeck,
7 you may make opening statement.

8 MR. VAN GAASBECK: Thank you, Your
9 Honor. My name is Steve Van Gaasbeck, two words.
10 This event that brought you here today started a
11 few years ago when Mr. Steven Dean Newbern and his
12 wife Claudia Newbern made the decision they wanted
13 to go to see a movie. Steven Newbern is -- we call
14 him Dean, that's his name, so that's what he goes
15 by. I will say Dean from time to time.

16 Dean Newbern at that time worked for
17 Boeing. He still does work for Boeing. His
18 background was as an Air Force veteran and then he
19 went into working with aircraft maintenance
20 repairing aircraft. He had a very productive
21 career with Boeing and has gone back to work at his
22 career with Boeing.

23 And his wife Claudia is a 17-year
24 veteran of schools. She is a teaching veteran.
25 She's a vice principal at a high school, Stall High

1 School. Her car was the car that they chose to go
2 to this theater. The car is a 2009 Ford Focus.
3 She drives that car normally. He drove another
4 car. On this day she drove. The entire trip would
5 have been about five minutes.

6 The -- Mr. Newbern took the right
7 passenger seat. And as they drove down the road
8 towards the theater about a minute before they got
9 to the theater a vehicle pulled in front of them in
10 the opposite direction, cut in front of them and
11 they had a collision.

12 The airbag deployed, airbags deployed
13 in that collision. And we will prove to you that
14 that collision did not require an airbag to deploy
15 and will also prove to you that when it did deploy
16 it deployed in such a way as to cause Mr. Newbern
17 to lose his right eye. Mr. Newbern today is
18 wearing a patch. He doesn't have to wear a patch
19 because he has a prosthetic eye. He does need to
20 wear the patch whenever he's outside in crowds. He
21 will explain to you why when he is not wearing the
22 patch as a demonstration for you, he is wearing the
23 patch because in crowds in places he is not
24 familiar with. He can bump into things including
25 people and they do not know if he is not wearing

1 that patch that he can't see them.

2 That is one of the reasons why we are
3 wearing a patch today, not for sympathy. On that
4 day, he didn't have the patch. He had two eyes.
5 It is our position then that this airbag for one
6 reason or another, we know what the reasons are, we
7 will give them to you, came out at such a distance,
8 such a speed as to damage that eye. It broke,
9 ruptured this globe, it shattered the orbit bones,
10 broke his nose, broke his internal sinuses and
11 broke his sternum.

12 On the other hand, Ford's position is,
13 we have to tell you what it is because I'm going to
14 tell you how I will disprove it, is that these
15 injuries were all caused by different things. So
16 they have argued that the chest injury was caused
17 by the seat belt. They have argued that the eye
18 was damaged because of broken glass.

19 So I am going to tell you about what
20 Mr. Newbern took with him on the day to go to the
21 theater in that less than five-minute trip to the
22 theater, particularly what he didn't take first of
23 all. He didn't take anything to drink. He didn't
24 need anything to drink for a 15-minute trip. The
25 only thing he does drink in a car at any time will

1 be a coffee in a mug that you will not take to the
2 theater. They planned on going to the theater.
3 They knew exactly what they were going to buy in
4 the theater, that included soft drinks.

5 And there is no mug anywhere to be
6 found. There is broken glass fragments. We will
7 explain to you how that may or may not have gotten
8 into the car. But there is no mug. And also the
9 other thing that he drinks is he takes water into
10 an empty Coke bottle, puts a little water in the
11 bottom of it, puts it in the freezer. He freezes
12 it. Then when he goes to go somewhere he removes
13 that, puts the water in it and that's his frozen
14 drink. Cheap and water. That's what he does. He
15 does not take a tumbler, glass tumbler, out for a
16 trip like this or any other trips.

17 It is Ford's position that he actually
18 had in front of him when driving with this cup this
19 tumbler in his hand when the airbag deploys and it
20 blows it back and it basically breaks his nose, his
21 sinus, his upper -- the entire quadrant of facial
22 bones. They will agree that it could not have
23 broken his sternum. It couldn't unless as we will
24 show it was one of those steins you get from
25 Germany at Oktoberfest. It would not have touched

1 the face or the sternum. That's important to
2 differentiate what caused this injury. This injury
3 cause will be very important to us in this case.
4 The chest. So he denies it. He says that never
5 happened. I wasn't holding a glass. So ultimately
6 it is going to be his word against Ford's on that
7 issue.

8 But it is not just that. There are
9 other things. His eye, he went to the emergency
10 room. He didn't really know what happened. But he
11 was in a lot of pain. He was pretty much beaten up
12 in this crash. Interestingly, his wife received
13 almost no serious injuries in this crash. Her
14 airbag was closer to her, but it's a smaller
15 airbag, was a round airbag because it has to be in
16 the steering wheel, can't go more than ten inches.
17 She received no injuries from the crash itself.

18 But he's in an emergency room. He
19 begins hearing things that are going on in that
20 emergency room and he does hear an EMS person
21 saying that they brought some glass from the crash.

22 Somehow that glass, that statement gets
23 into the medical record and is all over the medical
24 record that it's glass that cut the eye because
25 that person came here and said that, actually said

1 it in the emergency room.

2 He never said that it was a glass in
3 the eye. He never said I was holding a glass.
4 Doctors had to ultimately -- a Dr. Waring, no doubt
5 that he is highly qualified to do what he did. He
6 repaired the rupture of his eye. He also had a
7 hole that started at the margin in the eyelid, one
8 hole, one cut, actually the word laceration is
9 going to be very important today. What you and I
10 think of laceration is not what medical people
11 think when they write down the word laceration. It
12 is a difference between a laceration and slice.
13 When a medical person tells you that something is
14 lacerated, they mean that it has been ripped and
15 there's bridging in it meaning two parts have been
16 separated for one reason or another. There is
17 bridging between that's been pulled apart and you
18 can still see bits of fragments of fibers of skin
19 between it.

20 That's different from a slice or a cut.
21 Slice or a cut you don't have bridging. There's
22 no -- the eye is described -- the injury is called
23 eyelid, is described as a laceration. There is one
24 laceration in his eye. He did get vertical
25 laceration, some pulled apart without pulling it

1 all the way apart. Then there's another laceration
2 across the top. Some L shape. Interestingly, he
3 cannot get that unless his eye was closed which
4 would happen when you start to see a crash occur.

5 On the other side of that eyelid is a
6 completely different pattern of laceration. In
7 other words, these are not cuts. If they were cuts
8 penetrating the eyelid, the eye here, you open it
9 up there, the lid penetration will be right here.
10 Instead, the eye was completely disorganized. It
11 was damaged by the blunt trauma. And there is a
12 type of injury to an eye that you can see with
13 blunt trauma, not penetrating trauma. That is in
14 the margins around our iris where the iris meets
15 the white of the eye. That's the weakest part of
16 the eye. If you press on that hard enough it will
17 separate there. You will get a separation. And
18 the doctor who actually did the work, looked at
19 that eye and he saw a laceration, a bridging slice
20 exactly where you would expect it if you caused
21 blunt trauma to the eye. It is circumferentially
22 from 11:00 to 7:00. There's no half moon
23 laceration on his eyelid. Nothing in the shape of
24 a half moon punched through his eyelid. If
25 anything punched through the eyelid punched through

1 here.

2 We will have experts, including the
3 doctors themselves, a biomechanic expert, based
4 upon their experience, the training and
5 observations tell you that this injury here is a
6 laceration and you cannot have the injuries behind
7 the eye with multiple lacerations unless you have
8 them on the eyelid, too. The eyelid has to have
9 been punctured. Every place that the eye is
10 punctured if these punctures -- the only way that
11 can happen is with a blunt force trauma.

12 Now, one or more of the doctors and
13 experts will also tell you what they found in the
14 eye. A CT scan was performed. No glass particles
15 anywhere in his eye. The doctor who repaired the
16 globe, sowed the globe up, did the real work on the
17 eyelid found no glass particles, not even a tiny
18 one, from the many lacerations that were in there
19 that he sees. Not one of those lacerations had
20 even a dust particle of glass in it.

21 The doctor who repaired his sinus found
22 no glass products. The doctor who repaired his
23 broken nose found no glass products. And the
24 doctor who took his eyeball out and held it in his
25 hand and looked at the back of the socket found no

1 glass particles. That doctor is Dr. Eiseman who
2 will come here in person. Dr. Eiseman knows what
3 he's talking about. We will prove that Dr. Eiseman
4 is a 26-year Army veteran retired whose time in the
5 Army after West Point was spent repairing the eyes
6 of servicemen from blasts, from shrapnel, from
7 accidents. He was the only doctor that did that at
8 Walter Reed Hospital for many years and when he
9 stopped doing that in 2012 he started doing that in
10 civilian life. He is the only doctor that does
11 this in some of our institutions here today in
12 Charleston.

13 Twenty-six years and many of those
14 years he tells us he was treating men from Iraq and
15 Afghanistan including Afghan national soldiers who
16 had eye injuries. He knows the difference between
17 a penetrating injury and he knows the difference
18 between a blunt trauma injury. And while they
19 sometimes are not completely 100 percent possible
20 to rule one out from the other, it is his opinion
21 from what he saw and he describes the
22 circumferential injury on the inside of the eyelid
23 as being most likely from blunt force trauma. And
24 actually highly unlikely that it was glass.

25 So if you go from that point you have

1 to ask well, how did this happen? That's my job is
2 well, how do you get there, such an injury to
3 happen. Did they do testing? Don't they do
4 something that will show you the airbags won't get
5 into the face or into the eye? Don't they do
6 testing to show or prove or assure that if this
7 airbag when it goes off, it should not go off, when
8 it is a crash will help. The answer is they have
9 requirements. You'll know from their own words and
10 documents. They have requirements that airbags do
11 not go off when they are not needed. That's one of
12 the number one tenets of airbags going off when not
13 needed.

14 Why is that the case? Because what
15 harm is there if an airbag goes off when you are
16 driving down the road or if your airbag goes off in
17 a minor collision? Is there any harm, wouldn't it
18 really be better just to have your airbag go off
19 anyway, you know, who knows what can happen? The
20 answer is no, it is not a good idea. If you have
21 an incident, a crash where you don't need an
22 airbag, the sensor system does not know what the
23 next instrument is. The sensor system doesn't know
24 what that is going to cause you to do.

25 But just beginning very simply if

1 you're in a crash in a city where most of your
2 crashes occur it is going to be a crash at an
3 intersection or some type of side road, not going
4 to be highway speeds. You don't -- there are a lot
5 of crashes you don't need it, but one of the things
6 you might be is making a turn. I am turning at an
7 intersection. Or you see somebody who is coming at
8 you and you try to turn. When you have done that
9 as the driver you have now put your hand right near
10 the airbag. And it is indisputable in our case,
11 Ford will not dispute this, and I will prove that
12 when that happens, your arm, arms are oftentimes
13 irreparably changed and permanently damaged and you
14 didn't need that. I am not talking about, when I
15 say don't need it, I'm not talking about the extra
16 cost the car has when your airbag goes off and you
17 have to replace it. If your airbag goes off if you
18 are driving down the road or goes off in a crash
19 that say you are going 70 miles an hour and you hit
20 somebody and that redirects or you try to be
21 redirected, you have a little bit of contact which
22 had nothing to do, has done nothing to you, but if
23 your airbag went off two things now happen. You
24 are not able to drive because you have an airbag
25 going off in your face. You're also driving your

1 passenger into the same thing that you're getting
2 into. Oftentimes when you have an accident you go
3 somewhere else. You don't just stop in that crash.
4 You have a glancing blow. If the airbag went off
5 and then you continue on now 30 miles an hour, you
6 lost ten miles an hour for example in the crash, so
7 now you have got 30 miles an hour, you are
8 continuing down the road, you are going to run into
9 people, you are going to run into poles, you are
10 going to run into walls, you are going to run into
11 other buildings, other vehicles. You won't have an
12 airbag. Why? Because your airbag already deployed
13 when it shouldn't have. That's another reason why
14 you do not want an airbag to go off unless it
15 should.

16 Another one is you can have your hand
17 out if you are in the passenger side bracing
18 against something. I see a car coming in front of
19 us. You do this. Well, now you are going to have
20 the injuries to the hand, to the wrist if you
21 didn't need to have. Worse, when they go off when
22 they shouldn't something else is happening there.
23 The sensor system is designed to identify a crash,
24 a crash is happening. It does it by actually
25 measuring the deceleration going on in the car and

1 where it measures it is very important. That's
2 part of the sensor design process. But it tries to
3 measure how my car is now slowing down. It
4 basically sends out data to the sensor saying we
5 are slowing down, how fast you are slowing down.
6 There is another sensor, there's a software routine
7 in the vehicle that's looking at those, looking at
8 that data saying is this a crash. Am I in a crash
9 right now? Might say yeah. You might be getting
10 ready to be in a crash. So it will turn on another
11 portion of the system. It starts saying is this a
12 crash I need to deploy this airbag on?

13 And does it by comparing by what is called
14 calibration process. Sensors are calibrated to
15 identify certain types of crashes and then try to
16 bridge those with those crashes that they can't
17 really do. You can't do all the possible crashes
18 that are in the world, but you can do a certain
19 representative amount, then draw a conclusion from
20 that. You do your best to be able to deploy an
21 airbag when you should deploy it and not deploy.

22 So the next thing that says should I
23 deploy, it is this a crash, I should deploy it.
24 After some period of time which is in our lifetime,
25 less than it's a few milliseconds, but for it it's

1 a very long period of time, it makes many, many
2 calculations in a second. During that time it says
3 I think it is, I think it is and it is. That
4 period of time when it says it is then it starts to
5 deploy the airbag. Takes seven milliseconds to get
6 the airbag out. Its job not only then is to note
7 that maybe yes, I am in a crash, okay, I better
8 deploy the airbag. It's also if you are going to
9 deploy it, you have to deploy it in time, in a
10 timely manner. And here's the reason why. Our
11 expert will tell you. Airbags need to get out
12 fairly quickly and that means that they have to be
13 fairly powerful when they deploy. When an airbag
14 deploys it wants to get out as close to you as
15 possible. And it wants to deploy fully before you
16 get into it. It does that very quickly. So
17 quickly that it can hurt somebody if you are in
18 that spot when it does it. It can kill you, it can
19 paralyze you, brain damage you. It can just blind
20 you if you take your arms up or shatter your skull,
21 and bang your brain around in your head. Those are
22 things it can do if you're inside that area where
23 it is deploying through. Airbag doesn't come out
24 like a nice big puff. Airbag comes out like a
25 punch. It draws back. You can't even see it. But

1 you'll see it in a very, very slow motion. You'll
2 see how it comes out and you don't want to be
3 there. Then it draws back. You go to it. It is
4 not supposed to come to you. You go to it.

5 One of the things that automobile
6 companies have found is that they are also judged
7 by how well they meet certain type of injury
8 criteria as measured by dummies. Not human, by
9 dummies. We shouldn't be testing humans. We test
10 with the dummy. That might replicate the types of
11 injuries, various types of motion and forces. So
12 they use a dummy and the government and also some
13 test agencies, one of them, they are a good one,
14 called Insurance Institute for Highway Safety also
15 runs tests. They judge this performance. They
16 judge it publically with stars and numbers and
17 ratings. And it's an unfortunate competition to
18 get the best numbers. The best numbers for a dummy
19 are not always the best numbers for a person. I'll
20 explain that the way our experts say it is like.

21 Let me give you an example. There's an
22 injury criteria called HIB, head injury brain. So
23 if your head is bouncing around, someone measured
24 that bouncing, they measured the deceleration, they
25 have decided -- they correlate a number that they

1 say you know what? If you get this number of HIBs
2 that's going to be an injury. That's not going to
3 be, that's bad. So they will measure HIB with an
4 instrument in a dummy in a crash test. That crash
5 test, they will run it through several different
6 times, U.S. government for this car had two that
7 mattered in this case, which they ran one. Not
8 Ford. But you can get good numbers on that. You
9 get that bag out as fast as possible and as close
10 to the dummy as possible so that the dummy falls
11 into the cushion and gets the most benefit out of
12 that. Therefore gets the very lowest HIB numbers
13 because when you get it right here, we go into it,
14 now are slowed down, you will ride that bag down
15 and you get very low numbers. That looks really
16 good, that gets some stars with some reporters.
17 Put a human being in that situation, airbag has
18 been designed to be really well for a dummy.

19 Now, that dummy in that crash is seated
20 in a certain position on a track seat, on the seat
21 track. There will be -- for our purposes there's
22 three types of dummies. There's child dummies, but
23 they really only tested two. A male and a small
24 female. So if they get the airbag out to protect
25 those people in a crash, that crash has no break.

1 The dummies are not breaking.

2 So if you put that bag out really close
3 to the dummy that dummy doesn't move forward in
4 that crash until the crash starts. But in real
5 life people break their cars. And in real life you
6 move forward and now if they have done their job
7 they built it with an airbag that's not going to
8 kill you, not going to slap you in the face, not
9 going to punch you. Instead they will use one
10 which is up and down, forms a barrier as fast as
11 possible. Unfortunately that dummy, that bag
12 doesn't get you the really good numbers for the
13 dummy. They get you a lot less than a thousand
14 HIB. They get you 200 or 400 HIB. You won't have
15 an injury, but they won't get to 100 HIB so it
16 doesn't look as good as those bags that come out
17 really fast, really hard to get really closest to
18 you.

19 On the other hand, they are not going
20 to hurt you either as easily. Bag comes out
21 because you have moved forward into that position.
22 Your injury will get worse and worse and worse and
23 your injury can be more extensive the closer you
24 get, the more parts of your body the closer you
25 get. You can get an injury here and here if you

1 are in their deployment zone. So when that occurs
2 just from breaking that's a bad design. But it can
3 also occur because that process of thinking about
4 what the crash is and it turns out that when the
5 sensors are thinking about a crash, it made sense
6 really if you run 35 miles an hour into an iron
7 wall, that's going to be a pretty quick collision.
8 But the information about that crash deceleration
9 is going to be very fast to get back to that
10 sensor. It is a crash right now. That is the
11 easiest crash to define. It's the quickest one to
12 get an airbag out in. When you start running into
13 other things, things that are soft, cars are soft
14 compared to walls. You run into the side of a car,
15 it is not a wall. And you run into a wall you stop
16 immediately. When you run into the side of
17 something you start slowing down because things
18 start to bend, bending in that car. You don't
19 always stop. You just run a little.

20 So it takes a little longer for it to
21 decide do I need an airbag. It's unfortunate if
22 they have put their sensors in places or in numbers
23 or with calibrations that don't get that right.

24 If they are under, for example, the gun
25 of trying to get a sensor into the system for job

1 one, you want a system that does that, but now on
2 it you are going to have problems.

3 So you can and it is feasible in 2009,
4 way before that, to deploy your airbags in a timely
5 manner if you do all the things that are necessary
6 to do and you let your engineers have the leeway
7 and the ability to chose various aspects of the
8 system for the purpose of giving you one that will
9 not deploy the bag late.

10 So in this case our experts will tell
11 you, we are going to prove to you that airbag
12 should not have deployed in this crash. And when
13 it deployed it deployed late because it was a
14 slower crash, so slow that it did not require an
15 airbag.

16 Unfortunately, the system decided to
17 deploy the airbag anyway and it takes extra time to
18 make that decision when it is not a wall. It takes
19 more time to make the decision and during that
20 process if somebody for example, is breaking or
21 during the crushing process of the cars coming
22 together, and the cars moving each other about, you
23 now move into the area that the airbag which
24 unfortunately was designed to get good numbers for
25 a dummy rather than good performance for a human,

1 you will be hit and you will start being hit in the
2 face and in the chest, exactly where our injuries
3 are.

4 Does this airbag do this? The process
5 then is well, let's look at the event data
6 recorder. Event data recorder says well, this
7 airbag deployed 40 some milliseconds. Would you
8 have an injury? Would you have enough time? Is
9 that late? That is really not late if you believe
10 the event data recorder. That's one thing we will
11 talk about during the trial, if you believe the
12 event data recorders. And I will prove to you that
13 you can't not believe the event data recorders.
14 You will have to.

15 So if you say that, if you look at that
16 and you say well, doesn't get you there, then the
17 event data recorder is not right, you have to look
18 at the other portion of their system now. Well, is
19 it susceptible to being late? Is it susceptible to
20 deploy an airbag when it needed to deploy? The
21 answer is yes, it is. We will show you the
22 calibration sheet. We use calibrations to report,
23 many pages, but very few are -- just a few are
24 pertinent.

25 What they do is they will run some

1 hundred crash tests in the process of developing
2 the whole entire vehicle. They have got to assess
3 many, many things, fuel leakage, does the door open
4 after they crash. They run many different crashes.
5 What will it do if you run into a pole, what will
6 it do if you run a curb or a cut off stump or a
7 wall, you run a bunch of them to learn what the
8 system can do.

9 This system performed with electronic
10 crash sensors and the crash sensors are a great
11 thing versus what the old ones were. The old ones
12 can only deploy the airbag at one scenario, if you
13 were over 14 miles an hour Delta-v3 is the velocity
14 it will deploy it. Unfortunately they would deploy
15 them regardless of what you are, how big you are,
16 what sex you are, are you a child, infant, do you
17 wear a seat belt, not wearing a belt. They were
18 bad, but they were as good as you can get at the
19 time.

20 Accelerometer outputs data all the
21 time. So you can make decisions all the time do I
22 need the airbag if somebody is wearing a belt? Do
23 I need an airbag if someone is not wearing a belt?
24 They can do that. Do I deploy an airbag if I have
25 a child seat or an adult in the same crash? Do you

1 want that to happen? They will turn it off for the
2 child seat. Hopefully it is properly installed for
3 an adult. Well, is that adult wearing a belt. If
4 you are not wearing a belt they are going to want
5 to deploy the airbag earlier. Because you are not
6 -- you don't have the protection of the belt.

7 Well, do I fire a pretensioner. Pretensioner is
8 the device that tightens your seat belt very
9 quickly. It's not what you are familiar with if
10 you are driving and kind of feel the belt lock.
11 The pretensioner is an explosive device that pulls
12 in about this much webbing. It takes it off down
13 to you, cuts through like heavy clothes, any slack
14 that might be to help you ride down. That's
15 another thing you can do. Another thing you can do
16 and it started out, we will show that some
17 companies decided to reduce the number of crash
18 sensors they had. The old sensor systems some had
19 four across the front and then three across the
20 front. The old sensors. Expensive, but it's a
21 good thing if you worry about getting timely
22 deployments. Then they went to two.

23 So they came in with the electronic
24 systems. Some car companies decided to use those
25 electronic accelerometers to replace the ones up

1 front altogether, put them into a -- let's use the
2 term RCM. They put it in the occupant position.
3 What you have lost there when you do that is you
4 have lost all the information about the crash that
5 you would have gotten if those parts were
6 functioning because they will crush it at a
7 different rate than what this is. This will slow
8 down a lot slower than these will. These will give
9 you information about the crash very quickly. Help
10 you then to make that decision timely. Some
11 decided to, and it is absolutely a money saving
12 situation, just remove those. Very quickly after
13 that they began to realize you can't really do
14 that, you need them. Some companies went to two up
15 front, some went to one in the middle.

16 Ford made a choice with initially this
17 Ford Focus to go with two up front. And if you
18 look at the calibration process, the calibration
19 report from that, it's a pretty good test, but
20 those we will show are not due to the fact that
21 they used two. It will be due to the fact that
22 where they actually put the sensors. The sensors
23 on the Ford because they have to put them in a
24 place that will deform in the crash. If you are on
25 for example, the framework that pushes through

1 another car, it doesn't slow down. The importance
2 of it slowing down is if the sensor is on that it
3 doesn't slow down either. So it doesn't know
4 there's a crash.

5 But if you put it on something that
6 deforms in the crash now it senses that motion from
7 the deformation and it gets that information down
8 to the back RCM. So it's very important where you
9 put it.

10 So Ford had made a decision to go away
11 from the two, go to one in the center. They redid
12 their calibration. They were running late on time.
13 Recalibration is not as good as the first one. And
14 the fact is it was a lot worse. But in many ways,
15 it is what actually explains what happened here.
16 Of those hundreds, they will say hundreds,
17 certainly at least a hundred, crash tests they did
18 on this, they pulled out some specific ones. They
19 put them into their design process they call
20 calibration. They gave the accelerometer data from
21 all those different accelerometers to their
22 supplier in this case, Bosch, and said okay, here's
23 what we want you to do with the data for these
24 crash tests. We want you to come up with a system
25 that will not deploy the airbag for this person for

1 this in this crash, this crash, this crash. Or to
2 deploy the airbag, but only for somebody not belted
3 in a crash or deploy the airbag for an unbelted
4 person, a belted person first stage, but don't
5 deploy it for an unbelted person second stage.
6 Because the beauty of our systems today if you do
7 them right is you don't just have to deploy them
8 all at one time. And you don't even have to deploy
9 it for one severity of the crash. We have dual,
10 what we basically call dual stage airbags or
11 advanced airbags or multiple stage airbags. So
12 when a crash occurs at a moderate crash that you
13 need an airbag for a person who is also belted,
14 even though they are belted, you need an airbag,
15 you don't have to deploy it at that powerful level.
16 You can deploy it at only one level. So we have
17 first stage, let's say I am just saying 65 percent
18 of the full power. That's all you need for that
19 crash. But if it is a more severe crash then
20 deploy them together. There are two aspects of
21 that system, actually two different squibs in
22 there, ignitors, two separate ways that they can
23 create more power by using the second squib. The
24 point is that you do that so they can really tailor
25 to your crash.

1 So they gave all their requirements
2 that included timing requirements in this crash we
3 want you to deploy at this time. In this crash we
4 want you to deploy at this time. So that's what
5 they did. Now, they came back, Bosch came back and
6 said we have done our work, we are done. With what
7 you have given us this is what we can do. And I'm
8 going to show you that they didn't meet, of the 20
9 some crashes that they did use to calibrate this
10 system, they failed at one aspect or another on all
11 of them, some being late, or they failed by firing
12 when they shouldn't fire or they failed by not
13 firing when they should have fired. You look at
14 one of those crashes and say here's a crash we
15 can't deploy the airbag in this crash. You want us
16 to deploy it in that crash and we want them to
17 deploy it, too. We want them to.

18 But in order to deploy it in this
19 crash, also with the system that you want us to
20 design, putting the sensors where you want to put
21 them, use these crashes, we are also going to have
22 to deploy it in a crash where it is not. We are
23 going to have to violate the requirements. Ford
24 had the two choices at that time. Go back and
25 change our positions --

1 MR. CARTER: Objection to argument.
2 This is what the evidence is supposed to show and
3 this is argument, Your Honor.

4 THE COURT: Tell them what you plan on
5 showing. Don't argue about it. Okay?

6 MR. VAN GAASBECK: Thank you, Your
7 Honor.

8 THE COURT: Tell them what you are
9 going to show. Quit arguing about it.

10 MR. VAN GAASBECK: So we are going to
11 show you that when that system came out that didn't
12 meet all its requirements. And the two choices
13 that they had at the time, our design expert will
14 say you want to go back and change the locations of
15 these sensors. That will solve it. We will show
16 you the choices not made. The choice was to accept
17 it and to accept it by saying -- we can show that
18 their decision was well, we don't think that these
19 airbags hurt anybody when they go off. So we are
20 going to change that. We are going to allow them
21 to go off.

22 So I will show you that they knew that
23 they put airbags out that deployed late, show you
24 they put airbags out that deployed in crashes where
25 they weren't needed. We will show you that not

1 just by a calibration, we will also show it with
2 the event data recorder about the decelerations in
3 our crash. We will show you our decelerations
4 which are actually the readings from those
5 accelerometers and they will show you that the
6 acceleration in that crash was actually less than
7 the deceleration in any of their prior crashes, any
8 of them. In fact, in some no fires it's less than
9 that. So by their own criteria, this crash was not
10 severe enough to cause an airbag to go off.

11 So the effect of this is the next thing
12 that we will show. I'm not going to go into a lot
13 of detail about this, but when you lose an eye, our
14 expert will show, Mr. Newbern will tell you when
15 you lose an eye as an adult you don't have a
16 lifetime of living with eye one, it's extremely
17 difficult to overcome. He will explain to you how
18 difficult it is. He will explain to you how things
19 that you can't even imagine are affected by that.
20 Of course it depends on the person themselves.
21 Some people are better able to handle isolation for
22 example. But certainly he'll explain to you just
23 simple items like driving a car because of all the
24 blind spots. He has got one half extra blind spot.
25 He will tell you how that affects him. Tell you

1 how it affects him going to work.

2 By the way, he was off work, the
3 evidence will show for a considerable period of
4 time. He lost a lot of income as a result of that.
5 He went back to his doctor and said please let me
6 go back to work. The doctor will tell you I didn't
7 want him to go back to work in the environment that
8 he works in. I don't think it's safe for him
9 because he's in a maintenance shop. Things are
10 moved around all the time. He will explain it. I
11 can't do it. He went back and said please let me
12 go back to work. He is working. He will tell you
13 how terrifying it can be sometimes in a place with
14 moving objects that can hurt you when you can only
15 see about half of your head.

16 It is not just the cost of what it was
17 to repair his injuries or to at least put him in
18 the before. It's not just the cost of the loss of
19 income, but it is also the compensation that we can
20 only do and it's all we can do for what we will
21 prove to be many incapacities that he now suffers
22 in that the way that has changed his life.

23 I'm going to stop now. I was going to
24 show a demonstration, but we will save it for the
25 trial period. Thank you.

1 THE COURT: Mr. Carter.

2 MR. CARTER: Please the Court.

3 THE COURT: Yes, sir.

4 MR. CARTER: Good morning, almost
5 afternoon. My name is Ken Carter. I introduced
6 myself earlier. And I introduced my law partner as
7 well. In addition today we have Mr. Ram
8 Krishnaswami who is sitting behind me. Mr.
9 Krishnaswami is an engineer with Ford Motor
10 Company. He will be a witness in this case. And
11 he will address a number of things that you have
12 heard about in the opening regarding what Ford did
13 or may not have done, what Ford knew or may not
14 have known. I want on behalf of Ford Motor Company
15 to thank each and every one of you for being here.
16 Thank you for your time. I know that you didn't
17 volunteer to be here. Thank you for your
18 attention.

19 I want to -- if I were to show you this
20 and ask you what are you looking at, you would say
21 Mr. Carter, that's your hand, and that would be
22 partially correct. But you actually can't see my
23 hand until you see both sides. And in this lawsuit
24 Ford Motor Company is the Defendant. And almost
25 everything we do because we're the Defendant and

1 the Plaintiff has the burden of proof, when I say
2 Plaintiff, that's Mr. and Mrs. Newbern. When I say
3 Defendant, that would be Ford Motor Company. I
4 will try to be very clear about who I am referring
5 to, but in this instance the Plaintiff has the
6 burden of proving so the Plaintiff goes first. The
7 Plaintiff will get to call their witnesses, and
8 they will get to put up whatever evidence they want
9 to put up to prove whatever they want to prove. We
10 will get to question those witnesses, but it won't
11 be until after that it's completely done that Ford
12 Motor Company gets to call its witnesses. So I
13 will ask you please don't make any determinations,
14 keep an open mind until you hear all of the
15 evidence. When you stood and took an oath just a
16 minute ago your oath was to fully and fairly try
17 the case based on the evidence.

18 And the evidence in the case, what
19 evidence is is statements from the witness stand
20 under oath, depositions that were taken in the case
21 which are sworn out of court statements, but again,
22 sworn statements under oath and physical evidence.
23 In this case there's mention of glass. You will
24 see the glass. That's the evidence. The Court
25 will instruct you what is not evidence is what I'm

1 saying right now.

2 What I am saying in opening, this is
3 not evidence. What you will base your decision on
4 is the evidence that comes from the stand and from
5 the documents and the things that his honor allows
6 you to consider as evidence, it's not what the
7 lawyers say that they think happened or might
8 happen or might have happened sometime in the past.

9 Pay close attention to the evidence and
10 we would ask that you don't make any conclusions
11 until you hear all the evidence.

12 In this case there are three general
13 things. First, the evidence will show that this
14 was a substantial collision. This was not a fender
15 bender. This was not a parking lot wreck. This
16 was a substantial accident with a closing speed
17 approaching 70 miles an hour.

18 Additionally, the 2009 Focus, the
19 evidence will show that both from the perspective
20 of the driver and the passenger that the airbag
21 system, because both airbags fired. If one fires
22 all fire. That it was properly designed and that
23 it worked exactly as it was designed and that the
24 allegation in this case is that the restraint
25 system is defectively designed. This is a design

1 defect case. The evidence will show you that the
2 2009 Focus, it was not defectively designed.

3 Then last, in this accident the
4 evidence will show that the injury that Mr. Newbern
5 suffered could not have been caused solely by the
6 airbag deploying. Something else had to happen.

7 I believe their testimony is going to
8 be that Mr. Newbern as a result of something, I'm
9 not sure what the evidence on that will be yet, but
10 got his head -- during this accident, got his head
11 close enough to where the airbag was going to
12 deploy so that as it was deploying it struck him
13 with blunt force trauma in the eye. I believe that
14 is the Plaintiffs's defect theory.

15 The testimony will show you that
16 regardless that without something else happening
17 the airbag does not cause the kind of injury that
18 Mr. Newbern suffered. Mrs. Newbern also received
19 an airbag. The evidence will show that she wore
20 eye glasses. That she wasn't injured. She was
21 able to go with her husband from the scene in an
22 ambulance and care for him for the months after the
23 accident.

24 Very briefly, there wasn't much
25 discussion about the accident. If you can bring it

1 up. This happened here in Charleston. You may or
2 may not be familiar with this intersection.

3 THE COURT: Mr. Carter, I hate to
4 interrupt you. I apologize. I understand one of
5 the jurors needs to take a break.

6 MR. CARTER: This would be a good spot.

7 THE COURT: We will take a short break.
8 Let the bailiffs know when you can come back to the
9 courtroom. All of you go. Everybody.

10 (Thereupon, the jury exited the
11 courtroom at 11:44 a.m.)

12 (Brief recess taken.)

13 (Whereupon the jury entered the
14 courtroom at 11:53 a.m.)

15 THE COURT: Thank you very much. Mr.
16 Carter, if you will continue your opening.

17 MR. CARTER: There hasn't been much
18 discussion about the accident itself. On the
19 screen you see the intersection of Ashley Crossing
20 Drive and Magwood. Evidence will show that the
21 Newbern vehicle was driving in this direction
22 toward the intersection. You will see in the
23 opposite direction there is a left turn lane. The
24 data downloaded from the vehicle after the crash
25 shows that the Newbern vehicle was traveling

1 42.3 miles an hour as it approached the crossing.
2 There was another vehicle stopped at this line. As
3 they approached this 1989 full sized Chevrolet
4 Caprice four door, full size vehicle approaching as
5 well, suddenly without warning rather than waiting
6 for the Newberns to pass swerved into the lane.
7 The collision was right in the center of the
8 intersection. The vehicles came together. The
9 evidence will show that Chevrolet Caprice had
10 enough momentum after the collision to continue
11 forward and strike the other vehicle which is a
12 Dodge Charger sitting waiting at Ashley Crossing.

13 There really is no contest about the
14 speed of the Caprice as well. Both Plaintiff and
15 the Defendant hired an accident reconstructionist
16 experts. You will hear from the accident
17 reconstructionist for Ford, Dan Toomey, who
18 calculated the speed of the Caprice was 27 miles an
19 hour as it made this turn. The speed at impact of
20 the Newbern vehicle was 42.3 miles an hour, which
21 is 68, almost 69 miles an hour closing speed
22 between the two vehicles. As to the Ford, it was a
23 frontal into the right front corner. We will have
24 photographs of the vehicle and you will be able to
25 see the damage. This was a substantial accident.

1 There's been discussion about the event
2 data recorder or the black box. 2009 Focus had a
3 -- called various things, event data recorder. It
4 controls the airbags, but it also records data from
5 several seconds before to several seconds after.
6 And so it takes down things like speed of the
7 vehicles, whether the occupants were belted or not,
8 airbags deployed or not. The speed which the
9 airbags deployed in this case was 42 milliseconds.
10 And I want to show you this just because I remember
11 the first time people talked to me about
12 milliseconds. It is not a concept that we deal
13 with regularly. This is the easiest example
14 because you are going to hear milliseconds multiple
15 times in this case. And I think this will help you
16 understand what that means.

17 This is the face of the clock, and this
18 is one second total, all right? So a thousand
19 milliseconds in one second. All right. So this is
20 250 milliseconds at 3:00, 500 milliseconds,
21 750 milliseconds.

22 The things that we are talking about
23 happening in 43 milliseconds are all between the 12
24 and the 1:00, actually right in here. The
25 testimony will be, and it is various people, the

1 speed it takes to blink your eyes is roughly here.
2 You can blink your eyes four times in a second. It
3 will be 250 milliseconds. All of this happens
4 very, very quickly. 43 milliseconds is a very,
5 very short period of time to determine if the
6 airbag is needed, fire the airbag and to present
7 the airbag. That's what this EDR recorder shows as
8 recorded.

9 Now, we believe that the EDR data is
10 correct in this accident. We believe that the
11 evidence will show that both the experts for the
12 Plaintiff and the Defendant rely on that data as
13 being accurate. I'm not sure what the testimony
14 will be otherwise.

15 After the accident -- this happened at
16 a quarter until 7:00 at night on December the 28th,
17 2012. So it is dark. It is dry. And I believe
18 the testimony was that Mr. and Mrs. Newbern were
19 going to a movie. After the collision, and the
20 testimony will be within seconds fortunately there
21 was an off duty EMT named Brandon Hinton. He
22 finished his shift, just happened to be driving by,
23 actually a good Samaritan in this case. He wasn't
24 on a run, but he stopped. He got out. He rendered
25 assistance. He checked on both Mrs. Newbern and

1 Mr. Newbern. He called for fire rescue because the
2 right front door was jammed. They eventually got
3 the door open. They were able to get Mr. Newbern
4 stabilized. They were able to get him out of the
5 vehicle. EMT -- Hinton called as well for an
6 ambulance. The ambulance showed up very quickly.
7 And you'll hear from certainly in the defense case
8 from both EMT Hinton, EMT Riddle and paramedic
9 Trammell. Riddle and Trammell were in the
10 ambulance and they were there again within minutes
11 and took over the crash. They did what is required
12 for them to do. They will testify about what they
13 did, what they saw. They were able to get Mr.
14 Newbern in an ambulance. Because of the nature of
15 the injury they went ahead and drove him straight
16 to MUSC. His wife was able to drive with him in
17 the front of the ambulance. He was taken to MUSC
18 and his testimony was he was treated for an eye
19 injury, laceration and a fracture to his right eye.

20 In addition, the evidence will show
21 that there were other injuries sustained by Mr.
22 Newbern in this accident. We think the evidence
23 will end up being important on these. These are a
24 laceration in his right palm, laceration on his
25 right thumb, and a fractured sternum about the area

1 where the seat belt would come across. Those are
2 the other injuries and we will hear testimony about
3 the significance of those injuries and how they may
4 relate to the airbag deployment and the nature of
5 how Mr. Newbern received his injuries in this
6 accident.

7 The lawsuit that was filed against Ford
8 basically alleges three things. That the vehicle
9 was defectively designed, the 2009 Focus, that in
10 this crash this should have been a no deployed
11 event. That's what the Plaintiffs allege against
12 Ford, and that's what Ford built its defense on,
13 and that in this accident the airbag shouldn't have
14 gone off and that when it did go off that Mr.
15 Newbern was able to move forward far enough that as
16 the airbag is inflating he's struck in the eye.
17 That's the allegation and I heard the term bag slap
18 and punch out. Those are terms of art and the
19 airbag expert will describe those.

20 But basically he is not on top of the
21 airbag, but he's not back far enough for it to work
22 properly. He is within six inches and the airbag
23 comes out before it is fully inflated. That's the
24 allegation that the Plaintiffs have made against
25 Ford.

1 What the evidence will show you, you
2 will first hear regarding the design and
3 development process at Ford Motor Company. Mr.
4 Krishnaswami is involved in that. He will testify
5 regarding for this platform 2008 to 2011 Focus are
6 basically the same vehicles, there were some
7 changes in that time frame, but in that -- before
8 the job one, the first 2008, this was a 2009, but
9 before 2008 Mr. Krishnaswami will talk to you about
10 what testing was done by Ford with regard to the
11 airbag sensing system. There were literally
12 hundreds of sled tests. There were dozens of crash
13 tests, actually taking a prototype vehicle and
14 running it into a wall, running it into another
15 vehicle, running it into a pole.

16 In addition to the crash tests there
17 are what are called sled tests. What they do is
18 they take the vehicle, rather than wrecking it so
19 they can use it again they put it on a rail, they
20 have a pneumatic ram and they can control the speed
21 and they fire the vehicle backwards which is the
22 effect of running into a wall, but you don't ruin
23 the vehicle. You can do it over and over and over.
24 They tested this way hundreds of sled tests.

25 And then from that information they run

1 thousands of computer simulations from all of these
2 crash tests. They get data. How fast is the
3 airbag operating, where is it operating, when is it
4 operating. Once they have the data they can move
5 it to computer simulation and then they can make
6 all of the adjustments.

7 Mr. Krishnaswami will be able to talk
8 to you at length about the process that went into
9 the design development of the 2008 to 2011 Focus
10 and why we believe it is not defective and it was
11 properly designed and that it operated properly in
12 this crash.

13 By 2009 the evidence will be that the
14 automobile industry, Ford Motor Company included,
15 had made very big strides with regard to airbag
16 technology by 2009.

17 In this vehicle the airbag system was a
18 dual threshold, dual stage, meaning that you can
19 get a low output or high output bag, depending on
20 the severity of the crash, as opposed to back in
21 the mid 90's where you only had one option. It was
22 full force. The airbag in the 2009 Focus could
23 determine based on the forces of the crash whether
24 a partial stage one or a full stage two was needed
25 depending on whether the occupant was belted. It

1 makes a difference whether you are belted or not,
2 whether the occupant was close to the steering
3 wheel or far away from the steering wheel and on
4 the passenger side whether the passenger was a
5 child in which you don't want to get a bag or an
6 adult and it adjusts, it knows, that makes the
7 determination based on the forces that the crash
8 sensors are detecting.

9 The testimony will be that in this
10 incident and this accident Mr. Newbern received
11 stage one which is roughly 50 percent of the full
12 output mid 90's bags. And again Mr. Krishnaswami
13 will be here and will be able to answer any
14 questions that opposing counsel has.

15 The other thing that the crash testing
16 that was done in the design development stage
17 enabled Ford to know is that the speeds at which
18 and the times at which the airbags deploy in this
19 vehicle do not present the hazard being alleged in
20 this case.

21 We ran, and Ford ran specifically for
22 this because of the allegations in this, a sled
23 test with a dummy seated and we have that and I
24 want to show it to you real quickly. You will see
25 it several times in the lawsuit. What looks like a

1 car going forward and stopping is actually a car
2 that's being propelled backwards. Mr. Krishnaswami
3 was responsible for calibrating and arranging that
4 sled test. He will be able to tell you about the
5 forces, what it replicates and how it relates to
6 the forces in this accident and what it tells us or
7 what it shows us about whether a full sized rear
8 seated passenger presents his head or face in the
9 area of the bag deploying.

10 The additional couple of pieces of
11 testimony that we believe the evidence will show
12 Mr. Newbern and maybe unlike what you expect here,
13 before I ever say what I think the evidence is
14 going to be, I have deposed these witnesses under
15 oath so I have asked these questions before and so
16 I know what they told me one time before under
17 oath.

18 So what I believe that Mr. Newbern will
19 say is that because he is 6 feet 200 pounds, 180,
20 200 pounds, Ford Focus is a small car, his wife's
21 car, whenever he rode in it he rode in the
22 passenger side. He slid the seat full rear and was
23 sitting full rear in this accident. In that
24 position we know, we believe, exactly what happens
25 to a passenger of roughly his size in an event of

1 the forces that were seen in this accident with
2 regard to the airbag.

3 Secondly, we believe that the evidence
4 will show there's testimony of the injury being
5 caused by blunt force trauma. We believe that it
6 was caused by blunt force trauma as opposed to a
7 knife cutting, think of a boxer or a boxer with an
8 ashtray in his hand. You get hit hard enough and
9 it is going to split the skin. It will do the same
10 to the tissue in the eyeball unfortunately. And
11 further determining what happened and investigating
12 the allegations we deposed the EMTs. These people,
13 they work for Charleston. They're citizens and
14 they will be on that stand. You can evaluate
15 whether they are believable or not. But it is not
16 Ford Motor Company that said there was glass
17 involved. The EMT's will talk about what they saw
18 with regard to a glass, a heavy drinking glass in
19 the vehicle. What they did with that glass, they
20 secured it, presented it to the treating physicians
21 and they will tell you why they did it and what
22 they did.

23 The testimony of Mrs. Newbern, Mr.
24 Newbern's wife, she can't be a hundred percent, but
25 she does think that she owns glasses that look like

1 this. This is a very distinctive, six-sided heavy
2 glass is what it appears to be from the fragments
3 that are found in the vehicle.

4 And then last EMT Riddle will be here
5 and you can judge for yourself. His testimony will
6 be that at the accident scene Mr. Newbern told him
7 that the glass hit him in the face.

8 Now, surprisingly when we took Mr. and
9 Mrs. Newbern's deposition they denied then, I fully
10 expect when they take the stand they are going to
11 deny that Mr. Newbern had a glass in his hand. You
12 will be the judges of the credibility of the
13 witnesses. You will be asked to determine what is
14 most probable based on the evidence, the physical
15 evidence, the testimony and using your common
16 sense.

17 Pay close attention to the testimony of
18 the EMTs and the paramedics that treated Mr.
19 Newbern, got him to the hospital after this
20 accident.

21 I mentioned the sled tests. We will go
22 into more about what that shows and how it is
23 demonstrative of what happened.

24 Again, ladies and gentlemen, I want to
25 be conscious of your time. I will close by saying

1 that the evidence in this case will show you that
2 this was a substantial collision, that the airbag
3 in the 2009 Ford Focus was properly designed and
4 this accident based on everything that we can tell,
5 it operated properly. That it does not operate
6 such that a person sitting in a position that Mr.
7 Newbern was sitting in this accident moves forward
8 the distance that it takes to put him in the area
9 of the deployment. And finally we believe that the
10 evidence will show you that his injury, the nature
11 of his injuries, indicates that the airbag alone
12 did not cause these injuries. Rather, they were
13 from a focused blunt force trauma. Ford believes
14 that that blunt force trauma came from that glass.
15 We believe that's what the evidence will show you.

16 Once you have heard all of the evidence
17 we get another chance to come and talk to you about
18 what we believe the evidence showed. Then after
19 that you will decide. You will be asked to render
20 a verdict and we will be asking that based on the
21 consideration of all of the evidence that you
22 return a verdict in favor of Ford Motor Company.
23 Thank you.

24 THE COURT: Call your first witness,
25 please.

1 MR. VAN GAASBECK: Yes, Your Honor. We
2 would call Mrs. Newbern.

3 CLAUDIA NEWBERN
4 having been duly sworn, testifies as follows:

5 THE CLERK: Please state your first and
6 last name and spell your last name loudly and
7 clearly for the microphone.

8 THE WITNESS: Claudia Newbern,
9 N-E-W-B-E-R-N.

10 MR. VAN GAASBECK: Your Honor, may we
11 approach the bench? I need to ask you about
12 something.

13 THE COURT: Yes, that's fine.

14 (Off-the-record conference.)

15 DIRECT EXAMINATION

16 BY MR. VAN GAASBECK:

17 Q. Could you please tell the jury who you
18 are for the record?

19 A. I'm Dean's wife.

20 Q. And Dean who?

21 A. Dean Newbern.

22 Q. Is that Mr. Newbern over there?

23 A. Yes.

24 Q. Thank you. Where do you live?

25 A. I live in West Ashley here in

1 Charleston County.

2 Q. How long have you lived there?

3 A. Five years.

4 Q. Prior to that where did you live?

5 A. We lived in Virginia Beach where Dean
6 is from.

7 Q. How long have you been married to Dean?

8 A. Horrible I have to count. This will be
9 our 11th year anniversary in December.

10 Q. What do you do for a living?

11 A. I have been a teacher for 17 years.
12 And just this year I started as assistant principal
13 at Stall High School here in Charleston County.

14 Q. Thank you. What does Dean do?

15 A. Dean works for Boeing. I know it has
16 to do with tools and things like that.

17 Q. Thank you. So let's just go for a
18 moment to the day that your husband lost his eye.
19 What kind of day was that?

20 A. It was very nice. I remember I was a
21 little sick that day so I had been at a doctor in
22 the morning. And we had just bought -- purchased a
23 house, our dream house in West Ashley and the
24 previous owners didn't much care about the yard and
25 trees were out growing and all that. So we both

1 were on our Christmas vacation because it was
2 December 28th. And Dean likes to work in the yard.
3 I'm not a yard person, but I decided to help him
4 out. So we spent the rest of the day after I came
5 from the doctor cutting trees and branches and just
6 cleaning all the yard. That's what we did all day.

7 Q. So at the end of the day cutting trees
8 and branches and such, what was your course of
9 events?

10 A. So I was not feeling that well. Dean
11 said we have been working all day, why don't we do
12 something. Usually Friday night is our date night.
13 We have done that for many years. So he said let's
14 do something. Let's go to the movies and I think
15 it was The Hobbit that was showing. I have to do
16 with his action movies. So we decided to go and
17 see The Hobbit. We decided to go to the movies.
18 We had dinner at the house and after that we
19 decided to go to the I think 7:00 movie at Citadel.

20 Q. So how far away from your home is the
21 Citadel?

22 A. I would say less than a ten-minute ride
23 because we live in Charleston at 61 and then take
24 526, then you are right there. Less than
25 10 minutes, seven.

1 Q. And what were your plans for the
2 theater? What type of plans did you have?

3 A. We usually don't buy like a lot of
4 stuff because it's expensive, but we usually get
5 some candy and some water that we usually have or a
6 soda.

7 Q. So I'm interested then in what you
8 brought with you in the car.

9 A. My purse and just had I think my cell
10 phone was in there and, you know, we don't carry
11 all kinds of things, just that, my purse.

12 Q. What did Dean bring with him?

13 A. I think he had a cell phone, but he at
14 the time and still now is not a very cell phone
15 person. He doesn't like them that much. So I
16 don't even think that he brings his cell phone and
17 his wallet. He always carries his keys with him.
18 Even if I'm the one driving out of the garage he
19 always has keys.

20 Q. So we have heard that he might have
21 carried some sort of glass with him. Can you tell
22 us a little bit about that?

23 A. No. When he got in the car he just had
24 his wallet. He usually has the car keys, the house
25 keys. That's all he had in his hand.

1 Q. Do you bring glass tumblers into the
2 car?

3 A. No. My car is actually pretty clean.
4 The teacher in me, I don't bring really anything.
5 If have anything it would be a bottle of water,
6 things like that.

7 Q. What types of drinks does Dean bring
8 into the vehicle?

9 A. He likes Red Bull. Sometimes he will
10 have that. But usually we like to drink water a
11 lot. We just brought one today. We had one in the
12 freezer last night. We usually put filter water
13 and freeze and in the morning when he goes to work
14 some coffee. But since we were going to the
15 theater we didn't have anything.

16 Q. So what does he carry the coffee in
17 when he does go to work?

18 A. He has some coffee mugs that are ones
19 that are -- I can't remember the name, brand name,
20 but very popular now. And I gave him one that he
21 kept in his car, aluminum, just had his name on it.
22 So it was a birthday present, just those kind of
23 coffee mugs that everybody has.

24 Q. Did he take a glass tumbler himself
25 filled with coffee for example?

1 A. No glass, no. They are aluminum or
2 plastic.

3 Q. As a normal course of events you use
4 plastic?

5 A. Yeah.

6 Q. So on the day of the incident did he
7 even bring the plastic?

8 A. Huh-uh. No, sir.

9 Q. And what -- can you state with any
10 certainty, though, that he did or did not carry
11 with him some sort of a glass tumbler that he had
12 in his -- first of all, just into the car did he
13 bring one?

14 A. Well, I looked at him once he was
15 getting in the car so I saw exactly what he had in
16 his hand. It was the wallet and his keys.

17 Q. Did you by any chance carry any glass
18 tumblers in the car?

19 A. No. That was Christmas break so as a
20 teacher, at that time I was teaching so you bring
21 everything that you need to work on your break,
22 books, things from the classroom, things like that.
23 So that would be the only place would be if I had
24 it in the back seat with all my other stuff that I
25 was working on during the break, but not like right

1 next to me, no.

2 Q. What did you carry in the car when you
3 drink?

4 A. Bottled water and just one of those
5 shakes like a plastic container you put shakes in
6 there. That's what I usually have.

7 Q. So if the question then comes down to
8 do you or do you not say that at the time of the
9 crash that Dean was holding some sort of glass
10 container, what is your position on that? What do
11 you say from what you saw?

12 A. No, he wasn't.

13 Q. Let's talk then about how far away was
14 the theater?

15 A. About seven minutes in the car from the
16 house.

17 Q. Was it hot in the car?

18 A. No, it was actually cold. It was
19 December 2008. I mean cold for Charleston. Just a
20 little bit breezy, but it was comfortable.

21 Q. Did you -- is it possible that you
22 might have felt the need to have a warm beverage of
23 some type for that five-minute drive?

24 A. No. It was too late. I don't drink
25 coffee myself and Dean only drinks it in the

1 morning.

2 Q. And can you tell us whether or not the
3 tumblers, the mugs that he would have used back in
4 that period of time, what did it look like?

5 A. They are Tervis. I remember now the
6 name. Because I gave him one. Tervis, I think
7 that's the name of the brand. And we had two of
8 those at the house. It's like aluminum, has his
9 name on it. That's what he used to take his coffee
10 with.

11 Q. What about the Tervis? Is it made of
12 glass?

13 A. It is plastic.

14 Q. So as you approach the intersection
15 with -- well, what intersection did this collision
16 occur at?

17 A. Magwood and Ashley Crossing.

18 Q. And which of these streets were you on?

19 A. I was on Magwood.

20 Q. And as you then approached Ashley
21 Crossing, what was your intention as you got to
22 Ashley Crossing?

23 A. Just going straight. We are going to
24 Paul Cantrell. I believe that's the intersection
25 that takes you to 526.

1 Q. We heard that -- as you approached the
2 intersection we heard that -- tell us what speed
3 you believe you were going?

4 A. I think 35 to 40-ish, about that. I
5 was following traffic. There was a car in front of
6 me not really close, but in front of me. There
7 were cars behind me as well.

8 Q. I think we heard that another car was
9 approaching in another direction; is that correct?

10 A. Yes.

11 Q. Tell us what happened with him.

12 A. When I was coming into the intersection
13 I could see a car; at night it's hard to tell
14 whether the car is moving or not. I just saw that
15 blinker going. I guess he was going left towards
16 Ashley Crossing. So I kept on going and, you know,
17 I saw the car and, you know, Dean and I were
18 talking I guess about the movie or whatever it was.
19 And then suddenly the guy just came in. So I
20 couldn't see him moving to be honest with you.

21 Q. So they tell us that he was going
22 something around 27, about 27 miles an hour. Any
23 answer to that or not? Do you have anything to say
24 about that?

25 A. Actually as I said, when he was there

1 looked like he was stationed, like he wasn't
2 moving, but that's at night, kind of hard to tell.
3 When I saw him moving is when he was on top of our
4 car basically.

5 Q. And let's say, though, that he was not
6 stopped there, he was turning. Let's at least
7 assume that he was going 27 miles per hour.

8 A. Okay.

9 Q. So if you were heading let's say in
10 this direction; is that right?

11 A. Yes.

12 Q. So he would be heading in this
13 direction?

14 A. Yes.

15 Q. Twenty-seven. Let's say 40 here. So
16 we have heard during opening statements that this
17 was a closing speed of around 70 miles an hour.
18 Let me ask you about that. Did he run into you,
19 straight into you?

20 A. No, sir. He had to kind of reduce his
21 speed in order to turn left.

22 Q. Okay. And relative to you, would this
23 be fair to say you are -- just let's say this is
24 you going into the --

25 MR. CARTER: Objection, leading, Your

1 Honor.

2 MR. VAN GAASBECK: It is not on the
3 ultimate point, Your Honor.

4 THE COURT: Okay.

5 BY MR. VAN GAASBECK:

6 Q. And now so the fellow wasn't in the
7 same lane you were in or was he?

8 A. Excuse me?

9 Q. Was he in the same lane that you were
10 in?

11 A. Basically because the left lane becomes
12 kind of one coming towards you.

13 Q. The lane that he was in as he's heading
14 towards you, was that directly into you like we
15 just talked about or was it from the next lane
16 over?

17 A. It was the lane, the next lane over.

18 Q. So then he turned like this?

19 A. Yes, sir.

20 Q. This is what explains. So do you know
21 then what his actual speed toward you was in this
22 crash?

23 A. It went like a slow motion to be honest
24 with you.

25 Q. Let me ask you this: Did he make his

1 turn then somehow move sideways into you?

2 A. No, he was making the turn when he hit
3 our car.

4 Q. So as far as the closing speed goes,
5 you're not saying that your cars went into each
6 other at 70 miles an hour?

7 A. No, not at all. Felt pretty slow.

8 Q. Thank you. Then did he come to a
9 complete stop right there? Did he lose all of his
10 speed right there at that?

11 A. No, he kind of moved a little bit and
12 then hit the other car, kind of touched it because
13 I got out and saw the other car.

14 Q. So about how far did he move with --
15 still moving, having not lost all of his speed in
16 that contact that you had, how far did he have to
17 go to hit the other car?

18 A. I use the metric, I am thinking about
19 feet and meters, but I think about maybe ten feet
20 at the most.

21 Q. He continued on another ten feet before
22 he hit another car?

23 A. Yeah.

24 Q. Thank you.

25 A. Yes, sir.

1 Q. What happens to you in the crash?

2 A. When the crash happened it's hard to
3 see because all this white powder come out. I
4 never been in a crash before with airbags. So I
5 did feel like literally somebody had punched me in
6 the face. That's how I felt like. First reaction
7 was to go like under my nose and touch and see if
8 it was blood because it felt like somebody had
9 punched me really hard. I felt the seat belt like
10 hurt right here in my collarbone. And then that's
11 when the EMT guy opened the door for me. So I
12 think I swelled up right away and my left leg was
13 hurting because I didn't know if I hit the door or
14 I was tense. Sometimes your muscles do that kind
15 of stuff. Was mostly on my face just a punch.

16 Q. So you have the impact with the other
17 vehicle. What happens with that fellow, do you
18 know?

19 A. He stayed in the car for a little
20 while. I think someone mentioned that he was
21 trying to go or leave or something and it took him
22 a while to get out of the car and give us
23 assistance. Finally he got out. The guy asked me
24 if I was alone in the car. I told him my husband
25 is in there and --

1 Q. So when did you first notice Dean after
2 the crash?

3 A. Immediately after the crash when the
4 powder went away, kind of dissolved, I looked at
5 Dean and I saw all the blood coming. I don't know
6 from where. There was a lot of blood. He was just
7 saying oh, oh, oh, so I knew he was hurt because
8 Dean's a big guy. So that's when the guy opened
9 the door and he asked me if I was okay. I said I
10 think I am okay. I didn't feel any pain except for
11 my face. And I just told him to go and attend to
12 my husband. That's what he did.

13 So I kind of stayed away and a very
14 nice lady came to me and just hugged me and said I
15 will get you some water and I kind of let them do
16 their work. I did not want to be in the middle of
17 it. I know the guy said I'm a paramedic, I will
18 take care of him and he did. So I see a lot of
19 blood. I didn't know where it was coming from.

20 Q. Did you ever hear Dean say or tell
21 anybody I was holding a glass in my hand?

22 A. Not at all.

23 Q. Did you ever hear him tell anybody
24 glass got into my eye or struck my eye?

25 A. No. As I said, I didn't know what

1 happened. Dean I think five seconds or when the
2 accident happened was completely blind. So he
3 couldn't tell what was going on. The powder that
4 comes out feels like something is touching you. So
5 I can only imagine what he felt he thought it was
6 glass because it feels like something is touching
7 you. It is hard to tell and you are a hundred
8 percent blind. You cannot make this assumption.
9 It is impossible.

10 Q. Well, let me then ask you did you see
11 anybody talking to him about glass?

12 A. No, I did not.

13 Q. After this, after you -- I guess you
14 were removed from the vehicle, did you get an
15 opportunity to see Dean before he was taken away?

16 A. Yes.

17 Q. Tell me about that.

18 A. When I saw him, because I think I
19 peeked into the door, the driver door just to see
20 what happened, how he was, I saw the guy I think he
21 was cutting the airbag on the side. I couldn't
22 tell very well and then I saw him putting the neck
23 brace on him. And then after that the fireman came
24 because the horn was going. It was driving me
25 crazy, would not stop. Hit really hard and it

1 stopped. And I could see Dean on the stretcher at
2 that point and they put him in the ambulance.

3 Q. What did you do?

4 A. The lady was hugging me and she gave me
5 her information. Then the guy said I'll drive the
6 ambulance. I asked him if I can go with him. He
7 said of course. So I grabbed my purse. I was in
8 the back seat of the car and I went front seat of
9 the ambulance.

10 Q. You left the car there?

11 A. Yes.

12 Q. Do you know what happened with the car
13 of your own personal knowledge after you left it?
14 I mean something that you have seen?

15 A. No, sir. I have no idea.

16 Q. What did you do next?

17 A. We were in the -- first I was told that
18 we were going to go to Roper St. Francis because
19 it's the hospital that is right there near the
20 intersection. But I guess after they saw him, they
21 saw Dean, they decided it was a very bad injury and
22 they decided to bring him back straight to MUSC to
23 the Trauma Center so I just went there with them.

24 Q. So were you able to be there with him
25 during any portion of the process they worked on

1 him?

2 A. After an hour they said you can't stay
3 here because it is trauma. There were a lot of
4 patients in there. So they told me we will call
5 you when we get in. So about an hour. In the
6 meantime I called my family and his mother and told
7 them what happened. And they called me and that's
8 when I was able to see Dean.

9 Q. When you went in there what did you
10 see?

11 A. What did I see?

12 Q. Yes.

13 A. The hardest thing ever in my life. I
14 saw Dean's face basically destroyed. Looked like
15 his eye was almost out. His eyelashes were all the
16 way up. Looked like he had like three faces in
17 one. It was very, very scary looking. A lot of
18 blood from his nose and a lot of swelling. He was
19 very swollen.

20 Q. Where on his face?

21 A. On everything. From here all the way
22 down here. All this portion was very swollen.

23 Q. Had anything been done at that time
24 with his eye that you could tell?

25 A. No, sir. They didn't -- I remember he

1 was asking for water. He was very thirsty and they
2 said we cannot give him any because he might go
3 into surgery and I begged them to please give him
4 something. So she let me wet some sponges they
5 have in the trauma room and put it on his lips and
6 he said this is the best thing I felt in a long
7 time. He was in a lot of pain I could tell. And
8 then about ten minutes later the police officer
9 that was at the scene came and just checked on me
10 to see how I was doing. He told me where they have
11 taken the car. And I saw the surgeons come. They
12 were a special team, two surgeons that work on
13 eyes, but they were called. So they are not on a
14 schedule, but they call them and they come and
15 attend to this kind of patient.

16 So I saw them coming into the room and
17 put this kind of big like goggles on, super big
18 like a microscope to look in the eye. I remember
19 him mentioning that it was very, very swollen, that
20 it was hard to tell what had happened, but that he
21 definitely needed surgery that night. So --

22 Q. Did you stay?

23 A. I stayed with Dean until -- I stayed
24 with him all the time. I just followed him around
25 when they were taking him. So in that room he went

1 to like a prep room for surgery. They needed to be
2 sure he was okay. I guess he got a CAT scan or MRI
3 of his entire body. And then they called me and
4 told me that he was ready for surgery. So I was
5 with him during all that time and when he went to
6 surgery I waited for him until he came out.

7 Q. Did you hear anybody say anything about
8 glass during that process?

9 A. No, nobody.

10 Q. Did Dean say anything about glass?

11 A. No. And I think he was very out of it.
12 Because I know after the fact they have given him
13 morphine during the trip to the hospital so I don't
14 think he really knew what was going on, just that
15 he was in a lot of pain. He told the EMT people
16 that he felt his chest was like crunchy, that was
17 the word he used, but no, I mean I think he was
18 very out of it, in and out kind of what was going
19 on, what he was saying and he was just asking me
20 many times if I was okay.

21 Q. Well, all right then. When is the
22 first time you heard anything about glass?

23 A. The first time I heard about glass was
24 when we had an appointment with a doctor, Dr.
25 Eiseman, his doctor had talked to us about --

1 MR. CARTER: I object to what I think
2 she is getting ready to say what another person
3 said, hearsay on that basis.

4 THE COURT: Don't say what the doctor
5 said, just say what you observed. Okay?

6 THE WITNESS: Can you repeat the
7 question?

8 BY MR. VAN GAASBECK:

9 Q. When is the first time you ever heard
10 anything about glass?

11 MR. CARTER: Your Honor, again --

12 THE COURT: She can say the first time
13 she heard anything about it, okay? Overruled.

14 THE WITNESS: The first time I heard
15 about is when Dean was going to get his eye removed
16 and the first doctor who attend to him that night
17 came to the room and said --

18 MR. CARTER: Objection, hearsay, Your
19 Honor.

20 THE COURT: All right.

21 MR. VAN GAASBECK: Your Honor, she is
22 -- we have been told that they were --

23 THE COURT: Why do you think it should
24 be admissible? Do you want to come up?

25 (Off-the-record conference.)

1 THE COURT: The objection is sustained.
2 Ladies and gentlemen, when attorneys make an
3 objection I will use one of two words here,
4 overruled which means I disagree with the lawyers
5 and it's admissible. If I use sustained that means
6 I agree with the lawyers it is not admissible under
7 the rules of evidence. Please proceed.

8 BY MR. VAN GAASBECK:

9 Q. So what were you then -- what was the
10 next process with Dean's eye?

11 A. They decided that the best thing for
12 him was to get his eye removed.

13 Q. When was that done?

14 A. About a month after the accident or so.
15 I can recollect that, but after he was having some
16 issues with lights and not being able to open his
17 eye. We had to live in the dark for a couple of
18 days. That's when he was recommended that the best
19 thing for him was to have his eye removed.

20 Q. What did you do regarding the vehicle?

21 A. The day -- the night of the accident I
22 called the insurance company to report the
23 accident. And the lady told me the first thing you
24 have to do is take your license plate off the car.
25 And that will make it easier when you buy another

1 vehicle. So that was the first thing I did was to
2 go to the place where they had it. The police
3 officer told me where the tow company had taken it
4 so I went there and took the license plate out of
5 the car, off the car. And I looked at the car. I
6 hadn't seen it since the night before. So I took
7 some pictures so whenever Dean would open his eyes
8 I was going to show him what happened to the car.
9 I took some pictures of the interior of the car as
10 well. And I remember I found Dean's cell phone and
11 I was able to take some of my school stuff, not
12 everything, just whatever I can gather really
13 quickly.

14 Q. What sort of facility was this?

15 A. Looked like a junkyard. Meeting
16 Street. You go over the railroad tracks when you
17 find it. Way down there.

18 Q. Was there anything that you noticed
19 about the vehicle that caused you to -- well, did
20 you take any photographs?

21 A. Yes, I did.

22 Q. What did you take photographs of?

23 A. I took photographs of the outside of
24 the car I guess for the insurance, too. That's
25 what people do if you have a crash. You take a

1 photograph in case they asked for them. I didn't
2 know what was going to happen to the car at that
3 point. I was not worried about the car actually.
4 Dean was in the hospital so I just wanted to get
5 that and go back there. And then I noticed a lot
6 of debris in the car. Front seats were completely
7 trashed with stuff. Back seat, even the trunk had
8 trash in it. Looked like they swept the entire
9 Charleston area and put it in there. It was
10 really, really dirty.

11 Q. I have a two-page document,
12 Exhibit 102. May I approach?

13 THE COURT: 102?

14 MR. VAN GAASBECK: Yes, sir. Show you
15 Exhibit 102. Ask you are these the photographs
16 that you took?

17 THE WITNESS: Yes, sir, I did.

18 THE COURT: Any objection to 102?

19 MR. CARTER: No objection, Your Honor.

20 THE COURT: 102 is admitted without
21 objection.

22 MR. VAN GAASBECK: It's a two-page
23 exhibit that are together and one has the exhibit
24 number on it. The other doesn't.

25 (PLF. EXH. 102 in evidence.)

1 BY MR. VAN GAASBECK:

2 Q. Can you tell us what Exhibit 102 is?

3 A. Yes.. This is one of the pictures I
4 took the day after the accident.

5 Q. And what is it of?

6 A. I can recognize -- can I point to it?
7 I can recognize this as actually a Christmas
8 present from one of my students. This is a bag. I
9 don't know where it came from, like a plastic bag
10 and the pieces of car, looks like a can, just
11 random things.

12 Q. Is that how you normally keep your
13 vehicle?

14 A. No, not at all.

15 Q. Was that the way the vehicle was when
16 you went to the theater?

17 A. No, sir.

18 Q. Was it that way when you left the car?

19 A. No, no, sir.

20 Q. Do you know who put that in there or --
21 of your own personal knowledge do you know who put
22 that in there?

23 A. No, sir.

24 Q. Or why?

25 A. No, sir.

1 Q. Second part of that exhibit, this
2 photograph, so what is this portion?

3 A. That's the back seat.

4 Q. And so where would the front of the car
5 be?

6 A. Right here. This is the passenger seat
7 right here.

8 Q. What's that -- what are you seeing in
9 that photograph between?

10 A. Looks like pieces of car, glass,
11 plastic that is broken, you see like orange, kind
12 of like taillights, various pieces of things.

13 Q. Well, do you know how that got there?

14 A. No.

15 Q. Of your own personal knowledge?

16 A. I have no idea how it got there.

17 Q. Thank you. What did you take in the
18 car at that time?

19 A. I remember finding Dean's cell phone
20 and then I had like a little cubbie. We teachers
21 use them a lot to put books and all our things in
22 so I had one of those left in the back seat and I
23 took that, one of those. I had other things in the
24 car, but that was the most important thing because
25 I had my students work. I didn't want to lose them

1 because I had to deal with that in January so I
2 took it with me and Dean's cell phone and I just
3 left and of course the license plate.

4 Q. Do you know it's been suggested that
5 you might have taken away some broken glass from
6 the glass that supposedly blinded your husband. Do
7 you know that?

8 A. No, sir.

9 Q. Did you do that?

10 A. No, sir.

11 Q. I'm going to show you Exhibit 268. You
12 have got a copy of it. It's a one, two, three,
13 four photograph collection. Just ask you first of
14 all, can you identify what those are?

15 A. These are some pictures Dean and I took
16 of the car.

17 Q. Okay. This is you and Dean together;
18 is that correct?

19 A. Yes, sir.

20 Q. Thank you. These we have already
21 supplied.

22 THE COURT: Any objection?

23 MR. CARTER: No objection, Your Honor.

24 THE COURT: 268 will be admitted
25 without objection.

1 (PLF. EXH. 268 in evidence.)

2 BY MR. VAN GAASBECK:

3 Q. Now, you said you and Dean took those
4 photographs?

5 A. Yes, sir.

6 Q. So this wasn't the first time that you
7 went there?

8 A. No. Dean was in the hospital and
9 basically blind for about two weeks so he couldn't
10 leave the house. So about two weeks I was still
11 looking for my classroom keys. If you are an
12 educator losing your classroom keys is like losing
13 the holy grail and they give you a hard time when
14 you lose your keys. So I was worried about that.
15 I still have some of my students work in the car
16 that I didn't know where they were.

17 So I told Dean that I needed to go back
18 to the car and find those things for me. I think
19 at that time I still had a rental car so we drove
20 there. That was in a different place. It was I
21 think a car auction in Ravenel and so we went there
22 and I asked the lady I need to get some things from
23 my car because I needed them for when I went back
24 to work. She was very nice and gave me a box to
25 grab my belongings.

1 So I went there. That time actually
2 Dean was able a little bit better and he was the
3 one taking the pictures with our camera. I was
4 concentrating on finding my keys and this student's
5 work. And he was taking the pictures that you see.
6 It didn't take me long to find the keys. They were
7 actually on the back seat. They appeared. I don't
8 know if somebody had been moving them or what
9 happened, but I found them and I found the other
10 work and we just went to the lady and said thank
11 you very much.

12 Q. So let me -- first of all, I want to be
13 certain. You said that this was now in a different
14 place, not at the wrecker yard?

15 A. That's correct.

16 Q. It was you said an auto auction?

17 A. Yes.

18 Q. Who transferred it to the auto auction?

19 A. I have no idea.

20 Q. Was there any insurance company
21 involved in this process?

22 A. Not that I am aware of.

23 Q. So you don't know who sent it over
24 there?

25 A. No.

1 Q. When you went over there then you were
2 allowed to go in and take some items?

3 A. Actually they brought the car to us.
4 Big forklift. They didn't let us get into where
5 the cars were. I described it and he brought it
6 back like in two minutes. He stayed there with us
7 and then he drove up and we left and he came by
8 with his forklift and I imagine he took the car.

9 Q. So he was there during that time?

10 A. Yeah. He was there. We were not there
11 for a long time.

12 Q. So of the collection of 268 let me show
13 you one of the photos that was taken and ask you
14 can you help us identify what that photo is?

15 A. You have to move it 45 degrees the
16 other way. There you go. So that's the front
17 passenger side of my car.

18 Q. Okay. So are you looking at -- what
19 window are you looking in through?

20 A. That's the passenger side of the car,
21 the front of the car, that's the floor.

22 Q. And so why did you take that
23 photograph?

24 A. Dean was taking the photograph of the
25 airbags actually. It was not after actually years

1 that we were asking again for the photograph and we
2 sent them back to our lawyers that I noticed that
3 the mat from my car is missing and that the car has
4 been cleaned, apparently looked like somebody
5 cleaned it. So it was like last year when we were
6 looking at the photographs and I was like Dean,
7 look, they took out actually our mat from the car.
8 We never noticed. Like that day we were just --
9 Dean was concentrating taking pictures of the blood
10 and the airbags and I was concentrating finding my
11 keys and my students work.

12 Q. Having looked back at that and realized
13 that's clean, was it clean -- what areas of the car
14 were clean?

15 A. Actually I don't think I noticed
16 anything that day. It was not -- as I said, I
17 looked at the pictures years later when I noticed
18 that even the mats are missing.

19 Q. Is the trash that you took photographs
20 of in that photo?

21 A. No.

22 Q. When you say clean, how clean would you
23 say?

24 A. Looks like almost detailing clean I
25 think. I have my car cleaned. That is like super

1 spotless.

2 Q. Did you take out a shop vac or
3 anything?

4 A. No, I don't own one.

5 Q. When the fellow was there did you ask
6 him if you could get a vacuum from them and vacuum
7 up everything in the car?

8 A. No, sir. It wasn't my car anymore.

9 Q. And I think you said that which mats
10 were gone?

11 A. Because of the photograph I noticed
12 that that mat was gone. I don't know if any others
13 were taken because I didn't inspect the car. I was
14 not there to look for mats or debris. I was
15 looking for my keys and the students work.

16 Q. Thank you. And aside from a shop vac
17 did you bring out any large long cables or cords in
18 order to plug in a shop vac?

19 A. No, sir.

20 Q. By looking at that can you orient?

21 A. It would be like 45 degrees.

22 Q. More like this?

23 A. Yes, that would be the direction, yes,
24 sir.

25 Q. Thank you. What side -- what is that a

1 picture of?

2 A. That's a picture of the passenger
3 airbag.

4 Q. Whose car?

5 A. My car.

6 Q. Thank you. Which side of the airbag is
7 that?

8 A. Looks like it's the left kind of folded
9 kind of like. This will be like the left side of
10 the airbag. This is the right side in the front.
11 You can see the radio is right here.

12 Q. And this. Why did you take -- do you
13 know why he took a picture of that?

14 A. Because that's his blood. I think it
15 is upside down.

16 Q. Thank you.

17 A. I can orient myself because of the
18 windshield right here.

19 Q. Thank you. Which side of the airbag is
20 that?

21 A. It looks like the front of the airbag.

22 Q. All right. Thank you. And can you
23 identify what that photo is of?

24 A. A picture of the windshield of the Ford
25 Focus.

1 Q. Thank you. Did you ever visit the
2 vehicle again?

3 A. The last time is when we met with you
4 and Mr. Bodiford and I think was one of the experts
5 to -- I think they were running some tests and
6 looking at the vehicle. I didn't go to the car. I
7 didn't want to see it again so I kind of stayed
8 away from when all of you were analyzing the car.
9 I think they were doing some measurements on Dean
10 and the car and all the technical stuff. So I
11 stayed away, but it was in a different place.

12 Q. Did you remove anything from the car at
13 that time?

14 A. No. I didn't go.

15 Q. Thank you. So after I guess after Dean
16 came home, what was the course of his recovery or
17 how did he deal with the injury itself?

18 A. When we came home he was basically
19 blind. Because of course the eyes were together.
20 So one eye was traumatized sort of together again.
21 The other eye was trying to compensate. I remember
22 him describing like if he heard a noise and kind of
23 do this it would hurt. So I think the other eye
24 started closing by itself, just kind of in a
25 defense mode. So I had to take care of him like I

1 had a 180 pound baby. I had to feed him, take him
2 to the bathroom, shower him because he couldn't see
3 anything. Lot of pain because of the broken
4 sternum. Getting in and out of bed was difficult.
5 I am way shorter than him. It was just me. We
6 don't have family in Charleston so I was the one
7 taking care of him the entire time. It was very
8 difficult because we didn't know what was going to
9 happen to his eye at that point. It was kind of in
10 the air, if he was going to ever see again or not.
11 It was us. I was out of work for about a month.
12 And he was recovering I would say pretty good
13 because he is a very healthy person. He doesn't
14 smoke, always works out so his recovery was easier
15 I think than from other people that have the same
16 kind of injuries. But he was 100 percent depending
17 on me for everything. Now, psychologically there
18 was a lot of issues. He's always been a very
19 confident human being.

20 Q. Sorry?

21 A. He's always been a very confident
22 person. His ability to protect himself, the house,
23 me, he's an ex-military guy, very proud of himself.
24 And I think after the accident many of that just
25 went away. Very paranoid of somebody coming to the

1 house breaking in, that he was not going to be able
2 to defend me or himself. When you lose one of your
3 senses the other senses become very acute. So I
4 think he could hear everything at night. So one in
5 the morning, two in the morning, for months he
6 would hear one little thing outside or in the
7 house. He would get up, scare me to death. It was
8 nothing. Just that he just felt very weak and kind
9 of fragile. Put a dent in our marriage absolutely
10 because there is a lot of depression, too. He had
11 to deal with depression, anxiety. Took him a year
12 to go back to the movies.

13 Q. Where?

14 A. To the movies. We didn't go to the
15 movies in a year. We were afraid that every time
16 we were going something like this was going to
17 happen again. So a lot of things changed in him.
18 He cannot do the things he enjoyed before. He was
19 a daredevil since he was in the Air Force, so
20 mountain biking. He went to college in Tennessee
21 so he has a bike, a very nice bike, but he can't
22 use it because there's no depth perception so he
23 doesn't know how far things are from him and it is
24 dangerous.

25 Q. Did Dean have any -- I think you told

1 us about mountain biking. What other activities
2 did he do that you observed may have been affected
3 by the eye injury?

4 A. Well, driving. He enjoyed driving, not
5 like a task. It's thinking that something is going
6 to happen. He's very aware of what he wears. He
7 wears his safety glasses when he drives. Special
8 glasses he ordered. So he's always really nervous
9 when he drives or I drive losing his only eye.
10 That's what he's always afraid of. He liked to do
11 sharp shooting like target shooting and he bought a
12 good rifle. He would go once a month and kind of
13 just shoot at a target and he cannot do that any
14 more because he only has one eye. So it took away
15 his favorite things to do.

16 Q. What about just moving around the
17 house? What's happening there?

18 A. He still bumps into things. Bumps into
19 our pets sometimes.

20 Q. Your what?

21 A. Pets. Sometimes he bumps into them.
22 Even though he knows where the house is and where
23 things are he still bumps into things in the house.

24 Q. I will be talking to Dean about how it
25 affects things in a little more detail. But I

1 thank you for giving me a little bit of an idea of
2 what you have seen. Was Dean off work any of this
3 time?

4 A. Yes, for a long time. First he was
5 told that he could go back to work six to eight
6 weeks when the sternum was already healed, but he
7 had so many restrictions from his doctors that he
8 worked the flight line at Boeing. That's basically
9 where the airplane is ready to go and they are the
10 guys who do the last things on the airplane. It's
11 called a live line, I think that's what I have
12 heard, meaning there's a lot of things going on,
13 pipes, cables, lot of things. So the doctor told
14 him he was not safe so they sent him back home for
15 almost two and-a-half years.

16 Q. Some people actually would not mind
17 having a doctor put you off work. They'd love to
18 be able to sit back for two and-a-half years and
19 draw whatever they can. What kind of fellow is
20 Dean related to that?

21 A. No. He was going insane at that point.
22 He likes to be doing things. He's a very handy
23 person. Actually when he was told he was going to
24 be home for so long we just bought the house as I
25 said before. We haven't been able to do anything

1 to the house. So after he recovered he knew he was
2 going to be out for so long sort of like he started
3 doing things around the house, a shed he built
4 himself and little things here and there to keep
5 him occupied. He started a garden with a lot of
6 things in the garden. He would be doing something.
7 It was really hard for him to be out of work. He
8 asked many times to be back because of his
9 restrictions. Every time he was rejected.

10 Q. Were you part of the process of the
11 decision to go back to work?

12 A. Yes, we talked about it. I think if he
13 hadn't we wouldn't be together today.

14 Q. What considerations then did you have
15 about him being able to go back to work and what it
16 would take to go back to work?

17 A. His mental stage. He was just
18 completely isolated from the world. When you make
19 friends, your friends at work. You see your
20 neighbors, but that's just hey, so he was basically
21 alone all week all day and I would leave at seven
22 in the morning, sometimes come home at 7:00 at
23 night. So he only had the pets in the house. He
24 had no human interaction. Basically like solitary
25 confinement almost. So mentally was affecting him

1 tremendously and we couldn't live like that.

2 Q. Was there a decision then made in order
3 to reconnect with his life related to work?

4 A. I think it was everything. He needed
5 to work. He likes to work. He likes to be busy.
6 He's not a very intellectual individual, but he
7 likes to read. He likes to interact with people.
8 And the isolation was killing him and was killing
9 our marriage. So we decided the best thing to do
10 was I told him no matter what job, Dean, I don't
11 care, clean trash cans at Boeing. I don't care.
12 You just need to be out there, see and talk to
13 people and that's what we did.

14 Q. Were you -- what did you do then in
15 order to be able to get him to go back to work
16 since he had these restrictions?

17 A. I didn't have to do anything. He was
18 the one who e-mailed his doctors, he did all that.
19 He finally said I just can't live like this
20 anymore. I need to go back there. So I didn't do
21 anything except talk to him, say like I think you
22 are right. You need to go back and we are very
23 honest when we talk with each other. We talked it
24 over and said if not, our marriage is not going to
25 survive this.

1 Q. I think I will maybe go to him and ask
2 him later as to what his reason was. Can we take a
3 short break?

4 THE COURT: Yes. We can take a long
5 break. Madam forelady, ladies and gentlemen of the
6 jury, we are going to take a lunch break at this
7 time. It's a little after five minutes after 1:00.
8 Be back in the jury room at 2:30. We will get
9 started at that time. Leave your notes on your
10 seats. Don't discuss the case among yourselves.
11 When you come to the courthouse come straight to
12 the jury room. See you at 2:30. Have a good
13 lunch.

14 (Thereupon, the jury exited the
15 courtroom at 1:09 p.m.)

16 THE COURT: Anything from the Plaintiff
17 before we break for lunch?

18 MR. VAN GAASBECK: No.

19 THE COURT: Anything from the
20 Defendant?

21 MR. CARTER: Other than just instruct
22 the witness that she is under oath not to have a
23 discussion.

24 THE COURT: Sorry, what?

25 MR. CARTER: Other than the witness is

1 not to have any discussion about her testimony
2 during the break.

3 THE COURT: Okay. Mrs. Newbern, just
4 don't talk about the case during lunch.

5 THE WITNESS: Yes, sir. Been on a jury
6 before. I know.

7 THE COURT: Anything else about the
8 case? Thank you. We will see you at 2:30.

9 (A luncheon recess transpired.)

10 THE COURT: Anything from the
11 Defendant?

12 MR. CARTER: One issue. During the
13 lunch hour Mr. Van Gaasbeck informed us that he
14 plans on calling Mr. Krishnaswami, Ford's corporate
15 representative, that we have presented fully. We
16 are going to have Mr. Krishnaswami here. He has
17 given three depositions in the case. We intend to
18 call him. He's the technical airbag guy. He
19 designs airbags. We plan on putting him up in our
20 case in chief.

21 THE COURT: What's the question?

22 MR. GLADD: The question is we have an
23 agreement with Mr. Van Gaasbeck that we will tell
24 the witnesses before we call them the next day.
25 This is a surprise. We are frankly not ready to

1 put up Mr. Krishnaswami to be called out of -- to
2 be called in their case. It's a surprise to be
3 called today when we didn't even talk about it. If
4 he is permitted by the Court to call Mr. --

5 THE COURT: I'm going to let him call
6 the witness. I won't prevent you from recalling
7 him, okay?

8 MR. GLADD: Thank you, Your Honor.

9 THE COURT: You can recall him whenever
10 you want. But if he wants to call him he can call
11 him. In my opinion I am not going to prohibit you
12 from recalling him. You go into cross-examination
13 in great detail and you recall him. I am not going
14 to let you duplicate.

15 MR. GLADD: Your Honor, that's a
16 difficult position, but I understand the ruling.
17 Thank you.

18 THE COURT: As far as I'm concerned,
19 you can either cross him or not cross. You can
20 call him on redirect. That's your choice. But if
21 you go into extensive cross-examination while he's
22 on the witness stand, the only thing I am going to
23 ask if you do recall him, don't duplicate it.
24 That's all I am saying.

25 MR. GLADD: Yes, Your Honor. Thank

1 you.

2 THE COURT: Okay? Anything else?

3 MR. VAN GAASBECK: No, sir.

4 THE COURT: Bring us the jury.

5 (Whereupon the jury entered the courtroom at
6 2:41 p.m.)

7 THE COURT: Mrs. Newbern, would you
8 come around and take the witness stand, please,
9 ma'am. Madam forelady, members of the jury, if you
10 want to leave those in your seats, just file back
11 in the same way. It will avoid a whole lot of
12 confusion if you can remember who you are sitting
13 next to when you file back in, okay? If you want
14 to finish the direct, please, sir.

15 MR. VAN GAASBECK: Yes, sir.

16 BY MR. VAN GAASBECK:

17 Q. Have you seen photos then of your
18 vehicle as it was after the crash?

19 A. Some of them, yes.

20 Q. Okay.

21 MR. CARTER: No objection, Your Honor.

22 THE COURT: What number?

23 MR. VAN GAASBECK: It's exhibit, Your
24 Honor, 260. It's two excerpted photo pages.

25 THE COURT: 260, that's two photos.

1 MR. VAN GAASBECK: Yes. Actually two
2 pages of photos. There's actually four photos.

3 THE COURT: Admitted without objection.

4 (PLF. EXH. 260 in evidence.)

5 BY MR. VAN GAASBECK:

6 Q. Would you please look at 260, and at
7 the photo that I'm focusing on from that page. Can
8 you see that?

9 A. Yes, sir.

10 Q. Can you tell us what vehicle that is?

11 A. Was my car.

12 Q. Thank you. So do you see where the
13 damage is on the vehicle?

14 A. Yes. Front right in the bumper.

15 Q. Do you see that little flap thing on
16 the side?

17 A. Yes, sir.

18 Q. Let me show you another picture. Do
19 you see that?

20 A. Yes, I do.

21 Q. Do you know what that is?

22 A. A piece of the side of the car.

23 Q. That's the -- is that peeled back a
24 little bit there?

25 A. Um-hmm.

1 Q. Thank you.

2 A. Yes.

3 Q. And what part of the car is this?

4 A. That is the driver side front.

5 Q. Okay. And I am sorry, ma'am, I pulled

6 -- I was trying to pull three of them and I

7 accidentally only pulled two. Is this a side view

8 then of your crashed vehicle?

9 A. Yes, that is the passenger side.

10 Q. All right. Thank you. Have you seen
11 summaries that were prepared which related to the
12 expenses, medical expenses in this case and also of
13 the lost wages lost in this case?

14 A. Yes, sir.

15 Q. All right. Exhibits 30 and 13.

16 MR. CARTER: Without objection.

17 THE COURT: What numbers?

18 MR. VAN GAASBECK: 13, Your Honor, and
19 that would be the medical expenses.

20 THE COURT: 13 admitted without
21 objection. And you said 30?

22 (PLF. EXH. 13 in evidence.)

23 MR. VAN GAASBECK: Yes, sir. 30 is the
24 summary of lost earnings.

25 THE COURT: Okay. 30 admitted without

1 objection.

2 (PLF. EXH. 30 in evidence.)

3 BY MR. VAN GAASBECK:

4 Q. If you look at that Exhibit No. 30,
5 summary of the lost wages, do you see that total of
6 the \$97,222?

7 A. Yes, I do.

8 Q. Is that what appears that you have put
9 together as being the loss?

10 A. Yes.

11 Q. Then the same for the medical? Is it
12 correct that the medical expenses were \$221,402.29?

13 A. Yes, sir.

14 Q. Thank you. Thank you, Your Honor. I
15 pass the witness.

16 THE COURT: Cross-examination.

17 CROSS-EXAMINATION

18 MR. CARTER: Thank you, Your Honor.

19 BY MR. CARTER:

20 Q. I have just a couple questions for you.
21 You're not an engineer, are you?

22 A. No, sir.

23 Q. Your lawyer put some drawings on there
24 in the first part of your testimony regarding the
25 speed of your car and the speed of the other car.

1 You're aware that you have hired -- your attorney
2 has hired engineers and experts to talk about those
3 things?

4 A. Yes, sir.

5 Q. You would look to those experts as
6 having more knowledge about those things than you?

7 A. Yes, sir.

8 Q. If the speed of your car was reported
9 at 42.3 miles an hour would you disagree with that?

10 A. No, that's about right.

11 Q. And if the expert calculated the speed
12 of the Caprice at 26.59 miles an hour, would you
13 disagree with that?

14 A. It would be hard to say. It was very
15 close to us when he hit us. I don't think it was
16 going anywhere close to that. I cannot say I
17 disagree.

18 Q. You would look to your expert?

19 A. Yes.

20 Q. All right. Now, when we had the scene,
21 accident scene up, Magwood is the street that you
22 were on, correct?

23 A. Correct.

24 Q. And at the intersection of Ashley
25 Crossing that street had the right-of-way, right?

1 A. Magwood does.

2 Q. And you were planning on going straight
3 through the intersection? You weren't planning on
4 taking a right or left?

5 A. No, I was going straight, yes.

6 Q. And the vehicle coming in the opposite
7 direction turned directly in front of you, right?

8 A. That's correct.

9 Q. All right. You believe that the
10 Caprice was responsible for causing the accident?

11 A. Yes, he caused the accident.

12 Q. And you have testified about what
13 happened to you in the accident. You testified
14 that you felt a force to your face and thought you
15 may have a bloody nose?

16 A. Correct.

17 Q. You didn't have a bloody nose?

18 A. No, I didn't.

19 Q. Now, I know this was a very confusing
20 time immediately after the accident, the horn was
21 blaring, there were multiple EMTs there, correct?

22 A. That's correct.

23 Q. I think you testified at some point the
24 lady, Ms. Trammel, the paramedic took you aside and
25 was talking to you?

1 Q. You didn't clean it?

2 A. No.

3 Q. I am not certain that you remember who
4 cleaned it?

5 A. I don't know.

6 MR. CARTER: Thank you, ma'am. That's
7 all the questions I have.

8 THE COURT: Any redirect?

9 MR. VAN GAASBECK: Yes, Your Honor.

10 REDIRECT EXAMINATION

11 BY MR. VAN GAASBECK:

12 Q. Do you have the broken piece of glass
13 in the photograph? What's the number?

14 MR. CARTER: Your Honor, may we
15 approach?

16 THE COURT: What number are we talking
17 about?

18 MR. VAN GAASBECK: 270.

19 (Off-the-record conference.)

20 BY MR. VAN GAASBECK:

21 Q. This is Exhibit 270. It is not marked.
22 And we will later explain what this is, where it
23 came from. But not through you.

24 THE COURT: What's the number?

25 MR. VAN GAASBECK: 270, sir.

1 THE COURT: Thank you, sir.

2 BY MR. VAN GAASBECK:

3 Q. And I'm going to ask you, does this
4 appear to be any --

5 MR. CARTER: If she can identify the
6 evidence, Your Honor.

7 THE COURT: What's the objection? He
8 hasn't asked the question yet. I don't know what
9 the question is. Finish the question and then I
10 will listen to your objection.

11 BY MR. VAN GAASBECK:

12 Q. Does this appear to be a fragment of
13 any glass that you have in your house?

14 A. Can I touch it?

15 Q. (Handing..)

16 THE COURT: Hold on. Do you have an
17 objection?

18 MR. CARTER: No, sir, not to that
19 question.

20 THE WITNESS: No. This looks like a
21 piece of a car, like a front lamp.

22 BY MR. VAN GAASBECK:

23 Q. But as far as something that might have
24 been in your house or something that you or Dean
25 might drink from, does this resemble that in any

1 way?

2 A. No, sir.

3 Q. Thank you.

4 MR. VAN GAASBECK: For identification
5 only.

6 THE COURT: Give it to her and let her
7 mark it.

8 MR. VAN GAASBECK: I don't have any
9 further questions.

10 THE COURT: You may step down. Thank
11 you very much. Call your next witness.

12 (PLF. EXH. 270, glass fragment, was
13 marked for identification.)

14 MR. VAN GAASBECK: Call Mr. Ram
15 Krishnaswami.

16 THE COURT: Okay. Come around and be
17 sworn, please.

18 MR. VAN GAASBECK: We are calling Mr.
19 Krishnaswami as an adverse witness.

20 THE COURT: Ladies and gentlemen of the
21 jury, the attorney asked the Court to treat this
22 witness as an adverse witness which means that he
23 can ask leading questions of an adverse witness
24 since he has worked for Ford Motor Company whose
25 the Defendant. I'm going to allow him to ask

1 leading questions of this particular witness. It's
2 an exception to what I explained earlier on direct
3 versus cross.

4 RAMANIYAM KRISHNASWAMI

5 having been duly sworn, testifies as follows:

6 THE CLERK: Please state your first and
7 last name and spell your last name loudly and
8 clearly into the microphone.

9 DIRECT EXAMINATION

10 BY MR. VAN GAASBECK:

11 Q. Are you ready, sir?

12 A. Yes, sir. He asked me to state my
13 name. My name is -- I go by -- my full name is
14 Ramaniyam Krishnaswami. I go by Ram Krishnaswami.

15 THE COURT: Can you spell your last
16 name, please, sir?

17 THE WITNESS: Yes, sir.

18 K-R-I-S-H-N-A-S-W-A-M-I, Krishnaswami.

19 THE COURT: Thank you very much.

20 BY MR. VAN GAASBECK:

21 Q. Mr. Krishnaswami, I believe your
22 deposition has been taken in different capacities
23 in this case three times?

24 A. Yes, sir.

25 Q. So one was as a corporate

1 representative; do you recall that?

2 A. Yes. I don't know exactly what time,
3 but we have spoken before.

4 Q. And I will not hold you to remember
5 everything that we said.

6 A. Thank you.

7 Q. In that having been a couple years ago.
8 Also in that respect you were called as a corporate
9 representative and you understood that to mean that
10 you were speaking for the corporation on certain
11 subject matters; is that correct?

12 A. Yes, sir.

13 Q. Thank you. Then you were also
14 designated to be an expert witness in this case; is
15 that correct?

16 A. Yes, sir, related to airbag sensors and
17 things of that nature.

18 Q. In both of those capacities you have
19 had the opportunity to look at many of the exhibits
20 in this case and address many of the issues that
21 are in this case?

22 A. Yes, sir, and typically that's the
23 process. Lawyers such as yourself want to find out
24 details related to engineering matters and the
25 company produces witnesses such as myself because

1 of our familiarity with engineering matters and we
2 try to assist you in trying to understand them.

3 Q. And also I think you also gave another
4 deposition as a corporate representative regarding
5 owner's manuals declarations?

6 A. Yes. You had some questions regarding
7 our owner's guide, our owner's manual that is
8 provided in the vehicles. And I spoke to you quite
9 recently I believe in the last two or three months.

10 Q. Well, thank you. Let me go on then to
11 let everyone know who you are. You have worked
12 with Ford in an engineering capacity; is that
13 correct?

14 A. Correct.

15 Q. And how long were you working as an
16 engineering -- when did you start working?

17 A. Well, I graduated with a master's in
18 engineering from Wayne State University in Detroit.
19 In 1993 I became a consulting engineer at Ford
20 Motor Company. And I became an employee since
21 1999.

22 Q. And at some point did you move to a
23 segment or division of Ford which is called design
24 analysis?

25 A. Yes. And that would be in October of

1 2007. My department -- the department I work for
2 is called design analysis engineering. Design
3 analysis engineering is a portion within our
4 automotive safety office and that's the division
5 that I work for.

6 Q. Is at least one of the responsibilities
7 or one of your job duties to support litigation
8 support for Ford in lawsuits?

9 A. Correct. Our job is primarily you
10 could say field performance of our vehicles and in
11 matters such as this whenever there is litigation
12 matters and lawyers such as yourself who want to
13 understand the technical nature of our documents,
14 Ford would afford our services through depositions
15 or through inspections and things of that nature.
16 We also consult with our product development
17 activities and other activities within the company
18 on advanced product and future design of vehicles,
19 things of that nature.

20 Q. Thank you. In the opening statements
21 -- were you here for the opening statements made by
22 Ford's attorney, Mr. Carter?

23 A. This morning, yes.

24 Q. What is your understanding you were
25 supposed to be describing from his opening

1 statement?

2 A. How the airbag functions, how the
3 sensing system functions generally, so those were
4 the things I understood.

5 Q. You also know what the other experts
6 opinions are? You have taken part, have you not,
7 in consultation or meetings with them?

8 A. I have not with respect to this matter.
9 The only thing I assisted Mr. Pearson who is one of
10 our experts in this matter and we conducted a sled
11 test I believe that was shown earlier this morning.
12 So I assisted in that. And I did consult
13 specifically our reconstructionist Mr. Toomey to
14 understand the crash forces, the principles, so in
15 that regard yes, but can you please verify like
16 what with regard -- I consulted them, yes.

17 Q. And so one of the people you worked
18 with was Mr. Pearson?

19 A. Correct.

20 Q. And you worked with him on putting
21 together this sled test we saw --

22 A. Yes.

23 Q. -- today. Also have you worked with
24 Mike Scott, the biomechanic, in any way?

25 A. With respect to this matter? Not

1 directly, no, sir, I haven't talked to him. I
2 don't remember talking to him directly about it.

3 Q. Well, it's been a long case.

4 A. Yes.

5 Q. You take part in legal engineering
6 conferences, LECs?

7 A. Yes. I'm not even sure that one -- I
8 participated in one in this matter.

9 Q. All right. Thank you. I want to --
10 can you tell us what this sled test we saw during
11 the opening was supposed to be representative of?

12 A. Well, a sled test, if you allow me I
13 would like to describe it.

14 Q. You can.

15 A. A few more details. It is an
16 engineering tool that we in the crash development
17 area, use quite frequently. Crash tests, everybody
18 knows, they have seen films, movies or
19 documentaries on crashes. You take a vehicle, you
20 hit it against another car, or you hit it against a
21 wall and you record forces of crash. We have
22 instruments all over the vehicle that records the
23 crash forces as the vehicle is impacting the other
24 object.

25 Also placed in this vehicle sometimes

1 are crash test dummies. And these crash test
2 dummies are also instruments that sometimes record
3 forces and things of that nature. And instead of
4 conducting impact into a wall, once if you know
5 what the forces are going to be in a crash, you
6 could simulate it on a subsystem and we call that a
7 sled. Where we have the vehicle interior, which is
8 a Ford Focus here, we have the vehicle interior and
9 a vehicle interior has seats, instrument panel,
10 steering wheel and things of that nature, the seat
11 belts. And what you do is in a crash, in any
12 crashes, there is a physics to this crash.

13 Q. Sorry?

14 A. There is a physics to this crash.

15 Q. Thank you.

16 A. There is crash one and crash two in
17 every crash. The first crash is between the
18 vehicle and the surrounding. The body of the car
19 and the surrounding. The second crash is from the
20 occupant into the interior of the vehicle. So the
21 first crash as I said is when we impact another
22 car, another pole, another side impact, whatever
23 the case may be. The second crash is as the
24 vehicle comes to a stop suddenly the human body
25 which was in a constant state of motion up to that

1 point in time is suddenly stopped and it moves in
2 the vehicle towards the front of the instrument
3 panel and things like that.

4 In the sled since we know what the
5 first crash is going to be, we know how quickly a
6 vehicle is going to come to a stop, since we know
7 that, we are able to impart those forces and see
8 what is going to happen in the second crash which
9 is the occupant with the interior. This is a way
10 to study occupant motion, occupant kinematics and
11 the airbags or the safety belt or knee bolster or
12 the seats in a controlled environment. That's what
13 a sled test is.

14 Q. Okay. Thank you very much. I
15 appreciate that. You were talking about crash
16 tests and sled tests. Now, are these generally run
17 for the purposes of determining what you're going
18 to demand from -- at least in some respects from
19 your certain system?

20 A. In a certain way, yes, like a sensor
21 system is a tunable parameter as you well know.
22 And the process of tuning the sensor system is
23 called calibration. Now, we can see from the sled
24 test if we were to deploy an airbag, let's say
25 20 milliseconds into the commencement of collision

1 like now and I would like to -- if you would afford
2 me I would like to explain a little bit about start
3 of crash two.

4 Q. I don't want to stop you from
5 explaining the way you think it needs to be done.

6 A. Thank you, sir. And what it is is that
7 let's say times zero is the commencement of crash
8 and somehow we are able to capture times zero and
9 from that let's say I believe Mr. Carter's talk
10 about the fractions of seconds it takes to deploy
11 an airbag. The entire moderate to high speed
12 collision, the entire collision is over in about
13 let's say hundred milliseconds. That's one-tenth
14 of a second. One-tenth of a second is hundred
15 milliseconds.

16 People say that depending on how fast
17 you blink your eye, it's about 200 to
18 250 milliseconds to blink an eye. The crash event,
19 which is basically the crash vehicle hitting the
20 wall and the crash, the occupant loading the airbag
21 and starting to unload the airbag and coming back
22 in is over in hundred milliseconds,
23 150 milliseconds. So having that as the big time
24 budget that you are working with, let's say the
25 commencement of crash is zero milliseconds. The

1 airbag let's say is triggered -- is commanded to
2 trigger at 25 milliseconds in a sled test or 30 or
3 40, whatever we are studying, that is when we say
4 that when are deploying an airbag at 40
5 milliseconds it means that after the commencement
6 of crash that's when the signal to fire an airbag
7 is provided.

8 And then we determine how the airbag
9 unfolds, how the occupant moves towards the airbag,
10 how the belt is restraining the airbag, those are
11 all the things that it is designed to study. So a
12 sled test in a sense to answer your question is
13 basically to go back and understand and verify that
14 sensor fire times and its behavior on airbags and
15 things like that.

16 Q. Well, thank you. Actually my question
17 was more a little more limited than that. But I do
18 appreciate elaborating on the methodology. But
19 prior to Ford determining what its requirements are
20 that it is going to give to a supplier that they
21 have to meet for their sensor system, Ford does
22 quite a bit of work, does it not?

23 A. Yes.

24 Q. So it runs hundreds of crash tests
25 according to Mr. Carter?

1 A. Correct. And some of that also comes
2 from our prior history. Like we have a long
3 history of collecting crash tests over decades. So
4 engineers such as myself rely on the reliability of
5 crashes and the data that we have accumulated
6 internally in order to come up with starting
7 locations or initial targets as we would call them
8 and we also use a lot of computer simulation to
9 come up with those initial starting positions.

10 Q. So one of the things that is considered
11 before a set of requirements is set and given to
12 for example, Bosch in this case, would be the
13 history that Ford has the experience with crashes,
14 right?

15 A. Correct. And we are -- we have a good
16 understanding of the full system knowledge and from
17 the full system knowledge we give them component --
18 they are the component suppliers for in this case
19 Bosch is airbag sensing systems maker. So we buy
20 the airbag sensors from Bosch to put into our
21 vehicles.

22 Q. So the experience that you have gained
23 over many years is brought to gain in creating the
24 requirements for Bosch. Hundreds of crash tests
25 that were performed with for example, the Focus are

1 part of what makes you determine what your
2 requirements are and including also sled tests?

3 A. Yes, sled test is another available
4 tool.

5 Q. And some sled tests and then static
6 deployments? Do you do static deployments?

7 A. Yes, and that is more to study the
8 airbag itself. As I said, Bosch is the sensor
9 supplier. We have another supplier for airbags.
10 And the airbag and safety belt supplier for this
11 vehicle is another company called TRW. They are
12 expert in making airbags, airbag components as well
13 as safety belts.

14 Q. But one of the things that go into your
15 requirements to make the decision as to whether or
16 not an airbag should deploy, whether it should not
17 deploy, those type of things, you have to take in
18 effect the extension and deployment path of the
19 airbag; is that right?

20 A. Correct. And let me also clarify that.
21 We have -- and again, the process of designing a
22 car is not instantaneous. And it is a very long,
23 drawn-out process. Takes as long as four years to
24 design a brand new car. And we generally know
25 initially we have a system maker. Ford is the

1 systems supplier. So we know what car we want to
2 make, we want to make a small car, a midsize car, a
3 large car, a pickup truck, SUV, so we have the
4 internal dimensions of the car. We have a general
5 idea of the theme and how the interior is going to
6 look and how it is going to perform.

7 So based on that we have some initial
8 assumptions that we develop based on our years of
9 experience, knowledge and testing. We have some
10 initial assumptions and we say we know that this
11 kind of an interior should require a certain size
12 airbag. So in that regard, I think you are right
13 we have a good starting position, but I must
14 caution you that that does not set in stone or it
15 is not a confirmed position. Because to a certain
16 extent while we know the volume of the airbag is
17 somewhat static, meaning we know that we want only
18 a certain hundred liter airbag on the passenger
19 side, we also need -- as the system develops we
20 would like to modify the shape of the airbag. Like
21 the profile of the airbag. For lack of a better
22 word we call it a cushion, the airbag cushion.

23 Q. That's acceptable.

24 A. And the airbag cushion, the shape when
25 you look at it from the side, it has to have a

1 certain profile. So that as the occupant moves
2 into the airbag we know which portions to be
3 restrained. To control the airbag we add side
4 panel, tethers, vent holes where the gas can
5 escape, all that is tunable parameters that keep on
6 evolving as the design evolves. However, we only
7 have a starting position to begin with.

8 Q. I appreciate your answer. I would --
9 basically I am asking do you also look at the bag
10 deployment characteristics, such as how far it
11 goes, how it stretches?

12 A. Yes, we monitor that.

13 Q. If you wish to elaborate upon some of
14 the reasons why, my question was do you do it? My
15 next question if I want to know why I would ask you
16 why. And we could keep this quicker, but --

17 A. Sure.

18 Q. I certainly don't have a problem with
19 Mr. Carter coming and asking well, why did you do
20 that. Okay? Thank you. So did it also include
21 computer simulations?

22 A. Yes. And I have personally performed
23 numerous computer simulations.

24 Q. What computer program have you used for
25 that?

1 A. For airbag development and occupant
2 interior development we use a package called
3 Marimor, mathematic dynamic molding. That's what
4 it stands for.

5 Q. Thank you. So a lot of effort, very
6 experienced technological and highly developed
7 effort went into developing a set of requirements
8 for that airbag as to timing, deployment, whether
9 or not an airbag should deploy and was then given
10 to Bosch and Bosch then was asked make us a system
11 that does that?

12 A. It's not as simple as that. And the
13 thing is we provide some initial targets and
14 initial guidelines to them and as we gather more
15 data through our crash test we also ask them to
16 participate in the test and provide them with all
17 that information. And they go back and since they
18 hold the algorithm, which is the mathematics behind
19 the computer that controls the airbag, they come up
20 with several iterations of it. And this is the
21 first iteration, second iteration, this is 20, 25,
22 whatever the case may be. Over the period of the
23 program development and at every iteration we study
24 the results and provide feedback to them.

25 Q. And you are talking about an algorithm;

1 is that what you said?

2 A. No. Algorithm is basic, but what I
3 meant is what executes the algorithm, the
4 calibration. The calibration which is unique to a
5 vehicle which is what controls the airbag
6 deployment or non-deployment.

7 Q. Thank you. I just wanted to be sure
8 the word was algorithm.

9 A. Yes.. Sorry. You have to pardon my
10 part English and part Indian accent.

11 Q. You do better than I do in India, so
12 don't worry about it. Let me ask you, sir, in the
13 process of development of the Ford Focus you
14 finally reached the point where you weren't giving
15 them any more crash tests?

16 A. Instead of saying not giving them any
17 more crash test we would say -- I would rather say
18 that we accepted the final calibration that was
19 provided to us.

20 Q. And you didn't make any changes to the
21 requirements when you gave it to them after
22 performing all the tests that you did? You did not
23 make changes to the requirements at the point that
24 you finally gave it to them and said give us a
25 final report?

1 A. Well, you got to be specific when you
2 say the requirements because there are requirements
3 that govern the hardware, the electronics of it.
4 That's the restraint system specification that is
5 based for the hardware from the electronic aspect
6 of it. If you are talking about requirements with
7 respect to target fire times, yes, we have an
8 initial fire time that we give and then we review
9 that. In that respect finally we deliver a
10 calibration -- finally they deliver a calibration.
11 We accept that deployment time of the calibration
12 and we study it further and we approve any
13 exceptions as the case may be.

14 Q. So sometimes after you have done all
15 the work that you have done to prepare for and give
16 what seems to be a well thought out set of
17 requirements the supplier will come back with a
18 calibration that might not meet all those
19 requirements?

20 A. Well, that's why I think I even used
21 the word soft targets to them because in a way to
22 design the end result for us is occupant injury
23 values as measured as recorded in crash test
24 dummies. Using that as the hard target as the
25 regular requirement as the case may be, we go back

1 and we see, we accept the fire time only if it
2 satisfies our several robust criteria including at
3 the component and at the subsystem level. Only
4 after satisfying ourselves do we approve of those
5 exceptions.

6 Q. Now, my question is, though, in this
7 particular case then, the Ford Focus, Bosch came
8 back with a version of calibrations that did not
9 meet the requirements that were given to them
10 initially?

11 A. I wouldn't say didn't meet the
12 requirements. It was an initial starting point of
13 the target and as I explained to you before, the
14 very fact that we signed it and received it means
15 that we accepted the end results.

16 Q. Yes. After they came back to you with
17 a calibration that did not meet the written
18 requirements you then went over that and said well,
19 we are going to make exceptions and we are going --
20 to our requirements and we are going to accept this
21 calibration?

22 A. Well, again, you keep using the word
23 requirements. I wouldn't call them requirements.
24 I would call them as initial starting point. We
25 call them starting targets. And going in we do not

1 know -- see again, the debate is chicken or the
2 egg, which came first, right? So the thing is we
3 have to start somewhere and based on our years of
4 experience we know a starting point and have no
5 approximation of the system. We have no idea what
6 the system is going to look like especially with
7 respect to design details. This is 30 months
8 before the vehicle is produced. That's why those
9 targets are starting points. Once that starting
10 point, whatever they have given back to us, we go
11 back, we study it, we go back and study it further.
12 And only then accept it. It is not our practice to
13 keep changing the targets, the original value as
14 and when more data comes in. If we do that, we
15 won't have a basis to come back. This is like
16 moving the goal post. No. It is not. So we don't
17 want to do that so that we can go and compare well,
18 based on our first principles we have this
19 approximate target that we provided. Now let's go
20 back and study it further and further and further
21 and see how we compare.

22 So I won't accept your notion that it
23 is a requirement.

24 Q. Let me accept then you do not like the
25 word requirement so we don't have to go back over

1 that and explain that you think it is a starting
2 point. I will accept that's what your position is.

3 A. Correct.

4 Q. What is the name of the document?

5 A. It is called the calibration report.

6 Q. Excuse me?

7 A. The calibration report. Or calibration
8 summary report.

9 Q. What's the name of the document that's
10 given to Bosch with what you call starting points?

11 A. It is that sheet of -- it's columns of
12 data which we specify various crash tests and what
13 the desired initial deployment time is for let it
14 be pretensioner or let it be airbag.

15 Q. It is not part of the specification?

16 A. The engineering specification is a
17 different document. That's a system design
18 specification that governs another set of data
19 which is basically the electronic hardware, the
20 function, spec and things like that.

21 Q. So let's say the targets then that you
22 selected and determined were appropriate for this
23 vehicle, when they don't meet those targets you
24 have two choices, then you could start another
25 calibration run; is that correct?

1 A. There would be multiple calibration
2 runs.

3 Q. Right. Or three actually. You could
4 go back and change those things which the
5 exceptions are having to be made to cover. For
6 example, you could move a sensor position to get a
7 better coverage for something, you could change a
8 -- you can add for example, reenforcement for a
9 crash path, get the signal to a place, these are
10 things which are possible, can be done?

11 A. And we do all that and we continue to
12 do that through all the design process, through all
13 the development process and that's why we call it
14 development so we test and retest and over multiple
15 scenarios.

16 Q. But in the end Bosch came back and said
17 here is our attempt at a calibration to meet your
18 targets, we didn't meet the target on this, this
19 and this. Instead of in this case creating a
20 different crash path towards a sensor for example,
21 or moving the sensor positions, Ford decided to
22 look at the targets that were not met and make
23 exceptions for them?

24 A. No. It is not that simple.

25 Q. Can we stop and ask you this? Instead

1 of doing -- instead of actually going back, I don't
2 want to object to nonresponsive.

3 MR. GLADD: The objection was that he

4 --

5 THE COURT: Overruled. He hasn't
6 finished the question before he interrupted the
7 question. Let me say something, okay? Listen to
8 the question. A lot of these questions you can
9 answer yes or no, I don't know, I don't understand.
10 And then you can give an explanation. But please
11 answer the question. Otherwise we are going to be
12 here all day with him asking the question in
13 different ways. And you give whatever expert
14 explanation you want to give. You may not want to
15 answer yes or no, but please answer the question
16 and then give your explanation rather than start
17 with your explanation and don't interrupt the
18 lawyer. Let him finish before you answer it.

19 THE WITNESS: Yes, sir.

20 THE COURT: Please proceed.

21 BY MR. VAN GAASBECK:

22 Q. Thank you. I know it is difficult, Mr.
23 Krishnaswami. When Bosch finally came back with
24 its -- what it made, its end product and said --
25 did say we can't meet this target, this target,

1 this target and this target. Several targets it
2 said it couldn't meet in its calibration report; is
3 that correct?

4 A. I don't think they came back and said
5 that.

6 Q. Well, were there targets that they were
7 supposed to meet that they did not meet?

8 A. Yes, they did not -- they were not able
9 to achieve the initial targets, yes.

10 Q. Now, did Ford then at that time for the
11 final release say or do anything like okay, we are
12 going to move our sensors about or create a
13 different, a reenforcement that would get the crash
14 signal in the front to the back, crash path, or did
15 Ford say let's look at these ones which don't meet
16 the soft targets and see if we can accept them?

17 A. Well, that process of packaging that
18 you are talking about happens much earlier than the
19 second process you are talking about when the
20 targets start coming.

21 Q. So Ford then decided to take the
22 exception, take the ones that didn't meet, evaluate
23 them and determine if they were acceptable?

24 A. Correct, within all the other
25 requirements or guidelines or targets that we set

1 forth.

2 Q. All right. Are those called
3 exceptions?

4 A. There are, yes, there will be some
5 exceptions to the original targets.

6 Q. For this particular vehicle -- with
7 this particular vehicle what was the -- what's the
8 job one for this one?

9 A. I think job one was sometime in 2007
10 calendar year, around June, July time period I
11 believe for a 2008 model year. And job one denotes
12 the launch of production.

13 Q. Sorry?

14 A. The launch of production, commencement
15 of production of a vehicle in Ford's internal
16 designation is called job one.

17 Q. Thank you. So was there a job one for
18 2008?

19 A. Yes, there was. And I have to refresh
20 my memory.

21 Q. Then there was a job one for 2008
22 and-a-half?

23 A. Yes, there was a running change during
24 2008 and yes, there was a running change in 2008.

25 Q. And was that change then made because

1 the 2008 had two up front sensors and Ford wanted
2 to move to one sensor up front?

3 A. Yes. Actually the original target was
4 let's see if we can make the system work with one
5 sensor and as a backup let's see if you can do two
6 sensors up front. So during the design phase they
7 were testing three different locations for sensors,
8 two on the outside and one in the center.

9 Q. And ultimately -- were they ultimately
10 the same positions that were used when they came to
11 the production vehicles, for example, the two on
12 the outside were the ones that were in the 2008 and
13 then the one that was in the center was on the
14 2005 -- 2008.5?

15 A. About a few months into production,
16 yes.

17 Q. Thank you. So what was job one for
18 2008.5?

19 A. It's just a few months later. It was
20 considered a running change because the two system
21 sensing system and the one sensor system were
22 considered equal so it is called a running change.
23 There is no set date when it transitions.

24 Q. So didn't Ford then have time between
25 job one in 2008.5 to go back and do a little more

1 work on moving the sensors around or adding
2 reenforcement or crash paths to try to eliminate
3 the exceptions that you would accept rather than to
4 just go forward?

5 A. Well, the exceptions are accepted --
6 the moment we accept an exception means that we are
7 satisfied with that exception and it meets the
8 overall target. So it was not necessary to do
9 that.

10 Q. Did one of those exceptions include
11 allowing an airbag to deploy in a crash in which
12 Ford knew it did not need a deployment?

13 A. Well, can you please tell me what crash
14 test you are talking about?

15 Q. Well, let's -- there are several, but
16 I'll talk about some of them. There is a 1598 --
17 15978 which we had a 30 degree right front barrier?

18 A. What was the speed, do you know?

19 Q. Twenty-five miles per hour, 24 to 25
20 into a right oblique angle barrier?

21 A. Okay. I have to look at the
22 calibration report.

23 Q. I will get it up. And I know you are
24 not being evasive. I know how hard it is to look
25 at that.

1 A. Because there is a lot of data there.

2 Q. Yes, sir. Let's look at the
3 calibration report then. Can you see it, sir?

4 A. Yes, I can.

5 THE COURT: Should be right in front of
6 you. Is it in front of you? Okay.

7 THE WITNESS: Yes, sir.

8 THE COURT: Can you see it again?

9 THE WITNESS: Yes, I can see it okay.

10 I just need to figure out how to move, scroll the
11 screen.

12 BY MR. VAN GAASBECK:

13 Q. I got it. If you are going to touch it
14 you are going to mark it.

15 THE WITNESS: Looks like I marked it.

16 THE COURT: If you want to touch
17 something it will mark it. James, show him how to
18 release the mark if you would, please. You can
19 mark it and then he will show you how to release
20 it. Do you understand how it operates?

21 THE WITNESS: Yes, sir.

22 THE COURT: Thank you so very much.

23 BY MR. VAN GAASBECK:

24 Q. Now, I will go through this. I am not
25 going to ask you to try to figure out and tell us

1 what each part means, but I will ask you about it.
2 First let's take a look at the -- I don't want to
3 mark it either. On the left-hand side in black and
4 white you can see a certain number of items. Are
5 those the crash tests that were run to calibrate
6 this system?

7 A. Yes.

8 Q. So to calibrate this system I am seeing
9 21 crash tests; is that correct?

10 A. Yes.

11 Q. So one, two, three, four, five, six,
12 seven, eight, like that, we are looking at right
13 there that's them, they are listed and identified
14 as to what they are. So for example, let's look at
15 the -- for example, showing you how this thing
16 works, crash tests. The one that I was talking to
17 you about would be No. 13; do you see that?

18 A. Yes, sir.

19 Q. So that's 15978, 25 miles an hour 30
20 degree right angle. What kind of crash is that?

21 A. Well, that would be at 25 miles per
22 hour and the vehicle is propelled at 25 miles an
23 hour into a rigid wall that is angled at
24 30 degrees. So if I were to propel this car into a
25 rigid wall, this wall is angled at 30 degrees. And

1 the car comes slightly into it.

2 Q. That's a nondeformable barrier?

3 A. Correct.

4 Q. So it doesn't bend or crack or squish
5 or crush?

6 A. No.

7 Q. So if we were to follow 13 across then
8 to this next box, and let me ask you then, you can
9 see up here it's labeled pretensioner performance;
10 is that right?

11 A. Correct.

12 Q. So that would be in the belt and you
13 could fire -- you could require that pretensioner
14 to deploy with the same type of gasses expansion
15 squid that would then tighten your belt. What's
16 the purpose of that?

17 A. The aim of the pretensioner if you are
18 belted is to remove slack that would be generally
19 present let's say if you are wearing an overcoat,
20 and when you are wearing a safety belt on top of
21 it, it makes the safety belt performance efficient
22 by firing micro gas generator and pulling the --
23 cinching the belt and make the safety belt
24 efficient. That's the function of the
25 pretensioner.

1 Q. So in this particular car, you could
2 just fire the pretensioner?

3 A. There are some crashes where you could
4 just fire the pretensioner and it is sufficient.
5 You do not need to fire an airbag.

6 Q. That gives you better performance on
7 your seat belt when you do that?

8 A. It is to make the overall seat belt
9 function efficiently in a frontal impact.

10 Q. Thank you. So does Ford have the
11 ability to say wait a minute, this guy is not
12 wearing a seat, why would I do that?

13 A. Yes. We do have an ability to do that.

14 Q. And did you do that in this case?

15 A. Yes.

16 Q. So the technology is pretty advanced
17 for things you want to do?

18 A. Correct. That's why it's called
19 advanced restraints.

20 Q. So taking 13 across we can see there is
21 a pretensioner performance and we see a section
22 which says no fire percentage right down the
23 center. Can you see that?

24 A. Correct.

25 Q. I'm going to make it a little bit

1 bigger so it may be easier for people to see. So
2 there is -- and that first section then on the
3 right in the gray, there's a section says target;
4 do you see that?

5 A. Yes.

6 Q. So on target that lists actually a
7 timing target; is that correct?

8 A. Correct.

9 Q. So if there's -- if you don't want it
10 to fire the target is going to be zero?

11 A. Yes.

12 Q. So when we look at the first three of
13 those crashes, one is an eight mile per hour
14 undercarriage, ten mile an hour bumper override, an
15 eight mile an hour into a wall, Ford didn't see a
16 need for those pretensioners to fire and so it gave
17 a zero target for it?

18 A. Correct. And those are all lower speed
19 impacts where we do not need to fire any
20 pyrotechnic devices to offer any occupant
21 protection.

22 Q. That was confirmed by that list of
23 things that we have just talked about that that
24 would be the target?

25 A. Correct.

1 Q. So then you can see that it met that
2 target, did it not, because just to the left of
3 there that's actually the performance, it's all
4 black for those three; do you see that?

5 A. Yes.

6 Q. What does all black mean?

7 A. That we are not deploying any devices,
8 that particular device in that event.

9 Q. So in that case -- you touched it.

10 A. Oh. Sorry.

11 Q. I am just teasing you. There is one
12 little red dot there. So below that, though, we
13 have actual performance and ones where we would
14 want it to fire; is that correct?

15 A. Correct.

16 Q. So on the left-hand side we can see the
17 columns of what the actual performance is. And we
18 see one that says normal; is that right?

19 A. Yes, nominal.

20 Q. What does norm nominal mean?

21 A. Nominal means that's what we expect
22 most of the time. And based on statistical studies
23 or distribution of these designs, all of it or
24 majority of the time that's what is going to
25 happen. And min max means that at the extremes

1 this is what you can see.

2 Q. What sort of various or fluctuations is
3 that attempting to take care of when you say mid or
4 max versus normal? What is the actual fluctuation
5 that you are trying to deal with?

6 A. Fluctuations in signals for the sensor
7 to discriminate or discern that could arise from
8 the electronics as well as the physical domain.

9 Q. Thank you. So then you will mark in
10 yellow those places where the timing did not meet
11 the target; is that correct?

12 A. Correct. And those are the highlighted
13 items and if you will allow me, and these are the
14 targets that we talked about --

15 Q. Yes.

16 A. -- a few minutes back.

17 Q. This is what you referred to as a soft
18 target and I refer to it as a requirement?

19 A. Yes.

20 Q. Fair enough?

21 A. Yes.

22 Q. Thank you. Let's take No. 13 across
23 and see where we go. If a person was -- hard to
24 follow.

25 A. That is 13.

1 Q. All right. Let's take it then to the
2 first potential there where the driver and
3 passenger is unbelted in a stage one deployment.
4 You know what I am talking about? You can draw it
5 there. I don't mind. Sounds like a good idea.

6 A. If you want me to.

7 Q. You might just put an arrow to where it
8 is.

9 A. (Witness complies with request.)

10 Q. I know how hard it is to draw that
11 line.

12 A. (Witness complies with request.)

13 Q. Have you touched it?

14 A. I thought I did. I see the arrow here.

15 THE COURT: Hold on a second here. He
16 will show you.

17 Q. Do you see that 24.3 nominal?

18 A. Yes.

19 Q. Is that -- does that relate then to our
20 crash test we are looking at?

21 A. Yes.

22 Q. Why don't we go ahead and mark this.

23 A. That's why I put the line in there or
24 let's do this. The monitors on the screen are a
25 little thick.

1 Q. Yes.

2 A. Let's just place a dot there.

3 Q. Thank you. I will tell you what I will
4 do. Let's go over to that spot right there. That
5 30, do you see above the zero? Is the crash test
6 that we are talking about just below that dot?

7 A. Yes, it's right there.

8 Q. That part that says 24.3, that is our
9 25 miles an hour 30 degree angle barrier?

10 A. Correct.

11 Q. So for an unbelted person there is a
12 target for deployment; is that correct?

13 A. Correct.

14 Q. That would be 28 milliseconds?

15 A. Correct.

16 Q. That's what is it supposed to do and
17 then it shows that it did that?

18 A. Correct.

19 Q. There might have been some a little
20 late, at least they did deploy for that?

21 A. Yes.

22 Q. And is it proper then in that situation
23 to deploy the airbag for somebody who is not
24 wearing a belt and deploy at the first stage?

25 A. Correct. And we cannot confuse the

1 pretensioner with the airbag deployment here
2 because the pretensioner is available only when you
3 are belted. And the airbag where you just marked
4 right now is for unbelted person.

5 Q. So first stage for an unbelted person
6 means the first stage airbag and there are
7 different stages. So why do we have different
8 stages?

9 A. Again, we did not explore why there are
10 multiple stages of airbags yet, but these are
11 called as dual stage airbag systems. They have
12 stage one and stage two. They are also called as
13 primary stage and secondary stage. Primary stage
14 is let's say the inflator capacity or the gas
15 generator capacity for an airbag is under four
16 percent. The primary stage is about 65 to 70
17 percent. The second stage is that rest of the
18 portion.

19 In a collision when you are in low to
20 moderate severity type collision, you will need
21 only to deploy primary stage airbag. You do not
22 need a more powerful airbag. Remember I said crash
23 one and crash two. Crash two is for the occupant.
24 Airbag itself is introducing a lot of energy into
25 an energy situation in that crash. So that being

1 said, the primary stage is about 70 percent. The
2 secondary stage is used in conjunction with the
3 primary stage when you are in a high severity
4 collision. Like for example, 35 miles per hour
5 into a rigid wall. That is when you use the
6 primary plus secondary stage in quick conjunction
7 so that you have enough energy to restrain the
8 occupant.

9 Q. Thank you. And you said about crash
10 one and crash two. That's a -- Ford understands
11 the principle between those two, the difference
12 between the two?

13 A. Meaning the occupant to the interior
14 and the vehicle to the surrounding, yes.

15 Q. So you can have a crash, the first
16 crash is the vehicles coming together.

17 A. Yes.

18 Q. The second crash is the occupant
19 impacting something inside that car?

20 A. Yes.

21 Q. One of the things an occupant could
22 impact is an airbag?

23 A. Or the steering wheel.

24 Q. Or the steering wheel?

25 A. Or the IP.

1 Q. And any one of those under the wrong
2 conditions can cause an injury, including an
3 airbag?

4 A. Yes. That's why we have to look at
5 occupant kinematics and design it carefully.

6 Q. So in the second collision Ford is
7 aware that airbags can actually cause injuries and
8 it does not want that to happen unnecessarily?

9 A. In the general sense, yes, we have to
10 be careful on how and where we deploy.

11 Q. Question has been asked or statements
12 have been made in opening as to the cause of the
13 crash. So let me ask about that. Let's ask about
14 the first crash. The cause of the first crash in
15 this case as you have studied it would be that
16 fellow that turned in front of the vehicle, his
17 action; is that correct?

18 A. Yes.

19 Q. Okay. Now, because he turns in front
20 of that vehicle, there is ultimately going to be a
21 second crash?

22 A. Oh, meaning for the occupant into the
23 -- in that regard, yes, every crash, big picture
24 crash has one for the vehicle and one for the
25 occupant.

1 Q. And Ford knows when it makes its airbag
2 systems that they are going to actually many, many
3 times have to operate in a condition in a
4 circumstance where somebody else caused the crash?

5 A. Yes.

6 Q. In that circumstance does Ford say
7 well, look, because other people negligently run
8 into cars, we don't have a responsibility to
9 provide protection for the second crash?

10 A. I don't think that's our intent to say
11 that, no.

12 Q. In fact, you do intend to say even
13 though there is a crash that causes a safety device
14 to work, that the safety device still has to work
15 properly, and it is Ford's responsibility to do
16 that?

17 A. Yes, and I would agree with that.

18 Q. So the next set on the crash No. 13 --

19 THE COURT: Mr. Van Gaasbeck, before
20 you start on this next we have been going for a
21 good hour and-a-half. We will take a break at this
22 time.

23 MR. VAN GAASBECK: Yes, sir. Thank
24 you.

25 THE COURT: Ladies and gentlemen of the

1 jury, if you will leave your pads in the chair and
2 hopefully you won't have all that confusion
3 swapping all the books around. We will take an
4 afternoon break. Ladies and gentlemen, if you need
5 anything let the bailiffs know. Don't discuss the
6 case among yourselves.

7 (Thereupon, the jury exited the
8 courtroom at 4:00 p.m.)

9 THE COURT: Mr. Krishnaswami, do not
10 discuss the case during the break with anybody if
11 you don't mind please, sir.

12 THE WITNESS: Definitely, Your Honor.

13 THE COURT: We will take about a 15 or
14 20-minute break.

15 (A recess transpired.)

16 THE COURT: Is the Plaintiff ready to
17 proceed?

18 MR. VAN GAASBECK: Yes, sir, I am.

19 THE COURT: Defense ready?

20 MR. GLADD: Yes, Your Honor.

21 THE COURT: Bring the jury, please.

22 (Whereupon the jury entered the courtroom at
23 4:24 p.m.)

24 THE COURT: Yes, sir.

25 BY MR. VAN GAASBECK:

1 Q. So when we look at No. 13 and we get to
2 a belted passenger crash No. 13, which is the
3 25 mile an hour and 30 degree angle, okay, can you
4 tell us whether or not it should deploy by this set
5 of targets for that crash for a belted passenger?

6 A. This -- it will deploy for this -- this
7 calibration for a belted passenger at 25 miles per
8 hour angle, that's the result.

9 Q. Twenty-five miles an hour 30 degree
10 angle?

11 A. Correct, yes.

12 Q. Where is that?

13 A. Let me help you. I think the
14 magnification shifted a little bit when the screen
15 went dark, so that would be right there.

16 Q. Right there?

17 A. Yes.

18 Q. Where it says 00?

19 A. Right.

20 Q. What's the target?

21 A. The original target if you were belted
22 was airbag suppression.

23 Q. Airbag what?

24 A. Suppression.

25 Q. Meaning no airbag?

1 A. No airbag. But after the calibration
2 after we went through the entire suite of
3 calibration it was decided to deploy the airbag
4 nominally around 45 milliseconds.

5 Q. Well, this calibration actually shows
6 that in trying to meet the no fire target or
7 requirement it didn't meet it and, in fact, it
8 deployed the airbag at 46.3 for max, 42.6 for
9 minimum, and 44.7. That's what it actually did
10 before you even accepted it?

11 A. No.

12 Q. Sorry. Am I right that you did not
13 meet the target with this calibration?

14 A. You are right in that sense that we
15 didn't meet the target, the starting target, yes.

16 Q. And then instead of going ahead and
17 making a new crash path or changing the sensors
18 around, you looked at it, you said well, you know,
19 that's not too bad; is that right?

20 A. Actually, no. We say, in fact, it is
21 good.

22 Q. Good. All right. So now what happens
23 -- why is it that people that -- first of all,
24 would you agree that Ford, NHTSA and about
25 everybody else says that you don't deploy an airbag

1 unless you need one?

2 A. Well, that's the thing. By NHTSA you
3 are meaning National Highway Traffic Safety
4 Administration.

5 Q. Right, National Highway Traffic Safety
6 Administration?

7 A. That is abbreviated.

8 Q. For among other things airbags?

9 A. Yes, for automotive manufacturers.

10 Q. And there's plenty of rule making which
11 -- in which everybody agrees that you don't want to
12 deploy airbags unless they are necessary; is that
13 fair?

14 A. Correct. And that is a fair statement;
15 however, I would like to explain that a little bit.

16 Q. You are right. Please do. You have a
17 right to do that.

18 A. What is it is we try to preserve the
19 airbag when you need it. And what do I mean by
20 that? Is that there are certain severity crashes,
21 low severity crashes where you don't need this
22 airbag and moderate severity crashes where you may
23 or may not need the airbag depending on your
24 occupant position. So we have to take the system
25 as a whole.

1 For example, when we -- a passenger may
2 not need a bag, but a driver would need an airbag
3 because of the proximity to a steering wheel. We
4 don't have devices where we can suppress the airbag
5 for the passenger and deploy the airbag for the
6 driver for similar occupant sizes. That technology
7 does not exist. Therefore, we have to consider the
8 system as a whole and also what we also term as
9 abuse and immunity where you go over a pothole,
10 curb impact, things like that. Those are the
11 conditions where we don't want to have an airbag.
12 We try to minimize the suppression when you see
13 those.

14 So we consider everything in order to
15 make our decisions.

16 Q. Thank you. Now, you and I have talked
17 about this a couple of times; fair to say?

18 A. I think you and I have talked about
19 this quite a bit.

20 Q. So when you and I talked about this
21 particular crash test, and why they decided that it
22 was good to deploy the airbag for this crash, it
23 wasn't because it was going to help anybody in this
24 crash, was it?

25 A. Well, again, in this crash meaning in

1 this crash test?

2 Q. Yes, sir, correct.

3 A. In this crash test, initially if you
4 are belted you do not see an occupant moving
5 towards it. The thing is if you delay the airbag
6 for a certain crash mode you may end up delaying
7 for other modes, too. That's why the system has to
8 be optimized. Then we go back and study is it okay
9 or is it absolutely okay to deploy an airbag in
10 this crash mode based on the studies and tests and
11 then we accept it.

12 Q. So I want to make it clear, though,
13 that when Ford went back and said okay, we are
14 going -- it's okay to deploy this airbag in this
15 crash, it wasn't because Ford looked at it and said
16 looks like we do need it for that crash, right?

17 A. Well, we do need it if you are
18 unbelted.

19 Q. Yes, and that was a must deploy, right?

20 A. Yes. If you see the previous several
21 columns initially it had all things being equal in
22 that crash test, if you are unbelted in that
23 25-mile per hour angle of impact you definitely
24 need an airbag. That's why we deploy an airbag.

25 Q. So for an unbelted person you could

1 deploy the airbag?

2 A. Yes.

3 Q. And you have the technology to not
4 deploy the airbag for a belted person, yes?

5 A. We do have the technology to set it to
6 a higher threshold.

7 Q. And, in fact, over here on the
8 left-hand side we see unbelted and we see that it
9 actually did have a target of what looks like
10 28 milliseconds. In other words, to deploy for
11 that unbelted person?

12 A. Yes.

13 Q. So you didn't under your initial soft
14 targets or requirements you, and I am talking about
15 Ford, I know this isn't you, Ford did not recognize
16 it was still not needed for the first stage airbag
17 to deploy. So deployment for the belted first
18 stage person doesn't do anything for the unbelted
19 person because they are already going to get a
20 deployment, right?

21 A. Yes. On the contrary we would not have
22 deployed it -- suppressed it for the unbelted
23 person and deployed it for the belted person.

24 Q. So it did not matter to anybody in the
25 car, did not help. The selection was we are going

1 to deploy this airbag for a different reason. It
2 wasn't because that somebody in that car that's
3 belted needed it, right?

4 A. Right.

5 Q. Okay.

6 A. If you allow me, as I just said, you
7 got to -- you cannot look at one crash test in
8 isolation and that's what I was trying to say.
9 What you do in one crash affects other crashes
10 because the system is tied together. One crash
11 mode is not independent of another crash mode. The
12 signal pattern, even though it varies, it is very
13 important to bring all the data together and look
14 at a system as a whole. And that's why we would
15 deploy in some modes where the initial target was
16 not to deploy to begin with.

17 Q. Okay. Accepting that the reason for
18 deploying the airbag for a belted person is not
19 because that belted person needs it, there is
20 another reason and that was because you could not
21 deploy it in another type of crash?

22 A. Yes. And because how do we know which
23 exact crash an occupant is going to be in, so the
24 whole system has to be considered.

25 Q. Absolutely. All these crashes -- by

1 the way, you just said you can't take any one of
2 them in isolation; is that correct?

3 A. Yes.

4 Q. And in other words, for a person who is
5 going to criticize this crash system or evaluate
6 this crash sensor system, it is proper for them to
7 evaluate all of the tests that are in that
8 calibration crash test?

9 A. For calibration purposes, yes. For
10 comparison purposes, that's a different story.

11 Q. Thank you. Now, you might wonder why
12 we have chosen a 25 mile an hour crash instead of a
13 70 mile per hour crash. Some people might wonder
14 that. Were you in here when Mr. Carter talked
15 about and actually gave his opening statement?

16 A. Mr. Carter was talking about closing
17 speeds, not initial speeds.

18 Q. Thank you. Can you blank my screen,
19 let me use this? Thank you. All right. So if we
20 have two cars at each other, one at 43 miles an
21 hour, say the other at 27 miles an hour, that would
22 be a closing speed of 70 miles an hour, right?

23 A. Correct, total closing speed.

24 Q. Now, as far as an engineer looks at
25 this, what is the actual decrease of velocity, the

1 actual velocity of the crash measured by decrease
2 of velocity of this crash. Is it a 70 mile an hour
3 crash, or is it something different?

4 A. Well, you use the word decrease in
5 velocity. That has specific meaning for an
6 engineer. Basically how quickly the vehicle comes
7 to a stop. That's what decrease in velocity means.

8 Q. And what would you call the decrease in
9 velocity when two vehicles of the -- the same --
10 just two vehicles made by the same company, same
11 car, and all that run into each other at 70 miles
12 an hour? Just for purposes of demonstrating the
13 process. What is the actual severity of that
14 crash?

15 A. It depends on other factors, too.

16 Q. And --

17 A. Stiffness and things like that. The
18 decrease in velocity for this car is for 40 miles
19 per hour to zero. And the decrease in velocity for
20 this car is 27 miles to zero.

21 Q. So are you saying that this is -- I am
22 sorry. Do you understand the concept that if two
23 vehicles run into each other that are exactly the
24 same, they are the same surface, hit each other
25 exactly right, that the actual -- that that is

1 actually a 30 mile an hour barrier collision?

2 A. Yes. And can I explain that concept to
3 you?

4 Q. You can.

5 A. Okay. Basically what you are trying to
6 say is let's say if a vehicle at 35 is hitting a
7 rigid wall at 35 miles an hour, it's the same as
8 approximately two vehicles going at each other of
9 same mass, same stiffness, same size, at 35 miles
10 an hour each. Or one vehicle going at 70 and the
11 other vehicle is stopped.

12 Q. And --

13 A. Of equal shape and size and things like
14 that.

15 Q. Would this one here be a closing speed
16 of 70 miles an hour?

17 A. Correct.

18 Q. Thank you. Can you close that, please.
19 Thank you. Now, you know a little bit about the
20 facts of this collision, don't you?

21 A. Yes.

22 Q. So you know that this is two cars
23 running into each other head to head at 35 miles an
24 hour or at I am sorry 43 and 27. You know that's
25 not really what happened here, is it?

1 A. Well, it was -- I think the
2 reconstructionists are basically going to come and
3 talk about specifics on the details of this crash,
4 but I think they have estimated to be about 43.7 I
5 think.

6 Q. Yes, not 70?

7 A. No, 70 is the total. It's no car --
8 let me explain this. No car in this accident
9 individually was traveling at 70 miles an hour.

10 Q. And you can put together the end result
11 and the barrier equivalent was 30 something?

12 A. Yes. The barrier equivalent would be
13 about --

14 Q. Well actually less than that?

15 A. Yes, the Delta-v was about 25, 26 miles
16 an hour.

17 Q. The decrease in velocity for our client
18 was 20 some miles an hour. That is why I have
19 chosen this crash test because it's a 25 miles per
20 hour crash test and also it's an angle off to the
21 right. That would be pretty close, as close as we
22 can get to our crash?

23 A. Okay.

24 Q. So if we look then there are some still
25 shots of that taken of the 1597 or whatever that

1 is. Is that one of those still shots?

2 A. Correct. And the crash number is right
3 here.

4 Q. If you look at that, you can see that
5 the damage is mostly on the passenger side of the
6 vehicle, yes?

7 A. Yes, because it was directed to be hit
8 at the passenger side.

9 Q. And --

10 MR. GLADD: Your Honor, can I get an
11 exhibit number?

12 BY MR. VAN GAASBECK:

13 Q. That's absolutely -- I am sorry. Look
14 for Exhibit 47. 47 will be the compilation of all
15 the crash tests report, the photographs and the
16 video of that particular crash test. There is
17 another little component you can see from the
18 damage of this car and that is the wrinkling of the
19 right front quarter panel; do you see that?

20 A. Right front fender, yes.

21 Q. Yes. Thank you. Isn't this a pretty
22 close approximation to what happened in the
23 photograph that you see -- you have seen from Mr.
24 and Mrs. Newbern's car?

25 A. Well, we are just looking at the

1 overall damage, but we always have to look at the
2 underlying data.

3 Q. Yes. Right now we have the 25 mile per
4 hour barrier equivalent for decrease of velocity we
5 want to say for this car and we also have
6 photographs of this car and we now can compare them
7 to those of Mr. Newbern's car and that's one of the
8 things you would do?

9 A. Yes. I believe we at Ford have done
10 that, too. We took several of the crashes in this
11 suite of crashes and we have compared it to the
12 accident data from this accident.

13 Q. So when you did that which crash test
14 did you think it looked more like?

15 A. I believe there was a vehicle to
16 vehicle about 32 and also at 25 miles per hour from
17 the barrier that it was close to.

18 Q. So the offset to deformity barrier,
19 meaning a softer --

20 A. Initially softer.

21 Q. And whereas the barrier that we are
22 looking at there is not ever going to be soft,
23 right?

24 A. Yes. It's a rigid barrier.

25 Q. Now, in the past you and I have talked,

1 you have instructed me as to what Ford uses as a
2 measure of crash severity; do you recall that?

3 A. Yes.

4 Q. One of the things that we have agreed
5 on is that crash severity is judged by the
6 decelerations, not the loss of Delta-v?

7 A. Yes.. Let me clarify if you allow me.
8 You said deceleration. Basically the word
9 deceleration is not in physics. It's a term of
10 art, but what you mean by that is acceleration on
11 the negative data sheet basically as the vehicle
12 comes to a stop. Decelerations over time from
13 which you can compare velocity. I believe that's
14 what I have told you in several of my depositions.

15 Q. So when you look at the decelerations
16 you are looking at the Gs, that's the same thing,
17 isn't it?

18 A. No. What I meant is decelerations, the
19 unit of measure for decelerations is Gs.

20 Q. So in this particular crash right here
21 that we see, the crash test, which is a non-deploy?

22 A. The initial target, yes.

23 Q. Yes. It's a non-deploy for the initial
24 target, not deployed for a belted passenger or
25 driver, okay, so when we look at the Gs, the crash

1 pulse of this crash, the deceleration and I am
2 showing the quad from that and would we look at the
3 longitudinal?

4 A. Yes, because that's the data sheet we
5 are interested in.

6 Q. So let me now -- are we looking at the
7 longitudinal decelerations?

8 A. Yes.

9 Q. So what's the maximum severity of this
10 crash according to that? Where does it reach its
11 maximum G level?

12 A. Yes. So thanks for clarifying. You
13 used initially the word maximum severity that I
14 wasn't going to accept it. But the maximum
15 magnitude is about 50 Gs that you see.

16 Q. How many Gs?

17 A. 50 Gs and it transfers to about 75 Gs.

18 Q. Now I am looking at longitudinal?

19 A. Yes.

20 Q. And I see minimum is 58.34 degrees -- I
21 mean Gs at 53 milliseconds?

22 A. Actually the graph actually helps you.
23 They have -- I have placed two dots up front. It's
24 the max and what the min is. So it goes from 52 --
25 56.16 to negative 68.4.

1 Q. It's the negative Gs that I am looking
2 at.

3 A. Okay.

4 Q. Do you know why?

5 A. Yes, but that is the harmonics which we
6 cannot exclude.

7 Q. Right. There's no -- at some point it
8 increases and sometimes that's decreasing in a
9 crash. Things are bending and breaking and bending
10 and breaking in a crash faster than any of us can
11 see, but they are happening. When they do slow
12 down, that's what we are seeing is bobbing up and
13 down?

14 A. That's the harmonics I'm talking about.

15 Q. Then we are looking at the
16 decelerations, the types of things which harm
17 people when they come to a quick stop? No?

18 A. No, I don't agree with that.

19 Q. What Gs then would you say are the Gs
20 that matter to a person in the car and why?

21 A. Well, before the force acting on the
22 body which is basically decelerations, the human
23 body has some tolerance. Three or four Gs, but
24 crash forces of much larger 20, 30 Gs, when you
25 filter the data and if you are belted person and

1 you are going to experience all that stuff.
2 However, to equate momentary Gs that are recorded
3 in very high frequency instrumentation data to what
4 happens to an airbag for severity is not right.

5 Q. Let's -- try to keep with -- stay with
6 me on this for a second. When I look at one of
7 these and for years have done so, I always look at
8 the lower part below zero to determine what this
9 crash severity is. Are you saying that we really
10 should be looking at the one above?

11 A. The total magnitude, no, I am not
12 saying that. In fact, this is only data point.
13 What we take is the interval of this, the derived
14 quantities from this data, which is the rate of
15 change of velocity over time which by definition is
16 acceleration. That's what we look at more closely.

17 Q. So when the event data recorder, that's
18 the event data recorder, but the RCM is deciding
19 whether to deploy an airbag, what -- it is doing so
20 from a certain position in the car; is that right?

21 A. Yes. It is able to do that, yes, it is
22 located in the RCM.

23 Q. And this data plot actually comes from
24 that very same spot?

25 A. Yes.

1 Q. Yes. So the Gs that are appearing are
2 the Gs that are actually being used to determine
3 whether or not the airbag is going to deploy?

4 A. I would agree with that only up to a
5 point.

6 Q. Right, because there are other things
7 which you have to factor in. Are you belted for
8 example, are you a child and your airbag has been
9 suppressed, you have some others?

10 A. Yes. Basically those are sensors, but
11 what is more important as I just said, the Gs are
12 then computed and decisions made in real time on
13 the computer values to make the decision.

14 Q. But the two big things which are being
15 looked at are time and Gs. Those are the two
16 factors that I would think you are looking at?

17 A. Time and Gs are recorded initially,
18 yes, but it is not the only quantity that can be
19 looked at. If we just use Gs to decide whether to
20 deploy, we will come up with a lot of erroneous
21 results. In fact, if you have a hammer strike you
22 can have higher Gs than that.

23 Q. But this is not a hammer strike, this
24 is actually a crash for the purpose of determining
25 what the severities are in this crash and then

1 making decisions about whether or not to deploy the
2 airbag? That's what this is, right?

3 A. No.

4 Q. Did this data result in the deployment
5 or non-deployment of an airbag?

6 A. This data is used, yes, it resulted in
7 the deployment of an airbag, but this data alone is
8 not used.

9 Q. So let's look at the -- let us -- can
10 you tell me what the deceleration is on this, the
11 maximum deceleration and the maximum acceleration?

12 A. If you are talking about positive and
13 negative quantities, the maximum negative quantity
14 is negative 69.4. And the maximum quantity is
15 positive for 56.16.

16 Q. So you have also looked at the download
17 and we talked about it. That's Exhibit 72. Is
18 that also the data which is -- that is recorded in
19 the data recorder from the same sensor that we are
20 looking at -- same sensor location, same RCM?

21 A. The same sensor location, but it's not
22 the same data.

23 Q. This would not be the same data?

24 A. Yes, because the frequency on the data
25 gathering is lower density compared to the

1 instrumentation data you were showing me from a
2 crash test.

3 Q. I was showing you the wide band, was I
4 not?

5 A. Yes, but that frequency is like 4000
6 hertz. It's a very high frequency.

7 Q. And when I asked you at some point
8 about what of the -- which of the plots that you
9 would look at, different types of plots I was
10 given, did you not tell me that it is the wide band
11 that you looked at?

12 A. Along with the computations from the
13 wide band data which is velocity.

14 Q. If you were to look now at the -- tell
15 us then, what is the very maximum deceleration in
16 the Gs in this crash?

17 A. In this filter data it's about here.
18 Maximum negative data sheet would be about 25 Gs.

19 Q. Twenty-five Gs for the deceleration
20 versus 68.5?

21 A. Correct.

22 Q. And the Gs for the acceleration, what
23 are they?

24 A. That's about eight Gs.

25 Q. Compared to 56?

1 A. Right. And that's the reason why we
2 can't use Gs.

3 Q. Why don't you deploy airbags when they
4 are not needed?

5 A. I don't understand the question.

6 Q. Why don't you deploy an airbag when it
7 is not needed?

8 A. We try to, as I said, I believe we try
9 to preserve the airbag for the event where you need
10 it.

11 Q. So when you say you try to preserve the
12 airbag, it means, am I correct, that you're saying
13 that sometimes you are in a crash where you don't
14 need it, but you go on in the same period of time
15 and same event and run into something that you do
16 need it? That's one reason?

17 A. Yes. I remember you also mentioning
18 that in your opening statement.

19 Q. But remember, that's not evidence.
20 That's just me talking. Today it is you talking
21 and it matters more. So in that respect when I ask
22 you is it not one of the reasons to not deploy the
23 airbag because if you deploy the airbag in a minor
24 impact you might have something more severe right
25 after that that you need the airbag?

1 A. Yes. But you also have to put into
2 context that all these are one use systems. So we
3 have to weigh.

4 Even if there are multiple events in a
5 long duration accident each event has to be weighed
6 in its own merit. Because the sensor does not know
7 that a more severe accident is waiting to happen
8 down the line. So let me wait for that accident to
9 happen and let me not deploy in the earlier
10 accident or event, we cannot do that.

11 Q. So the design of -- reasonably
12 responsible design. It is designed to offer
13 reasonable protection, would be to not deploy the
14 airbag when it is not needed because there is going
15 to be a time maybe that you will need it?

16 A. Well, yes, and that's why we weigh
17 individual event in its own merit.

18 Q. Thank you. And then are there other
19 ways that an airbag can injure you by the fact that
20 it deploys other than the fact that it might lead
21 you into another crash?

22 A. Yes.

23 Q. Like what are those?

24 A. There are soft tissue injuries that can
25 happen from airbag deployment.

1 Q. Would eye injuries be some of those?

2 A. Yes, it is possible soft tissue injury.

3 Q. Is it then possible that there are
4 people in cars that drive to work with like mugs of
5 coffee?

6 A. Well, hopefully it is closed.

7 Q. You don't want it to get cold and you
8 don't want to have an accident?

9 A. Yes.

10 Q. And other things that normally are in
11 cars can be thrown back into people's faces for
12 example? How about an arm? Can an arm be thrown
13 back in someone's face?

14 A. It could.

15 Q. How about if you have an arm and you
16 turn your steering wheel and it goes off, is that
17 going to be a bad thing for that driver?

18 A. Well, it could and that's why we also
19 consider the steering wheel turn 90 degrees and
20 180 degrees in our airbag design and evaluation.

21 Q. And somebody puts their hand out when
22 they are getting ready to see a crash, they might
23 have some injuries even if the crash is minor just
24 because of the airbag?

25 A. Correct. Actually what I would agree

1 with you is there is no injury proof vehicle. I
2 would completely agree with you.

3 Q. So you got to do the best you can to
4 not deploy airbags when they shouldn't, would you
5 agree with that?

6 A. Yes, and we got to also deploy the bags
7 when you need it.

8 Q. Right. And you do that by making a
9 good system which actually you can do both, not
10 deploy it when it isn't needed and deploy it when
11 it is needed?

12 A. Yes. I would agree with that and we
13 have it here.

14 Q. Is Ford capable of doing that, was it
15 capable of doing that technologically and
16 economically in 2009?

17 A. Yes. And I believe we have done it
18 here.

19 Q. Thank you. I'm going to try to shut
20 this down, sir. I'm going to let you go pretty
21 soon. I need to get back here though. Could we
22 blank my screen? We had a talk -- we were talking
23 a little bit about time budgeting. The one second
24 is a thousand milliseconds; is that right?

25 A. Yes.

1 Q. That's my best circle. So we worry
2 about time because you don't want late deployment,
3 that's one thing, you want the airbag out in time
4 to help? You don't want the airbag to come out and
5 quickly deploy and nothing happen for them, right?
6 So timing matters quite a bit?

7 A. Yes.

8 Q. Let me just talk about the late
9 deployment aspect, okay? So late deployment is --
10 what is that -- what -- in terms of a danger posed
11 by an airbag what is a late deployment?

12 A. It depends.

13 Q. So I will be happy to hear all of them,
14 but let's start with one of them.

15 A. Well, it depends on the occupant
16 kinematics and let me try to be as general and so
17 that I try and I will also try to be brief.

18 Q. Actually I know what you are saying.
19 Let me see if I can make it quicker. If I am
20 leaning forward to get something, and an airbag
21 goes off and hits me, that's not a late deployment,
22 is it? It is timely, could be timely?

23 A. Well, yeah, I think you are mixing
24 apples and oranges here, but let me see where you
25 are going.

1 Q. I just want to say if you get injured
2 by a late deployment it is because you're inside
3 the path of the airbag when it is deploying, right?

4 A. Correct. .

5 Q. And an airbag doesn't come out as a
6 cushion. It actually comes out first and has to
7 forcefully in order to then fill quickly and work
8 with the time budget?

9 A. Correct. And that's why we test for
10 those conditions, too.

11 Q. So you get -- because of the inevitable
12 extra forces added to a crash by that punching it
13 out, by that coming out quickly, then bouncing back
14 to the cushion, somebody that's in that area under
15 several different mechanisms can receive an injury?

16 A. I don't think so, not with these new
17 bags. That's why we do the out of position test
18 where we place a dummy on top of the airbag and
19 deploy the airbag to insure that this type of punch
20 out and membrane loading are minimized.

21 Q. Well, for example, you don't have --
22 you are not checking for eye injuries, are you?

23 A. We don't have the mechanism to check
24 for eye injuries in the hybrid three dummies. But
25 the more serious head, neck, chest injuries are

1 measured.

2 Q. Yes. If you just -- if you have a
3 dummy that you're deploying the airbag on their
4 chest, that operates on the chest, right?

5 A. Yes, that's the primary contact point
6 when it begins to come out of the module.

7 Q. So when you are further back if you get
8 hit by an airbag square in the head, not the chest,
9 a head can be moved backwards, can't it?

10 A. Yes. And that would be neck extension
11 issues like if a bag unfolds in front of a dummy's
12 face.

13 Q. So even though you are deploying into
14 the chest, somebody laying on top of an airbag,
15 that's one type of getting hurt, orbit problem, for
16 example, I think you said you don't have -- you are
17 not causing real serious injuries when you're
18 draped over the -- with your chest over the open
19 airbag?

20 A. Yes.

21 Q. Is that what you said? But when you
22 are further back somewhat and you get hit, and your
23 head is taken backwards, you have a possibility of
24 having a neck injury, don't you?

25 A. Yes. That's why you cushion the bag

1 appropriately.

2 Q. And then the other thing is that if the
3 bag comes out while you are inside of it because
4 you have moved forward in the crash, because of the
5 forces in the crash your body is moved forward, you
6 get hit in the face by the airbag, that's another
7 known way of causing injuries?

8 A. Yes. And but those deployments are
9 considered in our development process.

10 Q. Yes. Thank you. So Ford knows that
11 can happen, that a late deployment can cause an
12 injury?

13 A. Well, yes. Again, what is late?
14 Depends on occupant kinematics.

15 Q. Right. But you actually have created
16 targets for what is timely and when you're -- if
17 you exceed those that is not timely?

18 A. No, I would not agree with that.

19 Q. When does it become late?

20 A. Depends on the occupant kinematics.

21 Q. So your time requirements are really
22 not related to getting the airbag out at a certain
23 time?

24 A. Yes. The end result is occupant
25 kinematics.

1 Q. After you work with the system you end
2 up with a system that it should deploy and if it
3 deploys later than that, that can cause an injury?

4 A. Again, it all depends on occupant
5 kinematics.

6 Q. So now in the budget of things the 1000
7 seconds -- milliseconds in a second, 250, right?

8 A. Yes.

9 Q. 125. So crashes, not many of them are
10 longer than 125?

11 A. Yes. Because under 125 would be lower,
12 mostly much lower speed crashes, moderate speed
13 crash is 125 to 150, and high speed crash are over
14 150.

15 Q. So now we are working with this range.
16 It is not up on yours. I don't know what happened.
17 It is on mine.

18 A. You went off chart. Let me see if I
19 can help you here.

20 Q. Let's get off of this circle because
21 it's more useful. Let's go to the line now.

22 A. Okay.

23 Q. 125, zero. So in this point of time
24 how much time is there for you to actually deploy
25 an airbag, get it out, have it come back into the

1 full cushion in time for the person to move into
2 it? What are we looking at there?

3 A. The driver bag about 30 milliseconds,
4 passenger bag about 40 milliseconds. So 30 to 40
5 milliseconds is the time you have to fully inflate
6 the airbag.

7 Q. And in that crash test that we are
8 looking at it had a 43 millisecond time to fire?
9 What it actually did do, right?

10 A. I don't remember, but I take your word
11 for it.

12 Q. Here is this. Let's say that a time to
13 fire is 43 milliseconds. So all this over here is
14 kind of immaterial to the time you get the airbag
15 out. Everything to the right of that we are not
16 worried about the airbag at that time?

17 A. If you are comparing to that exact
18 crash I would like to see the duration of the
19 pulse, maybe it extends a little more than 125 to
20 140 or something like that, but it again depends on
21 that.

22 Q. Understanding that, working with what
23 you and I have come up with just getting an idea of
24 what a ten millisecond difference is when you are
25 dealing with a 47 millisecond total.

1 So if you had a difference in ten
2 milliseconds that would be almost, what,
3 20 percent?

4 A. Yes.

5 Q. Twenty percent difference?

6 A. Twenty-five if it is --

7 Q. So even though ten milliseconds sounds
8 small, for the budget that you are working with it
9 is 25 percent of the budget?

10 A. Yes.

11 Q. In this circumstance. And you're
12 working with a computer that can do that. Has
13 speeds that can do that?

14 A. Yes, the computation speed is there.

15 MR. VAN GAASBECK: I think I will pass
16 the witness.

17 THE COURT: Finished with your
18 questions?

19 MR. VAN GAASBECK: Thank you, sir.

20 THE COURT: Any cross-examination?

21 MR. GLADD: May I approach, Your Honor.

22 (Off-the-record conference.)

23 THE COURT: Ladies and gentlemen of the
24 jury, at this time the Defendant would have an
25 opportunity to cross-examine the witness, but it is

1 ten minutes after 5:00. Rather than starting and
2 have to come back in the morning, we will break for
3 the day. If you will be in the jury room in the
4 morning at 9:30 we will get started. I understand
5 passes have been given to you to park upstairs in
6 the parking lot so you won't have that parking
7 problem three or four blocks away. Does everybody
8 have a pass to park in?

9 THE BAILIFF: They will have, sir.

10 THE COURT: They will give you a pass
11 to park in the top floor of the parking garage.
12 The bailiff will show you where to come and how to
13 come into the courthouse tomorrow and it will be a
14 different way to come the front door. Okay?
15 Please don't discuss the case among yourselves.
16 Don't do any electronic monitoring or any
17 electronic examination about seat belt restraint
18 system in automobiles. You make the decision on
19 what you hear in the courtroom, not what you found
20 outside the courtroom. See you tomorrow at 9:30.

21 (Thereupon, the jury exited the
22 courtroom at 5:12 p.m.)

23 THE COURT: Mr. Krishnaswami, don't
24 talk to anybody about your testimony overnight,
25 please, sir.

1 THE WITNESS: Yes, sir.

2 THE COURT: Okay?

3 THE WITNESS: Yes, sir.

4 THE COURT: Anything from the Plaintiff
5 before we break?

6 MR. VAN GAASBECK: Not from me, sir.

7 THE COURT: Anything from the
8 Defendant?

9 MR. CARTER: No, sir.

10 THE COURT: We will adjourn until 9:30
11 in the morning.

12 (These proceedings were adjourned at
13 5:12 p.m., September 13, 2016.)

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CERTIFICATE OF REPORTER

I, Ruth C. Weese, Registered Diplomate
Reporter for the State of South Carolina at Large,
do hereby certify that the foregoing transcript is
a true, accurate, and complete record.

I further certify that I am neither related
to nor counsel for any party to the cause pending
or interested in the events thereof.

Witness my hand, I have hereunto affixed my
official seal this 16th day of December, 2016 at
Charleston, Charleston County, South Carolina.

Ruth C. Weese

Ruth C. Weese

Registered Diplomate

Reporter