

HECO, ET AL v. MIDSTATE DODGE LLC, ET AL

DAVID C. VIANO, Dr. Med., Ph.D.

March 14, 2013

Prepared for you by



Bingham Farms/Southfield • Grand Rapids
Ann Arbor • Detroit • Flint • Jackson • Lansing • Mt. Clemens • Saginaw

1 THE STATE OF VERMONT
2 CHITTENDEN COUNTY SUPERIOR COURT
3 DOCKET #: S869-10-CnC
4 _____
5 DZEMILA HECO)
6 And)
7 KENAN HECO)
8 And)
9 EMIR HECO)
10 Plaintiffs,)
11 v.)
12 MIDSTATE DODGE LLC)
13 and)
14 JOHNSON CONTROLS, INC.)
15 Defendants.)
16 _____)
17

18 The Deposition of DAVID C. VIANO, Dr. Med., Ph.D.,
19 Taken at 30800 Telegraph Road, Suite 2925,
20 Bingham Farms, Michigan,
21 Commencing at 9:26 a.m.,
22 Thursday, March 14, 2013,
23 Before Melinda S. Moore, CSR-2258.
24
25

1 APPEARANCES:

2

3 JAMES L. GILBERT

4 The Gilbert Law Group

5 5400 Ward Road, Building IV,

6 Suite 200

7 Arvada, Colorado 80002

8 303.431.1111

9 jgilbert@thegilbertlawgroup.com

10 Appearing on behalf of Plaintiffs.

11

12 ROBERT L. LANGDON

13 Langdon & Emison

14 911 Main Street

15 Lexington, Missouri 64067

16 660.259.6175

17 blangdon@langdonemison.com

18 Appearing on behalf of Plaintiffs.

19

20

21

22

23

24

25

1 JAMES P. KERR (Via Telephone)

2 Cornell & Gollub

3 75 Federal Street

4 Boston, Massachusetts 02110

5 617.482.8100

6 jkerr@cornellgollub.com

7 Appearing on behalf of Defendant

8 Midstate Dodge LLC.

9

10 RICHARD K. WRAY

11 Reed Smith

12 10 South Wacker Drive

13 40th Floor

14 Chicago, Illinois 60606

15 312.207.3891

16 rwrays@reedsmith.com

17 Appearing on behalf of Defendant

18 Johnson Controls, Inc.

19

20 ALSO PRESENT:

21 Andrew Kim

22

23

24

25

1	TABLE OF CONTENTS	
2		
3	WITNESS	PAGE
4	DAVID C. VIANO, Dr. Med., Ph.D.	
5	EXAMINATION BY MR. GILBERT	7
6		
7	EXHIBITS	PAGE
8	(Exhibits attached to transcript.)	
9		
10	DEPOSITION EXHIBIT 1	7
11	Deposition Notice	
12	DEPOSITION EXHIBIT 2	7
13	7-8-2012 Report	
14	DEPOSITION EXHIBIT 3	7
15	10-21-2012 Supplemental Report	
16	DEPOSITION EXHIBIT 4	7
17	Delta V (mph) based on	
18	NASS-CDS 1993-2007 (Towpar=1,	
19	MY 1994+, Age 13-104)	
20	DEPOSITION EXHIBIT 5	7
21	Delta V (mph) based on NASS-CDS	
22	1994-2010 (MY 1994+), Age 13-104	
23	DEPOSITION EXHIBIT 6	7
24	Program: Heco impact by	
25	Delta V.SAS NASS-CDS 1994-2010	

		PAGE
1		
2	DEPOSITION EXHIBIT 7	7
3	SAS System Contents	
4	Procedure Created 3-2-13	
5	DEPOSITION EXHIBIT 8	7
6	Program: Neon Analysis.SAS	
7	NASS-CDS 1994-2010	
8	DEPOSITION EXHIBIT 9	7
9	SAS System Contents Procedure	
10	Created 5/25/2000	
11	DEPOSITION EXHIBIT 10	7
12	PROC SURVEYFREQ Method	
13	DEPOSITION EXHIBIT 11	7
14	NASS-CDS 1994-1996	
15	Standard Error Calculation	
16	DEPOSITION EXHIBIT 12	7
17	Invoices	
18	DEPOSITION EXHIBIT 13	7
19	Testimony Lister 2007-Present	
20	DEPOSITION EXHIBIT 20	7
21	List re: Exhibits and Notice	
22	Paragraphs	
23	DEPOSITION EXHIBIT 21	13
24	Textbook for Introductory Medical	
25	Statistics Excerpts	

1		PAGE
2	DEPOSITION EXHIBIT 22	38
3	Overview of Dr. Viano's	
4	Supplemental Notices, Findings	
5	and Observations on NASS-CDS	
6	DEPOSITION EXHIBIT 23	39
7	2-26-01 Joseph Carra	
8	PowerPoint Presentation	
9	DEPOSITION EXHIBIT 24	125
10	Dr. Viano Reed Smith Case List	
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		

1 Bingham Farms, Michigan

2 Thursday, March 14, 2013

3 9:26 a.m.

4 DAVID C. VIANO, Dr. Med., Ph.D.,
5 was thereupon called as a witness herein, and
6 after having first been duly sworn to testify to
7 the truth, the whole truth and nothing but the
8 truth, was examined and testified as follows:

9 MARKED FOR IDENTIFICATION:

10 DEPOSITION EXHIBITS 1-13

11 DEPOSITION EXHIBIT 20

12 9:26 a.m.

13 EXAMINATION

14 BY MR. GILBERT:

15 Q. Good morning.

16 A. Good morning.

17 Q. Dr. Viano, this is the second deposition you've
18 given in this case?

19 A. Yes.

20 Q. Have there been any opinions in the first
21 deposition that are now no longer correct or have
22 changed?

23 A. No.

24 Q. I have printed out -- or Andrew Kim has written
25 out in Exhibit 20 a list of the exhibits with a

1 listing of the paragraphs of the Notice, the
2 Notice being Exhibit 1.

3 A. Yes.

4 Q. And paragraphs 2 to 7 are the ones I wanted to
5 focus on now.

6 A. Okay.

7 Q. And he has written out, and I think you have
8 confirmed, that pursuant to paragraph 2, which
9 required that you produce the actual computer
10 code used to generate all the numbers shown in
11 supplemental report tables 6 through 9, including
12 the weighted cases, the standard error values and
13 risk values, and you indicate the exhibits
14 produced pursuant to that request are Exhibit
15 6 -- Exhibit 6, correct?

16 A. No. Exhibit -- I reproduced 4, 5, 6 and 8
17 pursuant to that one issue.

18 Q. Okay.

19 A. And it may need a bit of explanation.

20 Q. Let me just get the numbers down. What exhibit
21 numbers are produced pursuant to paragraph 2 of
22 the Notice?

23 A. 4, 5, 6 and 8, I believe.

24 Q. Explain.

25 A. Exhibit 4 reproduces what I believe was in the

1 supplemental report, table 6. And that I had done
2 several years ago. Because of the upgrades of
3 computers and software, it's no longer possible to
4 generate data from 1993 using the SAS program.

5 Q. S-A-S?

6 A. S-A-S, Statistical Analysis Software. Absent the
7 ability to provide an input data set that would
8 give you these numbers, because 1993 is no longer
9 compatible, I updated or had Dr. Parenteau update
10 the file using '94 to 2010, which I provided in
11 Exhibit 5. For that I'm able to give you a SAS
12 input and output data set for those years, and
13 that's what's given to you. I think it's 7 and 9,
14 Andrew's notations are consistent with what was
15 marked.

16 Q. Then you said you also produced 6 and 8 pursuant
17 to paragraph 2 of the Notice.

18 A. Correct. Isn't that -- let me just check here.
19 The actual computer code used to generate --
20 that's the input code that you need to generate
21 those two -- the table, yes.

22 Q. Which exhibit is that?

23 A. Well, that's a good question. We marked both of
24 them.

25 Q. You refer to something you called computer input

1 code. Were you asked to provide the actual
2 computer code used to generate all the numbers in
3 your supplemental report, table 6 to 9?

4 A. Correct.

5 Q. So which exhibit contains that computer code?

6 A. I mean, I'm assuming these are exactly what I sent
7 you. 9 is --

8 Q. I guarantee --

9 A. -- A2-2.

10 Q. Just a minute. I guarantee the exhibits in front
11 of you were sent to me by you through Mr. Wray's
12 office.

13 A. I'm only saying if this is actually A2-2. I'm
14 assuming that it is.

15 Q. A2-2?

16 MR. WRAY: It should be 8, according to
17 Exhibit 20.

18 THE WITNESS: Why do I have 7 and 9 in
19 front of me? That's what's confusing. It's 6 and
20 8, yes. I'm sorry, somehow I got the wrong ones
21 in front of me. Here we are. Sorry.

22 BY MR. GILBERT:

23 Q. Okay.

24 A. This is a little helpful here, yes.

25 Q. Let's go back. Where is the computer code you

- 1 used to produce the numbers in those four tables?
- 2 A. 6, 8 are the input codes.
- 3 Q. Okay. So 6 being the input for table 6?
- 4 A. Yes and no. Remember, 6 I can't generate any
- 5 longer because '93, so what I --
- 6 Q. New table 6?
- 7 A. Correct, updated to the years that I would run.
- 8 Q. Which exhibit is new table 6?
- 9 A. 6 input.
- 10 Q. No, I put in front of you, I believe, table 6
- 11 from your supplemental report.
- 12 A. The original is No. 4.
- 13 Q. Okay.
- 14 A. And the revised where I can provide you an input
- 15 data set to run it is 5.
- 16 Q. Okay.
- 17 A. And the input data set is 6.
- 18 Q. Okay.
- 19 A. Sorry.
- 20 Q. So the code used to produce the numbers, the
- 21 values, the data in Exhibit 5, that code is
- 22 contained in Exhibit 6?
- 23 A. Correct. And then to reproduce the other tables
- 24 which are 7 through 9, it's Exhibit 8.
- 25 Q. Okay. Let's go to paragraph 3 -- paragraph 3 of

1 the Notice.

2 A. That's what I was looking at before and got me
3 confused.

4 Q. Let me just get my question out. You were asked
5 to produce the actual computer output data
6 generated from the computer code provided in item
7 2.

8 A. Correct.

9 Q. And what exhibit is that?

10 A. The one consistent with the revised table 6 is
11 Exhibit 7, and the one associated with table 7
12 through 9 is 9.

13 Q. Okay. Paragraph 4 required that you produce
14 formulas and scientific documents relied upon to
15 arrive at risk and standard error calculations.
16 What exhibits reflect documents produced pursuant
17 to that item in the Notice?

18 A. I actually printed a bit from a textbook which I
19 can give you, but it's fairly straightforward. I
20 copied a few pages of it.

21 Q. Was that produced?

22 A. I brought it with me because it's just a simple
23 calculation, but I brought a few pages from a
24 textbook in case you want to rely on something.
25 And the answer is produced, yes, I've got it here.

1 Q. Was it produced before just now?

2 A. No, because I brought it. It's just three lines
3 of equations.

4 Q. Okay.

5 A. I brought it with me and I brought something that
6 I would rely upon, the Textbook for Introductory
7 Medical Statistics.

8 Q. Why don't you circle in a pen or highlight the
9 formula or equation that you used to arrive at
10 risk and standard error calculations. Circle it
11 on the exhibit.

12 A. Right here. I put a square. Is that okay?

13 Q. Do you have an exhibit?

14 A. If I were to rely on a reference, it's right here.

15 Q. Okay.

16 A. Some pages from a textbook.

17 Q. Why don't you circle -- let's make this Exhibit
18 21.

19 MARKED FOR IDENTIFICATION:

20 DEPOSITION EXHIBIT 21

21 9:36 a.m.

22 BY MR. GILBERT:

23 Q. Okay. Exhibit 21 contains the formulas used by
24 you to arrive at risk and standard error
25 calculations?

1 A. Correct.

2 Q. Okay. Why don't you circle the formula you used
3 for standard error.

4 A. I used my own notation here, but it's referred to
5 in the three -- I circled standard deviation,
6 standard error, and average, which are what I
7 squared on my notepad here using my own notation.

8 Q. You have drawn circles in Exhibit 21 around three
9 different -- they appear to be different
10 formulas.

11 A. They are.

12 Q. Okay. Did you rely on all three formulas when
13 you calculated your standard error in table 6?

14 A. Yes.

15 Q. Okay. Do all three of these formulas produce the
16 same values?

17 A. No, they're formulas for three different things,
18 the average, the standard deviation, and standard
19 error. The third one is the only one you need to
20 calculate standard error, but to calculate risk
21 you need all three.

22 Q. Okay. Why don't you put SE next to the formula
23 you used to calculate your standard errors in
24 table 6.

25 A. Okay.

1 Q. So that is on page 128 of the text?

2 A. It's almost correct what I just said. The problem
3 is I don't calculate them. It is done
4 automatically within SAS using a formula, so I
5 don't personally make that calculation. If you go
6 into SAS -- let me give you the page they refer
7 you to. They refer you to two separate
8 calculations. You had marked this, so I don't
9 think I -- correct. 11 is the original
10 calculation by NHTSA for standard error. And 10
11 is the method that SAS uses to generate standard
12 errors. The formula would be probably an
13 estimate, but it would be similar to the circled
14 SE in the textbook.

15 Q. If I put in the numbers, the data that I want to
16 use to calculate a standard error, would the
17 formula in the SAS code spit out the same
18 standard error as the formula you've circled in
19 Exhibit 21?

20 A. I doubt it. I think it's a much more complicated
21 algorithm within -- it will be close but not
22 precise.

23 Q. How -- what is close?

24 A. I don't know.

25 Q. You mean horseshoes --

1 A. It's within horseshoe, around the ring. Because
2 the method that NHTSA originally used for standard
3 error --

4 Q. In 11?

5 A. -- will produce slightly different numbers than
6 the SAS algorithm.

7 Q. 10, 11 and 21 are all related to calculation of
8 standard error?

9 A. And they'll all be close but not identical, I
10 think.

11 Q. Okay. The formula you used is contained in the
12 SAS software?

13 A. And that's 10 -- Exhibit 10.

14 Q. But 10 doesn't have the software, does it?

15 A. I can't find the software formula within the --
16 maybe it's in the manual somewhere, but I couldn't
17 find it. It refers --

18 Q. What do you mean? Because I don't know any of
19 this stuff so I need to have you explain.

20 A. If you go into the SAS and say how is it producing
21 the standard error as an output from the input
22 data, it refers you to this procedure survey
23 frequency, which makes the calculation.

24 Q. Exhibit number?

25 A. 10. Within there there's something called Chapter

1 84, which gives some description of the procedure,
2 but it's not just one formula. It talks about how
3 it makes its estimate.

4 Q. Okay. Which of those three documents -- and,
5 again, it's Exhibits 10, 11 and 21 -- which of
6 those three did you use? You used the SAS
7 software?

8 A. Procedure survey frequency, which is Exhibit 10,
9 which is referred to by the government as the way
10 to calculate SEs today.

11 Q. Did you calculate your standard errors in both
12 old table 6 and new table 6 using the SAS
13 software?

14 A. Yes.

15 Q. All of them?

16 A. I believe so, yes.

17 Q. Okay. Why don't you look at table 6, which I
18 believe is the new table 6 --

19 A. That I know was calculated using this version of
20 the SAS program.

21 Q. In exhibit what?

22 A. 10.

23 Q. Okay. What about old table 6, how were those
24 standard errors calculated?

25 A. They were also calculated but in a different SAS

1 routine, I think with the same procedure, but I
2 don't know if anything changed between that SAS
3 and those data and what's available, excluding
4 1993.

5 Q. Okay. Why don't you pull Exhibit 6, which is the
6 computer code you referred to. Where is Exhibit
7 6? I can't read upside down.

8 A. Here's 6.

9 Q. Does 6 contain anywhere in that the code needed
10 to calculate standard error?

11 A. No.

12 Q. So where is the code that SAS uses?

13 A. It's within SAS calculation procedures. It
14 referred -- Exhibit 10 referred -- I think
15 referred to Chapter 84 within the procedures book,
16 and that doesn't actually give you formulas. It's
17 buried somewhere in the SAS routine.

18 Q. So you don't have any copy of the code that is
19 used to calculate standard error?

20 A. Probably not given because it's proprietary code,
21 so they're not going to hand out the code per se.

22 Q. Can you go to Exhibit 6 and tell me -- do you
23 have Exhibit 6 in front of you?

24 A. In front of me, yes.

25 Q. Can you tell me whether or not in that exhibit

1 there are any command lines for -- that refer to
2 the calculation of standard error?

3 A. There have to be. Where it is, that's a different
4 matter.

5 Q. Did you do any of these runs or calculations
6 yourself?

7 A. I did not, but on page --

8 Q. Of what exhibit?

9 A. Correct, page 6 -- excuse me, Exhibit 6, page --
10 how about I number them? Or should I say the
11 second-to-last page?

12 Q. No, go ahead and number them. Why don't I do
13 that. Thank you.

14 A. 13 is blank but I'll number it. On page --
15 starting on page -- bottom of page 11 through 12,
16 the command files have to be operated on an annual
17 basis. You have to calculate the standard errors
18 each year of data, and then calculate the sum of
19 the squares -- square root kind of calculation to
20 get the overall standard error, and that's done on
21 pages 11 and 12.

22 Q. Why don't you circle -- what are we referring to,
23 the command lines for the calculation of standard
24 error or something else?

25 A. Yes. Yes.

1 Q. Okay. Why don't you circle on pages 11 and 12 of
2 that exhibit the command lines for the
3 calculation of standard error.

4 A. Sure. On the bottom of 11 there's a command line
5 that just starts with proc survey frequency data.

6 Q. It starts with proc?

7 A. Yes.

8 Q. Okay. So that's the last line on page 11?

9 A. Correct. And it's looking for the occupant
10 underscore vehicle, giving the age and rat weight,
11 and then there's a series of subsequent ones for
12 different variables. So that gives you the
13 standard errors for rear impact, side impact,
14 front impact, MAIS zero to F, 4 to F, 4 to F, 4 to
15 F for different reasons -- for different crash
16 types. I'm underlining those variables.

17 Q. Thank you, sir. So, again, starting on the
18 bottom of page 11 and throughout page 12, those
19 are the command lines for the calculation of
20 standard error?

21 A. What happened to 6? Do you have --

22 Q. I've got it right in front of me. You just gave
23 it to me.

24 A. Then it's the one -- the one-page data for that,
25 the one for '94. Is that it? Yeah.

1 Q. Yeah, this is new table 7.

2 A. Those command lines will generate the numbers that
3 are shown on the top of Exhibit 5.

4 Q. Exhibit 5, that's new table 6.

5 A. That's the counts for the standard error.

6 Q. Could you describe in layman's language, language
7 that I and the jury might understand how survey
8 freq, f-r-e-q, data is calculated.

9 MR. WRAY: Object to the question.
10 That doesn't speak English, referring to
11 frequency.

12 THE WITNESS: The SAS routine takes the
13 weighting factors and the unweighted data and
14 calculates a best estimate for the average, and it
15 calculates an estimate for the standard error.
16 The standard error is a measure of how close an
17 independently obtained sample of data will
18 generate a similar average value.

19 BY MR. GILBERT:

20 Q. Anything else for how that standard error is
21 calculated by that program?

22 A. No. It takes into consideration the factors that
23 I mentioned, the weighting factor, the unweighted
24 data, and makes a calculation.

25 Q. The NASS data, what kind of data is that? In

1 other words, if I'm in a wreck today in Detroit
2 and someone else is in a wreck in Colorado and
3 someone else in Florida, do we all have an equal
4 likelihood that we're going to be included in the
5 NASS data?

6 A. Given some general screening characteristics, if
7 you pass all those screening characteristics, you
8 are -- it's a random sample based on a
9 statistically prorated procedure to investigate
10 accidents.

11 Q. What do they call that statistically prorated
12 procedure? What kind of a sample is it?

13 A. Well, they call it a random sample, but they
14 selectively choose more severe outcome crashes
15 than they do minor so that they can generate a
16 backward weighted U.S. representative sample.

17 Q. I notice in some of your -- I think it's in both
18 your original report possibly and in your
19 supplemental report you refer to something called
20 a stratified sample. What is that? What does
21 that term mean?

22 A. In the execution of the NASS sampling procedure,
23 there are regions where police-reported accidents
24 have a possibility of being selected, and I think
25 the government set it up so that the regions had a

1 population density stratified over the United
2 States to be representative.

3 Q. So is that the same as a simple random sample?

4 A. I don't think so.

5 Q. How is it different from a simple random sample?

6 A. The government recognized that they were -- the
7 ability to have complete coverage of the United
8 States was impractical in terms of the number of
9 accidents. So they established regions that
10 were -- where population densities could be
11 representative of the United States, and within
12 those regions they have -- they collect all the
13 possible candidate accidents, and based on, I
14 believe, the outcomes from the accidents and some
15 formulas, they randomly select an accident to be
16 investigated. The details of how that procedure
17 is in practice worked out I'm not completely
18 certain of.

19 Q. The next item in the Notice, Dr. Viano, is
20 formulas and scientific documents relied upon to
21 arrive at mathematical expressions found in
22 opinion 56. What exhibits were produced pursuant
23 to that request?

24 A. I didn't. That's just division, so you take the
25 number of exposed people and divide it by the

1 number of seriously injured, either the best
2 estimate or the standard error, and you generate
3 that number.

4 Q. And then the next item in the Notice is item 6,
5 which required that you produce original complete
6 documents supporting table 7 to 9, including
7 cases for the Neon. What exhibits did you
8 produce pursuant to that request?

9 A. I gave them to you in 3 and 4 already. There's
10 nothing more that I have, the input and the output
11 data sets, plus the tables that are in the
12 supplemental report.

13 Q. So those would be Exhibits 3 and 4?

14 A. I believe the input, the output, and the actual
15 tables that are in 7 are responsive to that.

16 Q. Okay. No. 7 of the Notice required that you
17 produce weighted case values for the data
18 included in tables 7 to 9?

19 A. I did not do that.

20 Q. Why didn't you?

21 A. I don't do that on individual vehicles. It just
22 doesn't generate reliable data.

23 Q. Why doesn't it?

24 A. Well --

25 Q. Look at tables -- take your supplemental report,

1 if you would, and look at tables 7 to 9.

2 A. Correct.

3 Q. And that's in Exhibit 3, your supplemental
4 report?

5 A. It is. By the time you get to table 9 where we're
6 looking at spinal injuries of AIS 3+ severity to
7 the spine or the spine-skeleton, you're down to
8 three cases in frontal, three cases in side, and
9 four cases in rollover.

10 Q. What's the point there? I'm not following.

11 A. I don't do weighted data when I get down to ones
12 and twos and tens. It's not reasonable to do so.

13 Q. Why can't you?

14 A. You could, but I don't do it.

15 Q. Why don't you?

16 A. What would be the purpose of generating weighted
17 data? It would only be to compare it to something
18 else, and I wasn't intending to. I was just
19 looking at the actual cases that were
20 investigated. One could do it. I just didn't
21 because I wasn't going to rely on the weighted
22 data.

23 Q. So for cases like, say, one to ten -- those are
24 numbers you mentioned -- you don't do it for a
25 number of cases like, say, one to ten?

1 MR. WRAY: Object to the form.

2 THE WITNESS: I have done it in the
3 past, but I didn't see any value of doing it here.
4 I wasn't trying to tell you what the national
5 average collision rate was for and the injury was
6 for the Neon. I just wanted to see what cases
7 were investigated.

8 BY MR. GILBERT:

9 Q. How much trouble would it have been to generate
10 those weighted values for the Neons?

11 A. When I did the work, I would have asked Dr.
12 Parenteau to add it. It would have been another
13 couple hours of work probably.

14 Q. Is it something Parenteau could have done if you
15 had asked her to do it?

16 A. Oh, certainly.

17 Q. And it would have taken a couple of hours?

18 A. Correct.

19 Q. And, again, why didn't you ask her to do it for
20 the Neon cases? You pointed to table 9.

21 A. Yes.

22 Q. What about table 7 and 8?

23 A. She could have done it for all of them and
24 generated it, but I didn't ask her to do it. I
25 just wanted to know what counts of Neons had been

1 investigated by the NASS teams. I was interested
2 just in that.

3 Q. But I was interested in the weighted values --

4 A. I know you were. I saw --

5 Q. -- for 7, 8 and 9.

6 A. Here's the input data. Go run it.

7 Q. Why don't you for the number of Neons -- I know
8 like, for example, 8 there were five Neons in
9 rollovers -- I mean in rear-enders.

10 A. There were.

11 Q. Any with MAIS 3+ fatal?

12 A. Yes.

13 Q. Why didn't you do it for those five?

14 A. The weighted data?

15 Q. Yes.

16 A. I wasn't interested in the number.

17 Q. Because of the -- there just weren't enough of
18 them or what?

19 A. What was -- I wasn't interested. I wanted to see
20 -- personally I only wanted to know what cases
21 were investigated by NASS, and that's what I asked
22 her to do. Certainly in table 6 I wanted to know
23 what the national estimate was, but I wasn't for
24 that purpose --

25 Q. I understand table 6. I'm interested in table 7,

1 8 and 9. Is there a reason that you didn't do
2 it? Does it have anything to do with the small
3 number of Neon cases?

4 A. No. I just didn't ask her to do it. That was
5 what my request was when we were looking at the
6 Neon investigations. I didn't ask her to do it.

7 Q. But it could have been done?

8 A. Oh, certainly. It's easy to do.

9 Q. Let's go to table 8, if you would, Doctor.

10 A. Sure.

11 Q. Let's go to table 9 first --

12 A. Okay.

13 Q. -- in your supplemental report. That's Exhibit
14 3?

15 A. I've got it in front of me.

16 Q. Pull out Exhibit 3.

17 A. 2 is here and 3 is here.

18 Q. So in your supplemental report on page 7 you have
19 table 9, and that's AIS 3+ spinal and
20 spinal-skeletal injuries in a Neon, correct?

21 A. Correct.

22 Q. And that's for the years when, 1994 through 2010,
23 or this was originally for the years '93 to 2007?

24 A. No, if you go to -- well, you can see it on the
25 left -- no, you can't. I should have reproduced

1 it. If you look at 7 -- table 7 on the left, the
2 calendar years for all these data are '94 to what
3 it says is --

4 Q. 2010?

5 A. -- 2010.

6 Q. I stand corrected. Thank you. So table 9 is
7 also for those years?

8 A. Yes, it is. It's consistent.

9 Q. Now, in table 9 you don't have any rear-enders
10 involving a spinal or a spinal-skeletal injury in
11 a Neon rear-ender; is that correct?

12 A. In neither of the two columns. There are actually
13 two groups of data. One is AIS 3 spine injuries
14 and the other is AIS 3+ skeletal injuries. Both
15 those had no rear impacts that NASS investigated.

16 Q. Now, would those NASS cases also identify any of
17 those kinds of injuries to someone in the rear
18 seat or were you only looking for injuries to the
19 front seat passenger?

20 A. I believe that this -- let me look at what I said.

21 MR. WRAY: Was the question drivers or
22 frontal occupants?

23 THE WITNESS: We didn't number this.

24 Maybe you want me to.

25 BY MR. GILBERT:

1 Q. Which exhibit is it?

2 A. 8. I may stand corrected, but I believe it was
3 any occupant in the vehicle.

4 Q. So for table 9?

5 A. All tables.

6 Q. All of 7 to 9 you were looking for both front
7 seat passengers and rear seat passengers in a
8 Neon rear-ender where someone in the Neon
9 suffered a 3+ fatal injury and a skeletal injury?

10 A. In that subdivision of the data, yes.

11 Q. Okay. And you found none?

12 A. Correct.

13 Q. Did you also look in FARS to see if there were
14 any Neon rear-enders?

15 A. I did not.

16 Q. Why didn't you?

17 A. Just didn't do it.

18 Q. But why?

19 A. Well, that is a database which is at least one
20 fatality in the accident, and the amount of
21 information available is very sparse. We would
22 know nothing about the injuries or what
23 circumstances led to the death, so I rarely use
24 FARS. Sometimes I do, but not in this case.

25 Q. Okay. But in FARS, at least one occupant in the

- 1 accident was killed, correct?
- 2 A. Would be, yes.
- 3 Q. And there were others who may have suffered
- 4 incapacitating injuries?
- 5 A. A KABC rating, yes.
- 6 Q. Which would include skeletal -- spinal-skeletal
- 7 injuries?
- 8 A. Unknown. It's only an at-scene police report.
- 9 They don't do anything about the actual injuries.
- 10 Q. Did you tell Parenteau to look in FARS?
- 11 A. No.
- 12 Q. Did you think about looking in FARS?
- 13 A. I thought about it, but I rarely use FARS.
- 14 Q. And then you decided not to look at FARS?
- 15 A. I tend to focus all my attention on NASS. It's --
- 16 sometimes I do FARS, but it's rare.
- 17 Q. Now, you are aware that there have been occupants
- 18 in Neons who were paralyzed or suffered brain
- 19 damage in Neon rear-enders, aren't you?
- 20 A. Personally aware?
- 21 Q. Yeah, personally, in your business.
- 22 A. In Neons?
- 23 Q. Yes, in Neons.
- 24 A. I wouldn't be surprised.
- 25 Q. Mrs. Heco is one?

1 A. I mean, I thought you meant besides the obvious.

2 Q. Okay. Have you talked to Mr. Wray about others
3 who suffered serious injuries in Neon
4 rear-enders?

5 A. Dick Wray, no.

6 Q. Has Mr. Wray offered to share with you any
7 information about other cases he's aware of
8 involving Neon rear-enders where someone was
9 seriously injured?

10 A. I don't think that's come up.

11 Q. Why don't we -- we've gone through the Notice
12 now. What was the purpose of doing your
13 supplemental report?

14 A. If you recall the deposition number one, I mean,
15 you just spent a lot of time asking questions
16 about NASS and things that I was -- that I had
17 used but I hadn't really delved into in detail, so
18 I decided, if it's important to you, I should
19 probably be better informed. So I did some
20 additional work to look at the NASS procedures,
21 what has been done in evaluating the procedures
22 and protocols, and what are the pros and cons of
23 the procedures and protocols, and I wrote up the
24 supplemental report and have done some additional
25 work since then as well.

1 Q. Was your supplemental report generated as a
2 result of communications between you and Mr.
3 Wray?

4 A. After the deposition where so many questions were
5 asked about the NASS and the data, I asked him if
6 it would be okay if I produced a supplemental
7 report with more background on the NASS and
8 calculations, and he said sure.

9 Q. Okay. Let's go through all of the reasons one by
10 one that you did your supplemental report,
11 including any request made by Mr. Wray or others.

12 A. There were at least two reasons. One, I believe
13 at the time you had asked something about what was
14 the total weighted sample available in NASS, and I
15 have produced so many of these I don't know what
16 number I gave you, maybe 19 million or something.
17 The deposition will speak for the actual number.
18 When I came home, that was a subset of some data
19 that I had been thinking about a table of, and I
20 asked Dr. Parenteau what was our most complete
21 analysis of NASS by delta V, and this was what was
22 Exhibit 4, which was the 29 million weighted
23 accidents where we had known or unknown delta V
24 for planar crashes. And that's what I put in my
25 supplemental report to answer the question, you

1 know, what is the total number of available
2 accidents that NASS has with weighted data.

3 Secondly --

4 Q. Now, the 29 million you mentioned in your first
5 deposition, those were what?

6 A. I don't think I said 29 in my first. It was more
7 like maybe 19 or 17 million.

8 Q. Okay. And you later found out it was how many
9 million?

10 A. Well, when I had included unknowns and everything,
11 it was actually 29 million.

12 Q. Okay. So the 29 million is the number of
13 accidents where the delta V was measured or
14 estimated?

15 A. No. The 29 million on Exhibit 4 are the exposed
16 occupants, so there may be approximately 1.3
17 occupants per car on average, so probably a
18 smaller number of actual vehicle accidents. Of
19 those, as you'll see in Exhibit 6, 14 million have
20 unknown delta V information. So what's left would
21 be 15 million known.

22 Q. So in your original table 6, if you could pull it
23 up there -- so the 14 -- there are 14,129,503 of
24 occupants where no delta V was known?

25 A. Was calculated.

1 Q. Where there was no delta V information?

2 A. Correct.

3 Q. And then the 29 million was both the 14 million
4 where there was no delta V information plus the
5 others where there was?

6 A. That's absolutely correct. And that's on the
7 occupant level.

8 Q. Okay. Now, why don't we go now to the second
9 reason you did your supplemental report.

10 A. The second part of your questioning was really who
11 does the investigations, what was their
12 background, what are the PSUs, what are the zone
13 centers. You were asking for a number of details
14 for which I had not a lot of good answers for you.
15 I wasn't fully informed of all of those, so I
16 actually went back and generated some information
17 about the NASS procedures and protocols and
18 provided that. I subsequently have become more
19 knowledgeable about the answers that I wasn't able
20 to give you back then in the first deposition.

21 Q. Do you now believe you have become knowledgeable
22 about those matters?

23 A. A little better, yes.

24 Q. Is there any -- is there anything you feel a
25 little insecure about as far as your knowledge?

1 A. Nothing insecure, no.

2 Q. I don't use that in a pejorative way. Do you
3 feel like you have adequate knowledge about this
4 NASS matter?

5 MR. WRAY: Object to the form.

6 THE WITNESS: I think I had adequate
7 knowledge then when I couldn't answer your
8 questions and now when I think I can answer them
9 better to have confidence in the NASS data and the
10 way it's collected.

11 BY MR. GILBERT:

12 Q. Who generated table 6, both old and new, you or
13 Parenteau?

14 A. Dr. Parenteau.

15 Q. Do you think she made any mistakes?

16 A. Mistakes?

17 Q. Yeah, in what she was doing. Did she do it the
18 way you thought it should have been done?

19 A. I believe she and I both looked at the data for
20 reasonableness. I have no reason to believe she
21 made a mistakes.

22 Q. Why didn't you do it? Is that something you know
23 how to do?

24 A. She has SAS on her computer. I don't.

25 Q. Is there anything about what she did in

1 generating some of this data that you don't do
2 because either you don't know how to do it or she
3 knows how to do it better?

4 A. The latter, obviously. I always ask her to make
5 the runs.

6 Q. Are all of your opinions contained in the
7 supplemental report at this point?

8 A. Plus my main report.

9 Q. Yes. But your opinions about NASS --

10 A. Oh --

11 Q. -- are there?

12 A. I've got a bunch of things that are beyond those.

13 Q. What opinions do you have about the NASS data
14 that is not contained in the supplemental report
15 or in the new table 6?

16 A. I don't know that I have a complete list, but I
17 had taken some time to talk to a zone center and
18 to several people, communicated at NHTSA to get
19 more background which I didn't have when I wrote
20 the supplement, so I have that information. And I
21 provided you a number of documents where I
22 actually went back and found GAO reports, NHTSA's
23 ongoing activity, so in the material you received
24 could have been -- and if I can refer you to that
25 one page I gave you. On item 4 it lists all the

1 different things that I subsequently found when I
2 went further into looking at NASS.

3 Q. Why don't I mark it as Exhibit 22.

4 MARKED FOR IDENTIFICATION:

5 DEPOSITION EXHIBIT 22

6 10:16 a.m.

7 BY MR. GILBERT:

8 Q. You have in front of you a copy of Exhibit 22?

9 A. I do.

10 Q. So the additional information you acquired is
11 referred to in paragraph 4 of that exhibit?

12 A. Correct. And you received, I believe, all that
13 information from me.

14 Q. Okay.

15 A. That would have all been subsequent.

16 Q. What else have you learned about NASS that's not
17 reflected in the supplemental report or in the
18 conversation with the zone center and someone
19 from NHTSA?

20 A. That's about it.

21 Q. Who did you speak to at NHTSA?

22 A. Steve Ridella.

23 Q. How do you spell?

24 A. R-i-d-e-l-l-a.

25 Q. Ridella?

1 A. Correct.

2 Q. And why did you speak to him and what did you
3 learn from that?

4 A. I just wanted some background on the training and
5 the experience of the PSU investigators.

6 Q. What did you learn from Ridella?

7 A. That they're mostly technical people, ex-police.
8 They're involved in a two-week training course in
9 Oklahoma. They get annual training updates. Most
10 of them have been a long time with NASS. Once
11 they come, they obviously from his point of view
12 like the work and they stay. So they're
13 relatively experienced. As you know, they're
14 managed under one of two zone centers. Zone
15 center details are described in the Carra
16 presentation which I provided you from 2001. And
17 if you look at --

18 Q. Why don't we mark that.

19 MARKED FOR IDENTIFICATION:

20 DEPOSITION EXHIBIT 23

21 10:18 a.m.

22 BY MR. GILBERT:

23 Q. What exhibit number is that?

24 A. 23.

25 Q. Exhibit 23 is a copy of a PowerPoint presentation

1 by whom?

2 A. A presentation by John Carra, director of the
3 National Center for Statistics and Analysis.

4 Q. So he's --

5 A. At NHTSA.

6 Q. Government person?

7 A. Yes.

8 Q. So why do you have that exhibit?

9 A. Well, this is a pretty nice overview of the
10 activities at NHTSA to review the procedures and
11 protocols and quality control with the NASS
12 sample, and the tenth slide specifically talks
13 about the CDS-NASS having 24 PSUs. It shows a
14 little map where they are. It identifies at the
15 time 67 investigators, 24 research assistants, and
16 25 zone center quality control personnel.

17 Q. So we can go through that and see kind of the
18 overview ourselves.

19 A. I wanted to know what does an investigator do,
20 what does a research assistant do, and what do the
21 zone quality people do to better understand how a
22 case is assembled.

23 Q. Now, your conversation with Ridella took place
24 when?

25 A. Maybe a month ago.

1 Q. Before your conversation with Ridella, had you
2 ever spoken to anyone else at NHTSA regarding the
3 NASS data?

4 A. Oh, many times.

5 Q. Have you ever written any articles or any
6 publications where you have observed that you
7 believe some of the NASS data was not reliable?

8 A. Yes, incorrect.

9 Q. Pardon me?

10 A. Yes, incorrect. I have.

11 Q. What were the circumstances that you said the
12 NASS data is not reliable?

13 A. Well, I think it was in the original deposition.
14 There was a paper on seat failures which is a term
15 that includes both mechanical failures as well as
16 seat deformation. It's an unfortunate terminology
17 that they use. I observed from the photographs, I
18 think, one or two of the cases, some problem with
19 the investigator's interpretation of the
20 protocols. I actually wrote there should be some
21 additional review, maybe revision of the
22 procedures and protocols for that area that I
23 identified a problem.

24 Q. Are all of your statistical opinions now
25 finalized?

1 A. I don't really do statistical opinions, but I talk
2 about field accident data using those terms, and I
3 believe they are, yes.

4 Q. So that you have no additional opinions about
5 field accident data or statistics other than what
6 you've already told us?

7 MR. WRAY: Object to the form of the
8 question.

9 THE WITNESS: I mean, I've published a
10 few papers in the last months since our
11 deposition, but I don't think they are specific to
12 the case involved.

13 BY MR. GILBERT:

14 Q. Okay. That's what I really meant. Do you have
15 any other statistics or accident data opinions
16 related to this case that you have not told us
17 about?

18 A. No, I don't. Or what's in my reports, yes.

19 Q. Now, you say you don't do statistics?

20 A. I don't use that term.

21 Q. Okay. The NASS data is a statistical sample,
22 isn't it?

23 A. Stratified sample is what they call it, but you
24 could call it a statistical sample.

25 Q. Would that be a correct characterization?

1 A. I wouldn't criticize you for using the term.

2 Q. Okay. But you say it's a stratified sample?

3 A. Correct.

4 Q. What is the difference between a stratified
5 sample and a simple random sample?

6 MR. WRAY: Object. It's been asked and
7 answered.

8 THE WITNESS: We already talked about
9 that. Statistical sample to me implies some sort
10 of prospective procedure for collecting data, so
11 this is not. It's a random sample.

12 BY MR. GILBERT:

13 Q. Was any of the work done by Parenteau in this
14 case, did any of that work involve any aspect of
15 statistics?

16 A. Sure. That's division. That's how you calculate
17 the average.

18 Q. Did you do any of that work or was that all done
19 by Parenteau?

20 A. She produced the table. I didn't do any of that.

21 Q. Have you done any of the statistical work in this
22 case?

23 A. The calculations of errors and standard and --

24 Q. Anything.

25 A. No, those were all generated.

1 Q. And that was statistical work she did, isn't it?

2 A. I call it mathematics, but you can call it
3 statistics.

4 Q. Statistics is a form of math, isn't it?

5 A. Sure.

6 Q. So as to the statistical work in this case that's
7 been done, all of that was done by Parenteau?

8 A. I don't think we do statistical work in the sense
9 that in some cases it almost requires that a
10 person have a Ph.D. in statistics. I'm using
11 common mathematics and some statistical formulas
12 that an engineer's required to do for his work,
13 and it doesn't require a Ph.D. in statistics. So
14 as long as we don't go down a road that I can't or
15 anyone could talk about or do statistical
16 calculations without a Ph.D. in statistics, I'm
17 happy to use that term.

18 Q. Okay. Does Parenteau have a Ph.D. in stats?

19 A. No.

20 Q. What's her Ph.D. in?

21 A. Engineering.

22 Q. What kind?

23 A. Biomedical.

24 Q. And do you have any kind of a degree in
25 statistics?

1 A. A degree, no.

2 Q. Okay. What training have you had in statistics?

3 A. I've taken course work as part of my engineering
4 education.

5 Q. In college?

6 A. Correct.

7 Q. Have you taken any statistical courses since
8 college?

9 A. No.

10 Q. And, again, just so I understand and make sure --
11 make sure it's clear, you would agree that some
12 of the work that's been done in this case as it
13 relates to the NASS-CDS data is a statistical
14 analysis?

15 A. I would say it's pure mathematics, addition,
16 subtraction, division. It doesn't require a Ph.D.

17 Q. I didn't say it required a Ph.D. I said would
18 you agree that it involves some aspect of
19 statistics?

20 A. Yes, to the extent that you don't then say that
21 you have to have a Ph.D. in statistics to do it.

22 Q. I'm not saying that.

23 A. Fine.

24 Q. And I don't want you to feel that that's what I'm
25 suggesting you need in order to do it.

1 A. Fine.

2 Q. I'm saying, if we're on the same page here, that
3 some of the work that's been done in the case by
4 you and Parenteau involves some aspect of
5 statistics?

6 A. Right. I gave you a chapter from a book on
7 medical statistics which is the one that I used,
8 and, you know, it involves using sampling
9 procedures, which is what you have to do to do
10 research in medicine, and --

11 Q. I'm --

12 A. -- you have to make some assumptions, and based on
13 those assumptions, you can make calculations.

14 Q. I'm talking about the work that's been done
15 related to the NASS-CDS data. Would you agree
16 that that work involves some aspect of
17 statistics?

18 MR. WRAY: Object to the form of the
19 question. It's completely vague.

20 THE WITNESS: Definitely because you
21 use SAS to make all the calculations.

22 BY MR. GILBERT:

23 Q. Do you have any additional opinions that are not
24 related to statistics or NASS?

25 MR. WRAY: You mean since the first

1 deposition?

2 MR. GILBERT: Yeah.

3 THE WITNESS: I don't think so.

4 BY MR. GILBERT:

5 Q. What is the difference, if any, between the
6 statistical opinions in your first report and the
7 opinions in your supplemental report?

8 A. Well, they're different things entirely. I mean,
9 I dealt with entirely different things. I was
10 responsive to your two questions -- or one of your
11 questions, which is what's the overall sample
12 size, weighted sample. I didn't have that table.

13 MR. WRAY: 6.

14 THE WITNESS: Yeah. I didn't have
15 table 6 with me at the time of the first
16 deposition, so I provided it, and then I did the
17 analysis of what cases NASS has investigated on
18 the Neon, so they're all -- this is all new stuff.

19 BY MR. GILBERT:

20 Q. Okay. What opinions in your supplemental report
21 relate directly to the Heco accident?

22 A. I would say they relate only in regard to the fact
23 that the field accident data that's generated
24 using NASS is relevant to field accidents like Ms.
25 Heco's.

1 Q. Okay. Which portion of your supplemental report
2 do you believe relates directly to the Heco case
3 or the Heco accident?

4 A. Clearly when we looked at Neons, what cases NASS
5 had investigated, we find ten cases with AIS 3+
6 spinal-skeletal injuries, none of which occurred
7 in rear impacts. So in some regard her accident
8 is less common than with the outcome she had than
9 what we see in side, front and rollover accidents,
10 so there is some bearing.

11 Q. That would be table 9 you believe relates to the
12 Heco case?

13 A. Of course.

14 Q. What else in your supplemental report relates
15 directly to the Heco case?

16 A. All of the material that I provided in the first
17 report, which is No. 1 of whatever this exhibit
18 is --

19 MR. WRAY: 22.

20 THE WITNESS: -- 22 are reliable,
21 relevant based on the NASS data.

22 BY MR. GILBERT:

23 Q. What else in your supplemental report relates
24 directly to Heco case?

25 A. I understand item 56 I do give you the risks for

1 severe to fatal injury in front, side and rear
2 impacts. It again shows the lowest risk of being
3 severely injured is in rear impacts, which include
4 vehicles like the Neon, but other vehicles as
5 well.

6 Q. What else in your supplemental report relates
7 directly to the Heco case?

8 A. I think -- nothing directly other than the
9 reliability and the relevance of the NASS data.

10 MR. WRAY: Let me note for the record
11 that counsel for Johnson Controls will make the
12 arguments as to legal relevance in the case.

13 MR. GILBERT: I don't care what you do.

14 BY MR. GILBERT:

15 Q. Anything else that relates directly to the Heco
16 case?

17 A. No.

18 Q. And I'm not asking you for lawyer opinions, am I?

19 MR. WRAY: You are.

20 THE WITNESS: I don't know.

21 BY MR. GILBERT:

22 Q. Well, I'm not. I want your opinions.

23 A. Okay.

24 Q. You're the expert. Okay. What opinions in the
25 supplemental report relate directly to the

1 performance of the JCI seat?

2 A. Directly?

3 Q. Yeah, directly or indirectly. What opinions --
4 what portion of the supplemental report relates
5 to the JCI seat?

6 A. In the Neon?

7 Q. Yes.

8 A. The only thing that would be directly relevant
9 would be the cases that the NASS team investigated
10 because that seat would have been in the vehicle.

11 Q. Okay. What portion of your supplemental report
12 relates to the JCI seat?

13 A. Nothing more than the numbers, the counts.

14 Q. What --

15 A. Table 7 through 9 are the counts, and I didn't do
16 it but one could go -- for all of the accidents
17 from 19 -- not all, most of the accidents from '97
18 on may have electronic files, so one could go in
19 and potentially find 900 cases to look at where
20 Neon accidents had an occupant exposed, maybe
21 injured, maybe not, and the seat would be
22 involved.

23 Q. So at this point the only portion of your
24 supplemental report that relates to the JCI seat
25 is contained in table 7 to 9?

1 A. Directly, indirectly through table 6 because there
2 would be some JCI seats.

3 Q. But you don't know?

4 A. I could find out, but I don't know as I sit here.

5 Q. Have you told Parenteau or asked Parenteau to
6 look for information about JCI seats in any of
7 these cases?

8 A. Any of these cases?

9 Q. Any of the cases referred to in any portion of
10 your supplemental report.

11 A. Sure.

12 Q. Have you or Parenteau made any effort to find out
13 information about JCI seats?

14 A. Only to the extent that table 7 through 9 are JCI
15 seats.

16 Q. That's it?

17 A. Correct.

18 Q. Okay. Have you ever thought about asking her to
19 dig out cases involving JCI seats to see what
20 happens to people?

21 A. I thought about it because I wanted to know the
22 count -- the unweighted count. When I say zero in
23 rear impact, there were no cases to go and look at
24 that would have been reasonably similar to Ms.
25 Heco's accident, so I stopped at that point.

1 Q. And you made no effort to ask her to look at any
2 of the FARS cases?

3 A. There's nothing in FARS to look at. You can't see
4 anything.

5 Q. It gives you the vehicle, though, doesn't it?

6 A. But you know nothing about the seat, the occupant
7 injury. You don't know anything to -- I can't
8 imagine how you would use that to look at a JCI
9 seat.

10 Q. And you haven't done any of that in this case?

11 A. Well, there's no case to look at in FARS, no
12 photographs, no anything.

13 Q. I'd like you to give me your definition of
14 standard error.

15 A. My definition of standard error?

16 Q. What does standard error mean?

17 A. You've already asked me that and I thought I gave
18 you a very nice answer. It is a measure of how a
19 totally independent sample from a population would
20 provide a similar average as the original sample
21 provided.

22 Q. What is a standard deviation?

23 A. Standard deviation is if you were to take a new
24 sample, how close is that sample to the average.
25 They're entirely different things.

1 Q. So standard error and standard deviation are two
2 separate concepts?

3 A. Definitely.

4 Q. And, again, what is the major difference between
5 those two?

6 MR. WRAY: I object. The witness has
7 just told you what they are.

8 THE WITNESS: If you have a sample that
9 you generated a standard deviation from, the
10 standard deviation tells you how close a new
11 sample will be in that population. A standard
12 error is if you take an entirely new population of
13 samples, how close will the average be to the
14 average from the first sample.

15 BY MR. GILBERT:

16 Q. What is a confidence interval?

17 A. That just says given a certain desire for a range
18 of accuracy, how many standard errors or standard
19 deviations or what fraction of them above and
20 below the average gives you a confidence that your
21 sample will fall within that range.

22 Q. What kind of confidence intervals do you use?

23 A. In the reporting of NASS data, I'm using one
24 standard error, which is about 67 percent.

25 Q. Okay. Do you use different confidence intervals

1 in other work you do?

2 A. Definitely.

3 Q. Okay. What other confidence intervals do you
4 use?

5 A. If I'm comparing one sample to another sample, I
6 would likely use a 95 percent confidence interval.

7 Q. How many standard errors would that be?

8 A. That's 1.97.

9 Q. Close to 2?

10 A. Close.

11 Q. So if you want a 68 percent confidence interval,
12 you use one standard error. If you want a 95
13 percent confidence level, you use 2 standard
14 errors?

15 A. It's a simple calculation.

16 Q. Is that correct?

17 A. Yes.

18 Q. What do you mean by weighted cases? You said you
19 didn't do that for the Neon. Tell us what that
20 is.

21 A. Sure. The NASS data is collected as a stratified
22 sample. NHTSA provides rat weights, which are a
23 way to turn the individual sample into a
24 nationally representative weight, so it's a
25 multiplier, which is produced by the NASS data to

1 get a representative sample for the United States.

2 Q. Do you personally know how to code the inputs and
3 generate the outputs using SAS software?

4 A. No.

5 Q. So that's why you have Parenteau do it?

6 A. I don't personally do it, but, I mean, I know the
7 input data set. If I had to, I could.

8 Q. Have you ever done it?

9 A. No.

10 Q. Which table 6 will you be using at trial, the new
11 one?

12 A. I have no idea. That's up to counsel.

13 Q. Which one do you believe better reflects the
14 opinions you have in this case?

15 A. Oh, probably the revised one because it's
16 certainly something that we have the input and
17 output data set for.

18 Q. Are you relying on any of the individual Neon
19 cases in tables 7 to 9?

20 A. I didn't pull out any.

21 Q. So you aren't relying on any?

22 A. I did not look at any, so, no.

23 Q. Table 7 is the number of Neons in the NASS-CDS?
24 Look at your supplemental report.

25 A. This is by calendar year the number of accidents

1 that were investigated for Neons, model year '94
2 plus.

3 Q. Okay. Does that include both Dodge and Plymouth
4 Neons or only Dodge?

5 A. I think model 20 is the Neon for both, I believe.

6 Q. Table 8 shows AIS 3+ injuries?

7 A. You know, I'll have to go back and check. I know
8 we talked about doing both, but when it says
9 "make=7, model=20," I don't --

10 Q. Who is "we talked about doing both?"

11 A. Dr. Parenteau. I think I asked her to do both the
12 Plymouth and the Dodge version, but now that I'm
13 looking at the heading, I'm wondering. I'll have
14 to check.

15 Q. So you don't know whether table 7 included both
16 Dodge and Plymouth Neons or only Dodge?

17 A. I remember having this conversation. I asked for
18 both. I just -- I know it says Dodge Neon right
19 here. I believe it's both.

20 Q. Table 8 shows 3+ -- AIS 3+ injuries?

21 A. Correct.

22 Q. Is that something you assessed or did you depend
23 on the NASS reviewers or investigators?

24 A. Are you talking about the injury severity level?

25 Q. Yeah.

1 A. Injury severity level comes out of the injury file
2 for NASS. That's a NASS coded variable. I didn't
3 code that.

4 Q. You have five Neons in rear-enders in table 8?

5 A. Correct.

6 Q. Do you see that? And why didn't you do 4+F for
7 the occupants? Because that's what you did in
8 table 6, isn't it?

9 A. Oh. I wanted a broader catchment. Once you
10 get -- at the end I did skeletal, if you recall.
11 There are very -- there are very few skeletal 4s,
12 so I wanted to capture skeletal 3s.

13 Q. How many involve 4+ as opposed to 3+?

14 A. I don't know, but I could find out.

15 Q. You would have to look at the cases?

16 A. I could rerun it with the 4+, and it will filter
17 it to let me know.

18 Q. Every case has a designation of the injury level
19 in terms of AIS?

20 A. No. These are only the cases with known AIS. So
21 that's a filter. If the injury is uncoded or
22 unknown, or 99, which is an unknown, it won't be
23 in the sample. There's a filtering that goes on
24 when you see the table MAIS 3+.

25 Q. So you're saying that there may be some Neon

1 cases that would not show up in this search that
2 you generated for table 8 because there was no
3 injury level --

4 A. Coded.

5 Q. -- coded?

6 A. Correct.

7 Q. Did you look at any of those Neon cases to see
8 why no injury level was coded?

9 A. I've done that in the past. It's usually because
10 they are AIS zero. They don't stay around to go
11 to the hospital and we don't get any factual basis
12 for the investigator to code based on medical
13 records. Once you get to 3+, you tend to only be
14 at the hospital, and those are fairly well based
15 upon the medical records, so my experience is when
16 it's uncoded, it's a zero.

17 Q. Do you know how many of the five Neon occupants
18 were 4+?

19 A. You just asked that question.

20 Q. And you don't know?

21 A. I don't know, but I can find out.

22 Q. Based on table 9, is it your opinion the Neon is
23 safe because there aren't any spinal injuries?

24 A. I wouldn't use table 9 to make that conclusion,
25 no.

1 Q. Why not?

2 A. Well, this is just counts of vehicles that are
3 investigated by NASS. I don't think I could make
4 a decision based just on these numbers.

5 Q. Why?

6 A. Well, there are no cases with rear impact with
7 spinal injury, so if that was the issue at hand, I
8 don't think there's a very robust sample here to
9 look at.

10 Q. What about using table 7 and 8? Can you use
11 table 7 and 8 to support an opinion that the Neon
12 seat is safe?

13 MR. WRAY: Object to the form of the
14 question.

15 THE WITNESS: I would not do that.

16 BY MR. GILBERT:

17 Q. Why?

18 A. We're just looking at counts. What does counts
19 have to do with safety? I mean, you could put
20 this in perspective if you were to have large
21 numbers where you could look at them, but I
22 wouldn't do it.

23 Q. So the numbers aren't large enough?

24 A. Well, they're zero.

25 Q. No, table 8.

1 A. Right, but that has nothing to do with, you know,
2 spinal injuries or -- those AIS 3+ Fs are not
3 spinal or spinal-skeletal. We know that. So
4 they're not going to relate to incidents. They're
5 something else, broken legs, chest injuries.

6 Q. Killed, death?

7 A. Possibly, but I don't know.

8 Q. So have you looked to see if any of the five Neon
9 occupants were killed?

10 A. That's what 4+ F means, and I already answered
11 that.

12 Q. Do you know how many were killed?

13 A. I didn't look at the five, so I don't know.

14 Q. Okay. And you don't know whether any of those
15 people -- strike that.

16 A. But I'll tell you when I'm done with today, I'll
17 go find out. You have me curious, what are those
18 five. When I find out, I'll let now. How's that?

19 Q. What is the risk of injury just using table 8?
20 Let's say, for example, in table 8 that all five
21 of those occupants had a 4+ F injury.

22 A. Okay.

23 Q. What would that risk be? Do you have a
24 calculator?

25 A. I do. I wouldn't do this, but since you asked,

1 based on table 7 and 8, it would be 6.9 percent.

2 Q. What's your numerator and what's your
3 denominator?

4 A. The numerator is 5 and the denominator is 72
5 exposed to rear impacts.

6 Q. Okay. Why didn't you use 58?

7 A. What's 58?

8 Q. For the denominator.

9 A. 58? Oh, yeah, that's occupants with known injury.
10 Yeah, I could use 58.

11 Q. Do you think it's better to use the 72 you just
12 calculated or 58?

13 A. I would have used the 58 if I were to publish a
14 paper. I wouldn't do it, though, on unweighted
15 data.

16 Q. What is the risk of injury given the only
17 information we have in table 8, which is five
18 occupants injured, 3+ F, out of 58 total
19 occupants with known injuries?

20 A. That's a different calculation then. That's 8.6
21 percent. So of occupants with known injury, it's
22 8.6 percent. With exposed occupants, it's 6.9
23 percent, neither of which are calculations I would
24 make.

25 Q. Now let's assume that three of the five had AIS

- 1 4+. What is that risk?
- 2 A. Based on exposed occupants?
- 3 Q. No, based on the number of known injured
- 4 occupants.
- 5 A. Number of known injured?
- 6 Q. Yes.
- 7 A. They're not injured. It's zero to F. Those are
- 8 exposed occupants with known injuries.
- 9 Q. It's 58, right?
- 10 A. Yes, 5.2 percent.
- 11 Q. Okay. So just using the unweighted cases, the
- 12 injury risk rate ranges from 5 percent to 8
- 13 percent, approximately?
- 14 A. I absolutely would not make that calculation
- 15 because when you understand the rat -- variation
- 16 in the rat weight --
- 17 Q. That's the computer code?
- 18 A. That's the scaling factor. You could have some of
- 19 these numbers multiplied by four and some of these
- 20 numbers multiplied by, I don't know, 300 to get a
- 21 national -- so when you calculate risk, you're
- 22 looking -- you know, based on this collection of
- 23 data, those calculations are correct, but it has
- 24 no relationship to national --
- 25 Q. Because there aren't --

1 A. -- injury rates.

2 Q. -- enough cases?

3 A. No, because you didn't include the rat weight.

4 Q. That's the weighted value?

5 A. Correct.

6 Q. That's the value we asked you to supply for these
7 Neons, but you did not do that?

8 A. You asked me to supply what I had. I had not done
9 that.

10 Q. And you made no effort to try to obtain that
11 information before today?

12 A. Absolutely. I don't work for you.

13 Q. No.

14 A. I provided what I had.

15 Q. I know who you --

16 MR. WRAY: Mr. Gilbert thinks everybody
17 works for him.

18 BY MR. GILBERT:

19 Q. I know who you work for. I'm not --

20 A. You're saying that I'm supposed to take your
21 requests as my work order?

22 MR. WRAY: You're supposed to read his
23 mind as to what he might request and take that as
24 your work order.

25 THE WITNESS: I did not do that in

1 generating my supplemental report, and I don't
2 take requests for work from you. Don't make it
3 sound like I didn't do what you wanted.

4 BY MR. GILBERT:

5 Q. Don't get mad at me.

6 A. I am.

7 Q. Why are you mad at me?

8 A. You're making it sound like I didn't do what you
9 wanted.

10 Q. Okay. I'm just asking you why didn't you do it
11 so we had some basis of comparing the Neon risk
12 to the risk of all of these other occupants in
13 crashes, the ones in table 6?

14 MR. WRAY: Object to the form of the
15 question and the sense of entitlement in general.

16 THE WITNESS: You're welcome to
17 generate these numbers and do it yourself. I'd be
18 happy to have you present them.

19 BY MR. GILBERT:

20 Q. Okay.

21 A. I didn't do it.

22 Q. But at this point are you saying because you
23 don't have the weighted data, you can't compare
24 the Neon risk to the risk of AIS 4+ for all the
25 other vehicles in NASS?

1 A. I didn't do it. It's certainly possible to do.

2 MR. GILBERT: Can you ask -- reread the
3 question.

4 (The requested portion of the
5 record was read by the reporter at
6 10:51 a.m. as follows:

7 "Q. But at this point are you
8 saying because you don't have the
9 weighted data, you can't compare
10 the Neon risk to the risk of AIS 4+
11 for all the other vehicles in
12 NASS?")

13 THE WITNESS: Yes, I cannot.

14 BY MR. GILBERT:

15 Q. Is that the reason?

16 A. Because I don't -- yes, I don't have the weighted
17 data to do that, and plus I don't do that because
18 it's fraught with problems. I tried to do this
19 for 30 years and recognized it's difficult to make
20 vehicle level comparisons. There are so many
21 complications because of the drivers' involvement
22 and the road. It becomes a very, very complicated
23 thing to do, so I don't do it.

24 Q. I don't know what you mean by it's difficult to
25 make vehicle --

1 A. Level.

2 Q. -- it's difficult to make any vehicle level
3 decisions.

4 A. It really is.

5 Q. Why?

6 A. It's so complicated. I've spent a lot of time
7 looking at that over my career. It depends on
8 two-doors versus four-door. You get an entirely
9 different answer if you look at two-door cars
10 versus four-door cars within the same model, and
11 if you then try to compare, say, a car with
12 two-doors and four-doors, compare it to some other
13 car or some other vehicle that has a different
14 demographic -- maybe it has younger families
15 versus older women driving it -- you get into
16 tolerance differences between people. In my
17 trying to compare make/models, I've always ended
18 up finding that the confounding variables are so
19 significant that it's hard to see the vehicle
20 within the comparison in field accidents.

21 Q. So that's why -- that's one of the reasons you
22 believe you can't compare the risk of these
23 injuries in a Neon to all other vehicles?

24 A. In my experience, that's fraught with so much
25 variability due to other factors that I don't do

1 it.

2 Q. Well, how is the court going to know how this
3 affects Mrs. Heco's Neon -- how this whole area
4 of statistical analysis affects her Neon and what
5 happened to her? How is the court going to know
6 that in your opinion, not a lawyer's opinion?

7 MR. WRAY: Object to the form of the
8 question, metaphysical question.

9 THE WITNESS: I've been trying to be
10 careful in analyzing NASS data to look at specific
11 questions that I think can be done reliably, and I
12 set up substantially similar conditions under
13 which I think the data is relevant, and, for
14 example, what I produced in my report were the
15 risks of injury by delta V based on a population
16 of crashes comparing front, side and rear. I
17 believe those statistical calculations using your
18 term are reliable. We've looked at head and spine
19 injuries. We've looked at children that are
20 injured in the second row. I've looked at obesity
21 and we've looked at the seat recline variable. I
22 think all of those provide reliable nationally
23 representative risks. I would be reluctant to do
24 it on a vehicle level.

25 BY MR. GILBERT:

1 Q. In your old table 7 -- and I guess the new table
2 7 as we -- it shows only 52 rear-enders in a Neon
3 for a period of '94 to 2010?

4 A. That were investigated by the NASS teams.

5 Q. Right. Doesn't that seem like a very small
6 sample?

7 A. 52?

8 Q. Yes.

9 A. No, not really small to me.

10 Q. When would a sample become so small that you say
11 it's going to be tough kind of making any
12 assessments of the risk or involvement by a
13 vehicle or any vehicle or a cluster of vehicles?
14 When does the sample size get too small for you?

15 MR. WRAY: Object to the form, lack of
16 parameters.

17 THE WITNESS: I guess there's two parts
18 to the way I would answer that. For example, when
19 we look at table 9 where we have no cases with AIS
20 3+ skeletal-spinal injuries, that doesn't mean no
21 cases happened in the United States. Because no
22 matter how I weight it, the number is zero. To me
23 it says they're -- that would indicate less than
24 20 accidents per year in the United States occur
25 there, because statistically it's possible you

1 would never sample one on an annual basis when
2 there's less than 20 per year.

3 On the other hand, I have looked at
4 NASS data on child injuries by child seat
5 use/misuse and compared the actual weighted data
6 to FARS data, and it's remarkable how the average
7 and standard deviation compare, and there you're
8 down to a handful of cases that are weighted to
9 maybe 300 in total. So I guess it depends. There
10 may be some circumstances where you won't see a
11 case and others where it provides a pretty
12 reliable estimate of FARS.

13 BY MR. GILBERT:

14 Q. When do you become concerned that perhaps your
15 sample size is too small --

16 A. Well --

17 Q. -- using NASS?

18 A. In table 7 to 9 it wasn't because the sample size
19 was too small. My question was what cases had
20 been looked at.

21 Q. Well, let's say --

22 A. So my request was not based on sample size. It
23 was just how many had been investigated.

24 Q. Let's say you are assessing percentage risk of
25 injury. When does your sample size get so small

1 that you begin to have concerns about the size of
2 the sample?

3 A. My practice in the last maybe eight years has been
4 to use NASS to develop a national estimate, and
5 then I always pull in cases to see if there's a
6 consistent case representation to the issue that
7 I'm dealing with. If there is, then I feel
8 there's -- the sample, whatever size, is
9 reasonable. If it's not, if there's -- if it's
10 just too variable, then I'll say I'm not getting a
11 reasonable field representation of something
12 that's happening.

13 Q. Does the sample size affect the calculation of
14 standard error, if you know?

15 A. Does the sample size? Yes, of course.

16 Q. How?

17 A. N is in the formula for calculating standard
18 error, so the number of -- the number of cases is
19 obviously a factor.

20 Q. So as you get smaller and smaller in sample size,
21 the standard error goes up?

22 A. It's a division by N, so your reliability that you
23 have calculated an accurate or very precise
24 measure of the average becomes more variable, yes.

25 Q. The standard error goes up as the sample size

1 goes down?

2 A. Yes. The denominator is the square root of N.

3 Q. Would the answer be yes?

4 A. Yes. Can we take maybe a few minutes?

5 Q. Yeah.

6 (Off the record at 11:00 a.m.)

7 (Back on the record at 11:09 a.m.)

8 BY MR. GILBERT:

9 Q. We've talked a little bit about your -- the
10 statistical analysis involved in the NASS data by
11 your firm. I think most of that was done by Dr.
12 Parenteau?

13 A. The SAS runs were done by Dr. Parenteau.

14 Q. What other types of statistical analysis other
15 than the SAS runs have been done in this case?
16 Is my question clear enough for you?

17 A. Not really.

18 Q. Okay. What other kinds of work have you done in
19 the case aside from the NASS runs that involve
20 some aspect of statistics?

21 MR. WRAY: Object to the form of the
22 question. The witness has told you everything
23 he's done. You're asking him now to label them.

24 THE WITNESS: Excuse me.

25 MR. WRAY: Go ahead.

1 THE WITNESS: Is this 23?

2 BY MR. GILBERT:

3 Q. 22.

4 A. In my original report, paragraphs 11, 13, 37, 38,
5 39, 40 and 45 dealt with various calculations made
6 using NASS data.

7 Q. So those would be statistics related?

8 A. Using your term, yes. 11 through 40 paragraphs
9 would have been mine and 45 was work done by
10 Digges and Bahouth, which I referred to and
11 provided some tabulations.

12 In the supplemental report, 53 to 55,
13 56, 57, and then the Appendix ST, PSU, NH and NASS
14 all relate to NASS data, either statistics or
15 calculations done by the government or by myself
16 and Dr. Parenteau.

17 Q. And you, of course, have reviewed all of those?

18 A. Yes.

19 Q. Do you understand them? When you reviewed them,
20 did you understand them?

21 A. Yes.

22 Q. I mean, it's not like learning a new language,
23 Greek? It wasn't Greek to you? You understood
24 what you were looking at?

25 A. Yes.

- 1 Q. Okay. Go ahead.
- 2 A. That answers your question, I believe.
- 3 Q. Okay. I've done calculations but not statistical
4 calculations. My calculations show that your
5 firm has been paid for the work in this case a
6 little over \$190,000.
- 7 A. Wow.
- 8 Q. Is that correct?
- 9 A. I haven't made that calculation.
- 10 Q. Why do you say "wow?"
- 11 A. It seems like a big number.
- 12 Q. Is that number consistent with the kind of
13 billings you've done in other cases like this?
14 Does it seem larger than what you typically would
15 bill in a case like this, or smaller, or about
16 the same?
- 17 A. It all depends on the work done. I've had cases
18 that are larger and some cases are less. It
19 depends.
- 20 Q. Is there kind of a typical range of billings you
21 have in a case?
- 22 A. No.
- 23 Q. The last bill appears to have included time up to
24 February 20. Do you see that, Doctor?
- 25 A. Correct.

1 Q. Okay. So you've obviously done work since
2 February 20?

3 A. Yes.

4 Q. About how many hours have you and Parenteau put
5 in since February 20?

6 A. Not very much. I think that was preparing the
7 exhibits that you got, and I haven't done much
8 since then.

9 Q. How frequently do you bill, every month or --

10 A. No, whenever there's -- I don't have -- I don't
11 have a standard.

12 Q. When do you expect to send a bill that would
13 reflect this time for your deposition and prep?

14 A. When the amount's probably in excess of 10 or
15 \$12,000.

16 Q. Do you think you probably will have that by the
17 time you get done with this dep?

18 A. I doubt it.

19 Q. Going to table 9, if you would, Dr. Viano, do you
20 agree that in this case Mrs. Heco's spinal cord
21 injury and paralysis is at odds with your table
22 9?

23 A. No.

24 Q. Where is she listed? Why isn't she listed in
25 table 9?

1 A. Well, we've had a fair discussion. This is a
2 stratified sample that may not be able to select a
3 case that's identical or substantially similar to
4 Mrs. Heco if her accident occurs less than, maybe,
5 ten times per year -- accident type.

6 Q. Do you realize that they're probably selling
7 100,000 or so Neons or were at some point for
8 many, many years?

9 A. I don't know that for a fact, but I'll take your
10 representation.

11 Q. There have been reports or there has been
12 testimony in this case that for a period of time
13 they were selling tens of thousands of these
14 Neons a year, maybe 100,000 a year. It was a
15 popular vehicle, wasn't it?

16 MR. WRAY: Object to the form of the
17 question.

18 THE WITNESS: I haven't looked at that
19 issue.

20 BY MR. GILBERT:

21 Q. You know the Neon? You've seen the Neon since
22 the 90s?

23 A. I've seen it.

24 Q. Pretty popular. You may not drive it, but a lot
25 of people do, don't they?

1 A. I assume so, yes.

2 Q. Have you ever owned a Neon?

3 A. I have not.

4 Q. Do you know anyone who has?

5 A. No.

6 Q. Do you know anyone who has ever been in a wreck
7 with a Neon?

8 A. No.

9 Q. Well, you know -- did anyone tell you about a
10 little boy who was brain damaged in Missouri in a
11 Neon? Did anyone tell you about that -- little
12 girl?

13 A. No.

14 Q. And she was brain damaged when grandma, the
15 driver, her seat came back and struck her head
16 and caused serious irreversible, permanent brain
17 damage. Did anyone ever tell you about that?

18 A. I'm not aware of it.

19 Q. Is that of any interest to you to know what
20 happened in that case?

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

23 THE WITNESS: Probably, yes.

24 BY MR. GILBERT:

25 Q. Why would you like to know more about that case?

1 A. I like to know about any accident where someone,
2 particularly children, are hurt because I might
3 learn something.

4 Q. Have you ever talked to Mr. Wray or anyone at
5 Johnson Controls and said, look at, if you've got
6 any experience at all with this Neon seat that
7 has caused serious injuries to someone, either in
8 the second row or first row, I'd like to know
9 about it? Have you ever told them that?

10 MR. WRAY: Object to the form.

11 THE WITNESS: We haven't had that
12 conversation.

13 BY MR. GILBERT:

14 Q. Don't you think that that conversation at some
15 point is one that you should have with the folks
16 at JCI?

17 MR. WRAY: Object to the form.

18 THE WITNESS: It seems to me if you
19 think it's relevant, you should have brought the
20 case here and we could have looked at it.

21 BY MR. GILBERT:

22 Q. No, don't you think at some point you believe
23 that conversation should take place?

24 MR. WRAY: Object to the form.

25 THE WITNESS: I actually did an

1 objective study based on field accidents and
2 provided that to you in my first report on how
3 children are injured in the second row. And I've
4 actually published on that subject. I don't
5 recall any of the accidents in there being Neons,
6 but I'll go back and take a look. I think I have
7 a pretty good understanding of safety of children
8 in the second row in rear impacts. But if there
9 was something about a case that happened that
10 counsel thought I should know about, he would have
11 told me.

12 MR. GILBERT: Could you ask my question
13 again, please.

14 (The requested portion of the
15 record was read by the reporter at
16 11:19 a.m. as follows:

17 "Q. Don't you think at some point
18 you believe that conversation
19 should take place?")

20 MR. WRAY: That's been fully answered.
21 I'm waiting now for the next question.

22 BY MR. GILBERT:

23 Q. Don't you believe at some point you should have a
24 conversation with the folks at JCI about any
25 knowledge they have about these kinds of serious

1 injuries when seats fold back?

2 MR. WRAY: Object to the form of the
3 question.

4 THE WITNESS: I think we've had those
5 conversations, and if there was anything that they
6 knew that they felt I should be aware of, they
7 would have provided it.

8 BY MR. GILBERT:

9 Q. So apparently they don't think it's important to
10 provide you with information about a little girl
11 who's brain damaged when her grandma's seat came
12 back and clobbered her in the head? Isn't that
13 your takeaway from this?

14 A. I have no --

15 MR. WRAY: Object to the form of the
16 question, if it's done now.

17 THE WITNESS: I have no way of knowing
18 the accident circumstances.

19 BY MR. GILBERT:

20 Q. Okay. But you would like to have information if
21 such an accident happened?

22 MR. WRAY: Object to the form of the
23 question.

24 THE WITNESS: You should have brought
25 it with you today, and I would have been happy to

1 look at it. I don't know about it. If you want
2 me to be aware of something, provide it and I'll
3 be aware of it.

4 BY MR. GILBERT:

5 Q. Why didn't you -- when Parenteau did her query or
6 search or whatever she did for the NASS database,
7 why didn't she include children under the age of
8 13?

9 A. Because of the age of Ms. Heco, we were looking at
10 adults.

11 Q. So it was not part of her task to look at what
12 was happening -- look at what was happening to
13 kids because this case involved Mrs. Heco?

14 A. Well, we tried to -- in the Neon selection
15 procedure, as you've got the input data set, I
16 asked her to do 13 up. I think that was what was
17 relevant to the Heco case.

18 Q. But weren't you at all concerned, I mean, what's
19 happening to little kids sitting in the back?

20 MR. WRAY: Object to the form of the
21 question.

22 THE WITNESS: Certainly. I've actually
23 done extensive research on it, published on it,
24 and have some pretty strong views about what needs
25 to be done, so obviously I'm interested in it.

1 BY MR. GILBERT:

2 Q. I'm talking about this case.

3 A. We don't have a child in this case.

4 Q. For the statistical analysis you did for serious
5 injuries in Dodge Neons in rear-enders, wasn't it
6 at all important to you to know more about if any
7 kids were being injured seriously in the back
8 seat?

9 MR. WRAY: Object to the form of the
10 question. It's been asked already. It's
11 pandering. It's absurd.

12 THE WITNESS: I provided you in
13 paragraph 38 of my first report a complete
14 analysis of data available in NASS on children
15 seriously injured in rear impacts, and that
16 contains, to my knowledge, recommendations for the
17 future, and I'm deeply interested in safety of
18 children in the second row. So I'm not certain
19 what it is about a particular accident you think
20 might be important to me, but if you provide it to
21 me, I'll look at it.

22 BY MR. GILBERT:

23 Q. Let's look at your table 6.

24 A. 6?

25 Q. Yeah, new 6 or old 6, it doesn't matter, either

1 one or both.

2 Who gave these directions to Parenteau
3 to look at the NASS database in order to develop
4 the values in table 6?

5 A. The original table 6 was done, I want to say,
6 maybe back in 2009 --

7 Q. Okay.

8 A. -- for a paper that I was writing. I gave the
9 directions for towpar=1, the age distribution of
10 13 to 104. We were looking at adults. I wanted
11 model year '94 plus vehicles. Those were my
12 directions.

13 Q. Okay. Now let's go to new table 7 -- I mean new
14 table 6 that was done for this case. It wasn't
15 done for a prior paper, was it?

16 A. It was done specifically to answer your question
17 for an input and output data set. We couldn't do
18 it for the '93 model year. I asked her to rerun
19 everything with updated years that were available
20 that could be used with the current SAS program.

21 Q. Was the answer to my question yes, the new table
22 6 was done for this case?

23 A. Not really for this case, but it was to address
24 your question.

25 Q. Have you used it in any other case, new table 6?

1 A. No.

2 Q. Have you published it?

3 A. No.

4 Q. The only disclosure of new table 6 is to me and
5 the folks in this case?

6 A. To be responsive to your request for an input and
7 output data set, yes.

8 Q. Okay. And why didn't you tell Dr. Parenteau when
9 she made her query of the NASS data in
10 conjunction with providing new table 6 in this
11 case -- why didn't you tell her to look at kids
12 under the age of 13?

13 A. It wasn't relevant to the query that we were
14 trying to make.

15 Q. So in your mind it wasn't relevant to the query
16 you were trying to make? That was a decision you
17 made?

18 A. Where do you find a child driving a car?

19 Q. No, a child in the second seat.

20 MR. WRAY: I'll object. This is just a
21 commentary; it's not a question.

22 THE WITNESS: Table 6 is front seat
23 occupants -- front outboard occupants in table 6.
24 So we could have some children in the passenger
25 seat, but I did not want to get into child seat

1 issues. So this query is identical to what I gave
2 you in supplemental report table 6, but updated
3 from -- in years from '94 to 2010.

4 BY MR. GILBERT:

5 Q. Assuming that there are spinal or have been
6 spinal injuries in rear-enders of Neons, how
7 would that affect your opinion, if at all?

8 A. Well, we talked at length in my last deposition
9 about the risk for spinal injuries with upright
10 seats. We also talked about the risk for unbelted
11 with rotated seats and contact on the second row.
12 So my opinion hasn't changed.

13 Q. Why didn't you use a confidence interval of 95
14 percent for table 6?

15 A. That's something that anyone could do just by
16 multiplying the standard error. And I'm not
17 making comparisons in table 6 specifically. One
18 could. I provide the data as average plus or
19 minus one standard error. It's just a matter of
20 multiplying by 1.97 to get a 95 percent confidence
21 level.

22 Q. But in this case for purposes of the Heco injury
23 and the analysis you've done in table 6, you and
24 Parenteau, why didn't you use a 95 percent
25 confidence level instead of 68 percent?

1 A. Standard practice in reporting NASS data in my
2 experience is to just report standard error and
3 let the user make whatever calculation he wants.
4 You might want to have 99 percent confidence
5 level. That's your prerogative. You just need to
6 multiply.

7 Q. If you had used a 95 percent confidence interval,
8 would that have influenced any of the opinions
9 you have in this case?

10 A. I doubt it.

11 Q. Why?

12 A. Well, if you look at the second paragraph on 56,
13 if I had tried to actually make a statistical
14 comparison between front, side and rear, it would
15 be statistically significant at the 95 percent
16 confidence interval. It would not make any
17 difference.

18 Q. What do you mean, it would be statistically
19 significant? What does that mean?

20 A. The risk of a frontal crash compared to a side
21 impact, compared to a rear impact is statistically
22 significant, irrespect --

23 Q. What does -- I'm sorry. I apologize. I don't
24 want you getting mad at me again.

25 A. -- if a 95 percent confidence level is used.

1 Q. What does that mean, it's statistically
2 significant with a 95 percent confidence
3 interval?

4 A. The chance that that's not a significant
5 difference is small.

6 Q. Okay. When you characterize something as being
7 statistically significant, does that mean there's
8 no overlap or there can be overlap and still be
9 significant -- statistically significant?

10 A. Overlap in what?

11 Q. Overlap in the bars, the length of the bars, the
12 standard error bars.

13 A. The typical practice at NHTSA is to use one
14 standard error, and non-overlapping represents
15 likelihood of being significant.

16 Q. Okay.

17 A. One could go and use confidence intervals like
18 you're asking about, and non-overlapping bars
19 would be a measure of significance.

20 Q. Okay. What if the bars overlap, what does that
21 mean about the statistical relationship?

22 A. It means that there's less confidence that it's
23 different.

24 Q. What does that mean?

25 A. That it's -- that you're less confident that it's

1 different?

2 Q. Yes.

3 A. It means the chance that it's similar is slightly
4 greater than in the case where there's
5 non-overlapping.

6 Q. Okay. So in the case of the risk, it would mean
7 that the risk at one level, if there's
8 overlapping, might not be all that different from
9 the risk at another level?

10 A. That is no, because the average value is the best
11 national estimate, and so the most confidence is
12 in the national estimate, and you can do
13 statistical calculations using standard error, but
14 the likelihood that one is greater than another is
15 dependent on the average, not on the confidence
16 level.

17 Q. Once again, you have said you could do a
18 statistical calculation of standard error. That
19 is a statistical calculation when you calculate
20 standard error, isn't it?

21 A. Of course.

22 Q. And this is something you do and Parenteau does,
23 or just Parenteau?

24 A. Almost anybody that uses NASS depending on their
25 application will make some calculations. Our

1 practice has always been to try to report the
2 standard errors, although if you look at the
3 examples from the government when they do
4 regulations, there are many situations where they
5 don't even go to producing standard errors; they
6 just take the best national estimate. I think the
7 government recognizes that rulemaking and changes
8 in safety standards have and can be done just on
9 national estimates as opposed to factoring in
10 statistical confidence based on the sampling
11 procedure.

12 Q. Do you believe that the work you've done in this
13 case requires that you take into account standard
14 errors as opposed to this situation you described
15 with NHTSA?

16 A. Requires? No.

17 Q. Do you think it's prudent to have taken into
18 account standard errors in this case?

19 A. I think it's prudent.

20 Q. Why?

21 A. It gives you a measure of uncertainty in the
22 accuracy or the -- let's say how accurate the
23 national estimate is. It gives you some measure
24 of the uncertainty.

25 Q. Is it also prudent in your opinion in this case

1 to take into account standard errors when you
2 calculate risk?

3 A. Well, I in fact did that on the second paragraph,
4 56.

5 Q. Is the answer to my question yes, it was prudent
6 and is prudent?

7 A. I was saying that's what I did, so obviously it's
8 prudent.

9 Q. Thank you.

10 A. It's not necessary, though.

11 Q. But why do you think it's prudent although not
12 necessary?

13 A. Because the uninformed might not know if .3
14 percent risk of severe to fatal injury in rear
15 impact, how accurate that is, but as soon as they
16 see it's plus or minus .05, they get a feeling, if
17 I did an entirely different sample of accidents in
18 the United States, I'd be pretty close to .3.

19 Q. And is it also important so that the reader or
20 the observer of the risk of injury understand is
21 this a reliable estimator or is it unreliable?

22 A. I think that's an improper term for what we're
23 talking about. The data is reliable.

24 Q. I'm not talking about the data. I'm talking --

25 A. The numbers are reliable.

1 Q. I'm talking about the confidence you have that
2 the number you're looking for falls somewhere
3 within a range.

4 A. The word "reliable" has no meaning in that
5 context.

6 Q. Does the word "reliable" have any meaning to
7 those who do statistical analysis like your firm
8 has done in this case?

9 A. Yes. The word implies to is NASS reliable data.

10 Q. No, I'm talking about the analysis of the NASS
11 data.

12 A. No, that's a matter of accuracy. The word
13 "reliability" is a different context in my mind.

14 Q. Does the sample size affect the reliability of an
15 estimate or an opinion?

16 A. No. The reliability is a measure of the quality
17 of the data. The sample size is a measure of the
18 statistical accuracy with which you produce an
19 average.

20 Q. Let me give you an example then. Let's say 52
21 percent of the population you've decided you're
22 going to do -- you're going to do a sample of
23 people in the United States who favor Obamacare,
24 and say you find that 52 percent of the
25 population favor Obamacare, okay? But because of

1 the standard errors, it's plus or minus 20. So
2 now we have a situation where it might be 52
3 minus 20, which would be 32 percent favor
4 Obamacare, or 72 percent favor Obamacare because
5 of the standard errors you've used. Isn't that
6 important to understand how reliable that 52
7 percent prediction is?

8 MR. WRAY: Object to the form.

9 THE WITNESS: The word "reliable"
10 doesn't apply there. It's how accurate you're
11 able to estimate the average that favor Obamacare.
12 The word "reliability" is not appropriate for that
13 in my mind.

14 BY MR. GILBERT:

15 Q. Okay. But you would want to know how accurate
16 that 52 percent estimate is, and it wouldn't be
17 very accurate if it was plus or minus 20, would
18 it?

19 MR. WRAY: Object to the form.

20 THE WITNESS: I would want to know two
21 things: One, how reliable is the sample that you
22 made, now, the quality and the -- that's the
23 reliability of the sample; and, two, what's the
24 accuracy, which is the standard error.
25 Reliability applies to the collection of the data

1 in my mind.

2 BY MR. GILBERT:

3 Q. In your mind?

4 A. Well, I believe that's the consensus. One could
5 say is the basic collection of data by NASS
6 reliable. The answer is yes. What is the
7 accuracy with which you can provide a national
8 estimate? That's provided by the standard error
9 and the average.

10 Q. Do you agree the smaller the standard error, the
11 more reliable the prediction is?

12 A. I won't use the word "reliable." It's more
13 accurate. You're able to determine a national
14 estimate.

15 Q. And would you agree that the smaller the sample
16 size makes the prediction less accurate?

17 A. Not always. The standard rat weight --

18 Q. Can it?

19 A. May or may not. It depends on a lot of different
20 things.

21 Q. Let's go to your table 6, the old one.

22 A. Yes.

23 Q. Because that's -- you can go to the new one, too.
24 That 160 is the weighted estimate for --

25 A. Where are you? 160 what?

1 Q. I'm sorry?

2 MR. WRAY: You have to be on the same
3 table.

4 BY MR. GILBERT:

5 Q. New table 6, delta V 20 to 25. We go down and
6 find that the weighted estimate of rear-enders
7 for these years was 160. Do you see that?

8 A. Yes, I do now.

9 Q. And it's plus or minus 75?

10 A. Correct.

11 Q. Okay. What would the range be, then, for that
12 estimate using one standard error? I think it's
13 just multiplication -- or addition and
14 subtraction?

15 A. It's just addition and subtraction, if you're
16 asking for what -- it does up to 235 and goes down
17 to whatever that is, 85.

18 Q. Go ahead and use your calculator. Let's get some
19 numbers.

20 A. You want to know what the upper and lower bound is
21 for the calculated or the average of 160 cases in
22 the 20 to 25?

23 Q. Much better question than the one I asked.

24 A. If I understand you. The top end is 235, and as I
25 said, the bottom is 85, which is what I said.

1 Q. So the lower -- the range is from 85 to up to
2 235?

3 A. Yes.

4 Q. Now let's say there's two standard errors. What
5 is the range there?

6 A. 10 to 310.

7 Q. So with the latter two, two standard errors, you
8 now are 95 percent confident that the number of
9 rear-enders at 20 to 25 mile an hour delta Vs is
10 somewhere between 10 and 310?

11 A. Well, we know the average is 160, but the
12 sample -- an entirely different sample has the
13 likelihood with 95 percent probability to be
14 within 10 to 310, but the best estimate is 160.

15 Q. Right. But you're confident it's somewhere
16 between 10 rear-enders and 310, 95 percent
17 confident?

18 A. And that's MAIS 4+ F injury.

19 Q. Of course.

20 A. The answer is yes, but the best national estimate
21 is 160.

22 Q. Now what I'd like you to do is in new table 6, go
23 to the risk, and you have the risk at 16 -- .16
24 percent, correct?

25 A. Yes.

1 Q. Okay. And your standard error was what?

2 A. .075.

3 Q. 075. Give me the upper and the lower range or
4 the range for the percentage risk using that
5 standard error.

6 A. One standard error?

7 Q. Yes.

8 A. I don't have the extra decimal point for the 16.
9 If I were to do it, I'd get three decimal points
10 so I don't know how accurate I'm going to be here.
11 23.5 down to 15.9. Sorry .235 down to .159, yeah.
12 Sorry.

13 Q. We started out with .16.

14 A. Right, and went down to .085.

15 MR. WRAY: It's identical to the
16 previous math that he's done. The numbers are the
17 same.

18 BY MR. GILBERT:

19 Q. Okay. So the lower range -- the range goes from
20 what to what?

21 A. Sorry about that. .085 to .235, I believe.

22 Q. Now give me two standard errors because I want to
23 be 95 percent confident.

24 MR. WRAY: This is the same math you
25 just did. Object to the form. It's repetitious.

1 MR. GILBERT: No, it's not.

2 MR. WRAY: Yes, it is. All you've done
3 is move the decimal point.

4 BY MR. GILBERT:

5 Q. We'll see.

6 A. .01 to .031.

7 Q. So the risk with 95 percent confidence interval
8 goes from .01 percent up to .31 percent?

9 A. Yes.

10 Q. Now go to -- let's go to 45 mile an hour and over
11 delta Vs, and let's go to the table 6 you had
12 before -- the old table 6 that we got when I
13 first met you.

14 A. Sure.

15 Q. And tell me whether or not at 20 to 25 your
16 injury risk -- well, we just did that. That's
17 the .16, correct?

18 A. Yes.

19 Q. That's the same for new and old?

20 A. Yes.

21 Q. Okay. Go to old table 6 and we see the injury
22 risk for 45 and over is what?

23 A. For rear impacts? 25.86 percent plus or minus
24 13.58.

25 Q. For new --

1 A. You said old. Didn't you say old?

2 Q. Yeah. So now give me the upper and lower bounds
3 of that at a 68 percent confidence level using
4 your standard error, I guess, of 13.58 something.

5 A. It goes from 12.3 percent up to 39.4.

6 Q. Okay. Now let's say I want to have a 95 percent
7 confidence level. Do that same 45 plus miles an
8 hour --

9 A. Sure.

10 Q. -- for two standard errors.

11 A. The risk would go from zero to 53 percent.

12 Q. Actually if you do the two standard errors, it's
13 actually a negative risk, isn't it?

14 A. I think you would be aware that that's a senseless
15 statement.

16 Q. I don't get in a wreck and benefit by the wreck?

17 A. It goes from zero to 53 percent.

18 Q. Okay, zero to 53. Now do -- let's go now -- I
19 want to know what my risk is using the standard
20 error in a parking lot accident, 5 miles an hour,
21 3 miles an hour. So go to the delta V of less
22 than 10 in old table 6, and I believe you said it
23 was .013 percent, correct?

24 A. No. Once you said parking lot accident, NASS
25 doesn't apply.

1 Q. Okay.

2 A. This is only with tow-aways, and --

3 Q. Less than a delta V of 10 miles an hour?

4 MR. WRAY: You have to understand
5 Mr. Gilbert has experts who tell him anything
6 under 40 miles an hour is a parking lot. But
7 different frame of reference.

8 THE WITNESS: His premise was a parking
9 lot accident.

10 BY MR. GILBERT:

11 Q. No, no.

12 A. This database is not going to give you parking lot
13 crashes.

14 Q. Stupid question. I'll withdraw it.

15 A. Okay.

16 (Off the record at 11:49 a.m.)

17 (Back on the record at 11:49 a.m.)

18 (Mr. Langdon not present at 11:49
19 a.m.)

20 BY MR. GILBERT:

21 Q. Now looking at the NASS database for delta Vs
22 under 10 miles an hour.

23 A. Yes.

24 Q. You have an injury risk of .013?

25 A. Yes.

- 1 Q. Now give me, using one standard error, what is
2 the range?
- 3 A. From zero to .026.
- 4 Q. Okay. Now using two standard errors.
- 5 A. 039.
- 6 Q. Up to?
- 7 A. Zero to 039.
- 8 Q. So do we have an overlap using two standard
9 errors -- do we then have an overlap between 45
10 mile an hour and above delta Vs and delta Vs of
11 less than 10 miles an hour?
- 12 A. No.
- 13 Q. We don't have any overlap using two standard
14 errors?
- 15 A. No, we don't have an overlap. Zero is zero.
- 16 Q. No, the highest -- the upper range of the risk at
17 under 10 miles an hour you said was .038 or .039
18 percent?
- 19 A. Correct.
- 20 Q. And the lower range of 45 miles an hour is zero?
- 21 A. Correct.
- 22 Q. Wouldn't there be an overlap of those two? There
23 either is or is not.
- 24 A. Yes, under that circumstance, but there is no
25 overlap.

1 Q. But the math says there is, but you're saying
2 it's --

3 A. It's a convolution of the math, of course, yes.

4 Q. So how is it a convolution of the math?

5 A. Because the national estimate is so different
6 between the two speeds that it makes that a
7 statistical anomaly not a reality.

8 Q. What is a statistical anomaly?

9 A. Exactly what you said, are those not statistically
10 different, the risk of being severely injured in a
11 less than 10 and greater than 45? Yes, there is a
12 difference.

13 Q. Isn't it also affected by the sample size?

14 A. Sure.

15 Q. Okay. The smaller the sample size, the greater
16 the standard error?

17 A. We already went through this. Generally, yes.

18 Q. Okay. How many samples did you have for your
19 less-than-10-mile-an-hour delta Vs?

20 A. There were 393,000 people.

21 Q. No, sample of cases, not weighted cases. How
22 many accidents did you use for your weighted
23 estimate for under 10 miles an hour?

24 A. I don't have that number in front of me right now.

25 Q. Can you get it in your materials?

1 A. Not with what I have here, no.

2 (Off the record at 11:53 a.m.)

3 (Back on the record at 11:56 a.m.)

4 BY MR. GILBERT:

5 Q. I was asking before the break how many actual
6 cases serve as the basis for the weighted
7 estimate for accidents under 10 mile an hour
8 delta V.

9 A. All accidents are 6,741, so -- and rear impact is
10 only 50, so I don't know today as I sit here what
11 the weighted -- unweighted number is.

12 Q. What would you need in order to know what the
13 unweighted number is?

14 A. I would ask Dr. Parenteau to print the same table
15 with unweighted data.

16 Q. Okay. Do you think it was probably several
17 accidents?

18 A. For the -- for which one?

19 Q. For the under 10.

20 A. For which number of the two I gave you? Under 10
21 there are 6,741 AIS 4+ for all different accident
22 types. For rear impact there were 50.

23 Q. Okay. But that's a weighted estimate of 50,
24 isn't it?

25 A. The 50 is weighted, yes.

1 Q. Okay. How many cases do you think made up that
2 weighted estimate?

3 A. Probably one.

4 Q. Okay. Do you know?

5 A. Since the standard error is 50, I'm pretty sure
6 that it's just one.

7 Q. Okay. Is that enough? Is that an adequate
8 sample size to make any kind of statistical
9 analysis?

10 A. When you get down to less than 10 mile an hour,
11 we're into an area where it's really at the bottom
12 edge of what NASS is looking at. 50 just says
13 that it's -- there's just not much happening for
14 MAIS 4+, but that being said, I was curious to
15 find that under 15 mile an hour rear impacts
16 represent about 15 percent of all severe injury,
17 and I said, how could that be, under 15 miles an
18 hour, we're going to have severe injury and death?
19 So I did look at all of the field accidents from
20 15 or less, which included than 10, and I found a
21 pattern of injury that I hadn't seen before.

22 So was there something useful in a
23 handful of cases? Yes. Do I have a robust
24 representation? Probably not because NASS doesn't
25 really deal with under 10 mile an hour accidents.

1 Q. How many accidents do you think served as the
2 basis for your weighted estimate of 160
3 rear-enders at 20 to 25 miles an hour?

4 A. Handful -- couple, three, four.

5 Q. Three or four?

6 A. Sure.

7 Q. Do you think that sample size is adequate?

8 A. Adequate for my purpose? Yes.

9 Q. Okay. What is your purpose? What would be a
10 purpose for which six or five or four, three or
11 two cases would not be adequate sample size?

12 MR. WRAY: Object to the form.

13 THE WITNESS: That all depends on the
14 question being asked. All I'm looking at here is
15 how is there a change with risk of delta V, and so
16 this gives an increasing risk with delta V. It's
17 not perfect, which indicates that there's some --
18 the national average is probably reasonable, but
19 there is some variability. In regard to the
20 purpose I had, it was to look at it in
21 relationship to side impacts and frontal impacts.
22 I think it's adequate for that.

23 Q. What about rear?

24 A. That's what I meant. Comparing side to rear or
25 looking at rear compared to front, it's adequate.

1 Q. Intuitively have you found over the years that
2 the risk of injury increases at higher speeds,
3 higher Delta Vs?

4 A. Intuitively?

5 MR. WRAY: Object to the form.

6 BY MR. GILBERT:

7 Q. Yes.

8 A. Certainly.

9 Q. Why?

10 A. There's more energy being dissipated in the crash,
11 and the higher the severity of the crash, the more
12 the likelihood of intrusion, being a source of
13 direct loading on an occupant. That is one of
14 them.

15 Q. You have your calculator there. What I'd like
16 you to do is give me the difference in energy at
17 15 mile an hour delta V and at 30.

18 A. The kinetic energy of the vehicles?

19 Q. Just a minute, let me see. Yes.

20 A. I'll use it, but I don't actually need it to make
21 this calculation. Since you asked me to use the
22 calculator, four.

23 Q. Four times?

24 A. Yes.

25 Q. Four times the energy. And is that something

1 A. Risk of AIS 4+, severe to fatal injury.

2 Q. Severe to fatal injury?

3 A. Correct.

4 Q. That's a .4 percent risk at 15 to 20, correct?

5 A. Correct.

6 Q. That risk goes down by half at a higher speed of
7 20 to 25, correct?

8 A. It does, yes.

9 Q. And it's even less at 25 to 30?

10 A. Correct.

11 Q. Does that make sense to you, that the risk of
12 injury goes down as you get up to 30 mile an hour
13 delta V from 15?

14 A. It does make sense, but you have to understand
15 what's going on in those different stratas.

16 Q. What are you looking at?

17 A. I've got to find it first.

18 Q. Oh. What document do you have in front of you?

19 A. That was my original report, so I don't know what
20 you numbered that.

21 MR. WRAY: It wasn't marked today.

22 BY MR. GILBERT:

23 Q. 2.

24 THE WITNESS: Yes, it was.

25 MR. WRAY: It was?

1 MR. GILBERT: Yeah.

2 THE WITNESS: It's here, No. 2, yes.

3 On page 71 I actually plotted the data, and it
4 just shows, .05, extremely small risk -- no, I
5 didn't plot that data. This is belted and
6 unbelted. The answer to the question is yes, that
7 makes sense, and there's some explanations why
8 there's some variability.

9 BY MR. GILBERT:

10 Q. Okay. Let's go back to where we got into this
11 discussion. I had you calculate the injury --
12 the energy, and you calculated an energy of four
13 times the kinetic energy at 30 miles an hour,
14 then 15 miles an hour delta V, correct?

15 A. Correct.

16 Q. And in spite of an increase of energy four times
17 at 30 over 15, the risk you have calculated in
18 table 6 shows that the risk actually went down
19 over that 15-mile-an-hour span?

20 MR. WRAY: I object to the form of the
21 question and the intentional misleading nature of
22 it.

23 THE WITNESS: The national average went
24 down, yes, based on this data.

25 BY MR. GILBERT:

1 Q. Does that make sense --

2 A. Yes.

3 Q. -- that the injury risk goes down?

4 A. It actually does.

5 Q. Okay. Why don't you now explain why there is a
6 lesser risk of injury at speeds up to 30 mile an
7 hour delta V than there is at speeds as low as 15
8 miles an hour delta V.

9 MR. WRAY: Object to the form.

10 THE WITNESS: Intuitively if you had
11 the same person in the same car at the different
12 delta Vs, you would get an increasing risk with
13 delta V, but that's not what happens in the real
14 world. It turns out these low speed accidents, 20
15 and less, there's a population of older occupants
16 with debilitating physical conditions that appear
17 to be injured in low speed accidents, and what
18 we're seeing when I look at the 20 -- the 25 to
19 30, 30 to 35, we are seeing more severe
20 deformation of the vehicle intrusion causing
21 injury.

22 So we have two different demographics
23 of people being injured MAIS 4+ F. It surprised
24 me, too, to see the risk being high relatively,
25 but there is a group of senior citizens that have

1 preexisting medical conditions that end up being
2 injured and can actually die in low speed low
3 impacts.

4 Q. Have you looked at the actual case samples, the
5 unweighted cases for each of these categories to
6 see if any of these cases reflect what you've
7 just told me, namely, that older folks get
8 injured at lower speeds than at higher speeds?

9 A. I have because that was curious to me why there
10 would be anybody injured in that low speed, or
11 killed. I actually published a paper on it, so
12 the answer is yes. And it turns out to be either
13 unusually unfit people or people with some
14 advanced age or some degenerative processes that
15 are cropping up in the low speed severely to
16 fatally injured.

17 Q. Okay. So that's your explanation for the low
18 speeds?

19 A. That's one. The other is you're talking about the
20 best national estimates having some variant
21 because of the sample size.

22 Q. Small sample size?

23 A. Yes. You're certainly seeing some of that.

24 Q. So some of the things that is not quite intuitive
25 might be related to the age and debilitation of

1 the occupant, and other counterintuitive might
2 relate to small sample size?

3 A. There are other factors as well.

4 Q. But those are two?

5 A. Correct. Usually what -- if you want to actually
6 see the relationship with delta V, you do some
7 sort of parabolic fit to the actual data. I
8 didn't do that here, but obviously you're seeing
9 that the injury rates are sort of flat up until
10 about 25 to 30, and beyond that you're getting
11 into higher risks.

12 Q. Do you know what the sample size is between 15
13 and 20 mile an hour delta V?

14 A. The unweighted?

15 Q. Yes.

16 A. For this table, I don't remember right now, but --
17 I don't know. It could be eight to ten maybe,
18 something like that. I can get the numbers. I
19 don't know right now.

20 Q. Is it anywhere in the exhibits you've produced?

21 A. You've asked that question again earlier, and I
22 said I didn't bring the unweighted for either 4 or
23 5 with me today.

24 Q. 4 or 5, what do you mean?

25 A. Exhibits 4 and 5.

- 1 Q. That would be old and new table 6?
- 2 A. Correct.
- 3 Q. What would that -- what would that material be
4 called? What would you -- what would you call
5 the material you'd have to go look at to see what
6 the sample size was?
- 7 A. Well, that's easy. You just have to rerun the SAS
8 routine I gave you but ask for the unweighted
9 data.
- 10 Q. Have you done that?
- 11 A. Not for that table, no.
- 12 Q. For table 6?
- 13 A. I don't think so. At least I don't remember
14 looking at it.
- 15 Q. Well, you didn't do any of that, did you?
16 Parenteau did it?
- 17 A. That's correct, but I looked at the work, and I
18 don't remember seeing the unweighted table.
- 19 Q. We've talked about the lower speed, kind of the
20 issues with respect to the risk going down at
21 higher speeds. Let's go to delta Vs of 30 to 35.
22 What's that risk for rear-enders?
- 23 A. Based on the old or new table?
- 24 Q. The old is fine.
- 25 A. For rear impacts it's 3.6 percent.

1 Q. Okay. You have 3.62 percent in your table.

2 A. Okay, 3.62 percent.

3 Q. I'm just reading what -- the numbers you've given
4 me. But that's correct, is 3.62 percent?

5 A. Yes.

6 Q. Then you go to 35 to 40, and once again, the risk
7 has dropped significantly, hasn't it?

8 MR. WRAY: Object to the form.

9 THE WITNESS: Based on this
10 calculation, yes, of course.

11 BY MR. GILBERT:

12 Q. Does that seem intuitive?

13 A. From what I know about NASS and the sample size
14 we're dealing with, that's what you would get if
15 you run the calculation this way.

16 Q. Okay. At the lower speeds you talked about older
17 people getting injured at lesser speeds, and then
18 in addition to the sample size --

19 A. Correct.

20 Q. -- being two factors. What are the factors, if
21 any, that show us that the risk actually goes
22 down when you jump the delta V from 35 to 40 up
23 to -- no, what accounts for the reasons the risk
24 of serious injury goes down at a higher 35 to 40
25 than 30 to 35?

1 A. Well, of course it doesn't. It's just the anomaly
2 of the small sample size and the calculation that
3 we don't have enough data to -- by delta V to make
4 sense. You put a curve through the data, it will
5 make sense, but it's probably not actually going
6 down.

7 Q. At what point would the sample size be a concern
8 to you, when it was less than 10, less than 50?

9 A. You asked that question. I'm not concerned about
10 the data going up and down because I know that
11 it's giving what is the best national estimate.
12 It's got some variability because we are dealing
13 with a relatively small number of cases in this.
14 My purpose in doing this was to compare -- compare
15 it to side and front, not between velocities of 30
16 to 35. But I have looked at those cases and there
17 could be a number of reasons why the numbers are
18 slightly different there.

19 Q. What is your acceptance criteria for standard
20 error as a percentage of the estimate?

21 A. What do you mean by acceptance criteria?

22 Q. Do you have any -- you know, if the estimate is
23 50 percent -- I mean, if the standard error is 50
24 percent of the estimate, is that acceptable or is
25 there some point where the standard error as a

1 percentage of the estimate begins to cause you
2 concerns?

3 MR. WRAY: Object to the form.

4 THE WITNESS: I don't have concerns.
5 What's produced is the best national estimate,
6 which is the average, and the SE or standard error
7 is the best way of describing how confident you
8 could be in the average, so I just put the data
9 down and let the reader make their own
10 determination.

11 BY MR. GILBERT:

12 Q. If the standard error was 40 percent of the
13 estimate, is that a concern in the work you've
14 done in table 6?

15 A. It's not a concern because what I'm really
16 interested in is the best national estimate.

17 Q. What about 70 or 80 percent of the estimate?

18 A. It could be a hundred percent like we see in the
19 under 10. That doesn't concern -- it's not a
20 matter of concern. It's a matter of rigor that's
21 produced by the algorithm based on the unweighted
22 sample and the rat weights that are given by the
23 government. There's no concern. It just says
24 there's a very small number of unweighted cases if
25 you dissect the data down as small as less than 10

1 miles an hour.

2 Q. What about some of the other delta V categories,
3 is this a concern at all that maybe --

4 A. No.

5 Q. -- the sample size is too small that it yields
6 very large standard errors?

7 A. No, not to me because what I'm interested in is
8 the national estimate, which is the average.

9 Q. And yet in this case you have produced exhibits
10 that show the risk goes down at higher speeds,
11 and you say that the reason is because of old
12 people for the 15 mile an hour vehicles -- I
13 mean, delta Vs?

14 MR. WRAY: I object to the form of the
15 question. It's an insufficient summary of
16 testimony if it's even a question.

17 BY MR. GILBERT:

18 Q. That's fine. Go ahead.

19 A. I'm not even sure what the question was. Let's
20 try it again.

21 MR. WRAY: We'll stipulate that the
22 record says what it says. Go ahead and read it
23 back.

24 (The requested portion of the
25 record was read by the reporter at

1 12:17 p.m. as follows:

2 "Q. And yet in this case you have
3 produced exhibits that show the
4 risk goes down at higher speeds,
5 and you say that the reason is
6 because of old people for the 15
7 mile an hour vehicles -- I mean,
8 delta Vs?")

9 MR. WRAY: Will you accept my
10 stipulation that the record says what it says?

11 MR. GILBERT: Sure, I guess.

12 MR. WRAY: Let's go on then.

13 MR. GILBERT: Was that a question?

14 MR. WRAY: I'll stipulate the record
15 says what it says.

16 BY MR. GILBERT:

17 Q. Do you think it was a question?

18 A. I didn't understand it. Sorry.

19 (The requested portion of the
20 record was read by the reporter at
21 12:18 p.m. as follows:

22 "Q. And yet in this case you have
23 produced exhibits that show the
24 risk goes down at higher speeds,
25 and you say that the reason is

1 because of old people for the 15
2 mile an hour vehicles -- I mean,
3 delta Vs?")

4 BY MR. GILBERT:

5 Q. What if the standard error is 80 percent of the
6 estimate, does that make the estimate less
7 reliable?

8 A. No, recognizing the word "reliable" is not
9 relevant here.

10 Q. Why isn't it?

11 A. Oh, my God, we spent so much time talking about
12 this and you didn't get it.

13 MR. WRAY: I'll object to the question.
14 The difference is fully explained and I think
15 Mr. Gilbert is trying to play with the legal
16 requirement of reliability, which is entirely
17 different from what the witness is talking about,
18 so I don't want to have a sound bite that he can
19 use in some motion as a result. For that reason,
20 I object to the form of the question.

21 BY MR. GILBERT:

22 Q. Do statisticians and people who do this kind of
23 statistical analysis ever use the word "reliable"
24 as it relates to the size of the standard error
25 and sample sizes?

1 A. I wouldn't because reliability, as we said now --
2 this has probably got to be the fifth time.
3 Reliability refers to the quality of the data in
4 the sample. The statistics is what it is. It is
5 -- once a person determines that the data they're
6 analyzing is reliable and relevant, then they can
7 put statistical confidence on its meaning, what is
8 its average, what is its standard errors. The
9 word "reliability" is out of context to
10 statistical calculations from my use.

11 BY MR. GILBERT:

12 Q. Do statisticians use the term "reliability" as it
13 relates to large standard errors, lower
14 confidence intervals, and standard error as a
15 percentage of the estimate?

16 A. There may be some. I deal with people that use
17 that term only with the quality of the data.

18 Q. Do you have anyone in your firm who is a
19 statistician?

20 A. There's only me.

21 Q. Well, Chantal Parenteau.

22 A. She's not an employee.

23 Q. Do you have anyone with whom you work on these
24 cases who is a statistician?

25 A. Yes.

1 Q. Who?

2 A. I've worked with Mark Edwards.

3 Q. Mark Edwards. Is he a Ph.D. statistician?

4 A. Yes.

5 Q. Has he done any work in this case?

6 A. No.

7 Q. Why haven't you asked Mr. Edwards or Dr. Edwards
8 to do any of the work in this case?

9 A. It was relatively straightforward calculations
10 that Dr. Parenteau can do.

11 Q. I don't have too much more. Maybe if we could
12 take about a five-minute break.

13 A. Sure. It's your deposition.

14 Q. Well, half.

15 MR. WRAY: It's really Mr. Kim's.

16 (Off the record at 12:21 p.m.)

17 (Back on the record at 12:28 p.m.)

18 BY MR. GILBERT:

19 Q. Would you at least agree with me --

20 MR. WRAY: Object to the form. It's
21 argumentative.

22 BY MR. GILBERT:

23 Q. Would you agree with me that the smaller the
24 standard error, the better?

25 A. The better?

1 Q. Yes. I don't want to use the word "reliable."
2 The more accurate the prediction or estimate?

3 A. Yes.

4 Q. Are you going to come to trial in Vermont and use
5 statistics to testify that the Neon seat back is
6 as good as other vehicles?

7 MR. WRAY: Object to the form of the
8 question.

9 THE WITNESS: I don't know what
10 questions I'll be asked. I don't think I would
11 make that specific reference.

12 BY MR. GILBERT:

13 Q. What if I asked you at trial do you believe that
14 based upon the work you've done in this case and
15 the statistics, do you believe that the Neon seat
16 back is as good as the seat backs in other
17 vehicles?

18 MR. WRAY: Object to the form of the
19 question.

20 THE WITNESS: I'm not sure what other
21 vehicles really means. You'd have to be more
22 specific with me if you're going to ask that
23 question.

24 BY MR. GILBERT:

25 Q. I mean the other vehicles in the NASS database

1 that you have kind of included and referred to in
2 your supplemental report.

3 A. I would agree with NHTSA's conclusions that the
4 field accident data of the kind shown in Exhibit 4
5 and 5 for rear impacts shows reasonable
6 performance of the vehicle and seats in rear
7 impacts.

8 Q. Not my question. Do you believe --

9 A. Then I would find that the Neon seat in comparison
10 to other conventional seats of the type we have in
11 the Neon are performing reasonable based on the
12 field accident data in NHTSA's interpretation of
13 it as well as mine.

14 Q. Is that based in part on your statistical
15 analysis in this case?

16 MR. WRAY: Object to the form.

17 THE WITNESS: I didn't really -- in
18 part, yes.

19 BY MR. GILBERT:

20 Q. What part yes and what part no?

21 A. I didn't say no. I said in part, yes.

22 Q. That given your statistical analysis in this
23 case, you believe that the Neon seat performs as
24 well as other seats in rear impacts?

25 MR. WRAY: Object to the form of the

1 question.

2 THE WITNESS: I didn't reach a
3 conclusion of as well. I said like other
4 conventional seats, its performance is reasonable
5 in protecting occupants in rear impacts.

6 BY MR. GILBERT:

7 Q. Are you going to come to trial and use statistics
8 to testify that the Neon seat back is as safe as
9 any other vehicle seat back?

10 MR. WRAY: Object to the form of the
11 question, the fact that it's been asked and
12 answered before. You actually read the same
13 question over. You changed a word.

14 THE WITNESS: As safe, I -- I doubt
15 those are questions I'm going to be asked by my
16 counsel, but if you were to ask me such a
17 question, I would -- I would say that the data
18 provided in Exhibit 4 and 5 are consistent with
19 NHTSA's conclusion that seats of the kind in the
20 Neon are reasonable and performing reasonably well
21 in rear impacts in protecting occupants.

22 MR. GILBERT: Read my question.

23 (The requested portion of the
24 record was read by the reporter at
25 12:32 p.m. as follows:

1 "Q. Are you going to come to trial
2 and use statistics to testify that
3 the Neon seat back is as safe as
4 any other vehicle seat back?")

5 MR. WRAY: It's been asked and
6 answered. Go ahead.

7 BY MR. GILBERT:

8 Q. That's my question.

9 A. I answered it already. I said I doubt that my
10 counsel will ask me that question, but I will tell
11 the jury that the field accident data provided in
12 Exhibit 4 and 5 are consistent with what NHTSA has
13 done where they've concluded that seats of the
14 type of the Neon are performing reasonably well in
15 rear impacts in protecting occupants.

16 Q. In your table 6, Dr. Viano, either new or old, if
17 the delta V is 15.2 miles an hour, which category
18 does it go in, 10 to 15 or 15 to 20?

19 A. The latter.

20 Q. 15 to 20?

21 A. Correct.

22 Q. What if the delta V is 15, what category does it
23 go in?

24 A. Oh, I think if it's exactly 15, it goes in the 10
25 to 15. I think it's equal 15 and then greater

- 1 than 15, less than or equal to 20.
- 2 Q. Where did you get that information?
- 3 A. Well, let's check that. That's a fair question.
- 4 Hold on a second.
- 5 Q. What exhibit are you looking at, Dr. Viano?
- 6 A. Right now I'm looking at Exhibit 6.
- 7 Q. Do you want to give me a page.
- 8 A. Oh, I'm in the wrong file here. I should be going
- 9 to -- because we didn't do delta V for that.
- 10 Q. For what?
- 11 A. For the Neon cases. The delta V was done -- it's
- 12 either 7 or 5. Do you know where that is?
- 13 Q. Here's 7.
- 14 A. No. Then it's 5.
- 15 Q. That's new table 6.
- 16 A. Maybe it's 8. Hold on.
- 17 Q. 8 is the input for 7 to 9.
- 18 A. Wait a minute, it is 6. Page 1 of Exhibit 6 -- I
- 19 should have seen that at the beginning. The --
- 20 what was your question, the 15 to 20?
- 21 Q. If the delta V is 15, what category does it go
- 22 in, 10 to 15?
- 23 A. I was correct, it's less than or equal to 15, so
- 24 if it's precisely 15, it goes into the 10 to 15.
- 25 Q. And the same with 20, it goes into the 15 to 20?

1 A. Correct. If you want me to circle that, it's
2 shown right here.

3 Q. No, you don't need to. It's on page 1?

4 A. Of Exhibit 6.

5 Q. Why don't you circle what you've referred to.

6 A. It shows delta V, for example, zero to less than
7 10, less than or equal to 10 is identified as less
8 than 10.

9 MARKED FOR IDENTIFICATION:

10 DEPOSITION EXHIBIT 24

11 12:36 p.m.

12 BY MR. GILBERT:

13 Q. 24 is a case list for Reed Smith. That's a
14 listing of five cases that you've worked with
15 Dick's firm?

16 A. Let's see. I have worked on --

17 Q. You don't need to read them all, but --

18 A. Yes.

19 Q. In any of those cases have you billed what you've
20 billed here, between 190 and 200,000?

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

23 THE WITNESS: Probably not.

24 BY MR. GILBERT:

25 Q. Can you think of any case you've worked on in the

1 last five years where you've billed more than
2 \$200,000?

3 A. Yes.

4 Q. How many?

5 A. Maybe two or three.

6 Q. Out of how many cases in five years is that?

7 A. Maybe 20.

8 Q. So about 10 to 15 percent of the cases in the
9 last five years you've billed more than 200,000?

10 A. I was asked to do that much work, yes.

11 Q. Yeah. Do you have any -- well, are there
12 organizations that recommend a confidence
13 interval of 90 or 95 percent as opposed to 68
14 percent?

15 A. Organizations?

16 Q. Yeah.

17 A. I'm not sure what the application is.

18 Q. Engineering kind of organizations.

19 A. It depends what the application might be.

20 Q. In a statistical study -- if you're doing a
21 statistical study, are there any organizations --
22 engineering-related or statistics-related
23 organizations that recommend using a confidence
24 level of at least 90 percent?

25 A. We use confidence intervals when you're trying to

1 compare one thing to another, and usually the
2 lower threshold is a 95 or 90 percent confidence
3 level. It depends on the quality of the data, the
4 robustness of the information, and the
5 application. I mean, if I'm making an elevator, I
6 certainly don't want -- I would want different
7 standards of practice for that or an airplane than
8 I would want for concrete on a highway, for
9 example.

10 Q. But there are organizations that recommend a
11 confidence level of 90 percent or greater --

12 A. Probably.

13 Q. -- when doing statistical studies?

14 A. It would depend on what they're being applied for,
15 yes.

16 Q. Are there any organizations that recommend when
17 doing a statistical study that you use 68 percent
18 confidence interval?

19 A. I'm not using one or another. I'm reporting data
20 that you could calculate any confidence interval
21 you want. I'm not suggesting any standard by my
22 reporting. I'm just finding a way to report the
23 data.

24 Q. But the only confidence interval you've reported
25 is one that gives you 68 percent confidence?

1 A. Absolutely not. I did not report a confidence
2 interval on anything I gave you.

3 Q. One standard error?

4 A. I gave you some numbers. I can tell you what they
5 are. You can do what you wish with them. I did
6 not use confidence intervals in anything I did.

7 Q. Can you think of any organizations that say using
8 a confidence interval of 68 percent is
9 recommended?

10 A. Don't know. I haven't studied that.

11 Q. Are you aware of any organizations that recommend
12 when doing a statistical study that a confidence
13 interval of 90 percent or greater is recommended?

14 A. Well, for example, in my journal, if someone were
15 to report a confidence interval and try to draw a
16 conclusion, I would have to think twice about
17 accepting, you know, one standard error. I would
18 probably want a 95 percent, unless there's some
19 explanation for why a lower confidence interval
20 would be used. But, again, I didn't report any
21 confidence intervals in this material.

22 Q. Do you plan to do any additional work before
23 trial?

24 A. Yes.

25 Q. What?

1 A. I'm going to look at the five cases of rear impact
2 with MAIS 3+ F.

3 Q. In a Neon?

4 A. Correct.

5 Q. What are you going to do with those cases?

6 A. I don't know. I'm going to look at them, at least
7 what's available.

8 Q. But you aren't going to look at FARS?

9 A. No.

10 Q. Have we covered all of your opinions that you
11 hold to this point in time?

12 MR. WRAY: Relating to this case?

13 MR. GILBERT: Say what?

14 MR. WRAY: Relating to this case as
15 opposed to everything that Dr. Viano has ever
16 worked on?

17 MR. GILBERT: Well, of course. I want
18 his opinions -- EEM I want to know what his
19 opinions are today. I don't want to learn them
20 for the first time at trial.

21 MR. WRAY: We're not communicating. Go
22 ahead.

23 THE WITNESS: Yes.

24 BY MR. GILBERT:

25 Q. We've covered them all?

1 A. I thought this deposition was exclusive to the
2 supplemental report, and I think we've gone
3 through that fairly well.

4 Q. I've read my questions correctly?

5 A. I don't know.

6 MR. WRAY: You have to ask Mr. Kim
7 that.

8 MR. GILBERT: That's all.

9 MR. WRAY: I have no questions. Mr.
10 Kerr?

11 MR. KERR: I don't have anything.

12 (The deposition was concluded at 12:42 p.m.
13 Signature of the witness was requested.)

14

15

16

17

18

19

20

21

22

23

24

25

1 DZEMILA HECO, et al.,
2 Plaintiffs,
3 vs. DOCKET #: S869-10-CnC
4 MIDSTATE DODGE LLC, et al.,
5 Defendants.

6 _____/

7

8 VERIFICATION OF DEPONENT

9

10 I, having read the foregoing
11 deposition consisting of my testimony at the
12 aforementioned time and place, do hereby attest
13 to the correctness and truthfulness of the
14 transcript.

15

16

17

18

19

20

21

22

23

24

25

DAVID C. VIANO, Dr. Med., Ph.D.

Dated:

1 ERRATA SHEET
2 PAGE LINE READS PAGE LINE SHOULD READ
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

DAVID C. VIANO, Dr. Med., Ph.D.

Dated:

1 CERTIFICATE OF NOTARY

2 STATE OF MICHIGAN)
3) SS
4 COUNTY OF MACOMB)
5

6 I, MELINDA S. MOORE, certify that this
7 deposition was taken before me on the date
8 hereinbefore set forth; that the foregoing
9 questions and answers were recorded by me
10 stenographically and reduced to computer
11 transcription; that this is a true, full and
12 correct transcript of my stenographic notes so
13 taken; and that I am not related to, nor of
14 counsel to, either party nor interested in the
15 event of this cause.

16
17
18
19
20
21
22
23
24
25

Melinda S. Moore

MELINDA S. MOORE, CSR-2258
Notary Public,
Macomb County, Michigan



My Commission expires: September 6, 2016