

Case No. 78701

In the Supreme Court of Nevada

MOTOR COACH INDUSTRIES, INC.,

Appellant,

vs.

KEON KHIABANI; ARIA KHIABANI, MINORS, by
and through their Guardian MARIE-CLAUDE
RIGAUD; SIAMAK BARIN, as Executor of the
Estate of KAYVAN KHIABANI, M.D.; the Estate of
KAYVAN KHIABANI; SIAMAK BARIN, as
Executor of the Estate of KATAYOUN BARIN,
DDS; and the Estate of KATAYOUN BARIN, DDS,

Respondents.

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APPEAL

from the Eighth Judicial District Court, Clark County
The Honorable ADRIANA ESCOBAR, District Judge
District Court Case No. A-17-755977-C

**APPELLANT'S APPENDIX
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129	Motor Coach Industries, Inc.'s Reply in Support of Renewed Motion for Judgment as a Matter of Law Regarding Failure to Warn Claim	06/29/18	50	12282–12309
70	Motor Coach Industries, Inc.'s Response to “Bench Brief on Contributory Negligence”	02/16/18	19	4728–4747
131	Motor Coach Industries, Inc.'s Response to “Plaintiffs’ Supplemental Opposition to MCI’s Motion to Alter or Amend Judgment to Offset Settlement Proceeds Paid to Other Defendants”	09/24/18	50	12322–12332
124	Notice of Appeal	05/18/18	49	12086–12097
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138	Notice of Entry of “Findings of Fact and Conclusions of Law on Defendant’s Motion to Retax”	04/24/19	50	12396–12411
136	Notice of Entry of Combined Order (1) Denying Motion for Judgment as a Matter of Law and (2) Denying Motion for Limited New Trial	02/01/19	50	12373–12384
141	Notice of Entry of Court’s Order Denying Defendant’s Motion to Alter or Amend Judgment to Offset Settlement Proceeds Paid by Other	05/03/19	50	12480–12489

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40	Notice of Entry of Findings of Fact Conclusions of Law and Order on Motion for Determination of Good Faith Settlement	01/08/18	11	2581–2590
137	Notice of Entry of Findings of Fact, Conclusions of Law and Order on Motion for Good Faith Settlement	02/01/19	50	12385–12395
111	Notice of Entry of Judgment	04/18/18	42	10365–10371
12	Notice of Entry of Order	07/11/17	1	158–165
16	Notice of Entry of Order	08/23/17	1	223–227
63	Notice of Entry of Order	02/09/18	15	3511–3536
97	Notice of Entry of Order	03/19/18	36	8839–8841
15	Notice of Entry of Order (CMO)	08/18/17	1	214–222
4	Notice of Entry of Order Denying Without Prejudice Plaintiffs’ Ex Parte Motion for Order Requiring Bus Company and Bus Driver to Preserve an Immediately Turn Over Relevant Electronic Monitoring Information from Bus and Driver Cell Phone	06/22/17	1	77–80
13	Notice of Entry of Order Granting Plaintiffs’ Motion for Preferential Trial Setting	07/20/17	1	166–171
133	Notice of Entry of Stipulation and Order Dismissing Plaintiffs’ Claims Against Defendant SevenPlus Bicycles, Inc. Only	10/17/18	50	12361–12365
134	Notice of Entry of Stipulation and Order Dismissing Plaintiffs’ Claims Against Bell Sports, Inc. Only	10/17/18	50	12366–12370
143	Objection to Special Master Order Staying Post-Trial Discovery Including May 2, 2018 Deposition of the Custodian of Records of the Board of Regents NSHE and, Alternatively, Motion for Limited Post-Trial	05/03/18	51	12495–12602

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39	Opposition to “Motion for Summary Judgment on Foreseeability of Bus Interaction with Pedestrians of Bicyclists (Including Sudden Bicycle Movement)”	12/27/17	11	2524–2580
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151	Order (FILED UNDER SEAL)	03/26/19	52	12931–12937
135	Order Granting Motion to Dismiss Wrongful Death Claim	01/31/19	50	12371–12372
25	Order Regarding “Plaintiffs’ Motion to Amend Complaint to Substitute Parties” and “Countermotion to Set a Reasonable Trial Date Upon Changed Circumstance that Nullifies the Reason for Preferential Trial Setting”	11/17/17	3	638–641
45	Plaintiffs’ Addendum to Reply to Opposition to Motion for Summary Judgment on Foreseeability of Bus Interaction with Pedestrians or Bicyclists (Including Sudden Bicycle Movement)”	01/17/18	11	2654–2663
49	Plaintiffs’ Joinder to Defendant Bell Sports, Inc.’s Motion for Determination of Good Faith Settlement on Order Shortening Time	01/18/18	11	2735–2737
41	Plaintiffs’ Joint Opposition to Defendant’s Motion in Limine No. 3 to Preclude Plaintiffs from Making Reference to a “Bullet Train” and to Defendant’s Motion in Limine No. 7 to Exclude Any Claims That the Motor Coach was Defective Based on Alleged Dangerous “Air Blasts”	01/08/18	11	2591–2611

37	Plaintiffs' Joint Opposition to MCI Motion for Summary Judgment on All Claims Alleging a Product Defect and to MCI Motion for Summary Judgment on Punitive Damages	12/21/17	9	2129–2175
50	Plaintiffs' Motion for Determination of Good Faith Settlement with Defendants Michelangelo Leasing Inc. d/b/a Ryan's Express and Edward Hubbard Only on Order Shortening Time	01/18/18	11	2738–2747
42	Plaintiffs' Opposition to Defendant's Motion in Limine No. 13 to Exclude Plaintiffs' Expert Witness Robert Cunitz, Ph.D. or in the Alternative to Limit His Testimony	01/08/18	11	2612–2629
43	Plaintiffs' Opposition to Defendant's Motion in Limine No. 17 to Exclude Claim of Lost Income, Including the August 28 Expert Report of Larry Stokes	01/08/18	11	2630–2637
126	Plaintiffs' Opposition to MCI's Motion to Alter or Amend Judgment to Offset Settlement Proceeds Paid by Other Defendants	06/06/18	49	12104–12112
130	Plaintiffs' Supplemental Opposition to MCI's Motion to Alter or Amend Judgment to Offset Settlement Proceeds Paid by Other Defendants	09/18/18	50	12310–12321
150	Plaintiffs' Supplemental Opposition to MCI's Motion to Alter or Amend Judgment to Offset Settlement Proceeds Paid by Other Defendants (FILED UNDER SEAL)	09/18/18	52	12917–12930
122	Plaintiffs' Supplemental Verified Memorandum of Costs and Disbursements Pursuant to NRS 18.005, 18.020, and 18.110	05/09/18	49	12019–12038

91	Plaintiffs' Trial Brief Regarding Admissibility of Taxation Issues and Gross Versus Net Loss Income	03/12/18	33	8018–8025
113	Plaintiffs' Verified Memorandum of Costs and Disbursements Pursuant to NRS 18.005, 18.020, and 18.110	04/24/18	42	10375–10381
105	Proposed Jury Instructions Not Given	03/23/18	41	10207–10235
109	Proposed Jury Verdict Form Not Used at Trial	03/26/18	42	10298–10302
57	Recorder's Transcript of Hearing on Defendant's Motion for Summary Judgment on All Claims Alleging a Product Defect	01/23/18	12	2818–2997
148	Reply in Support of Motion for a Limited New Trial (FILED UNDER SEAL)	07/02/18	52	12755–12864
128	Reply on Motion to Retax Costs	06/29/18	50	12269–12281
44	Reply to Opposition to Motion for Summary Judgment on Foreseeability of Bus Interaction with Pedestrians or Bicyclists (Including Sudden Bicycle Movement)"	01/16/18	11	2638–2653
46	Reply to Plaintiffs' Opposition to Motion for Summary Judgment on Punitive Damages	01/17/18	11	2664–2704
3	Reporter's Transcript of Motion for Temporary Restraining Order	06/15/17	1	34–76
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18	Reporter's Transcription of Motion of Status Check and Motion for Reconsideration with Joinder	09/21/17	1 2	237–250 251–312
65	Reporter's Transcription of Proceedings	02/13/18	16 17	3818–4000 4001–4037
66	Reporter's Transcription of Proceedings	02/14/18	17 18	4038–4250 4251–4308

68	Reporter's Transcription of Proceedings	02/15/18	18	4315–4500
69	Reporter's Transcription of Proceedings	02/16/18	19	4501–4727
72	Reporter's Transcription of Proceedings	02/20/18	20 21	4809–5000 5001–5039
73	Reporter's Transcription of Proceedings	02/21/18	21	5040–5159
74	Reporter's Transcription of Proceedings	02/22/18	21 22	5160–5250 5251–5314
77	Reporter's Transcription of Proceedings	02/23/18	22 23	5328–5500 5501–5580
78	Reporter's Transcription of Proceedings	02/26/18	23 24	5581–5750 5751–5834
79	Reporter's Transcription of Proceedings	02/27/18	24 25	5835–6000 6001–6006
80	Reporter's Transcription of Proceedings	02/28/18	25	6007–6194
81	Reporter's Transcription of Proceedings	03/01/18	25 26	6195–6250 6251–6448
82	Reporter's Transcription of Proceedings	03/02/18	26 27	6449–6500 6501–6623
83	Reporter's Transcription of Proceedings	03/05/18	27 28	6624–6750 6751–6878
86	Reporter's Transcription of Proceedings	03/07/18	29 30	7045–7250 7251–7265
88	Reporter's Transcription of Proceedings	03/09/18	30 31	7424–7500 7501–7728
89	Reporter's Transcription of Proceedings	03/12/18	31 32	7729–7750 7751–7993
99	Reporter's Transcription of Proceedings	03/20/18	37 38	9076–9250 9251–9297
100	Reporter's Transcription of Proceedings	03/21/18	38 39	9298–9500 9501–9716
101	Reporter's Transcription of Proceedings	03/21/18	39 40	9717–9750 9751–9799

102	Reporter's Transcription of Proceedings	03/21/18	40	9800–9880
103	Reporter's Transcription of Proceedings	03/22/18	40 41	9881–10000 10001–10195
104	Reporter's Transcription of Proceedings	03/23/18	41	10196–10206
24	Second Amended Complaint and Demand for Jury Trial	11/17/17	3	619–637
107	Special Jury Verdict	03/23/18	41	10237–10241
112	Special Master Order Staying Post-Trial Discovery Including May 2, 2018 Deposition of the Custodian of Records of the Board of Regents NSHE	04/24/18	42	10372–10374
62	Status Check Transcript	02/09/18	14 15	3492–3500 3501–3510
17	Stipulated Protective Order	08/24/17	1	228–236
121	Supplement to Motor Coach Industries, Inc.'s Motion for a Limited New Trial	05/08/18	49	12013–12018
60	Supplemental Findings of Fact, Conclusions of Law, and Order	02/05/18	14	3470–3473
132	Transcript	09/25/18	50	12333–12360
23	Transcript of Proceedings	11/02/17	3	598–618
27	Volume 1: Appendix of Exhibits to Motion for Summary Judgment on Punitive Damages	12/01/17	3 4	665–750 751–989
28	Volume 2: Appendix of Exhibits to Motion for Summary Judgment on Punitive Damages	12/01/17	4 5	990–1000 1001–1225
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1 much -- so I'm not, like, documenting, like, writing it
2 down, like "Hey, this is 10 whatever"; this is the
3 computer is -- this is an all-hands -- we're all going
4 to be all hands on here. So we're not -- we're not
5 going to waste manpower with someone with a computer
6 trying to -- we're going to try to do what we can for
7 this person, and then we'll go back later.

8 So this is where, when I'm doing my report,
9 we park 20, 30 feet from the patient. We're pretty
10 much going to be there. As I get out, I'm there within
11 10, 15, 20 seconds. So I usually just add a minute to
12 my on-scene time to my patient contact.

13 If it's something where I was going to a
14 casino or on-scene and it takes me eight minutes to get
15 to patient contact, then usually in the computer, as
16 soon as we get to that room, I will hit patient
17 contact. But, here, that computer set down we're all
18 hands on at that point.

19 Q. Can you give the jury a -- a range with
20 when -- which that's going to be a accurate number. So
21 it's 10:40 give or take?

22 A. Okay. So if I'm 10:39, I'm almost at 10:40
23 when we get there. So it's almost probably closer to
24 10:40 and a half to maybe just under 10:40. Because I
25 can't remember how long it took me to get there, but it

1 was -- I'm coming off the -- the passenger side of the
2 engine and then making my way.

3 So -- I mean patient contact can technically
4 be me touching him or I'm actually assessing that
5 patient as I'm walking up. So you can kind of -- is
6 that the contact we're talking about? I'm just looking
7 at, like, as I go back in the report, I'm right there.

8 So I'm assessing the patient's condition
9 from -- initially, I'm thinking it's -- he got hit by a
10 different vehicle. So I'm not seeing this -- a bus at
11 all. So I'm kind of looking -- I'm assessing that
12 whole scene. Plus, with a captain, I'm responsible for
13 scene safety.

14 So this is the one -- traffic accidents, this
15 is not a highly trafficked area, but this is -- like, a
16 highway would be a lot worse. But this is where I
17 almost want to take a step back and -- scene
18 safety-wise, but this is one of those ones where I have
19 to get all in. But the truck was there to block our
20 traffic, so I knew we had a safe circle to work in at
21 that point.

22 Q. So, summarizing that, is it fair to say that,
23 at least within one minute of 10:40, you had eyes on --
24 on the patient?

25 A. Yes. Yes.

1 Q. Okay. And -- and you mentioned the engine.
2 Tell the jury again what engine you arrived in.

3 A. Engine 28.

4 Q. Very good.

5 Now, the "left scene," is that when you left
6 the scene or is that when Engine 28 left the scene?

7 A. This -- the "left scene" should be Engine 28.
8 'Cause -- so me, another firefighter, and we had a
9 ride-along from CSN, I believe -- we go back into the
10 AMR rig, and we take off. So they're now hitting
11 buttons that I have no access to.

12 So whoever's driving, which is the nonmedic,
13 they get in there and they start driving. They're
14 hitting their buttons now. We don't get that on this
15 patient care report.

16 Q. So these buttons are from Engine 28?

17 A. Right. And Engine 28 now has to -- we had
18 the suction unit that we were using. So they're
19 cleaning up whatever we used or -- whatever -- so --
20 yeah, so there's two people left on there. There's one
21 fireman and our engineer. So they're gathering stuff.
22 And then they're in no hurry to get to the trauma
23 center. The patient is gone, and now we're -- we're
24 there.

25 So they're just picking up stuff, making sure

1 everything's good. They might even have had to wait
2 for Metro. I'm not quite sure on this one. I think
3 they were already there. So they might have to secure
4 the scene before they leave.

5 But it's only 13 minutes after we were even
6 on scene, so it wasn't that long. So "at the
7 destination" would be them arriving at University, but
8 no lights and sirens, just following all the traffic
9 laws and getting there.

10 Q. So "at destination" would be Engine 28
11 arriving at destination?

12 A. Yes. And so "at destination" from the
13 ambulance would be on their report. I don't have
14 access so that.

15 Q. Okay. And you mentioned AMR to the jury.

16 A. Yes.

17 Q. Is AMR an ambulance company?

18 A. Yes.

19 Q. And did they also respond to the scene in
20 addition to Engine 28?

21 A. Yes.

22 Q. Did they get there before or after you?

23 A. After us.

24 Q. And when they left and transported

25 Dr. Khiabani, what was the destination?

1 A. UMC trauma.

2 Q. Okay.

3 A. So we're forced to go to -- well, not
4 forced -- but, per protocol on something like this,
5 that's our -- it's not the closest hospital, but that's
6 where we want to go. That's our level one trauma
7 center. So -- if any kind of accident like this, an
8 auto-ped, any kind of ejection, rollovers, that -- we
9 take them there. And they have the best staff there to
10 meet us there.

11 Q. And you rode in the ambulance with the AMR
12 team --

13 A. Yes.

14 Q. -- to UMC?

15 A. Yes.

16 Q. You accompanied Dr. Khiabani?

17 A. Yes.

18 Q. And when -- when a paramedic from the fire
19 department shows up and a crew from AMR shows up, who's
20 in charge?

21 A. It's Clark County Fire Department's scene
22 until -- if we're not riding in and we hand off patient
23 care, then it becomes -- they're responsible for the
24 patient. If we ride in, it's ours all the way until we
25 get to whatever hospital. And then we do a transfer of

1 care to either the nurse or the doctor. And then if
2 that's -- if we're the ones transporting, we would have
3 them document -- sign our -- our PCR and stuff.

4 But, usually, if we ride in with AMR, they're
5 the ones getting the signatures. But we're in control
6 of -- if we don't like how things are going, it's our
7 scene all the way till the end.

8 Q. So, in this case with Dr. Khiabani, you were
9 in charge from the moment you arrived about 10:40 a.m.
10 up until the -- the time he arrived at UMC?

11 A. Yes.

12 Q. Very good.

13 Brian, could we go to the next page, please.
14 The top one-third of the page, if you could blow that
15 up.

16 So I see that there's a block here for
17 "assessments." Are these assessments that you
18 performed?

19 A. Yes. So this is the -- this whole report is
20 done after the fact. So, as we get to UMC, the
21 computer gets brought with us but it's logged out.
22 It's -- it's -- well, it wasn't logged out; it ends up
23 timing out because we're not touching it because we're
24 all on the patient right now.

25 And then, when we get there, we log in. I

1 bring up the call. And then I'm doing as much of this
2 as possible because this is fresh as it can be.
3 Because we can technically get two or three or four
4 more calls, and then now I'm playing the whole, hey,
5 what -- so I'm going to definitely meet with the
6 paramedic with AMR, and we're going to go over this --
7 the pertinent interventions we've done that were, like,
8 you know, the assessments and all that stuff, and
9 making sure that, like, the intubations, the IOs, the
10 medications, everything is matching so we're not four
11 or five minutes apart from one another. We're on the
12 same page.

13 Because in that -- in that -- it might seem
14 like ten minutes to me, and it might seem one minute to
15 them. It depends on where you're at emotionally during
16 that call. So this is one of those calls that
17 definitely could stay with you. So it's one of those
18 we'd want to make sure we got it all in writing and
19 we're all on the same page, because they don't shoot us
20 their report; I don't shoot them our report. So it's
21 let's make sure we have our data so when we put it in,
22 it's as accurate as it can be.

23 Q. And when you say "their report," you're
24 referring to a separate report that's prepared by the
25 AMR team?

1 A. They do their own electronic PCR. We can
2 send, like, heart rhythms to one other and certain
3 things like that, but the whole -- getting the whole
4 report would be they just do it and then, like, our
5 quality -- our quality assurance can now, if need be,
6 pull that up, and then they match times.

7 So they randomly do that to make sure that
8 we're doing what we're supposed to do throughout the
9 year. So that's why our main thing -- one of our main
10 thing is, when we do ride in, we're supposed to be
11 doing that report while we're there so there isn't
12 that -- so when you go back to the station and then,
13 all the sudden, you forgot to get something and it
14 doesn't match, it just doesn't -- the story -- the
15 story that you're trying to portray is a little off.
16 So that's why we do it when we're at the scene -- at
17 the hospital.

18 Q. Okay. So, at the hospital, you would have
19 met and conferred with the AMR team, compared notes,
20 and reached agreement on the time of assessments and
21 events?

22 A. Yes.

23 Q. And the -- the actions from your team, the
24 Clark County Fire Department team, are also entered on
25 the AMR report; correct?

1 A. Prior to arrival, they wouldn't be. So if
2 they come four or five minutes, they're missing
3 probably suction, manual stabilization of the C-spine,
4 certain things like that. I can't remember if we had
5 him loaded on a backboard and stuff before they got
6 here.

7 We pretty much -- we can't transport in a
8 fire truck. So we get as much done as we can, so when
9 they get here, they get their bed there. And then I'm
10 usually face to face with the medic. "Hey, this is
11 what we got. This is what we've done." And then, you
12 know, they can use -- on a call like this, they can see
13 right away, hey, this is go time. Let's go, let's go,
14 let's go.

15 So, on a trauma call, we're trying to get to
16 that trauma center as fast as we can to give them --
17 it's called the golden hour. So if they need some kind
18 of surgical intervention, you can get there in that
19 golden hour, their survival rates are obviously a lot
20 higher.

21 Q. Okay. I'd like to talk to you now about the
22 assessment that you made of Dr. Khiabani when you
23 arrived on the scene.

24 And I -- I see under "head to toe," there's a
25 portion for "pertinent negatives." You noted that his

1 left eye and right eye were not reactive. Could you
2 explain to the jury what you did to determine that and
3 what significance you gave that.

4 A. They were not reactive. So the one thing
5 with -- with this one is we could -- it is during the
6 day. The sun is beating down on his face. So they're
7 already smaller than usual. So they weren't reactive
8 to when I shine a flashlight in it, but I'm trying to
9 cover up the eye and do this. But I wasn't getting
10 much reaction to it. So I put in nonreactive.

11 But I don't have enough time -- in this kind
12 of injury, I'm not going to sit there and try to make
13 his eye dilate and do that. So, real quick, I'm just
14 trying to block it because we were just -- there was no
15 sun -- there was no cloud cover. And I remember trying
16 to do it. And I was getting -- so I put it down as not
17 reactive. And it didn't change throughout the call.

18 So when we're in the back of the ambulance,
19 you do have regular lighting now, it's not the sun.
20 And he still was not reactive en route.

21 Q. Under "neurological assessment," it states
22 "unconscious." Is that a determination that you made?

23 A. Yes. Just -- there's nothing that I did
24 where he was going to give me anything purposeful. It
25 was a little bit of slower breathing at the time. And

1 it was just -- and it wasn't the normal rhythmic
2 breathing you normally would have. So it seemed like
3 there was some kind of injury that was -- and the body
4 was doing whatever it could to keep going.

5 And it just was one of those. So he was
6 unconscious. I could have sternal rubbed -- like, when
7 a patient's unconscious, we'll sternal rub. There's
8 certain pressure points we can push to where, if
9 they're responding to us or at least they -- they make
10 a movement and, all right, hey, the brain is working.
11 It reacted to it.

12 But there was nothing. Like, I was doing a
13 sternal rub with him. There was no movement at all.
14 It was just laying on his back and him doing the
15 irregular respirations.

16 Q. Did you observe any sign of consciousness
17 from the time you first laid eyes on the patient
18 between 10:40 and 10:41 until UMC?

19 A. No.

20 Q. Let's look at the -- at the vitals. I see an
21 entry for 10:41 a.m., a Glasgow Coma score. Could you
22 explain to the jury what a Glasgow Coma score is?

23 A. Okay. So they have -- the E is for eye
24 opening. And then you have the V is for verbal. And
25 then the M is for mechanical -- or -- yeah, mechanical.

1 And -- so the eye. So if they -- you talk to
2 them and their eyes open spontaneously and they're
3 tracking you, then they get the highest score they can
4 get. So then each one, when they're unresponsive, they
5 get a 1.

6 So verbal, I'm talking to him, "Hey, sir,
7 sir." Nothing. I get nothing. If I rub his chest, I
8 get nothing. He's unresponsive. He gets another 1.

9 And then mechanical, if I do a chest and his
10 arm moves, then he mechanically moves. Nothing moved.
11 So he got 1, 1, and 1.

12 So when I get there -- and this is something,
13 like, I don't have the computer to go, hey, Glasgow
14 Coma Scale, this, this, and this. It's one of those
15 things I'm looking at him. If they don't do anything
16 purposeful, I know it's an automatic 3.

17 If it was where I start rubbing their chest
18 and they start squirming in, then you get a couple
19 extra points on whatever one I'm doing. And then it
20 adds up. So in our computer, they'll put, like, eye
21 opening. And it's like, was it unconscious? All
22 right. 1. And then I hit whatever I put in there.
23 And it adds up the score.

24 If they're 8 or below, 8 is comatose. So
25 they're not going to do anything. But if they don't --

1 if they're unresponsive the whole time with no
2 mechanical or verbal inappropriate -- like, sometimes
3 they're moaning, would be inappropriate sounds, or
4 confused. That would give you a couple extra points,
5 but this one was just the 1, 1, 1 for 3.

6 And then, en route, he deteriorates vital
7 sign-wise, but he's still a 3. And then when we get to
8 the hospital and they call him, it's still a 3. There
9 was nothing that was purposeful the whole entire time.

10 Q. So 3 is the lowest score you can get on the
11 Glasgow Coma Scale?

12 A. 3 is the lowest -- it's 1, 1, and 1, yes.

13 Q. And you can be higher than a 3 and still be
14 comatose or unconscious; correct?

15 A. Yes.

16 Q. So this is the -- basically the lowest level
17 of unconsciousness.

18 A. So someone that's in a cardiac arrest or --
19 yeah, a cardiac arrest, so they have no -- they're not
20 breathing and they have no heart rate, they're a 3.
21 There's nothing we can do. We're the ones starting up
22 the heart. And then we're the one breathing for them.
23 And then if we have the medication or the electricity
24 to restart it, then -- then, if they start to come out
25 of it, then their GCS can change. But, until then,

1 it's a 3.

2 Q. Okay. And -- and I see that there's another
3 entry for a Glasgow Coma score at 10:57, about 16
4 minutes later. Was the score the same?

5 A. Yes.

6 Q. And even though you've only evaluated this in
7 your log entries twice, during this whole time period,
8 were you with Dr. Khiabani?

9 A. Yes.

10 Q. And did he ever exhibit any sign that his
11 Glasgow Coma score would have been higher than 3 from
12 the time you got there?

13 A. No.

14 Q. And in addition to -- to your readings, did
15 the AMR paramedics also do their own Glasgow Coma?

16 A. So when they arrive -- excuse me. When they
17 arrive, that medic is going to do his own -- like, as I
18 walked up to the patient, I'm doing my own size-up of
19 the scene, and then I look at the patient. And from --
20 what we're taught is, if it was just, like, a normal
21 sick person, just by seeing that person, you're going
22 to assess them as you're walking up. That medic is
23 doing the same thing.

24 So even though we're on-scene for four or
25 five minutes by ourselves, even though we got him on a

1 backboard, that medic is doing his -- his -- his GCS in
2 his own mind. Because, like I said, we're documenting
3 this later. So you're doing a verbal, like, hey, this
4 is definitely a 3.

5 And then I'm going to give him a rundown,
6 like, "Hey, when we got here" -- the big thing from the
7 trauma center -- like, when you're bringing in a sick
8 person that's conscious, they really don't care about
9 the GCS. But if you're bringing in a trauma patient,
10 the GCS, they want that score over an 8. If it's an 8
11 or below, they know that now it's a trauma activation.
12 And then this whole giant team is waiting for you, and
13 they know, like, the brain is not perfusing and we need
14 to get to work and fix this. You know?

15 So, definitely, he does his own. And it's
16 obviously staggered. It's not -- it's probably in
17 between mine. So he's staggered five minutes. When
18 you have an unstable patient, we're going to do
19 second -- we're going to do follow-up assessments on
20 him.

21 But this one was, like, we needed a tube, we
22 need an intubation, we need an IO, we missed -- there's
23 an IV, something with his arm wasn't allowing us to
24 stretch it out so we couldn't get the vein where we
25 wanted it. So we tried a couple times with that. Then

1 we used the IO, which is in the tibia in the bone. So
2 we use that. So we got good access there.

3 And then, within all that, we're heading
4 Code 3 to trauma center, which is kind of far from
5 where we're at, but time goes by really fast when the
6 interventions are all hands on. We have a ride-along
7 that can do chest compressions and maybe hold C-spine,
8 but that's as much as they're -- they're not even in
9 basic. They're in basic school. And so they were just
10 there for experience. And then if we do have a cardiac
11 arrest, they can jump on the chest and do chest
12 compressions.

13 Q. And was there a cardiac arrest,
14 unfortunately --

15 A. There was a --

16 Q. -- en route to the hospital?

17 A. There was a cardiac arrest with -- I gave
18 epinephrine and --

19 MR. ROBERTS: Could you go to the next page,
20 Brian.

21 BY MR. ROBERTS:

22 Q. Is your entry for epinephrine on the next
23 page?

24 A. Yes.

25 Q. It's at --

1 A. It's at 11:06. It should be my last one.

2 So we -- we wouldn't give epinephrine -- one
3 in ten thousandths, so that's going to be our IV dose.
4 And we wouldn't give that unless they were in cardiac
5 arrest. That's our first-line medication in a cardiac
6 arrest.

7 And so from 11:49 when they intubate -- so we
8 get the tube down there -- I remember they get the
9 tube. I have to grab the ears and we also tape over
10 the abdomen and chest. So usually have the good lung
11 sounds, equal rise and fall, and nothing over the --
12 the stomach.

13 So if you get the stomach, that's -- you're
14 in the esophagus and not the trachea. So we verify
15 that. We have end tidal CO2. And then -- and then
16 after that all settled down, we looked at him, like,
17 hey, is he breathing? And then that's when we
18 realized, hey, he's no longer -- because if you look at
19 our other -- we had a blood pressure, we had heart
20 rate, but it started to go down. So we're trying to
21 get all this stuff in place. And then, obviously, he
22 stops breathing and his heart stops pumping.

23 So then we go transition now into our cardiac
24 arrest protocol, which is CPR. We already got a line.
25 We immediately can grab the drug bag. We have to put

1 together -- the epinephrine is in a prefilled syringe,
2 but we still have to pop it off and then get it to the
3 IO. We push it. And then that's when we mark it on
4 our computer -- or on the monitor. So we mark it.
5 It's -- and it can give us a selection. Epinephrine is
6 usually the first one. We just hit it.

7 And so that is -- the 11:06 is definitely
8 accurate. So between 10:59 and 11:06, somewhere in
9 that time frame is where he stopped -- stopped
10 breathing and his heart stopped pumping. Because we
11 had -- once we get that and we verify everything, now
12 we got the strap that holds everything in place. It
13 takes a minute or two to get everything situated.

14 And then, obviously, the -- the injury to the
15 back of his skull where we were -- where we need to
16 kind of get around, it's making it all just very, very
17 hard to put it in. Because once that tube is in there
18 and we inflate it, it's there, but any kind of hooking
19 this, we can push it in farther. And now it's not
20 where we want it. So we had to be careful on that
21 whole part of it.

22 And, like, if there is, we didn't want to be
23 causing more harm than not with that. So we put it all
24 in place. And then we were right there at UMC. And
25 then there was no reason to keep giving it when we're

1 right there. We're going to let the trauma center
2 handle it. And they go through -- go through their
3 interventions.

4 Q. Okay. And am I correct that -- that you lost
5 the patient before you arrived at UMC?

6 A. That -- when that cardiac arrest started,
7 we -- and he was -- so when we have our monitor hooked
8 up, he's asystole, which shows zero electrical activity
9 in his heart. So it's not a shockable rhythm. A
10 shockable rhythm would be a VTAC -- or a VFIB is where
11 the heart is just shaken. And then electricity would
12 get it out of that shaking and hopefully give us the
13 nice sinus rhythm we want.

14 It's not in those. When it's a zero, it's
15 flatline, what you normally would see on TV. So
16 flatline is zero electrical activity. So someone in
17 that age and in that shape riding their bike, the
18 connection between the brain and the heart is finally
19 ceased. So there's no electrical activity going.

20 So sometimes we get electrical activity, but
21 it's not creating a pulse. So that means, okay, if we
22 can kickstart this, the connection is still there. But
23 in this case, it's -- it went from breathing, blood
24 pressure, everything is good, and then that was it.

25 And so we tried to do what we could, but --

1 and then the epinephrine, it's kind of that adrenaline
2 to get it going. When we got to UMC trauma center, it
3 was waiting for us, we gave them the rundown. They're
4 listening to lung sounds, doing their quick assessment.
5 And then they called him within a very short time just
6 because of the injury.

7 And -- and, like I said, they have the X rays
8 and are able to really do what -- what they need do on
9 that.

10 Q. From the time that you first laid eyes on
11 Dr. Khiabani between 10:00 and 10:41 a.m. until he
12 passed, did you ever observe any indication that
13 Dr. Khiabani was in pain?

14 A. No. It seemed like it was -- the body just
15 took over at that point and was doing -- just
16 electrical activity was forcing it to do almost like
17 reflexes. Like, the breathing was just,
18 neurologically, the brain just randomly going. Like,
19 he wasn't perfusing anything. So whatever happened, I
20 didn't think he would have felt -- after a few seconds,
21 that was it.

22 Q. Thank you, Captain.

23 At your deposition, you were shown a fairly
24 graphic video taken by a bystander. Do you recall
25 that?

1 A. Yes.

2 Q. Is anything in that video inconsistent with
3 your testimony here today?

4 A. No.

5 Q. Any reason for --

6 A. It's actually -- that video -- the video
7 of -- the landscaper's video was exactly what I saw
8 when I showed up, with that -- the dark red foam and
9 stuff, it's exactly -- and it put me right there.
10 Like, that's it; right? That's exactly what was going
11 on.

12 Q. So that --

13 A. And that's the breathing. And you can call
14 it agonal. And, you know, on the street, they call it
15 guppy breathing because it seems like it's almost like
16 a guppy breathing. But it's that whole neurological
17 just firing of the neurons and everything. And it's
18 just -- there's no pattern to it. It just happens.
19 And then that's the deterioration of where we're at.

20 Q. Thank you so much, Captain. I appreciate
21 your help.

22 A. No problem.

23 MR. ROBERTS: That's all I have, Your Honor.

24 THE COURT: Mr. Kemp?

25

CROSS-EXAMINATION

1
2 BY MS. WORKS:

3 Q. Good afternoon, Captain Horba.

4 A. Good afternoon.

5 Q. We met briefly at your deposition back in
6 September; right?

7 A. Yes.

8 Q. Mr. Roberts was there. He asked you some
9 questions, Mr. Kemp as well.

10 A. Yes.

11 Q. Okay. And at the time of your deposition, in
12 addition to the gardener's video, you also observed the
13 Red Rock video. Do you recall that?

14 A. Yes.

15 Q. Okay. And that's the Red Rock video where
16 you're seeing a lot of palm fronds?

17 A. Yeah, a strategically placed tree branch.

18 Q. Yeah, the perfectly placed branch.

19 But you can see a number of different things
20 in that video?

21 A. You see everything on the scene except for
22 the actual where the patient's at.

23 Q. And you went over with Mr. Roberts the time
24 that the call was dispatched. Do you recall at --
25 which was 10:35. But, obviously, that's sometime after

1 the impact; correct?

2 A. It should be, yes. And I didn't remember if
3 the security camera had running time. I don't know.
4 But, yeah, I don't know exactly when the actual call
5 would have happened.

6 MS. WORKS: Shane, if we could play the Red
7 Rock video, Exhibit 3, please.

8 BY MS. WORKS:

9 Q. And this has already been admitted into
10 evidence, the jury has seen it a few times, but we're
11 going to see if we can refresh your recollection with
12 respect to the time of the impact on the video, which
13 is stamped.

14 (Whereupon video was played.)

15 MS. WORKS: Thank you.

16 All right. And can you back up that just a
17 little bit, Shane. Freeze it right at the time we
18 first see the bus come through the intersection.

19 BY MS. WORKS:

20 Q. Okay. So you can see that's just --

21 A. 10:34:21.

22 Q. Before 10:34:20.

23 And just before that --

24 If you could back it up a little bit, Shane.

25 Or, actually, you can see -- in the upper

1 right corner, Captain, you see the two individuals on
2 the motorcycle.

3 A. Yes. Yes.

4 Q. Okay. And you recall that those two people,
5 to your recollection --

6 A. Came over and started assisting or helping.
7 They're -- one of those, I'm pretty sure, called 911;
8 right? And it appears to be since we got the call
9 received, it's almost a minute, 20, after the impact.

10 Q. All right. So impact at 10:34 --

11 A. Uh-huh.

12 Q. -- 20, or just before. You get the call
13 sometime about a minute and a half later. And then
14 with Mr. Roberts, you confirmed that you had hands on
15 Dr. Khiabani at -- by 10:41; correct?

16 A. Yes.

17 Q. So about seven minutes total from the time of
18 impact until you first are on-scene and able to observe
19 Dr. Khiabani; is that correct?

20 A. Yes.

21 Q. And you have no knowledge of what transpired
22 during those six minutes between the time of impact and
23 when you arrived on-scene; correct?

24 A. No. And we -- again, we have our computer
25 that gives us maybe updated info, like multiple callers

1 or, hey, this patient was on a bike. Sometimes it
2 comes in as a motorcycle, sometimes -- sometimes their
3 notes say one thing, and then we get there and it's
4 totally different.

5 So it depends on the -- how amped up the
6 caller is. This one could have been -- because they
7 were witnessing it. So we have nurses that, when they
8 work in the ER, they're super calm and great, then they
9 witness something out in the street and they lose their
10 mind. And they're no help to us when we get there;
11 they're actually in the way. Because they're not used
12 to witnessing; they're used to getting the person
13 that's hurt and it's already in a confined area. Where
14 this, I could see being amped up.

15 But, like I said, it took -- I mean, you
16 would think there to a minute, 40, or a minute, 20,
17 later, that seems like a significant time. You would
18 think you would call right away, but, you know, it's
19 all -- instinctually, you're going to go see if you can
20 help or whatever.

21 Q. Right. And at this point shortly after that,
22 you've observed the video and seen that a box truck
23 comes in and they're blocking the scene and so --

24 A. Yes.

25 Q. -- it took your -- earlier, you were saying

1 normally you would respond and try to block off the
2 scene and make sure it's safe. So in that
3 minute-and-a-half time frame, they're observing what's
4 going on; correct?

5 A. Right.

6 Q. They're doing what you may have done later,
7 which is to sort of secure the scene, make sure nobody
8 else is going to get hurt; right?

9 A. Yes. Like, I never talked to that -- I
10 thought the box truck was the one that was involved.
11 But then I never talked to any of them. So I -- I
12 imagine the way they strategically parked was they
13 just -- they made the scene safe for everybody, that --
14 all southbound traffic, it was perfect.

15 But, at the time, I was like, how did you run
16 into -- I didn't put it all together, but, at the time,
17 you just sort -- usually, Metro -- we're there for
18 medical, so if you -- however you got hit, we're still
19 dealing with the patient. But we always tell everybody
20 on traffic, "Hey, save the story for Metro. We're just
21 here. What hurts? What can we fix?" Then Metro gets
22 there, then they can explain it.

23 Q. Your goal is the patient?

24 A. Just patient care, yeah. And scene safety,
25 but it was, like, taken care of for us on this one.

1 Q. And when you arrive on-scene, you immediately
2 know it's a very traumatic injury; correct?

3 A. Yes.

4 Q. Okay. And we talked about the gardener's
5 video, earlier.

6 Shane, if you could cue up 4.

7 MR. GODFREY: Playing with or without audio?

8 MS. WORKS: Without, please.

9 BY MS. WORKS:

10 Q. And, Captain Horba, you viewed this video at
11 your deposition; correct?

12 A. Yes.

13 Q. And you were talking about --

14 MR. ROBERTS: Objection. Cumulative, Your
15 Honor. Objection to the video as cumulative.

16 MS. WORKS: Shane --

17 THE COURT: Overruled.

18 MS. WORKS: -- go ahead.

19 BY MS. WORKS:

20 Q. You were talking about the agonal breathing.

21 A. Right.

22 Q. And I think you mentioned guppy-like
23 breathing with Mr. Roberts earlier. And that's
24 consistent with what you're observing here in this
25 video?

1 A. Yeah.

2 Q. And this is shortly before you arrive
3 on-scene; correct?

4 A. Right.

5 Q. So sometime within that seven-minute window?
6 You can stop it there, Shane.

7 That's what's happening to the doctor
8 sometime within that seven-minute window; correct?

9 A. Right.

10 Q. Okay. At that point, though, Dr. Khiabani
11 still has a pulse?

12 A. Yes.

13 Q. He's still breathing on his own?

14 A. Yes.

15 Q. Okay. And it was discussed during your
16 deposition, but Ms. Samantha Kolch, one of the
17 motorcycle riders who responded to the scene, she
18 actually testified at trial four weeks ago maybe. It's
19 been a bit. But she observed -- and, actually, we can
20 play the clip and let her speak for herself.

21 MR. ROBERTS: Objection. Foundation.

22 THE COURT: Sustained.

23 BY MS. WORKS:

24 Q. So you recall, during your deposition, you
25 were questioned about the fact that one of the

1 witnesses on the motorcycle had testified that she in
2 fact had observed Dr. Khiabani try to move each
3 shoulder once or twice. Do you recall that?

4 A. Yes.

5 MR. ROBERTS: Objection. Foundation.

6 THE COURT: Sustained.

7 BY MS. WORKS:

8 Q. At the time of your deposition, you were
9 informed from both counsel that one of the witnesses
10 had testified that Dr. Khiabani had moved his
11 shoulders; correct?

12 MR. ROBERTS: May we approach, Your Honor?

13 THE COURT: Yes.

14 (A discussion was held at the bench,
15 not reported.)

16 BY MS. WORKS:

17 Q. Captain Horba, on direct with Mr. Roberts,
18 you mentioned some of the things that would factor into
19 your assessment of the Glasgow Coma rating scale;
20 correct?

21 A. Yes.

22 Q. And would shoulder movements or an attempt to
23 get up be one such movement -- type of movement that
24 would factor into your assessment of that scale?

25 A. Yes. If I was on-scene and there was

1 movement, patient movement, then that would factor into
2 my -- into adding to the Glasgow Coma Scale.

3 But when I got there, there was no -- what
4 happens before I get there doesn't have anything to do
5 with -- the Glasgow Coma Scale starts as soon as I get
6 there. And it's now, in my opinion, what I'm seeing.

7 And what I see and what someone else sees may
8 be slightly -- a couple points different. But when
9 it's a 3, it's usually pretty consistent in what we
10 got.

11 Q. Certainly. And, again, your first assessment
12 is seven minutes after impact; correct?

13 A. That's correct.

14 Q. Okay. And Ms. Kolch has testified in this
15 case that she is on-scene immediately and observes the
16 doctor move each shoulder twice and she believes is
17 attempting to get up.

18 If you had -- if, in fact, that observation
19 was correct and you had observed that, that would have
20 increased the Glasgow Coma rating scale in this case;
21 correct?

22 A. If it was -- if it was purposeful. So if I'm
23 doing it where he's just on his own doing it, it
24 doesn't affect -- the Glasgow Coma Scale starts when I
25 either ask -- you know, see if he can respond to verbal

1 or motor or if I start talking to him and his eyes open
2 or if we start now doing sternal rubs there.

3 So me en route, if he's doing stuff and no
4 one's telling him to do it, it doesn't factor into my
5 Glasgow Coma Scale. It would -- so if I was walking
6 over there as -- if I was one of those on a motorcycle
7 and I'm walking over there and he's moving, it doesn't
8 mean anything till I get there and then you start
9 asking -- because you're -- these are questions or
10 things you do to someone that you're kind of suspecting
11 a traumatic brain injury.

12 So it's one of those things like how -- how
13 traumatic is it? How are they responding to the things
14 that you're doing? But if no one is talking to you or
15 touching you or provoking some kind of response from
16 you, there's -- the Glasgow Coma Scale doesn't -- it
17 doesn't happen yet.

18 So if it was just random movement, if they
19 were there going, "Hey, sir," and he's moving, then
20 definitely it factors into my Glasgow Coma Scale. If
21 he's just moving on the way -- as I'm getting there, it
22 doesn't factor in. And then, as soon as I get there,
23 he stops moving and then that's it, then it's a 3 and
24 then I stay with it.

25 Q. I think you testified at your deposition,

1 though, that whether it was a voluntary, purposeful, or
2 an involuntary movement of both shoulders, that would
3 still increase the Glasgow Coma Scale rating; correct?

4 A. Yes. If -- if -- and, like -- like I said,
5 though, if -- it's got to be someone provoking it to
6 get to the number, yes.

7 Q. Understood.

8 And, here, understood, Captain, that you did
9 not see that movement in order to make a determination
10 as to whether it was purposeful or involuntary;
11 correct?

12 A. Correct. Yes.

13 Q. You simply have no way of knowing whether
14 those movements were involuntary or purposeful;
15 correct?

16 A. No.

17 Q. And we wouldn't want the jury to base their
18 decision in this case on speculating one way or
19 another; right?

20 A. No.

21 Q. And you have -- certainly have medical
22 training, but if a doctor were to testify as to what
23 that movement may or may not have been, you would defer
24 to a medical doctor on those issues; correct?

25 A. Definitely.

1 Q. Okay. And are you familiar with Dr. Lisa
2 Gavin?

3 A. No.

4 Q. She is a medical examiner for the Clark
5 County Coroner's Office.

6 A. No. We usually don't get that far into
7 the -- our calls don't go that far.

8 Q. And you don't review --

9 A. No. And the only time I've had -- with the
10 coroner, like, when we have cardiac arrests or people
11 that have passed and we're on-scene, we wait for Metro
12 or the coroner, whoever comes first, and -- but we're
13 not getting the doctor; we're getting whoever the
14 coroner is sending to take control of the body.

15 And so the only experience I have with the
16 coroner is what we've done through paramedic school,
17 where we did, like, a four-hour ride-along with them
18 or -- or at their facility.

19 Q. Sure. You don't --

20 A. So that's it.

21 Q. You don't review the medical examiner's
22 report after a call?

23 A. No. There's -- like, certain things like
24 this, if I want to get a follow-up, like everything
25 with HIPAA and everything, we can't just call UMC and

1 go like, "Hey, what happened? I was the paramedic."

2 We have to go through our quality assurance,
3 who has a relationship with them. And they'd say,
4 "Hey, I'm responsible for this. Can you pull this
5 incident number up." And then we get -- so a lot of
6 times -- that's the one thing. When we don't
7 transport, especially being on the engine and the
8 patient goes, we don't see that final outcome. Where
9 the ambulance companies are in and out of those
10 hospitals, they do see -- you know, "Hey, remember that
11 patient you had yesterday? This is what it ended up
12 being."

13 So they get a little bit more than we do.
14 Unless it's -- like I said, they're doing quality
15 control on that call and they're getting some info and
16 then they'll pass it along to us. But, for the most
17 part -- and it could be -- I just recently got a couple
18 calls where it was -- I barely remember them. They
19 were, like, two years ago. I'm like, "What is this?"
20 So then you're kind of like -- you're get a pat on the
21 back for something that happened two years ago. So we
22 really don't get to see that part of it.

23 Q. You have not reviewed the autopsy or the
24 medical examiner's report in this case; correct?

25 A. No. No.

1 Q. Okay.

2 A. This is all that I got to see, was this.

3 Q. Now, you also spoke to Mr. Roberts about the
4 fact that AMR arrived at some point after your arrival
5 and they did their own Glasgow Coma assessment;
6 correct?

7 A. Yes.

8 Q. But, again, their arrival -- you arrived
9 seven minutes after impact. I believe, during your
10 deposition, you indicated it was likely another six or
11 so minutes before AMR arrived. And that would have
12 been the point at which they did their own assessment;
13 correct?

14 A. Yes.

15 Q. So their assessment is actually 14 minutes
16 after the initial impact; correct?

17 A. Yes. Yes. Or whatever their report says
18 they're on-scene. I have no idea. I can't remember if
19 they were a couple minutes or five to ten minutes.

20 Q. And, again, you aren't responsible for
21 writing their report?

22 A. Yeah. Their report is going to have when
23 they hit on-scene. And then that would be the time
24 when he gets out.

25 Q. Now, on direct, I think you mentioned that

1 the purpose of the Glasgow Coma Scale is actually for
2 the trauma center -- is that right? -- so they can
3 assess and determine what level of trauma to activate?

4 A. It's one of their codes, but it's for us too
5 now to put a number on. And it's one of those, like,
6 what's the degree? How severe is this?

7 So we get someone that just fell from a
8 standing position, they could get a Glasgow Coma Scale
9 of 3 also, just standing and hitting their head. And
10 then when we do our couple of things and they're not
11 responding, then they get to 3. And then, en route, it
12 could -- it usually increases as they start to -- and
13 especially, like, a seizure patient we get and they're
14 postictal, they will be out of it.

15 There's -- we can do a lot of stuff. They'll
16 respond to pain, so it's not usually a 3. But then, as
17 we get there and they become more with it, and then, by
18 the time we get to the trauma center or we just get to
19 the hospital, they're maxed out at a 15. They're good
20 to go.

21 So it's one of those -- it is definitely what
22 the trauma center uses or it's, like, a threshold.
23 Like, hey, if it's this, then we need to go to a level
24 one trauma center. We have a level two and a level
25 three out here. Sunrise is a level two, and I think

1 Siena St. Rose is a level three.

2 So the one-stop shop is going to be UMC.

3 When I say that, is they have everybody there. They
4 don't have to call in people; they're ready to go. So
5 that's where you might go the extra couple of minutes
6 to get to that hospital because that's, you know -- or
7 that's where helicopters can fly people there and stuff
8 like that.

9 But we use it also as just to gauge under the
10 severity of it. So we're not thinking of it as,
11 like -- once we do our telemetry to the hospital, we're
12 not worried about them making sure they grab 30 people
13 to meet us there. It's, hey, that part is done and now
14 we're worrying about ours and what interventions can we
15 do now to increase that Glasgow Coma Scale?

16 Q. Okay. All right. So we have established
17 that you arrive on-scene seven minutes after the
18 impact; correct?

19 A. Yes.

20 Q. You -- during that time, you don't have any
21 knowledge of what the doctor was enduring during those
22 seven minutes; correct?

23 A. No.

24 Q. And you would have to defer to witness
25 accounts of -- of what they observed because you have

1 no independent knowledge; correct?

2 A. Yes. Just the videos that we're seeing and
3 the time stamps on those, that's it.

4 Q. And, here, you're -- this is a medical
5 emergency. You know that you're trying to get to the
6 call as quickly as possible. And you do that in this
7 case; correct?

8 A. Yes.

9 Q. I mean, two to three minutes --

10 A. There was no delay on this call.

11 Q. -- is a quick response; correct?

12 A. Yes.

13 Q. But, again, six minutes, medically speaking,
14 during that time, a lot can happen, in your experience;
15 correct?

16 A. Yes.

17 Q. Okay. Minutes count?

18 A. Yes.

19 Q. Seconds count?

20 A. Yes.

21 Q. A lot can change during that six- to
22 seven-minute time span; correct?

23 A. If there's not -- where this call happened
24 and where -- this station cannot be any closer than
25 what it was. If this was Mountain's Edge, by the time

1 we would have got to the patient, it would already have
2 been a cardiac arrest. We would have started at a
3 cardiac arrest and went from there.

4 Q. So in a medical emergency like this, minutes
5 and seconds count because things can progress and
6 change quickly; correct?

7 A. And that's where that golden hour with the
8 trauma call comes into effect. And then, in this case,
9 there would have been -- it was a golden -- there was
10 no hour. We didn't have an hour time frame to deal
11 with on this one.

12 Q. Understood. I think that's all I have.
13 Thank you, Captain.

14

15 REDIRECT EXAMINATION

16 BY MR. ROBERTS:

17 Q. Captain Horba, couple of follow-up questions
18 for you.

19 Have you seen unconscious patients that
20 you're attending to have muscle twitches, spasms?

21 A. Yes.

22 Q. Okay. And is it helpful to have medical
23 training and experience sort of to distinguish between
24 voluntary and involuntary movement of a patient?

25 A. Yes.

1 Q. And that's something that you would have been
2 able to assess had you been there and seen movement;
3 correct?

4 A. Maybe not exactly why they're twitching, but
5 there's degrees. There's certain things where it's
6 seizures. And then you have people that have just
7 tics. There's multiple -- you know, it's one of those
8 things -- like I can't just look at the person, hey,
9 this is why he's shaking. This is why this is
10 happening.

11 And then you get, like, a cancer patient that
12 has a tumor that's now pushing on something, and then
13 nothing -- nothing's presenting like it should, so ...

14 Q. So the 1 would indicate no movement. And
15 that's what you assessed for the entire time you were
16 with Dr. Khiabani --

17 A. Right.

18 Q. -- right?

19 A. Yes.

20 Q. And then the scale would move up, 2, 3. And
21 you'd really have to get to 4 or higher before you saw
22 something that would look like purposeful movement;
23 correct?

24 A. Yes.

25 Q. So is it possible for a patient to have some

1 movement, some involuntary movement, and still be
2 unconscious?

3 A. Yes.

4 Q. Okay. And if Samantha Kolch said that, from
5 the first time she could see Dr. Khiabani's face, she
6 saw no indication of pain, given his injuries, is that
7 consistent with your findings of unconsciousness once
8 you arrived?

9 A. Yes. Like I said, he didn't change --
10 mentally, nothing changed, so I don't -- if he's
11 unconscious, he's not feeling any pain.

12 And that's where we're trained -- like, when
13 they're awake, we ask questions. Hey, what is your
14 pain scale out of 10? They give us a number. We try
15 to bring it down with what we can. And then we
16 dictate, like, hey, we'll get you in a position of
17 comfort.

18 Once they become unconscious, now they're
19 with a piece of machinery and now we're going to fix
20 it. So we'll be -- I don't want to say rougher with
21 that patient, but we need to expedite it. No one's
22 screaming. No one's complaining about anything.
23 You're just moving that patient.

24 If you had a broken bone, when they're
25 unconscious, you can move them and they're not yelling

1 at you. So just getting them where they need to go and
2 let's set it in line, and we move on from there.

3 Q. You -- you were asked about the coroner's
4 report. You haven't seen that; right?

5 A. No, sir.

6 Q. But if the coroner told the jury that, based
7 on the head injury that she observed, more likely than
8 not Dr. Khiabani was unconscious the moment that injury
9 occurred, do you have any reason to dispute that?

10 A. No. That would be -- that would be my expert
11 on that one, yeah.

12 Q. Thank you, Captain. Appreciate it.

13

14 RECROSS-EXAMINATION

15 BY MS. WORKS:

16 Q. Just a couple of follow-up questions,
17 Captain.

18 You just indicated that you would, in fact,
19 defer to Dr. Gavin's conclusions; correct --

20 A. Yes. That's -- that's the coroner; right?

21 Q. -- as a medical doctor?

22 Yes.

23 A. Okay. Yes.

24 Q. And if she testified that the shoulder
25 movements described by Ms. Kolch could be -- or are

1 consistent with conscious movement, you would defer to
2 Dr. Gavin's conclusion in that regard; correct?

3 A. Yes. They're the ones that more -- we're
4 there to fix stuff; they're -- like, when I was doing
5 my thing -- my ride-along with the coroner and they're
6 doing autopsies and seeing how it -- I mean, they're --
7 they get to see what actually happened.

8 So if spinal cords are severed and all that,
9 they don't -- they don't speculate anything till they
10 get in there and see exactly. And they do measurements
11 and they weigh things. So it's definitely -- there's
12 not just a guess; it's definitely a scientific way they
13 go about. And it was pretty impressive to see.

14 So that's why, when you say that, it's like,
15 hey, that's way beyond what -- I'm just showing you the
16 couple brief minutes I was there, and that was it.

17 Q. Thank you, Captain. A couple last questions.

18 Mr. Roberts was at your deposition. And he
19 asked you some questions very similar to what he just
20 asked you, which was, if you were -- you -- you
21 couldn't offer an opinion as to whether or not those
22 shoulder movements were voluntary or just twitching;
23 correct?

24 A. Correct. I'd just be speculating.

25 Q. Pure speculation; correct?

1 A. Yes.

2 Q. And we don't want this jury to decide based
3 on speculation; right?

4 A. Sure. Yes.

5 Q. You weren't there; Ms. Kolch was. She
6 described what she described, and you have no way of
7 knowing whether those movements were involuntary,
8 voluntary, or otherwise; correct?

9 A. Correct.

10 MS. WORKS: Thank you.

11 MR. ROBERTS: Nothing further, Your Honor.
12 Thank you.

13 THE COURT: Any questions from the jury?

14 THE MARSHAL: They do.

15 (A discussion was held at the bench,
16 not reported.)

17 THE COURT: Captain Horba, I can barely see
18 you, but I have a question from the jury. I'd like you
19 to answer if you are able.

20 The question is, was there any gashes on the
21 skull/body?

22 THE WITNESS: Okay. When we got there, you
23 saw the video of the red foam coming out -- the dark
24 red foam -- the back of the head. As soon as I put my
25 hands back there, it was just -- no -- I don't remember

1 any lacs on his face because of all the blood that was
2 coming out. We tried to suction it and clean it up,
3 but we never got to the point where we were looking --
4 at this point, we're -- a lac isn't going to be life or
5 death on this.

6 But the back of the skull was -- it's called
7 crepitus. When the bone gets broken into smaller
8 pieces, it kind of floats around. And so as soon as I
9 put my hand in there, I was covered. And he was in a
10 pool of blood. So we slid him out from there, kept him
11 in line, just to give us to where -- as soon as we
12 start stepping in that, then we're all going to just
13 start slipping and sliding.

14 So we slid him out of there and then kind of
15 regrouped, but we never -- we knew -- as soon as we get
16 crepitus, we know what's back there. We're not going
17 to sit there and start poking around and causing more
18 issues. So when we put him on the backboard, his head
19 never moves after that fact. So he goes -- he's all in
20 one piece, the backboard goes, he goes on the gurney,
21 he's strapped onto the backboard, and now he's strapped
22 down to the gurney.

23 And then he never -- a strap or two may be
24 undone on the way in, but there was no lacs on his face
25 that I -- that I can recall. It was all pretty much

1 the back of the -- the back of the skull.

2 THE COURT: Any other questions from counsel?

3 THE MARSHAL: I have one other question, Your
4 Honor.

5 THE COURT: From the jury?

6 THE MARSHAL: Yes.

7 (A discussion was held at the bench,
8 not reported.)

9 THE COURT: The last question asked by the
10 jury isn't really pertinent to Dr. -- excuse me --
11 Captain Horba.

12 Any other -- or you had a follow-up?

13 MR. ROBERTS: One follow-up.

14

15 FURTHER REDIRECT EXAMINATION

16 BY MR. ROBERTS:

17 Q. You told the jury that you observed crepitus
18 to the back of the skull?

19 A. Yes.

20 Q. And that was the fracture to the skull; is
21 that correct?

22 A. Yes. Yes.

23 Q. And there was bleeding from that spot?

24 A. Yes.

25 Q. Other than that, you observed no other injury

1 or gashes or -- to -- to Dr. Khiabani other than that
2 fracture?

3 A. Yeah. According to -- like, I have nothing
4 that's -- if anyone had a lac under his eye or
5 something, usually I just put -- we have a -- it's a
6 very easy -- like, I would put "lac" in there.

7 But I have a skull fracture with heavy
8 bleeding from the back. I -- I could have probably
9 described it as crepitus, but it's still skull fracture
10 is what it is. So depending on if it's in three or
11 four or five or six or seven different pieces, it
12 doesn't really matter. So I just have just heavy --
13 and, plus, the foam coming out was all bubbles, and
14 then the blood was nice -- was solid. So it wasn't
15 like that was -- it coming out of his mouth and just
16 pooling there. It was coming from the back, because
17 then the bones would have been mixed in with that. So
18 I didn't see any of that.

19 Q. So the blood the jury observed on his face in
20 the video you were just shown, that was coming from his
21 mouth?

22 A. Yeah, the foam, and then he had a little bit
23 of blood coming out from there, but then the majority
24 of it was back -- from the back of the skull.

25 MR. ROBERTS: Thank you, Captain.

1
2 FURTHER RECROSS-EXAMINATION

3 BY MS. WORKS:

4 Q. Captain, you observed the crepitus -- or what
5 you believe was a crepitus fracture on the back of the
6 head. Do you recall what side that was on?7 A. It just -- I thought it was -- I thought -- I
8 would be speculating. I thought it was just right in
9 the middle. It just didn't seem like I had a side to
10 pick from. Because, like I said, once I put my hand in
11 there and I come out with blood, it's like, "Hey, guys,
12 this is what we got." And we don't want to -- because
13 we're blindly doing it, plus I have to move his -- I
14 don't want to move his neck too much. I'm just trying
15 to barely put my fingers underneath there. And I
16 didn't want to start putting my fingers where I'm
17 touching things I don't -- I'm not supposed to.18 Q. So it could have been the left side? You
19 just don't know?20 A. Right, I didn't -- like I said, as soon as I
21 get blood back there and I feel a little bit of
22 movement, "Hey, guys, we got a skull fracture.
23 Let's" -- and then that's when we start making sure we
24 keep him in line and do all our stuff.

25 Q. And you were unaware that Dr. Khiabani

1 actually had multiple rib fractures --

2 A. No.

3 Q. -- and some other trauma?

4 A. And he had -- he had, like, a black -- I'm
5 trying to remember, like, a black, like, tight riding
6 suit-type deal. And -- but we had nothing -- like, we
7 were looking for -- like, if it was an exposed femur
8 fracture or something like that. We had nothing.

9 But when we were looking at a skull fracture,
10 that's our life-threatening fix right now is this. All
11 this other stuff, ribs and all that stuff -- like, if
12 he had a -- like you said, if he had rib fractures that
13 are now puncturing his lung and now he's getting a
14 tension pneumothorax, that's stuff that we would -- we
15 would see that on his SvO2. So -- so his -- the oxygen
16 in there would start to decrease. His was decreasing
17 anyway.

18 So it would have eventually probably been
19 addressed. But then when he goes into cardiac arrest
20 and then we put the tube in, now we're doing everything
21 for him. So -- so we -- and -- and rib fractures
22 are -- unless they're awake and tell us, hey, does this
23 hurt? We really -- we don't know unless they have a
24 frail chest where -- you can get crepitus also there,
25 where we just feel mush. But we didn't get any of

1 that.

2 Q. And when you arrived, he was breathing on his
3 own and had a pulse; correct?

4 A. Yes. Exactly what you saw on that video.

5 Q. So your main concern at that point is -- is
6 the head fracture?

7 A. Yeah. We get there, and then we prioritize,
8 like, what's going to ultimately end this person? So
9 what can we fix? So it was the head injury. We went
10 with it.

11 If it was -- the head injury was intact and
12 we still know he hit -- it's hard, it's all contained.
13 We're still looking at -- now we're looking at vital
14 signs that are pushing us. Is there an increase in
15 cranial pressure or is it his femur -- or if he had
16 broke his pelvis, there's a lot of blood loss internal
17 that we can't see, so we have to now switch to -- we
18 got this injury here. Now we're looking at vital signs
19 that are pointing us in the direction. And then we're
20 letting the trauma center know, hey, we have an
21 unstable pelvis.

22 And so they automatically know, hey, that's
23 between 2,000 and 3,000 ML of blood that could possibly
24 go inside. So it's significant. So that -- little
25 things like that. But as soon as we get to the head,

1 now we're hyperfocused into that. All this other stuff
2 falls to the wayside until we can take care of this.

3 Q. Got it.

4 A. It never got to that point.

5 MS. WORKS: Thank you, Captain.

6 THE COURT: Anything else?

7 MR. ROBERTS: No follow-up, Your Honor.

8 Thank you.

9 THE COURT: Okay. Captain Horba, thank you.
10 You're excused.

11 THE WITNESS: Thank you.

12 THE MARSHAL: Thank you, sir.

13 THE COURT: Okay. Mr. Roberts, ready to call
14 your next witness?

15 MR. TERRY: Your Honor, our next witness is
16 Kevin Granat. We would like a short break before we
17 put him on.

18 THE COURT: Okay. Let's take a --

19 MR. TERRY: Five minutes.

20 THE COURT: Five minutes. Okay?

21 You're instructed not to talk with each other
22 or with anyone else about any subject or issue
23 connected with this trial. You are not to read, watch,
24 or listen to any report of or commentary on the trial
25 by any person connected with this case or by any medium

1 of information, including, without limitation,
2 newspapers, television, the Internet, or radio.

3 You are not to conduct any research on your
4 own relating to this case, such as consulting
5 dictionaries, using the Internet, or using reference
6 materials.

7 You are not to conduct any investigation,
8 test any theory of the case, re-create any aspect of
9 the case, or in any other way investigate or learn
10 about the case on your own.

11 You are not to talk with others, text others,
12 tweet others, google issues, or conduct any other kind
13 of book or computer research with regard to any issue,
14 party, witness, or attorney involved in this case.

15 You're not to form or express any opinion on
16 any subject connected with this trial until the case is
17 finally submitted to you.

18 Take a five-minute recess.

19 THE MARSHAL: Okay. All rise. Five-minute
20 recess.

21 (Whereupon a short recess was taken.)

22 THE MARSHAL: All rise.

23 (The following proceedings were held in
24 the presence of the jury.)

25 THE MARSHAL: All the jurors are here, Your

1 Honor.

2 THE COURT: Okay.

3 THE MARSHAL: Please be seated. Come to
4 order.

5 THE COURT: Do the parties stipulate to the
6 presence of the jury?

7 MR. KEMP: Yes, Your Honor.

8 MR. ROBERTS: Yes, Your Honor.

9 THE COURT: Okay. Very good. Please.

10 MR. TERRY: Motor Coach would call Kevin
11 Granat.

12 THE COURT: Okay.

13 THE CLERK: You do solemnly swear the
14 testimony you're about to give in this action shall be
15 the truth, the whole truth, and nothing but the truth,
16 so help you God?

17 THE WITNESS: I do.

18 THE CLERK: Thank you. Please be seated, and
19 please state and spell your name.

20 THE WITNESS: It's Kevan Jay Granat. Kevan
21 is K-e-v-a-n; Jay is J-a-y; and Granat is G-r-a-n-a-t.

22 THE CLERK: Thank you.

23 THE COURT: You may proceed.

24 MR. TERRY: Thank you, Your Honor.

25

1 DIRECT EXAMINATION

2 BY MR. TERRY:

3 Q. Mr. Granat, for purposes of the record, would
4 you repeat for the jury your name.

5 A. Sure. It's Kevan Jay Granat.

6 Q. And where do you reside, sir?

7 A. I am northwest of Houston. I'm in a suburb
8 called Tomball.

9 Q. And how old a man are you?

10 A. I am 50.

11 Q. Could you tell the jury where you attended
12 college after you graduated from high school.13 A. Sure. I went to Purdue University. I
14 studied mechanical engineering at Purdue. I earned a
15 bachelor's degree in mechanical engineering, and then I
16 went on to do a research project and earned a master's
17 degree in mechanical engineering.18 Q. When were you -- when were you awarded your
19 bachelor's degree? What year?

20 A. Bachelor's degree would have been 1990.

21 Q. And then what project did you work on?

22 A. For my master's or -- originally, I started
23 as a teaching assistant. And I worked teaching an
24 automotive design course as a graduate student. And
25 then I worked on a research assistantship after that,

1 where I was working on a project for Ford Motor Company
2 that involved automotive chassis design.

3 Q. When were you awarded your master's?

4 A. That would have been summer of 1982.

5 Q. And then, after that, did you go into work?

6 Did you go to work?

7 A. Yes. At that point, I went to work for Ford.

8 Q. When did you start with Ford Motor Company?

9 A. Immediately after I got my master's degree.

10 Q. Where did you work for Ford?

11 A. I was at Ford's Dearborn headquarters. It
12 was their engineering center in Dearborn, Michigan.

13 Q. What was your position or your title?

14 A. It varied a little bit through the years, but
15 I was primarily a chassis engineer. So I was working
16 on automotive design issues, vehicle simulation and
17 testing.

18 Q. Were you assigned to a particular line, like
19 Taurus, or a particular vehicle?

20 A. Several different lines. I did a lot of work
21 on the Ford Ranger back then. And then I worked on
22 additional light trucks, commercial vehicles, and some
23 passenger cars as well.

24 Q. Could you give the jury some idea of what you
25 would do for Ford when you worked on the chassis?

1 A. Sure. That involved testing on Ford's test
2 tracks. Ford has test tracks in northern Michigan,
3 Arizona, Florida. And I would select instrumentation,
4 design test plans for testing a vehicle for a certain
5 engineering evaluation.

6 Sometimes there would be evaluations on limit
7 handling for vehicles. So I would be taking the
8 vehicle on the test track and putting it through
9 extreme maneuvers to evaluate the vehicle's ability to
10 withstand extreme steering and braking maneuvers,
11 making sure the vehicles wouldn't roll over in that
12 situation.

13 I also was involved in a significant amount
14 of work doing computer simulation. At that point in
15 time, Ford was investing heavily in doing computer
16 simulation for basically early prototyping of vehicles.
17 So I would work with early data on the design of a
18 vehicle and I would evaluate that for -- for steering,
19 handling, and braking-type issues.

20 Q. Did any of your work for Ford Motor Company
21 involve application of aerodynamic principles?

22 A. Sure. When it comes to steering and handling
23 of a vehicle, there are many different areas that you
24 look at.

25 One of those is going to be something like

1 crosswind sensitivity. So when a vehicle was driving
2 down the highway at 60 miles per hour and you have a --
3 a gust or a crosswind, then we used simulation models
4 with really early vehicles -- really early vehicle
5 designs to evaluate how that design is going to perform
6 in crosswind situations.

7 So that would be computer simulation work and
8 also some testing on the test tracks that would
9 evaluate something like crosswind sensitivity, and I
10 would -- using aerodynamic properties of vehicles for
11 that type of work.

12 Q. Did you actually do testing of crosswind
13 sensitivity for Ford Motor vehicles?

14 A. Sure.

15 Q. When did you leave Ford Motor Company?

16 A. I left Ford in 1997.

17 Q. After you left Ford Motor Company, did you go
18 to work for others or for yourself?

19 A. I worked for another company, a consulting
20 company, in Houston. And it's a automotive consulting
21 company, similar to what I do nowadays.

22 Q. And when did you start work for yourself?

23 A. I would have been working for myself in 2006.

24 Q. And are you working for yourself at the
25 present time?

1 A. I am.

2 Q. And what is the name of the company that you
3 work for?

4 A. It's just my name, Granat Technical
5 Consulting.

6 Q. So during the time that you have worked for
7 your -- for others or for yourself since you left Ford,
8 have you been a consulting engineer on vehicles?

9 A. Yes. Automotive consulting, yes.

10 Q. Have you done vehicle testing?

11 A. Yes.

12 Q. Have you done crash reconstruction?

13 A. Yes.

14 Q. Have you analyzed vehicle handling and
15 stability?

16 A. Yes.

17 Q. Have you performed limit-handling tests on
18 various vehicles?

19 A. I have.

20 Q. Have you performed performance tests on
21 vehicles?

22 A. Yes.

23 Q. Tire tests?

24 A. Yes.

25 Q. Have these been both passenger cars, pickups,

1 and commercial vehicles?

2 A. Yes.

3 Q. Have you established test protocols to
4 conduct a test both as a consulting engineer and while
5 you worked at Ford?

6 A. Sure. I've established protocols, and then
7 also, while at Ford, I would have followed Ford's
8 protocols.

9 Q. And then did you perform the tests yourself
10 and with others?

11 A. A combination. I would have performed a
12 number of tests myself; I would have performed others
13 with -- with other individuals involved.

14 Q. And did you record the results of the tests?

15 A. Sure. The standard practice in testing is to
16 record everything, especially with -- if it's related
17 to litigation consulting.

18 So that includes video recording of all the
19 tests. That includes data acquisition, which means I'm
20 measuring the output of sensors that are on the vehicle
21 telling me things like steering angle, vehicle speed,
22 et cetera.

23 Q. And then did you interpret the results that
24 you obtained to answer whatever question you had posed
25 or were trying to test for?

1 A. Yes. That's one of the steps that you take.
2 After you gather the test data, you have to evaluate
3 that test data and analyze it.

4 Q. And have you done that over the course of
5 your career both as an engineer for Ford and as a
6 consulting engineer?

7 A. Yes, and even as a graduate student as well.

8 Q. Have you ever written or published any
9 article that would have appeared in a peer-reviewed
10 journal in your trade or profession?

11 A. Sure, I have.

12 Q. Do you know how many you've published?

13 A. Something like six or seven, seven or eight.

14 Q. Could you give the jury an idea of what you
15 have published?

16 A. Sure. I've done testing and test programs on
17 vehicles that undergo a tire failure, for example. And
18 I've published papers discussing the results of that
19 testing. So that would be testing, like, for a tire
20 that fails at freeway speeds, what type of effect does
21 that typically have on a vehicle? How does vehicle
22 design affect the response of the vehicle to a tire
23 failure? I would have published that type of an
24 article -- a number of those articles in the Society of
25 Automotive Engineers.

1 Q. Now, before you came, Dr. Breidenthal
2 testified. And he identified his education as a
3 bachelor of science, a master's, and a PhD in
4 aeronautics.

5 A. Right.

6 Q. Do you have a degree in aeronautics?

7 A. I do not. My degree is in mechanical
8 engineering.

9 Q. Do you know what aeronautics is?

10 A. Aeronautics is the study of flight.

11 Q. So that would be the study of machines that
12 fly in the air?

13 A. Essentially.

14 Q. Now, you have studied the vehicles that drive
15 on the ground?

16 A. Right.

17 Q. Have you dealt with their aerodynamic
18 properties or how aerodynamics affects vehicles that
19 drive on the ground?

20 A. Sure. The way vehicles are analyzed, you
21 only have a certain number of forces that are applied
22 to a vehicle. So if a vehicle is driving down the
23 road, all of the inputs that tell you how this vehicle
24 is going to move come from the tires or from
25 aerodynamics. Those are all the forces that are

1 available.

2 So there's a very significant amount of
3 vehicle dynamics analysis that has to do with the
4 tires. And then there's -- you get more analysis that
5 has to do with the aerodynamics of the vehicle.

6 Q. And that is what you have done over your --
7 the course of your career as a consulting engineer --

8 A. Yes.

9 Q. -- and as an employee of Ford Motor Company?

10 A. That's right.

11 MR. TERRY: Your Honor, I would tender
12 Mr. Granat as a mechanical engineer expert for purposes
13 of conducting testing on vehicles, to evaluate air
14 displacement caused by a passing motor coach.

15 MR. KEMP: No objection, Your Honor.

16 THE COURT: Okay.

17 BY MR. TERRY:

18 Q. Mr. Granat --

19 MR. TERRY: Oh, I apologize, Your Honor.

20 THE COURT: He will be so recognized.

21 MR. TERRY: I didn't mean to --

22 THE COURT: It's okay.

23 MR. TERRY: Forgive me, please.

24 THE COURT: It's not a problem.

25 /////

1 BY MR. TERRY:

2 Q. Mr. Granat, I would like to establish the
3 things that you did not do in connection with this
4 case.

5 A. Okay.

6 Q. You did not reconstruct the accident.

7 A. I did not.

8 Q. You did not make an effort to determine what
9 the position of the vehicles involved in this accident
10 were or was on the street where the accident occurred.

11 A. I did not.

12 Q. You did not attempt to decide what their
13 actual relative position was?

14 A. In the subject crash, I did not.

15 Q. You did not attempt to determine line of
16 sight for anyone involved in the crash?

17 A. I did not.

18 Q. Do you have any expertise at all in proximity
19 sensors?

20 A. I have familiarity. I would be talking about
21 it from an expert point of view, no.

22 Q. You're not an expert on proximity sensors?

23 A. That's correct.

24 Q. What mission or brief were you given? What
25 were you asked to do in this case?

1 A. Well, I was primarily asked to evaluate this
2 theory of an air blast being caused by a passing coach.
3 So I was basically given the assignment to evaluate is
4 there an air blast by -- caused by a passing coach?
5 And how large of a magnitude of force would that air
6 blast create if it existed? So that was my -- my goal
7 was to evaluate the effect of a passing coach.

8 Q. Was the name and the style and the
9 manufacturer of the coach identified for you?

10 A. Sure. It's an MCI J4500 coach.

11 Q. Was the name and the manufacturer of the
12 other vehicle, the bike, identified for you?

13 A. Sure. It's a Scott Solace bicycle.

14 Q. Were you give any information about the
15 speeds of the vehicles?

16 A. I was.

17 Q. What information were you given?

18 A. I was told that the -- the reconstructionists
19 that worked on the crash determined that speed of the
20 coach was 25 miles an hour approximately.

21 Q. Were you given a speed for the bike?

22 A. I was given a speed for the bike of -- I
23 think it was 13 1/2-miles-per-hour nominal speed.

24 Q. Were you given any -- any description of or
25 scenario for how the vehicles came together or were

1 involved; that is, did the bus run into the bike?
2 overtake the bike? Did the bike pass the bus?

3 A. I was simply told that this was a passing
4 scenario, where the two vehicles would have been
5 basically side by side at some point some distance
6 apart, without, you know, really any specification of
7 that distance or anything else with that regard.

8 Q. But with the bus traveling faster than the
9 bike, the bus would have overtaken the bike?

10 A. Yes.

11 Q. And that is the situation that you set up to
12 examine to look for the forces that would have been
13 involved on the bike?

14 A. Yes.

15 Q. Can you tell the jury basically what steps --
16 three steps you followed in reaching your conclusions
17 or opinions?

18 A. Well, sure. I did a number of different
19 things. I evaluated the design of the coach from a
20 geometric point of view. So I looked at the shape of
21 the coach based on measurements of an actual vehicle,
22 in fact, the subject vehicle involved in this crash.

23 And I evaluated those to determine basically
24 what those shape parameters were, like the width of the
25 coach, the radius of the corners, those types of

1 dimensions. Then I also did on-track testing, where I
2 drove a J4500 coach past a stationary bicycle, and then
3 also did some additional -- and I did that at different
4 relative positions and at different relative speeds.

5 And then I also did a number of tests with a
6 human cyclist and evaluated the type of inputs that a
7 human cyclist would see caused by the passing coach.

8 Q. So in terms of the actual tests, the first
9 phase would have been to -- to have the coach pass a
10 stationary bicycle?

11 A. Correct.

12 Q. And then the second phase would have been to
13 have the coach pass a moving bicycle?

14 A. Yes.

15 Q. When it moved past the stationary bicycle,
16 was there a rider on the bike, or was it a --

17 A. It was a anthropomorphic test device. That's
18 an ATV. That is basically a crash test dummy, you
19 could call it. It's a human form that is made to weigh
20 and be the same height as a -- as a predetermined
21 height and weight.

22 Q. And in the second phase, was the bike
23 operated by a human?

24 A. It was.

25 Q. All right. In terms of the testing that you

1 did, did you then reach certain conclusions?

2 A. Absolutely.

3 Q. I'm going to display for the jury what will
4 be marked as 573-001, which are your conclusions, and
5 ask you if these are the conclusions that you reached
6 as a result of the testing.

7 Now, this is a -- one where you described the
8 testing, that it was done in a scientific matter; is
9 that correct?

10 A. Correct.

11 Q. The second conclusion that you reached deals
12 with the aerodynamic disturbance forces.

13 A. Correct.

14 Q. And you determined they were not substantial
15 and do not create, quote, air blasts?

16 A. That's right. I determined that they were
17 minimal forces, they were not significant, and they
18 were nothing that I would describe as an air blast.

19 Q. And then the third conclusion that you
20 reached was test runs at higher speeds -- and I assume
21 that's higher than 25 miles an hour?

22 A. That's correct. I did testing up to 45 miles
23 an hour.

24 Q. And they exhibited a smooth variation?

25 A. Right. So the testing followed what we would

1 expect from aerodynamic principles. And that is, as
2 the vehicle speed got higher and higher, the -- the
3 force that would have been applied to an adjacent dummy
4 would have been higher and higher, although those
5 forces are still a very low-level force.

6 Q. And then the fourth conclusion that you
7 reached talks about, subjectively, the effect of the
8 coach passing at 25 miles per hour.

9 A. Right. That is related to the human cyclist
10 riding past the coach or the coach passing a human
11 cyclist. During that phase of testing, I acted as the
12 cyclist during some of the tests myself. So I could --
13 as the subject of the -- of the test, I could determine
14 how -- what I felt as a result of the passing vehicle.

15 Q. And then the fifth conclusion, the testing
16 that you did shows the airflow in close proximity to
17 the coach traveling at 25 miles per hour does not
18 create substantial disturbance on a nearby cyclist?

19 A. That's correct. It was not of such a
20 magnitude that I would call it something that could
21 push somebody out of control or significantly affect
22 somebody's direction.

23 Q. Now, on the basis of those five conclusions,
24 did you reach a sixth?

25 A. Yes.

1 Q. And there are no aerodynamic properties or
2 design characteristics of the J4500 coach that would
3 have impacted Dr. Khiabani or forced him out of
4 control?

5 A. That's correct. There was nothing odd or
6 unusual about the coach. There was nothing strange
7 that caused it to create something that you would call
8 an air blast. It was typical of other vehicles.

9 Q. Okay. Now, the first part of the work that
10 you did, you described actually going to the test -- or
11 the subject vehicle and the test vehicle and conducting
12 some dimensions and some measurements.

13 A. Right. I took -- or actually I used --

14 Q. In connection with that work, did you prepare
15 documents that show the work that you did?

16 A. Yes.

17 Q. Okay. I'm going to show you what has been
18 marked as 574-001 to 11 and ask you if those are the
19 diagrams and documents that you prepared?

20 A. These are.

21 Q. So these represent your work in actually
22 measuring and evaluating the dimensions of the coach?

23 A. These do, yes.

24 MR. TERRY: Your Honor, we would offer
25 574-001.

1 MR. KEMP: No objection, Your Honor.

2 THE COURT: Admitted.

3 (Whereupon, Defendant's Exhibit 574-001
4 was admitted into evidence.)

5 BY MR. TERRY:

6 Q. Sir, I'm going to hand you what has been --
7 admitted?

8 THE COURT: Yes.

9 BY MR. TERRY:

10 Q. And we're going to display it on the board
11 for the jury to see. Can you explain what the first
12 picture is.

13 A. Sure. This is not exactly a picture; this is
14 a set of measurements of the subject coach. So this is
15 a set of measurements -- these were actually done by
16 Exponent, who also worked on this project. These
17 measurements are done with laser scan, which is a
18 common measurement tool that I use in my work.

19 A laser scanner takes millions of data points
20 when you put it at different positions around the
21 vehicle. It takes very precise measurements. And it
22 gives you what you could consider, like, a 3-D model or
23 a 3-D picture of the vehicle.

24 So these are all a very dense number of
25 individual points that were measured on the subject

1 coach.

2 Q. So if we focused on the right front corner on
3 the -- at the top, can we see enough detail for you --
4 or for us to make out the actual points or ...

5 A. Sure. Yes. As you get around the top edge
6 here, the laser scanner doesn't pick up the actual roof
7 of the vehicle, so you can kind of see the points as
8 they spread out up there. So that's -- all those
9 individual points are individual measurements. There's
10 actually more measurements than what we see here
11 because we're zooming in on the pixels of this image.

12 Q. Then as part of your work, do you take a
13 particular section or slice of the coach?

14 A. Yes. You should be able to see in that
15 previous image, there was a plane that was put through
16 the center of the coach. And this is about at the
17 cyclist's height.

18 Q. When you talk about the particular plane, I'm
19 going to use my -- is this right here?

20 A. Yes.

21 Q. So is this something that was added by you?

22 A. Yes. That is -- using the software that I
23 use for this type of analysis, that is a cutting plane
24 that allows me to look at the measurements around the
25 entire coach in that specific area.

1 Q. Okay. So then the next diagram we have is
2 the actual plane?

3 A. Right. So this is just that slice of
4 measurements. It's a little easier to work with a
5 single slice and evaluate the dimensions of the coach
6 that way.

7 Q. And then can you look at it from the top
8 down?

9 A. Sure. This is -- it's a little difficult to
10 see, but this is a slice through the entire coach. The
11 lines that you see there are the outside of the coach.
12 You can also see a little bit of the -- the dual rear
13 tires there kind of being sliced by that measurement
14 plane. And then the front of the coach, you can see
15 the outline of the front shape of the coach.

16 Q. Now, on the basis of that actual picture or
17 laser-drawn image of the bus, do you then make
18 measurements?

19 A. Right. These are measurements themselves.
20 And then what I did was basically reduce those to
21 measurements that make a little more sense to us in
22 engineering terms.

23 Q. So the next one is the actual measurements
24 that you made?

25 A. Correct. If we look at this, these -- the

1 orange line represents a -- an outline drawn through
2 that cutting plane. So these are the actual
3 measurements that were taken with the laser scanner.
4 And then I reduced these now to more specific numbers
5 such as the radius of the front of the coach,
6 et cetera.

7 Q. Okay.

8 MR. TERRY: May the witness approach the
9 drawing, Your Honor?

10 THE COURT: Yes.

11 BY MR. TERRY:

12 Q. Mr. Granat, if you would take this pointer
13 and show the jury what you're -- what you're doing.

14 A. Sure. And I might suggest that it may be
15 best to go to the next drawing.

16 MR. TERRY: Next one, please.

17 THE WITNESS: Okay. So this is the very
18 front of the coach. This would be the driver's left
19 front corner, this would be the right front corner, and
20 there would be an entry door in this area.

21 The specification for the coach is that it's
22 not allowed to be greater than 102 inches wide. The
23 measurement shows it was 101.89 inches wide. And
24 there's a 10-degree taper -- this is labeled 10 degrees
25 on the previous drawing -- a 10-degree taper at the

1 front of the coach. There's a radius at this corner,
2 and then there's a sweep across the front of the coach.

3 So at the center of the coach, it sweeps back
4 either side as you go left or right. And that sweep
5 has a radius of almost 200 inches. The width of the
6 front of the coach is approximately 90 1/2 inches,
7 taken at a point on those radii at the corners of the
8 coach.

9 BY MR. TERRY:

10 Q. Okay. So the front windshield, then, is
11 curved, if you will?

12 A. The entire front nose of the vehicle is
13 curved in this direction here.

14 Q. And then, at the corners, there's additional
15 curving, if you will?

16 A. Right. There are radius corners at the -- at
17 the edges of that front.

18 Q. And then there's a taper from the front to
19 101 inches?

20 A. Right, a taper that basically takes you from
21 90.49 inches to 101.89 inches along that side.

22 Q. In connection with this case, have you
23 compared the front of the J4500 to what is called a
24 bluff body?

25 A. Yes.

1 Q. Next one, sir.

2 Okay. Now, this is a bluff body that was
3 drawn for us as an example by Dr. Breidenthal, and is
4 that outlined in the green?

5 A. Right. This purely is a rectangular shape
6 with the overall width of the vehicle and then ending
7 at the front of the vehicle here. So what you see with
8 this darker green line here, that's just simply a
9 rectangle. That would be what you would call a bluff
10 body.

11 Q. So that's comparing the front of the J4500 to
12 a brick, if you will?

13 A. Essentially, yes. This is for that sliced
14 plane of measurements that we've got here, this green
15 area here represents the difference between the front
16 of the coach and a brick, as you put it.

17 Q. And that has been taken away to leave behind
18 a streamlined curve that is depicted on your drawing
19 here?

20 A. Right. Clearly, these -- these effects here,
21 this radius of the front end, the radius of the corner,
22 the taper here, these are all streamlining effects that
23 change the way the airflow goes around the vehicle. So
24 these are streamlining effects that are not present in
25 something that you would have -- that you would call a

1 bluff body.

2 Q. And we've got one that shows this even
3 closer, focused on the right front corner.

4 A. Correct. Yes, this is just that right front
5 corner. So now you're seeing the rectangular bluff
6 body in green. This is the amount of the material that
7 would be removed when I look at it that way, comparing
8 to a bluff body. And this orange outline is the right
9 front corner of the J4500.

10 Q. Now, Dr. Breidenthal testified before you
11 came that there was what he considered to be an optimal
12 shape, where he identified rounding the corners at
13 .125. Are you aware of that?

14 A. Right. He discussed -- from my observation
15 of his testimony, he discussed that if you take the
16 overall width of the vehicle -- in this case,
17 102 inches approximately -- and if you divide that by
18 8, you take 1/8 of that, that is a radius that you
19 should apply to this corner to make it, in his terms,
20 optimally streamlined.

21 Q. Did you compare the actual J4500 to the
22 optimal?

23 A. Sure.

24 Q. And can we focus on the right front corner.
25 I think that this is the next slide, sir. Okay. All

1 right.

2 Can you explain to the jury what they're
3 looking at there.

4 A. Sure. This is very similar to the -- the
5 view we had for the bluff body, or the rectangular
6 shape that would have come down here. Now, this radius
7 here is 1/8 of the overall width of the vehicle. So
8 this is what Dr. Breidenthal testified to as the
9 optimal corner radius. He said once you get to 1/8 of
10 the overall width, anything that's at that radius or
11 greater -- meaning more curvature -- you're not going
12 to have streamlines that detach from the -- the side of
13 the vehicle; you're going to have flow that smoothly
14 wraps around the vehicle. And that was what he said
15 was based on his research.

16 Q. Now, on the J4500, they did not simply round
17 the corners, as his optimal design had, they put in
18 streamlining from the center of the windshield all the
19 way back to the taper.

20 A. Right. Right. The shape that we have for
21 the J4500 coach is clearly not the same as a simple
22 radius. It's a more complicated shape because it's a
23 vehicle designed. There are no vehicles on the road
24 that are basically rectangular. With the radius here,
25 vehicles have different styling and different

1 accessibility issues that require more complicated
2 shapes.

3 So what we've got here is -- is a shape that
4 has the sweep that we talked about, the radius at the
5 corner, and then the taper. And those are all depicted
6 dimensionally accurately in this image.

7 Q. Did you subject this particular shape to any
8 wind tunnel-type testing?

9 A. Not wind tunnel testing, no.

10 Q. Did you do anything to -- to determine or
11 measure whether or not separation would have occurred
12 using the J4500 shape?

13 A. I did not do wind tunnel-type testing, no. I
14 did on-track testing that we'll talk about, but not
15 wind tunnel testing.

16 Q. In connection with your testing, do you have
17 an opinion as to whether or not separation occurs as
18 the wind comes around the side of the J4500?

19 A. Well, I have an opinion that it's not the
20 same as a bluff body. My opinion is, though, if you
21 really want to know whether you have any flow
22 separation at all, you need to do a test.

23 Q. And you did not?

24 A. I did not.

25 Q. Now, did you look at the front or the profile

1 of the bus?

2 A. Yes. The profile meaning the side view.

3 Q. Okay. Now, on the side view, this is the
4 same laser measurements that have been done before?

5 A. Right. This is just looking at those 3-D
6 laser measurements from the side. Some of the laser
7 measurements obviously include interior information of
8 the seating inside the vehicle as well.

9 Q. Did you extract the shape of the bus from the
10 laser print?

11 A. Right. Essentially, like the cutting plane
12 that we looked at before going through above the tire
13 on the vehicle there, now I looked at the shape in this
14 side view, the front profile of the coach.

15 Q. And did you -- did the shape of the front of
16 the bus look like the next diagram?

17 A. Right. Yes. In fact, this orange line is
18 drawn on that previous diagram right at the front edge
19 of the laser-scanned measurements.

20 Q. So is there a curve -- could you go back,
21 sir, just one.

22 Is there a curve, then, to the front of the
23 bus?

24 A. Sure. There are a couple of curves. There's
25 a curve to the entire windshield. This is kind of the

1 windshield from about here all the way up here. That's
2 a leaned-back, curved profile there.

3 And then the -- the roof extends at another
4 radius right above the windshield going back that
5 direction. So the entire front end is shaped in -- in
6 a combination of several different curves.

7 Q. Okay. Did you compare the actual coach shape
8 to the brick?

9 A. Sure. It's compared in the next slide to a
10 rectangular shape. So that's a rectangular shape in
11 green, obviously. And then this is the actual coach
12 shape in orange.

13 Q. Okay. Thank you. You may resume your seat,
14 sir.

15 In connection with your -- in connection with
16 the actual work that you did figuring out the shape of
17 the bus, did you arrive at an opinion as to whether or
18 not the bus had been streamlined intentionally?

19 A. Sure. The bus is definitely a streamlined
20 vehicle. It's not a purely rectangular bluff body. It
21 has radiuses in multiple directions. It has rounded
22 corners. It has a rounded windshield. It has a
23 rounded roof. It's -- it's far from -- from a
24 rectangular prism.

25 Q. Okay. Now, you were aware -- or you were

1 made aware that, in 1993, Motor Coach Industries
2 commissioned a wind tunnel study on certain shapes of
3 the front and the rear of buses?

4 A. Yes, I've seen the study.

5 Q. Okay. I'm going to show you the front page
6 of the study.

7 This has already been admitted into evidence.

8 This is a wind tunnel investigation of the
9 aerodynamic characteristics of buses. Have you had a
10 chance to review this?

11 A. I have.

12 Q. On this Exhibit 126, at page 7, there's a
13 listing of the purposes that are being performed.
14 We're going to highlight those purposes. What is the
15 first purpose for the test?

16 A. The first purpose is that they're
17 investigating alternative front and rear ends for a --
18 an evaluation of load, aerodynamic drag.

19 Q. And then the fourth?

20 A. The fourth one is that they're looking at
21 fuel savings as a result of -- of these types of
22 aerodynamic modifications.

23 Q. Does a reduction of the coefficient of drag
24 have an impact on fuel efficiency?

25 A. Sure.

1 Q. Is it more -- the less coefficient of drag,
2 the better the fuel efficiency?

3 A. Sure. Aerodynamic drag is directly related
4 to power consumption, and power consumption is directly
5 related to fuel efficiency.

6 Q. So the less you have, the less power you have
7 to waste moving the bus?

8 A. Correct.

9 Q. All right. In terms of this, you were aware
10 that they had took a look at some buses or bus fronts.

11 A. Right. They had several proposals and
12 several shapes that they were looking at.

13 Q. I'm going to direct your attention to
14 Exhibit 126 at page 17.

15 Is this a listing of the bus fronts that they
16 took a look at?

17 A. Yes.

18 Q. Okay. Now, up on the top, they make
19 reference to a standard CJ3.

20 A. They do.

21 Q. The smooth CJ3, is it sort of --

22 A. Right.

23 Q. -- is it a real bus or is it a modified bus?

24 A. Well, my understanding is that is certainly a
25 modified bus. The -- the other thing to note that

1 these are -- these are scale models. So these are 1/6,
2 the scale buses.

3 Q. And then Proposal 1 and Proposal 2 are new
4 designs?

5 A. Those are evaluation designs that they're
6 working on to look at reductions in aerodynamic drag.

7 Q. So at the time this test was performed, there
8 would be no bus running down the road that is a
9 Proposal 1 or Proposal 2?

10 A. Correct. That's my understanding of the
11 test.

12 Q. And then they have three competitors that
13 they've tested against?

14 A. Correct.

15 Q. And when they test these in accordance with
16 the protocol set out in the study, these are not real
17 buses; these are models?

18 A. Right. These are 1/6 scale models -- buses.
19 They're -- they're made out of aluminum and mahogany.

20 Q. Okay. I'm going to show you 126-032.

21 Okay. I'm going to isolate on the upper
22 left.

23 Okay. Now, that is the standard MCI CJ3
24 which would have been a bus in operation in 1993.

25 A. That's what the -- the test report says that

1 the -- the configuration that they were evaluating was
2 the MCI CJ3 as a standard -- or as a production
3 vehicle. So it was a currently produced vehicle.

4 Q. Okay. And they were also testing it against
5 what is known as MCI Proposal 1, which is also on that
6 same page at the bottom right-hand corner.

7 A. Right.

8 Q. And that's Proposal 1. And that proposal and
9 the standard were tested in the wind tunnel to
10 determine the coefficient of friction of both shapes?

11 A. Coefficient of drag for both --

12 Q. Oh, I'm sorry. Coefficient of drag for both
13 shapes.

14 Now, there has been a claim made that the
15 J4500 resembles the standard MCI CJ3. Okay? Have you
16 looked at both the picture from the study as well as an
17 actual J4500?

18 A. Yes.

19 Q. Have you prepared some pictures that show the
20 two side by side?

21 A. I have.

22 Q. So, for demonstrative purposes, I'm going to
23 show you a set of pictures, 575-001, and ask you if you
24 can come down, with the Court's permission.

25 THE COURT: That's fine.

1 BY MR. TERRY:

2 Q. And show the jury what you've got up there,
3 sir.

4 A. Sure. It's probably a little bit obvious,
5 but this is the MCI CJ3 shape that they used in their
6 wind tunnel testing. So this is the standard vehicle
7 that they're evaluating. This is what they called a
8 currently produced vehicle in 1993.

9 And then this is actually the subject bus.
10 This is a photo taken of the J4500 that was involved --
11 involved in this collision.

12 Q. Okay. So this -- the one on the right is a
13 photo of the actual bus?

14 A. Correct. This is the subject vehicle.

15 Q. In your opinion, is the subject bus -- the
16 actual bus, or a 4500 -- the same as the MCI CJ3?

17 A. No. There are very, very clear differences
18 between those shapes as well as differences in some of
19 the details such as lighting and the windshield.

20 Q. And, now, have you had an opportunity to
21 inspect the J4500?

22 A. Sure. In my testing, I drove a J4500 coach.
23 I took numerous photographs of that and measured that
24 as well.

25 Q. Could you point out for the jury what you

1 perceive to be the differences between the production
2 front and the front of the J4500?

3 A. Sure. There's some very clear differences
4 here. We got a radiused roofline here that's swept
5 back. And that's in contrast to a more harder-edged
6 roofline here that's obviously not radiused like this
7 one.

8 Obviously, we've got differences in the
9 marker lights. This is a set of three lights above the
10 center of the windshield. This one has individual
11 lights and then two more marker lights at the corner.

12 This one has a upper panel above the two
13 windshield panels, whereas this one does not have a
14 separate upper panel.

15 This one has two windshield panes that are
16 roughly rectangular and not radiused in a significant
17 degree.

18 This one has two larger panes that are taller
19 than they are wide. And they have a radius in -- in
20 two different directions, kind of a -- I mean, a
21 fishbowl shape in that they're radiused in this
22 direction and then they're also radiused in this
23 direction.

24 And then we kind of continue on down. We've
25 got different headlights and turn signals. We've got

1 different bumper -- there are a number of differences.
2 Obviously, the windshield here is -- is substantially
3 rounded; this one, less so. The corner radius is right
4 here on the J4500.

5 Q. Do you have the same kind of picture
6 comparing the J4500 test vehicle that you used against
7 this standard shape?

8 A. Sure. The exact same comparison.

9 Okay. So this photo is the test vehicle that
10 I used, slightly different angle. And you can see the
11 same types of differences: the radius at the top; a
12 different radius here, if much at all; different marker
13 lights; different windshield configuration; different
14 turn signals; different front bumper; different
15 radiuses in the corner.

16 Q. Okay. Did you also compare the MCI CJ3 front
17 to this bus, a D bus?

18 A. Yes, this is a MCI 102DL3 coach. This is a
19 1995 vehicle. So I compared that visually to the
20 models in the wind tunnel study.

21 Q. Now, in the D coach at the top, there's some
22 lights.

23 A. Right. We've got marker lights here. We got
24 a set of three in the center and then the two at the
25 outside. Clearly, we've got the same thing here, two

1 at the center, two at outside.

2 Q. Sir, could you highlight the marker lights on
3 the -- can you blow them up a little bit.

4 All right. So, in the model, they actually
5 depict or have the same shape of the lights on top of
6 the model that they have on top of the D coach?

7 A. Right. Given the limited quality of the
8 photocopy of the report, but, clearly, there are
9 details in the model that would include things like the
10 marker lights and other details, headlights, et cetera.

11 Q. Are there any other details on the pictures
12 that are similar between the D and the model?

13 A. Sure. I mean, clearly, we've got the -- the
14 upper panel above the windshield. It's a little hard
15 to see in this dark photo, but this is the upper panel
16 above the windshield here.

17 And then we've got the two semirectangular
18 windshield panels there. Even below the windshield, we
19 have this area here that's cut out for the -- the
20 windshield wiper placement here. And you can see that
21 same shape here, kind of a -- I guess you'd call it a
22 trapezoid type of shape here -- that same headlight
23 assembly, the same general bumper shape, many details
24 between these two are -- are essentially the same.

25 Q. Okay. So, looking at the pictures again side

1 by side, is the D coach represented by the MCI CJ3
2 model?

3 A. The D coach is a very good match with the MCI
4 CJ3 model.

5 Q. Okay. Did you look at the rear ends?

6 A. Yes.

7 Q. Okay. Now, the one on the right is the
8 J4500?

9 A. Right. This would have been my test vehicle.
10 This is the J4500. You have a taper to the width of
11 the rear. This would be the full width of the vehicle,
12 and then it tapers slightly toward the radiused corner
13 here. And then we also have a radius at the roofline
14 up here and some radiuses at the corner as well.

15 Q. And then we have that vent in the back?

16 A. Right. There's an engine compartment vent
17 here which has three louvers on it.

18 Q. Okay. And then, to the left, we have the --
19 could you go back one, sir, just a moment.

20 To the left, then, is the rear end of the
21 standard MCI CJ3 that was tested?

22 A. Right. This is the -- the -- like I said,
23 it's a mahogany wood carved model that they used in
24 their wind tunnel tests.

25 Q. So this is a standard CJ3 that was tested.

1 Is it the same as the J4500?

2 A. Could you repeat the question.

3 Q. The question is whether or not the J4500,
4 when it was -- that you tested, is it the same as or
5 substantially similar to the rear end of the standard
6 MCI CJ3 tested in 1993?

7 A. No. There's certainly different rear ends to
8 these coaches.

9 Q. And now we do have an example of where we
10 compare the standard rear end tested with the D. Are
11 these substantially similar?

12 A. Yes. You can see pretty clearly with these
13 we've got similar taillight arrangement here and here.
14 We can even see the cutout for the license plate there
15 and there and then a very characteristic set of louvers
16 over the engine compartment here. The -- the MCI CJ3
17 model that we see in the testing is -- is very similar,
18 if not identical, to a 102DL3 coach.

19 Q. Okay.

20 Is that the last?

21 All right. You can resume your seat, Doctor,
22 if you will -- Mr. Granat, if you will.

23 In your opinion, sir, does the MCI CJ3 model
24 that is depicted in the wind tunnel testing compare to
25 the 4500 or to the D bus?

1 A. The wind tunnel testing looks to be conducted
2 on a vehicle that's either an MCI D coach or very,
3 very, very similar to the D coach.

4 Q. Does the 4500 incorporate design changes that
5 are implicit in the Proposal No. 1?

6 Do you understand?

7 A. Certainly. Yes.

8 MR. TERRY: Can we see Proposal 1, again,
9 sir. Just proposal -- I need to see Proposal 1 again.

10 The beginning of the series, we showed the
11 fronts that were tested, the extracted Proposal 1. The
12 series we were looking at the wind tunnel studies, the
13 picture of Proposal 1.

14 Next one. Next one, Brian. The next one,
15 Brian. Can you set up the ELMO. Okay.

16 BY MR. TERRY:

17 Q. All right. That's Proposal 1 that we looked
18 at earlier; correct?

19 A. Correct.

20 Q. Could you return and show to the jury what
21 features of this proposal were incorporated into the
22 J4500 that was built in 2007?

23 A. Sure this -- this proposal had a radiused
24 roof you see at the top here. It's still maintained a
25 three-panel configuration up front, but it had radius

1 that extended down to the windshield. It had more
2 radiused corners. It lacks a couple of features that
3 the J4500 has, and that includes the rounded radius
4 around the front, and it lacks some of the radius that
5 you can see in the J4500 in the vertical direction.
6 But it certainly incorporates the -- the rounded roof
7 and then the round corners at the front of the coach.

8 Q. In your opinion, Mr. Granat, does the actual
9 front of the J4500 incorporate design changes suggested
10 by MCI Proposal No. 1?

11 A. Well, it clearly incorporates some of these
12 design changes. It incorporates additional variations
13 as well that are -- that are actually more streamlined
14 than Proposal 1.

15 Q. What do -- what are the things that the J4500
16 actually incorporates?

17 A. I would say the radiused roof that we have
18 here, and then also the radiused corners that we see at
19 each side.

20 Q. And what does the J4500 add in addition to
21 the streamlining contained in Proposal No. 1?

22 A. Sure. That's the sweep to the front, which
23 is that radius we can see on the front of the coach,
24 and then also the vertical radius to the entire
25 windshield in this vertical direction. It adds those.

1 We can't quite tell with Proposal 1 if it had taper.
2 The J4500 has a taper to the front of it as well so
3 it's got a narrower front that -- that presents itself
4 to oncoming wind.

5 Q. Okay. I'm going to return to 126-017.

6 MR. CLARK: Now, this was page 32 for the
7 record.

8 MR. TERRY: If you resume your seat, sir.

9 BY MR. TERRY:

10 Q. I'm going to highlight the -- again, what the
11 jury looked at earlier. What they talk about Proposal
12 No. 1 is a new design with flush glass.

13 A. Right.

14 Q. Does the J4500 have flush glass?

15 A. It has a seal around the windshield.

16 Q. What is flush glass?

17 A. Flush glass, from my understanding, is just
18 glass that has no seal. It comes to the body edge
19 and -- and meets it flush.

20 Q. All right. Do you know if there is an
21 operational reason that MCI would make a bus that has
22 not flush glass but the seal?

23 A. Certainly from a serviceability point of
24 view, the -- the windshield cannot be operated -- the
25 vehicle can't be operated if the windshield is cracked,

1 so there's a need from serviceability point of view to
2 be able to remove and replace the windshield panels
3 quickly.

4 Q. Are you in a position to comment on what
5 actually occurs in the operation of these buses and
6 what the customers demand, or would you defer to MCI in
7 that area?

8 A. I would certainly defer to MCI in that area.

9 Q. But you do know that it is easier to replace
10 one that's got the rubber as opposed to one that has
11 the flush glass?

12 A. Right, that's got the seal.

13 Q. Okay. I want to turn your attention now to
14 the Phase 1 of the testing that you performed where you
15 actually had a stationary bike and you drove the bus
16 past.

17 A. Right.

18 Q. Before we get to that, are you familiar with
19 an article that appears in SAE journal written by a
20 Mr. Kato?

21 A. Yes.

22 Q. I'm going to show you Exhibit 139. Is this
23 the Kato article that you're familiar with?

24 A. This is, yes.

25 Q. Is there some, what they call, text or

1 metadata on that document?

2 A. Just simply the -- the date and the source
3 for the document with my name at the top.

4 Q. Okay. So I'm going to highlight what appears
5 at the very top.

6 Can you make it any larger? Okay.

7 That says downloaded from SAE International
8 by you, Friday, October 6th, 2017.

9 A. That's right.

10 Q. So, as part of your work, did you download
11 the Kato article that has been introduced into
12 evidence?

13 A. That's right.

14 Q. All right. So are you familiar with the
15 article itself?

16 A. I am.

17 Q. I want to draw your attention to the first
18 figure that appears.

19 Is this sort of a representation of the test
20 that he performed, Mr. Kato?

21 A. Right. This is a sketch showing the test
22 configuration that he did. He's got a bicycle off to
23 the left side of a coach, or at least a model of a
24 coach, and the velocity vector there in the -- or the V
25 arrow that you see there, that's basically the speed of

1 the coach coming past the bicycle. So he's got a coach
2 next to a bicycle.

3 Q. Is this bicycle stationary for purposes of
4 this test?

5 A. It is a stationary bicycle model.

6 Q. So in this test that Mr. Kato performed, he
7 uses stationary bike and he moves the bus over -- to
8 represent overtaking the bike?

9 A. Correct.

10 Q. If you go to Figure No. 5, sir.

11 This is a representation of the bike and what
12 is called a load cell. What is this that we're looking
13 at?

14 A. This is the sketch of the configuration that
15 Mr. Kato studied, so this is his model bicycle attached
16 to a load cell, measuring the force what we call the
17 lateral force, the force in one direction on that
18 bicycle.

19 Q. Is there just one load cell involved?

20 A. Yes. He's measuring just the lateral force
21 applied to the bicycle.

22 Q. He's measuring it at the center of the bike?

23 A. He is.

24 Q. When you did your test, did you use an
25 instrument similar to or equal to the load cell?

1 A. I used a load cell. Basically, it's called a
2 strain gauge. I used a load cell that was configured
3 as a strain gauge.

4 Q. I want to show you Figure No. 7.

5 Now, this is a graph that the jury looked at
6 for some time with Dr. Breidenthal.

7 Do you understand what is depicted in this
8 graph?

9 A. Sure, I do.

10 Q. What do you see depicted in the graph?

11 A. Well, this is a representation of lateral
12 force that Mr. Kato measured in his experiments, so
13 this is one test run. And this representation, since
14 it's a scale model, it's a representation of a scaled
15 force. So he's listing it as CY, which means a
16 coefficient for the lateral force applied to a bicycle.

17 Basically, that's a representation of the
18 force, but it's not the force in pounds or kilograms or
19 anything like that. It's just a representation of the
20 shape of the force.

21 And then along the other direction, we have a
22 representation of time. So where it starts from minus
23 3 all the way up to 4, those aren't seconds; that's
24 just a scaled version of time that he comes up with his
25 tests.

1 MR. TERRY: If you would show the paragraph
2 above the diagram, sir, and the paragraph immediately
3 below.

4 BY MR. TERRY:

5 Q. Here, Mr. Kato says that the first peak of
6 the force occurs just as the front of the vehicle is
7 even with the rear wheel of the bicycle.

8 A. Correct.

9 Q. Did you find that to be true in your own
10 test?

11 A. Generally, yes. I found that the force --
12 the first sign of the force is when the -- the coach
13 approached the rear tire of the bicycle.

14 Q. And that is the force resulting from the air
15 displacement?

16 A. Right. That's the displacement of the air
17 around the coach as it approached adjacent to the
18 cyclist -- the bicycle, and that force is measured on
19 the strain gauge on the bicycle.

20 Q. And there is no impact between the air
21 displaced by the bus and the bike until the bus gets to
22 that relative position to the bike?

23 A. Right.

24 Q. And then the second peak occurs when the
25 vehicle is approximately even with the front of the

1 bike?

2 A. Correct.

3 Q. Okay. Now, he describes the first peak as
4 push away from and the second as a pull towards?

5 A. Correct.

6 Q. Did you find that when you did your own
7 testing?

8 A. Generally speaking, yes. Certainly the force
9 as the bus approached the bicycle was a small level --
10 a low-level force that would push it away from the
11 coach.

12 MR. TERRY: Would you go to Figure 12, sir.

13 BY MR. TERRY:

14 Q. Okay. Do you know what Mr. Kato is doing in
15 this section or what he intends to represent by this
16 figure?

17 A. Sure. He's -- he's got a number of
18 rectangular shapes there that -- that he's using to
19 illustrate where the bus is, the rectangle shape with
20 the hash marks on it there. And that is represented to
21 be going past the bicycle from the right side to the
22 left.

23 Q. If I may. So this position right here is
24 where the front of the bus reaches the back wheel?

25 A. Yes.

1 Q. So the force begins?

2 A. Right. That's what he measures with his test
3 apparatus.

4 Q. And this is about halfway through?

5 A. Correct.

6 Q. And then this is where the front of the bus
7 reaches the front of the bike?

8 A. Correct.

9 Q. More or less?

10 A. Yes.

11 Q. What are the arrows?

12 A. The arrows are a series of sketches that
13 Mr. Kato did. He used a smoke wand to -- to generate
14 some smoke in that moving air, and then he used
15 basically his observations to sketch the path that
16 smoke would take when he did multiple runs.

17 So this is his representation of -- of the
18 direction of the airflow around the bicycle model.

19 Q. Okay. So the airflow, as the front of the
20 bus reaches the back of the bike, is at an angle
21 pushing the bike away?

22 A. Correct.

23 Q. And then in the middle is with -- is there
24 any force at all pushing the bike?

25 A. Right. When it's adjacent, the -- the forces

1 are lower. They're basically going away from the
2 coach, though.

3 Q. And then what in the third position? What is
4 the direction of the wind?

5 A. In the third position, he shows the wind
6 moving rearward and slightly outboard from the coach.

7 Q. Okay. Was there anything to the smoke that
8 he generated that indicated the pull force?

9 A. He didn't sketch any arrows that would show
10 the smoke wand being directed towards the bus or
11 towards the coach model. He only showed them in the
12 directions you see here.

13 Q. And then what is the significance of the last
14 one?

15 A. The last one shows basically that the -- the
16 airflow now is parallel to the coach and the bicycle.

17 Q. And is it flowing in one direction or
18 another?

19 A. It's -- it's a circulating pattern. So the
20 air that's next to the coach, it's within the boundary
21 layer of the coach, which means it's trying to go the
22 same speed as the coach. So it's traveling from right
23 to left in this image, and then there's air on the
24 opposite side of the bicycle that's traveling from
25 front to rear of the bicycle.

1 Q. Now, in terms of the Kato paper, did you find
2 anything in there that you could use to scale up from
3 the models that he used to real-life objects?

4 A. No. His -- his testing is more of a -- we
5 would call it a qualitative test. He's looking for the
6 characteristics of these forces, what they would look
7 like, but he's not looking for actual values.

8 So he's not designed his tests to measure
9 precise forces on the model or on a real bicyclist, but
10 he's trying to figure out what direction -- what
11 direction the forces are applied.

12 Q. Okay. Now I'd like to turn to your testing,
13 if we could, Mr. Granat.

14 Did you prepare a result or a book that shows
15 your aerodynamic disturbance test?

16 A. I've got a test report binder that documents
17 the testing.

18 Q. Okay. I'm going to show you what has been
19 marked as Exhibit 478.

20 Is that your test binder?

21 A. It is.

22 Q. And does it show the results of the tests and
23 the testing that you did?

24 A. It does. It shows the testing configuration,
25 how I set up the test. It documents the

1 instrumentation, the vehicle, and the results of the
2 testing.

3 Q. And is that work that you prepared yourself?

4 A. This is.

5 Q. May I have that, sir?

6 MR. TERRY: Your Honor, we would offer
7 Exhibit 478.

8 MR. KEMP: No objection, Your Honor.

9 THE COURT: Okay. It is admitted.

10 (Whereupon, Defendant's Exhibit 478 was
11 admitted into evidence.)

12 BY MR. TERRY:

13 Q. All right. Sir, I'm going to hand you
14 Exhibit 478. I'm going to show the jury the front
15 cover.

16 Is that your test results?

17 A. Right. This is a the cover page from my test
18 report.

19 Q. I'm going to show them the first page.

20 Okay. Could you highlight the category, sir.

21 All right. Now, what is indicated by these
22 seven sections?

23 A. These are just how I've documented the
24 testing that I've done. I've got a number of documents
25 that show the configuration of the vehicle that I used,

1 photographs of the test vehicle, the test bicycle, the
2 test dummy, the instrumentation, et cetera. I have got
3 documentation of the instrumentation itself, so how the
4 instrumentation is calibrated, what the model numbers
5 are for the instrumentation. If somebody needs to
6 repeat the testing, they can do that with that
7 information. I've got the test location.

8 And then there's an index of all the tests
9 that I ran. There's approximately 148 tests run. This
10 index basically lists some of the pertinent information
11 from each of those tests.

12 And then I've got data plots for all the runs
13 in the next section, and then I've got some analysis of
14 that data.

15 Q. All right. Now, could you describe for the
16 jury in general terms what the test is that you
17 conducted?

18 A. Sure. The first part of the testing that I
19 did was looking at a coach driving past a stationary
20 bicycle. And on that stationary bicycle, I put a test
21 dummy, an anthropomorphic test device or test dummy,
22 scaled to match the size of Dr. Khiabani.

23 And then I drove the coach past that bicycle
24 at a number of different displacements from the
25 bicycle. So if you see the bike in this position, I

1 drove past the bicycle at a nearby distance away from
2 the bike, and then I kept running at different
3 distances away?

4 And then I did that not only at 25 miles an
5 hour, I did that at 10, 15, 20, 25, 30, all the way up
6 to 45 miles an hour. So I did a range of offsets and a
7 range of speeds to evaluate the forces that you'd see
8 on this bicyclist.

9 Q. So you did essentially, with a real bus and a
10 real bike, what Mr. Kato had done with his models?

11 A. Yes, to a more accurate degree, because what
12 I'm actually measuring are the actual forces rather
13 than a scale representation of the forces.

14 Q. Can we look at the configurations.

15 A. Sure. Some of the original or the initial
16 configuration information here is just information
17 about the coach that I used. It's a J4500 coach.

18 Q. Could we run through these pretty quick, sir?

19 So these are the configurations for the
20 vehicle that you used?

21 A. Correct.

22 Q. Specifications? Drawing of the bus?

23 A. Correct. And then this is the decoded VIN --
24 that's the vehicle identification number -- for the
25 specific coach that I used. So that's -- that tells

1 you what model this is and when it was manufactured.

2 Q. All right. Now, we have some photographs of
3 the equipment that you used.

4 A. Correct, starting with the coach itself.

5 Q. Is this your test vehicle?

6 A. This is the vehicle that I tested, yes. This
7 is the MCI J4500, has that vehicle identification
8 number that we just looked at.

9 Q. This is the interior?

10 A. Correct. That's the --

11 Q. Could you go back just one, please.

12 Now, is any of your test equipment in this --
13 these pictures?

14 A. There is test equipment that will be off to
15 the left of the driver's position. I don't know if you
16 can see it in these photos, but I've got photographs
17 that are closer to these ones. This one is before
18 instrumenting the vehicle, so that's without test
19 equipment.

20 Q. Could you go ahead, sir.

21 A. So I have documented basically --

22 Q. So you're documenting the bus that you used?

23 A. Right.

24 Q. And the bus you used was a J4500?

25 A. Correct.

1 Q. Made in 2008 with the VIN number indicated?

2 A. Correct.

3 Q. Go through. Now, this is the bike?

4 A. This is the bike that I used for my testing,
5 right. This is a Scott Solace bike, similar to the
6 subject bike.

7 Q. Okay. Now, have you got this bike set up as
8 you would for the test?

9 A. Right. It might be difficult to see in some
10 of these photos, but this bike is attached to a balance
11 rod, and that balance rod is mounted to the seat of the
12 bike with what's called a hind joint. It's basically
13 just a ball joint that allows the balance rod to hold
14 the bicycle vertical. And then at the opposite end of
15 the rod that we don't see here is where I've put the
16 strain gauge in the rod. So the strain gauge is what
17 I'll use eventually to measure the force, applied
18 laterally to that bike.

19 Q. Okay. Could we see the photographs of --

20 A. Right.

21 Q. Is that the strain gauge, the one on the
22 right middle?

23 A. Right. That's the -- it's a small electronic
24 device that's meant to measure the force in both
25 directions, so it measures whether the bike is being

1 pushed one way or pulled the other way. It's a
2 precision device. It's common in the industry for
3 measuring forces in -- in what we call
4 tension/compression. It's the two directions.

5 Q. Okay. Continue if you would, sir.

6 All right. Now we see the bike with the
7 anthropomorphic test device?

8 A. Right. That's the test dummy that I've
9 fastened to the bike. Basically he's -- he's strapped
10 in there because his natural position isn't necessarily
11 on the bike seat, so he's attached to the seat,
12 attached to the handlebars, and attached to the pedals.
13 And this is the -- the anthropomorphic test device that
14 is scaled in size and height to match the --

15 Q. Dr. Khiabani?

16 A. -- the dimensions of Dr. Khiabani.

17 Q. Could you proceed, sir.

18 A. As we're going through these, I can say that
19 the rider --

20 Q. Is this the test track and the stills of
21 tests?

22 A. This is just the test configuration. So what
23 you see on the ground there, that's a grid of 1-foot
24 spaces, and that's where the bike would be mounted at
25 the zero portion of the grid. Each of these 1-foot

1 spaces goes out to a final space of 12 feet, and then
2 the coach is parked there to show you the direction of
3 approach of the coach during the test.

4 Q. Okay. Proceed, sir.

5 And this is the same configuration from
6 different angles?

7 A. Correct. And mounted on the rear of the
8 bicycle there's a camera that records the testing from
9 the bicycle's point of view.

10 Q. Proceed, sir.

11 A. He did.

12 Q. Okay. Now, is this where you size up or
13 scale up the test device?

14 A. Right. These are a series of photos that
15 document how the ATD, the anthropomorphic test device,
16 was configured. He's -- he's set up initially as a
17 certain weight and height, and then the -- the
18 technicians at this facility can add spacers to the
19 legs, to the arms, to the neck and add weights that
20 they take to the device. And they get a final product
21 that is the proper height, the proper weight
22 distribution, the proper weight overall, of -- of the
23 target weight.

24 Q. So you were given the height and weight of
25 Dr. Khiabani?

1 A. Correct.

2 Q. And this anthropomorphic test device was
3 sized and weighted to be just like him?

4 A. Correct, based on the numbers that I was
5 provided.

6 Q. And then you were -- you dressed him in
7 clothes just like he was wearing?

8 A. It was very similar, yes. He's -- the
9 anthropomorphic test device is basically clothed with
10 rider shorts, riding shirt, and a helmet that's of the
11 same model as the subject helmet.

12 Q. So there he is on a bike and dressed?

13 A. That's -- in that configuration, this is
14 actually atop some scales. These scales are weighing
15 the test dummy and bike combination.

16 Q. So you verified that the weight you had put
17 together was the weight you were looking for?

18 A. Right. And documented the combination weight
19 of the ATD on top of the bicycle.

20 Q. Okay. We'll go to the next section, sir.

21 All right. Now, this is the instrumentation
22 section; correct?

23 A. Correct.

24 Q. And what do you have here? Is this just the
25 instruments that you used?

1 A. Right. This is a log sheet that just shows
2 the instrumentation that I used, and then it's followed
3 by a number of documents that just are the
4 specifications, the calibration sheets, the other
5 information that documents exactly how the
6 instrumentation was set up.

7 Q. So if the individual juror wants to see what
8 testing equipment you used, it would be here at the
9 instrumentation section?

10 A. Right. Yes.

11 Q. Can you run through this, sir.

12 So these are pictures of the instruments
13 together with specifications for the instruments?

14 A. Correct. Actually, this first one, previous
15 one there, is a picture of a scaled digital force gauge
16 used to confirm the calibration of the sensors. So I'm
17 applying this in two directions, either pulling or
18 pushing on the bicycle, and confirming that the reading
19 that I get on this digital force gauge matches the
20 reading that the computer is recording from a strain
21 gauge. So it's kind of just an end situation
22 confirmation that it's accurate.

23 Q. Okay. And then in this section, the rest of
24 it consists of information about the actual test
25 instruments?

1 A. The rest of it is not very exciting.

2 Q. Okay. What is the next section?

3 A. The next section of the binder discusses
4 the -- the crash -- I mean, the test location.

5 Q. Okay. This is where you actually performed
6 the test?

7 A. Correct.

8 Q. And where was the location where you
9 performed the test?

10 A. The test location was at the Exponent test
11 and engineering center. This is a facility in Phoenix.
12 And I was able to use a portion of this facility for
13 the testing of the -- of the coach passing by.

14 Q. Okay. And then, in connection with the place
15 where you performed the test, did you gain additional
16 information about the area where the test was being
17 performed?

18 A. Sure.

19 You can go to the next one.

20 The -- this just shows you an aerial image.
21 There's a very large roundish, kind of tapered, round
22 pavement area there in the center. That's their skid
23 pad. And at the southern edge of that, the bottom of
24 that, there's a straightaway test track going around
25 the entire test property there. On that straightaway

1 at the southern edge of the skid pad, that's where I
2 performed the tests.

3 Q. And this is outside Phoenix?

4 A. This is just to the north side of Phoenix.

5 Q. Okay.

6 Proceed.

7 And what is this?

8 A. The next many pages are weather records.

9 There's a weather station at that test facility. And I
10 requested the -- the weather records for all the time
11 that I was doing a test. So this shows the daily
12 temperature readings, the wind speed and direction,
13 other parameters, such as humidity and that kind of
14 stuff, throughout the duration of the test.

15 Q. In your opinion, sir, does any of this data
16 have an impact on the results of the tests?

17 A. Well, the ambient conditions provide some
18 level of noise, you would call it, so there's some
19 variation in the tests. The wind during my tests was
20 6 miles an hour on average. So there is some ambient
21 effect from the wind that's out there. But that's why
22 I ran many repetitions of my tests. And that's to try
23 to eliminate the effect of -- of any random effects
24 caused by the local conditions.

25 Q. Okay. And what is the next section, sir?

1 A. The next section would be the index of tests.

2 Q. So is this a list of every test that you
3 performed?

4 A. This is -- there's going to be multiple pages
5 of tests here. And these are the --

6 Q. What information is contained on each line,
7 if you will?

8 A. Well, what you'll see there on the left is a
9 test number. And that's a number that I have assigned
10 to each test. And then I've got a -- a data file for
11 the instrumentation that was on the coach.

12 The instrumentation on the coach is recording
13 the vehicle speed and its GPS location. It's got a
14 high-accuracy GPS sensor that I used on the coach.

15 The next data file is the mat lab data file.
16 That records everything that's on the ground. So
17 that's going to be the strain gauge that's attached to
18 the test dummy. And that's also going to record a
19 laser sensor that I've attached to the test dummy
20 fixture to measure precisely how far the coach passes
21 next to the -- to the test dummy.

22 And then the -- the next two columns, those
23 are target speeds and offsets. So the -- what you see
24 there is nominal speed. That's my target speed as I'm
25 driving past the coach or past the bicycle.

1 And then the nominal offset, that's my target
2 offset. These are those marks that you saw on the
3 pavement, 0 to 12 feet. It should be noted that the
4 actual offset will be less than these because the bike
5 rider has a width. So every nominal offset is actually
6 a little overestimated there.

7 Q. Okay. So every test that you performed is
8 contained in your test index?

9 A. Correct.

10 Q. What is the next section in there?

11 A. The next section is going to include the data
12 plots.

13 Q. All right.

14 A. So of the 148 tests run, the data will be
15 plotted on these graphical formats here.

16 Q. Okay. Can you go to No. 50, Plot 50. I
17 think it's 136.

18 A. 52.

19 Q. Oh, it's at 52?

20 A. Yeah.

21 Q. Okay. Go to -- go to 52. All right.

22 Now, could you explain to the jury, if you
23 would approach it, what this is recording, sir?

24 A. Sure. This is just a graphical
25 representation of each test. It's's informative from

1 an engineering point of view, but it's not terribly
2 informative otherwise.

3 What you see, though, is a blue trace here.
4 Blue is the speed of the coach on this scale over here.
5 So this particular run, you can see this zero here.
6 Coach speed starts at zero when I turned on the data.
7 And then I accelerated the coach up to roughly 25 miles
8 an hour. This one looks like it's probably 26 miles an
9 hour. It's all recorded.

10 And then, at the same time, you can see this
11 green line here. The green line is the force in the --
12 in the strain gauge. And you can see, it has a -- some
13 variation here in the center of the plot. That's the
14 force variation through the test.

15 And then you can see also a red line here.
16 This is the displacement from that laser sensor.

17 So what this bike in the laser sensor is is
18 I've got a laser sensor that's near the bicycle pointed
19 towards where the -- where the bus is going to pass.
20 And that's measuring how far the bus is from the
21 bicyclist. So it's reading nothing for most of the
22 test, and then, as soon as you see this spike up, that
23 means this laser sensor is picking up the coach as it
24 passes the bicyclist.

25 And then it's measuring along this surface

1 here. That's how far it is away from the -- the
2 bicyclist. So that number you'd read off this scale.
3 Every pass-by test, I've documented it this way.

4 So I've got information that tells me the
5 speed of the vehicle, the distance between the coach
6 and the bicycle, and then also the force variation that
7 you see as a result of that.

8 Q. So on this test, 52, what is the speed of the
9 vehicle?

10 A. It's roughly 26 miles an hour when it passes
11 the -- the bicyclist.

12 Q. Okay. And what's the distance between the
13 passing coach and the bicycle?

14 A. It's about 2 1/2 feet from the bicycle.

15 Q. And what is the lateral force -- the maximum
16 lateral force that the passing bus subjects the bicycle
17 to?

18 A. This is on this scale over here. The peak
19 force is on the order of -- of about a pound.

20 Q. Okay. You may resume your seat, sir.

21 Now, did you videotape these as they were
22 being performed?

23 A. I did. There were multiple video cameras
24 mounted on the vehicle, on the dummy, and then some
25 other ground locations.

1 Q. Okay. Did you assemble those in a format so
2 we could display this test for the jury?

3 A. Sure. I did.

4 MR. TERRY: Could you -- Video 52.

5 MR. CLARK: 52?

6 MR. TERRY: Yes.

7 MR. CLARK: That's going to be Exhibit 577.

8 MR. TERRY: Exhibit 577.

9 MR. CLARK: Do you want volume?

10 MR. TERRY: Yes, please.

11 (Whereupon video clip was played.)

12 THE WITNESS: So this shows you the general
13 configuration of the test. You'll see there, that is
14 the 2.44 feet offset that's measured. And then I
15 paused the bus as it passes the cyclist.

16 This gets repeated several times so you can
17 see it in different configurations.

18 This is a camera mounted over my right
19 shoulder. So this is, as I'm driving past the dummy,
20 you see it's about 26 miles an hour.

21 BY MR. TERRY:

22 Q. So are you driving?

23 A. I'm driving the coach in these tests.

24 Q. Do you have a CDL license?

25 A. I do.

1 This is a boom camera that shows an overhead
2 view of the coach passing, and then you see the force
3 reading there of 1 pound. That's the maximum force, so
4 that's not an average or anything like that. That's
5 the peak -- the actual peak force.

6 Now you see multiple views as the coach
7 passes the cyclist there. The camera's on the
8 right-hand side. One's mounted on the coach; one's
9 mounted on the bicycle.

10 MR. TERRY: Can you find for us data plot 69.

11 MR. CLARK: It's in --

12 MR. TERRY: Not the video; the plot itself.

13 BY MR. TERRY:

14 Q. Okay. This is the same kind of plot for Test
15 No. 69?

16 A. Correct.

17 Q. Is the bus moving faster in this test?

18 A. Right. This is a 35-mile-an-hour test.

19 Q. And the lateral separation to the bicyclist?

20 A. This one is -- is closer to the cyclist.

21 We'll see it in the video, but I think it's on the
22 order of 2 feet.

23 Q. And the lateral force exerted on the
24 bicyclist by the passing bus?

25 A. I believe on this one it's 1.6 pounds, the

1 peak force.

2 Q. And there was a video made of this test as
3 well?

4 A. There is.

5 (Whereupon video clip was played.)

6 THE WITNESS: So this follows the same
7 format. You see the oncoming coach. And then freeze
8 to show you the displacement between the coach and the
9 cyclist. And that is 1.8 feet.

10 Okay. I can't see. Oh, there it is. Sorry.

11 So this is just a repetition of that same
12 test. And you see the speed is about 35 miles an hour.
13 And you can see we're closer. The bike is on that
14 dashed yellow line. So there's where the coach goes
15 past the bicyclist. And you'll see this again now
16 in -- in some additional views.

17 This is the overhead view. So, in that view,
18 you get -- or in that test you get about 1.6 pounds of
19 peak lateral force, and that was clearly a close
20 pass-by.

21 This is the same test from multiple different
22 views.

23 BY MR. TERRY:

24 Q. All right. Now, at the conclusion of running
25 the 140 or 150 tests that you performed, did you

1 assemble the data in a form where you could look at all
2 the tests at a particular speed?

3 A. Sure.

4 Q. And did you plot them on a graph?

5 A. I did.

6 MR. TERRY: Could you show us the graph for
7 25 miles per hour. I think it's 182, sir.

8 MR. CLARK: 478-point ...

9 BY MR. TERRY:

10 Q. All right. Now, if you would, sir, could you
11 approach the graph and explain to the jury what they're
12 looking at, if you will.

13 A. Sure. So this is a little bit confusing, but
14 these are all of the runs that I did at 25 miles per
15 hour. So each one of these red circles represents a
16 test run. And I think there's 16 or so test runs on
17 this chart. Okay?

18 So the distance away from the coach --
19 imagine that this line right here is where the coach
20 is. This test was run with the -- the coach passing
21 less than a foot from the bicycle. Okay?

22 And then, as you get over here, these tests
23 were run at greater offset. You've got a test -- a
24 bunch of tests run at much greater offsets all the way
25 up to approximately 12 feet.

1 So this is how far we are away from the coach
2 as you go along this axis, and then this is the force
3 that you see along this axis. So for -- for instance,
4 there's 2.4 pounds of force on this -- the closest run
5 that's at about 9 inches of separation between the bus
6 and the bicyclist. That's the highest force measured
7 here.

8 And then, as you can see, once we get out
9 here around 3 feet or greater, then the force stays
10 below 1 pound. And these are the peak forces. These
11 aren't just an average force or anything like that.
12 This is the maximum force that you see.

13 So the force that's applied to the stationary
14 bicycle is very low, especially if you're more than
15 3 feet away. And then this blue line is a curve fit
16 line through that data.

17 Q. Now, is the blue line one that you impose on
18 the data?

19 A. It's a -- it's a line that I calculated. So
20 it's a parabolic line that fits this data the most
21 accurately.

22 Q. So is it done by some sort of mathematical
23 formulation?

24 A. Sure. That's a least squares curve fit line.

25 Q. So the data, why is the data not all on the

1 line?

2 A. Well, that's the -- the ambient effect that I
3 was talking about. There's local air wind speed.
4 There's variations in the testing as we're running. So
5 these -- these points, in an ideal world, might lie all
6 the way to the blue line. But since we were out there
7 doing multiple tests, we get some variation in the
8 tests. That's why I ran the 16 runs at 25 miles an
9 hour. I wanted to characterize the forces at many
10 different displacements as best I could.

11 Q. Is it fair to conclude that the lateral
12 force -- maximum lateral force generated by a J4500 at
13 25 miles an hour passing a Solace bike with an
14 anthropomorphic test device equal to Dr. Khiabani
15 sitting on it is as reflected here?

16 A. It is. That's correct.

17 Q. And so the -- the force is about 1 pound?

18 A. If the distance is 3 feet or greater, the
19 force is a pound or less. Once you get closer and
20 closer to the coach, once you get here to approximately
21 9 inches away from the coach, the measurements go up,
22 as you would expect with aerodynamic principals. You
23 would expect the force to be greater the closer you are
24 to the coach.

25 Q. Now, did you prepare a graph like this for

1 the test you performed at 40 miles per hour?

2 A. I did.

3 Q. I think it's 185, sir.

4 All right. Now that the jury knows the
5 general meaning of it, can you explain what the values
6 are?

7 A. Sure. Again, we've got each circle
8 representing an individual test run, like the videos
9 that we watched. The displacement away from the coach,
10 this is as close to the coach as I got. It looks like
11 about 10 inches, 9 inches away from the coach -- I
12 mean -- I'm sorry -- away from the bicycle, 9 or
13 10 inches there, and then all the way out to
14 approximately 11 feet away.

15 So the force varies like we would expect it
16 to. It increases as you get closer to the coach. Up
17 here in these -- these tests that were run very close
18 to the cyclist, we get something on the order of about
19 4 pounds of peak force.

20 Q. Now, in the force that -- the lateral force
21 that you measured, did you find that it was a push
22 force or a pull force or both?

23 A. It's a little bit of both. And I should
24 clarify. These are 40 miles an hour, which is
25 significantly faster than the reconstruction speed.

1 Q. Okay. Thank you, sir. Please take your
2 seat.

3 Now, on the basis of the testing that you
4 performed with the stationary bike and the coach,
5 J4500, driving past it at speeds, did you reach certain
6 conclusions?

7 A. I did.

8 Q. Is it fair to say that the first conclusion
9 you reached was the testing you did was performed in a
10 scientific manner?

11 A. Sure.

12 Q. The exemplar coach was the same as the real
13 coach, bicycle the same as the real bicycle, and the
14 anthropomorphic test dummy was selected and configured
15 to match Dr. Khiabani?

16 A. That's correct.

17 Q. As a result of the values you received, did
18 you reach the conclusion, No. 2, that it was not
19 substantial, it did not create an air blast?

20 A. That's correct.

21 Q. The measured peak lateral force magnitude at
22 25 miles an hour was on the order of 1 pound or less?

23 A. Right. For -- for passing by on the order of
24 3 feet or more, the -- the force was very, very low, 1
25 pound or less.

1 Q. And then the third conclusion that you
2 reached was that the test runs at higher speed, like
3 40, exhibited smooth variation?

4 A. Right. As you would expect from aerodynamic
5 principles, the faster you go or the closer you get to
6 the cyclist, the forces would go up; likewise, the
7 slower you go and the farther you are away from the
8 bicycle, the forces would go down.

9 Q. All right. Thank you, sir.
10 Now, you also performed a second phase to the
11 test?

12 A. Correct.

13 Q. Could you describe to the jury in general
14 terms, what was the second phase of the test?

15 A. Well, the second phase was looking at how
16 this -- these forces affect an actual human rider.
17 Because all of this is done so far with a stationary
18 ATV on the stationary bike, and then the next step is
19 to take those forces that we measured there and extend
20 that out to an actual human bicyclist.

21 Q. Did you use the same test bus?

22 A. Used the same test bus, yes.

23 Q. Did you use the same test bike?

24 A. Yes.

25 Q. Only now you have real people riding the

1 bike?

2 A. Correct.

3 Q. Did you have the bike rider travel at about
4 13 miles per hour?

5 A. Correct. The target speed was roughly
6 13 miles per hour.

7 Q. And was the bike rider instrumented?

8 A. Yes.

9 Q. What kind of instruments did he have?

10 A. The instrumentation on the bicycle rider
11 itself, that was provided by Dr. Carhart. He was a
12 collaborator with me on that test. So he instrumented
13 the bicyclist. And he instrumented that -- the bicycle
14 itself and the cyclist with instruments that would
15 measure the bike's position, the speed, the
16 accelerations that it experienced and -- and other
17 parameters that I would let him describe.

18 Q. So he's the one that set the instruments,
19 chose the instruments, and recorded the results on --
20 on the bicyclist?

21 A. On the bike and the cyclist. Of course my
22 instrumentation was on the coach.

23 Q. And so the same instrumentation that you had
24 on the coach, was it on the test coach during the
25 side-by-side test?

1 A. Correct.

2 Q. So the measurements that were done by
3 Dr. Carhart with his instrumentation would be
4 objective, as yours were for the first phase?

5 A. Correct.

6 Q. Did you have any subjective appreciation for
7 the test?

8 A. Sure. With -- objective means we're
9 measuring actual physical numbers; subjective means how
10 did it feel.

11 So since we did this testing with a human
12 cyclist, I -- I rode the bicycle several times as
13 Dr. Carhart drove past me in the coach. And so I had
14 the subjective analysis -- or an evaluation of what it
15 felt like to be a cyclist that's passed by a moving
16 coach.

17 Q. Was -- were those tests preserved by video as
18 well?

19 A. Yes.

20 Q. Did you put some together that we can show
21 the jury to give them some idea of what the test was
22 like?

23 A. Yes.

24 MR. TERRY: 113.

25 (Whereupon video clip was played.)

1 THE WITNESS: Okay. This test is me driving,
2 with Dr. Carhart on the bicycle. And the pass-by
3 speed, you can see there on the screen, was about
4 27 miles per hour. And you'll get several different
5 views.

6 This is a wide-angle camera that's attached
7 above the entry door of the coach. And, there, you can
8 see the coach passing the cyclist.

9 I should say, on the setup of this testing,
10 we painted a line on the test track that the -- the
11 cyclist was trying to maintain. I think we should go
12 through that as I'm explaining it, if that's okay.

13 BY MR. TERRY:

14 Q. You want to do that one again?

15 A. Yes, please.

16 Q. So when you set up this test, did you create
17 a specific area where the test was going to be
18 performed?

19 A. Yes. The -- the coach was being driven on a
20 series of dashed yellow lines there that are 3 feet
21 away from the white lines. So what you'll see when we
22 get to the actual testing --

23 Q. Okay. Now, this is Test 113, which is
24 Exhibit 579.

25 A. Okay. So this is a view --

1 MR. TERRY: Could you stop it there, Brian.

2 BY MR. TERRY:

3 Q. What are the lines that you're talking about,
4 sir?

5 A. On the pavement -- if I -- can I approach
6 with the pointer?

7 Q. Yes.

8 THE COURT: Yes. Go ahead.

9 THE WITNESS: Okay.

10 On the pavement here, this is the white line.
11 That's part of the test track. The bicycle rider -- in
12 this case, Dr. Carhart -- is trying to maintain his
13 bike position on that line. So he's just riding down
14 the line, basically.

15 You'll see, as the bus is being driven, a
16 series of short, dashed yellow lines here. There's not
17 one in the image right now, but that's -- that's a mark
18 that's 3 feet away from the line. So that's -- that's
19 the target line for me to drive on. And what that does
20 is it puts the side of the coach 2 feet away from
21 Dr. Carhart's left elbow. So when you see the coach,
22 if it's driving right on that dashed yellow line, then
23 we know it's 2 feet from his elbow or 3 feet from the
24 white line.

25 MR. TERRY: Please run the test.

1 THE WITNESS: So there's the pass-by of the
2 cyclist, roughly 27 miles an hour. And then this is
3 the overhead view. You can see the yellow dashed lines
4 every once in a while go by there. And there's the
5 cyclist that is passed.

6 And then the next view shows you multiple
7 views. This is the overall test from a stationary
8 camera. And then this camera is mounted on the side of
9 the coach, as is this one. So you'll catch him as the
10 coach approaches him and catch him as the coach passes
11 him.

12 So this -- this is a -- a 2-foot offset of a
13 25-mile-an-hour coach adjacent to a rider that's --
14 that's trying to go approximately 13 miles an hour.

15 BY MR. TERRY:

16 Q. Okay.

17 Let's also take a look at 119. This one is
18 Exhibit 580.

19 A. So this is the same type of test. This is at
20 30-miles-per-hour coach speed.

21 Q. Maintaining the same lateral distance?

22 A. Correct.

23 So this is me driving. You can see the speed
24 is nominally 30 miles an hour. And there's Dr. Carhart
25 on the cycle -- on the bicycle.

1 You can see the same test from this overhead
2 view. So this is 30 miles an hour, and this is a
3 wide-angle camera. It doesn't look like it's as close
4 as it really is. You'll see it in the next view.

5 The -- the coach passes 2 feet from -- from
6 his elbow. So it's a pretty close pass-by test. He's
7 2 feet away from Dr. Carhart, 2 feet away. That's the
8 continuation of Dr. Carhart's travel.

9 Q. Okay.

10 Let's do the last one, 122.

11 MR. CLARK: Exhibit 581?

12 MR. TERRY: Exhibit 581.

13 BY MR. TERRY:

14 Q. Who is the rider here?

15 A. This is a test run with me as the rider. And
16 I hadn't prepared to do that, so I did not have riding
17 gear. So I'm in blue jeans as a test engineer out
18 there. This is Dr. Carhart driving a coach for the
19 first time. And he's passing me as the cyclist at
20 approximately 28 miles per hour. He's approximately
21 3 feet away from the cyclist on that one.

22 Then you see this in several different views.

23 Q. Now, these bypasses or pass-bys for the human
24 cyclist. They were not meant to re-create the actual
25 event, were they?

1 A. No. They were just to evaluate what's the
2 airflow displacement around a coach and how does that
3 feel when you ride past a coach coming 25 miles an
4 hour.

5 Q. Using the same parameters that we started out
6 with: MCI coach, 25 miles an hour or more, about
7 3 feet away?

8 A. Well, 2 feet away from the elbow, about
9 3 feet center line to the bicycle to the coach.

10 Q. In terms of a Phase 2 testing, was there any
11 other form of testing done to take a look at the
12 interaction between the moving bike and air
13 displacement?

14 A. Sure. There was some additional tests run to
15 evaluate just applying a force to a human rider, and so
16 we did that with a couple of different techniques. We
17 used some stationary fans to blow on a rider that rode
18 past, and then we also used a model rocket engine to
19 apply a force to a rider.

20 Q. Now, here we skipped over these pictures
21 earlier that. They're in the photograph section of
22 your book, are they not?

23 A. Uh-huh.

24 Q. Can you explain to the -- is that yes?

25 A. Yes.

1 Q. Okay. Can you explain to the jury what
2 they're looking at?

3 A. Sure. This is just a simple wind generation
4 station, if you want to call it that. There's a couple
5 of fans mounted in a rectangular section here, so we're
6 just trying to channel air against a bicycle. This
7 particular test is run with the bicycle mounted to that
8 same balance rod, so I'm measuring the force applied by
9 the wind of the fans in these tests here.

10 Q. Okay. And then when the test is actually
11 conducted, a real bicycle rider rides past the fans?

12 A. Correct.

13 Q. And what is the purpose of this test, sir?

14 A. Well, the test with the ATD, or the test
15 dummy, is to measure the force, and in this fan test we
16 get about 1 1/2 pounds of force applied to the test
17 dummy.

18 Q. Okay. We've got a video on the fans with the
19 test dummy. I think it's 135, sir.

20 MR. CLARK: This will be Exhibit 582.

21 BY MR. TERRY:

22 Q. 582. Now, the purpose of this is to actually
23 measure the force from the fans?

24 A. Right. This is to measure the force on a fan
25 or the fan applied to the bike rider. It's a very

1 simple short test.

2 Q. Those fans don't look like they're moving.

3 A. Well, that's just the video. It's like when
4 you see a video of a helicopter and the blades look
5 like they're barely moving, it's the video effect.

6 So this fan is applying a force of
7 1.5 pounds.

8 Q. And you're measuring the force the same way
9 you measured it in Phase 1.

10 A. Correct.

11 Q. And then do you have the bike rider go past
12 the fans?

13 A. Yes. Then the ATD cyclist was removed and
14 the human rider would ride past.

15 Q. I believe that's 145.

16 MR. TERRY: That would be Exhibit 583.

17 THE WITNESS: So this is just Dr. Carhart.
18 He's got the instrumentation on his person and on the
19 bicycle, and he's riding past those same fans.

20 So that's 1 1/2 pounds of force. And that's
21 basically 50 percent more than the force I measured in
22 the past tests.

23 BY MR. TERRY:

24 Q. Now, the bike rider himself was wearing
25 instruments; right?

1 A. Yes.

2 Q. And those values would have been captured by
3 Dr. Carhart, who can describe what they were?

4 A. Right. That was his -- his instrumentation
5 and his evaluation of the forces.

6 Q. Okay. Now you said you also used a rocket?

7 A. Correct. A model rocket engine, just like
8 the small model rockets that you see -- that kids will
9 shoot up. This is a model rocket engine that's mounted
10 to the back of the bike rider. In this case, this is
11 the test dummy, so ...

12 Q. The bike rider wears the rocket?

13 A. The bike rider wears the rocket, and it's set
14 sideways.

15 Q. He's the rocket?

16 A. The rocket man. Yes. It's set sideways, and
17 it applies a lateral force to the bike rider when it's
18 ignited, and it's set on a random timer that ignites
19 the rocket engine.

20 Q. Did you measure how much force would be
21 delivered by the rocket when it was engaged?

22 A. Right. The first -- first step of this test
23 was to measure the force, so then we could look at what
24 it would be -- what would be applied to a bicycle rider
25 that we put this rocket on.

1 Q. Okay. Do we have a video of the actual test
2 where you calibrate the lateral force from the rocket?

3 A. Sure. Right. This is the rocket amount --
4 rocket mounted to the test dummy, and so this is
5 measuring using the same equipment I had before.

6 MR. CLARK: This will be Exhibit 584.

7 MR. TERRY: 5 what?

8 MR. CLARK: 84.

9 MR. TERRY: 584.

10 (Whereupon video deposition was played.)

11 BY MR. TERRY:

12 Q. So you measure whatever lateral force that
13 was here 5 pounds the same way you measured it during
14 the first phase of the testing?

15 A. That's right.

16 Q. And then did you put this on a rider and have
17 him ride?

18 A. Yes. That was Dr. Carhart.

19 Q. Now, was there anything set up so that
20 Dr. Carhart would not know exactly when the rocket
21 would go off?

22 A. Right. That's the -- the random timer. One
23 of the technicians at Dr. Carhart's facility designed a
24 random timer that would just count off some random
25 number and then fire.

1 Q. Okay. Was Dr. Carhart instrumented during
2 this test?

3 A. Yes, he was.

4 Q. And he has the values that he captured with
5 his instrumentation?

6 A. Correct.

7 Q. All right. Can we see the actual test with
8 the rocket.

9 MR. TERRY: I believe that's video 147.

10 MR. CLARK: Exhibit 585.

11 MR. TERRY: 585.

12 (Whereupon video deposition was played.)

13 THE WITNESS: So this is Dr. Carhart riding
14 down that same white line, and that's the 5-pounds of
15 peak force being applied to the rider.

16 BY MR. TERRY:

17 Q. And he was instrumented for that?

18 A. He was instrumented for that test.

19 Q. Okay. Now, in terms of the testing that you
20 performed that we talked about in Phase 2, were you
21 able to reach some conclusions?

22 A. Yes.

23 Q. Second page of the conclusions, sir.

24 All right. Here, this is "Subjectively, the
25 effect of a J4500 coach passing at 25 miles an hour

1 does not create significant aerodynamic disturbance to
2 cause a nearby cyclist to be forced out of control or
3 to be drawn into the side of a coach."

4 Is that your subjective evaluation?

5 A. Yes. That's -- that's my conclusion being a
6 cyclist riding at about 13 miles an hour with a coach
7 passing me. It is a nonevent. There's certainly
8 nothing that occurs that I would call an air blast.
9 There's no significant force applied to the rider with
10 myself being a rider. It was basically like riding
11 without the coach there. Apart from the sound of the
12 coach, there was really no noticeable effect of the
13 coach riding by.

14 Q. You were also able to reach Conclusion No. 5.
15 "Scientific testing shows that the airflow in close
16 proximity to the coach traveling at 25 miles an hour
17 does not create a substantial disturbance on a nearby
18 cyclist."

19 A. That's correct.

20 Q. Is that your conclusion?

21 A. That is.

22 Q. And is that conclusion based on reasonable
23 engineering probability?

24 A. That is.

25 Q. Okay. And then No. 6.

1 "There are no aerodynamic properties or
2 design characteristics of the J4500 coach that would
3 have caused a cyclist, including Dr. Khiabani, to be
4 forced out of control or forced to collide with the
5 coach."

6 Is that your conclusion on the basis of the
7 testing you conducted alone, that you conducted in
8 connection with Dr. Carhart, and the test that you
9 participated in as a bike rider?

10 A. Right. That's my conclusion based on those
11 things as well as dimensional analysis of the coach
12 itself.

13 Q. And are all those conclusions, all six of
14 those conclusions, based on reasonable engineering
15 probability?

16 A. Yes.

17 MR. TERRY: Your Honor, we would offer the
18 conclusions themselves, 573-001.

19 MR. KEMP: No objection, Your Honor.

20 MR. TERRY: That concludes the direct
21 examination.

22 MR. BARGER: Can we have a moment?

23 (Whereupon, Defendant's Exhibit 573-001
24 was admitted into evidence.)

25 /////

1 BY MR. TERRY:

2 Q. There are just a couple of points I wanted to
3 bring up, Mr. Granat, and that is that Dr. Carhart rode
4 in -- rode a bicycle in many of his side-by-side tests.
5 And he performed those side-by-side tests using his own
6 instrumentation on the bicyclist and interpreting his
7 own results; correct?

8 A. That's correct.

9 Q. And there were views taken of his testing by
10 a camera mounted on the bicycle that he rode?

11 A. Correct.

12 Q. And we have not seen all or most of the video
13 presentations or preservations of the testing that was
14 done with Dr. Carhart's instrumentation?

15 A. Right. The testing that he was instrumented
16 in, I assume will be presented by him.

17 Q. Okay. I'm going to go back and look at a
18 slide that we looked at earlier that shows the J4500
19 together with Proposal No. 1. Okay? This one is
20 Exhibit 575.

21 Were you aware that Dr. Breidenthal claimed
22 that MCI Proposal No. 1 was the best choice and was
23 aerodynamically sound?

24 A. I read his trial testimony, and I'm aware of
25 what he said.

1 Q. Okay. Are features from Proposal No. 1
2 incorporated in the J4500 --

3 A. Absolutely.

4 Q. -- as you described earlier?

5 A. Sure.

6 Q. And are there additional streamlining effects
7 incorporated in the J4500?

8 A. There are.

9 Q. Is it your opinion that, of the buses we
10 looked at, the J4500 compares closely with MCI Proposal
11 No. 1 plus additional streamlining features?

12 A. Well, of the -- of the proposals in the CJ3
13 is certainly closer to Proposal No. 1 than it is to the
14 Proposal 2 or the CJ3 in the wind tunnel tests, but it
15 does incorporate more streamlining features, such as
16 the taper, the sweep of the front, the rounding of the
17 windshield.

18 Q. Thank you, sir.

19 MR. TERRY: That concludes the direct
20 examination, Your Honor.

21 MR. KEMP: Your Honor, I told Mr. Terry I
22 could probably get done in 35 minutes, but I would
23 think the jury would want at least two or three minutes
24 maybe? Five-minute break? Ready to go? I'm ready if
25 you're ready. Okay.

1 THE MARSHAL: You guys okay?

2 MR. KEMP: Trying to get back on track, Your
3 Honor.

4

5 CROSS-EXAMINATION

6 BY MR. KEMP:

7 Q. Doctor, can you explain to the jury what
8 animamater is?

9 A. An anemometer?

10 Q. Yeah.

11 A. Not a doctor. An anemometer is a --

12 Q. Mr. Granat. I'm sorry.

13 A. Yes. That is a device to measure pressure
14 between two positions, so basically it's a fluid device
15 that measures the difference in pressure from one
16 location to another.

17 Q. Measures the wind.

18 A. It measures the wind speed as a change in
19 pressure.

20 MR. KEMP: Can I have one of these, please.

21 MR. GODFREY: Ms. Recorder, if you could,
22 please.

23 BY MR. KEMP:

24 Q. Is that what you're talking about?

25 A. No, that's not an anemometer.

1 Q. What is that?

2 A. That's a wind speed device.

3 Q. And that's the device that's used in most
4 weather stations to measure wind; right?

5 A. Device like that, sure.

6 Q. You're familiar with that?

7 A. To some degree.

8 Q. You've used it before?

9 A. I've used data recorded by such devices, but
10 I have not used the device itself.

11 Q. You did not use that device in your testing
12 to record the wind speed; correct?

13 A. I did not use that device. I just received
14 the -- the ambient conditions from the Exponent test
15 facility.

16 Q. Okay. The ambient conditions, what you mean
17 from that is you were getting crosswind one way, the
18 other, front wind during the entire testing period;
19 right?

20 A. There's movement of the air out there. I
21 wouldn't characterize it as crosswind or anything like
22 that, but there's movement.

23 Q. Some points it was crosswind one way, some
24 points it was crosswind the other way, some point you
25 were going into it, and some point you were coming out;

1 correct?

2 A. I would have to look back at the data, but I
3 think it would be characterized as variable conditions.

4 Q. You already told the jury that, because of
5 those variable conditions, some of those test results
6 were not consistent; correct?

7 A. No, they're consistent, but there is
8 variability about the trend line.

9 Q. In other words, when we get a side wind of 7
10 and you're trying to measure what's coming out of the
11 bus, the side wind is going to mask or confuse that
12 data; correct?

13 A. I'm not sure about mask. The side winds that
14 you see out there are going to either augment or change
15 the forces to a minor degree. But once the peak forces
16 are calculated and plotted, the trend lines match the
17 actual data.

18 Q. Okay. Well, to a minor degree you had tests
19 where you were running the bus 35 miles an hour and
20 2 feet away and tests where you were running it
21 45 miles an hour and 2 feet away, and you got the exact
22 same peak forces; right?

23 A. Sure. You can get variabilities in those
24 tests.

25 Q. Variability. Does that sound very reliable

1 to you that the 35-miles-an-hour test at 2 feet and the
2 45-miles-an-hour test at 2 feet are the exact same
3 force rating?

4 A. Sure. Absolutely. The variability --

5 Q. That's reliable?

6 A. Absolutely. Sure. If you look at the trend
7 lines in the data, you'll see that the data follows a
8 parabolic slope, and the variation around that is
9 normal. That's expected. And that's exactly why I
10 would have run repetitive tests.

11 Q. And you wouldn't have had that problem, that
12 discrepancy of the 35-mile-per-hour test being about
13 the exact same as the 25-mile-per-hour test, you
14 wouldn't have had that problem if you'd been running
15 the test inside; correct?

16 A. Inside?

17 Q. Correct?

18 A. What do you mean by inside?

19 Q. In an inside test facility, like a wind
20 tunnel perhaps?

21 A. You wouldn't want to run that test in a wind
22 tunnel.

23 Q. Okay. You wouldn't have had that problem if
24 you had been running it on a day when there was no
25 wind; correct?

1 A. I think you're going to get variability no
2 matter what. So that's why you run multiple runs.

3 Q. You've seen Dr. Rosenthal's report about the
4 weather conditions in Phoenix on the two days you ran
5 those tests, haven't you?

6 A. Well, I've got my own weather data in the
7 test book.

8 Q. You have seen Dr. Rosenthal's report
9 pertaining to the weather data at the Phoenix airport
10 on the two days you ran those tests?

11 A. At the Phoenix airport?

12 Q. Have you seen Dr. Rosenthal's rebuttal report
13 that outlines the wind conditions at the Phoenix
14 airport close to you on the day of the test? Have you
15 seen that?

16 A. I don't recall him using Phoenix airport
17 data. That's probably 40 miles away.

18 Q. Okay. You don't disagree with me that the
19 wind on that day hit 12 miles an hour when you were
20 doing the testing, do you? Or do you disagree?

21 A. I do believe the test data -- or the weather
22 data that's at site there has variability up to
23 12 miles an hour down to zero.

24 Q. So you are measuring what you think are
25 forces coming out of the bus when you have

1 12-mile-an-hour forces potentially going directly the
2 other way; right? That's what you're doing.

3 A. Well, not 12-mile-an-hour force. There's
4 ambient wind out there that will affect the force
5 readings, but what I'm measuring is the pass-by force.

6 Q. Affect the force readings. That makes the
7 data unreliable, doesn't it? A 12-mile-an-hour wind
8 into what you're trying to measure?

9 A. No, no. The tests --

10 Q. It's still reliable?

11 A. The tests are reliable because I did a series
12 of tests.

13 Q. Okay. Well, let's -- let's --

14 A. Repetition of tests eliminates the --

15 Q. Let's finish the weather readings.

16 If you had really wanted to measure the wind
17 coming off the front of the bus, you could have set up
18 a device to catch the winds and measure it; right?

19 A. That would be a good experiment. Sure, you
20 could do that experiment.

21 Q. A good experiment. I mean, you bought
22 rockets. You had buses going back and forth. You
23 spent two days. Why didn't you just set up a little
24 device that measures the wind?

25 A. I measured the force on a bike rider.

1 Q. Well, you took a 190-pound dummy, hooked a
2 wire to it, and measured how much it took to push over
3 the dummy?

4 A. That's not quite accurate. No, the -- the
5 reason you measure the force with a test dummy is
6 because the force that's created by any sort of air
7 displacement from a coach is going to be dependent on
8 the surface area -- let me finish -- is going to be
9 dependent on the surface area of that bike and that
10 rider.

11 Measuring just with an anemometer, if you
12 want to call it that, or a wind speed measurement
13 device, that will just tell you the speed of the wind.
14 That will not tell you the force on the bike rider.

15 Q. Mr. Granat, you'll find I rarely interrupt
16 witnesses. I can't say the same for everybody, but I
17 rarely do.

18 So if you measured 2 1/2-mile-an-hour
19 force -- or 2 1/2 pounds -- you're measuring pounds of
20 force -- on the test dummy, we could have had a wind
21 speed of anywhere between 20, 25 miles an hour; right?

22 A. No.

23 Q. No? We couldn't have?

24 A. No.

25 Q. How do we know that if we didn't measure?

1 A. Well, if you want to go back to
2 Dr. Breidenthal's calculations, he said that --

3 Q. 35 miles an hour.

4 A. He said that if you have a 34-mile-an-hour
5 air speed, you'd measure 9 pounds of force.

6 So if you had 35 miles an hour of wind coming
7 off of the coach, you would measure that in the force
8 on the bicycle.

9 Q. You don't know what the air speed was in the
10 2.5-mile-an-hour -- or pound test that you did;
11 correct? You don't know that?

12 A. I have not tried to measure the specific air
13 speed, but it's much less than Dr. Breidenthal
14 estimated. What I measured is the force on the bike
15 and the rider.

16 Q. Well, if it's much -- how do you know it's
17 much less if you haven't measured test -- and we're
18 going to show you the test in a minute, where you got
19 the 2.4, the highest one; right? Remember that one?

20 A. Sure.

21 Q. Okay. You don't know what the air speed
22 coming off that coach was during that test?

23 A. I'm not trying to measure air speed; I'm
24 trying to measure the force on the bicycle.

25 Q. Listen to my question. You do not know what

1 the air speed coming off that coach was in that test?

2 Yes or no.

3 A. I'm not trying to measure air speed there.

4 Q. I guess that means no.

5 A. I don't --

6 Q. You don't know.

7 A. -- the specific air speed. I could estimate
8 a range.

9 Q. But the air speed could have been 10, could
10 have been 15, could have been 20. You just don't know;
11 right?

12 A. No, that's not true.

13 Q. It's not true that you don't know?

14 A. You can -- you can provide a range, based on
15 the force applied to the rider.

16 Q. Okay. Let's -- let's hear Dr. Breidenthal's
17 explanation of why he -- and you've read his depo --
18 his trial testimony?

19 A. I have.

20 Q. He criticized the way you did this test;
21 right?

22 A. Sure.

23 Q. Let's see what he said.

24 (Whereupon video deposition was played.)

25 "QUESTION: And in your view, does the

1 Granat testing -- is that substantially similar
2 to what we have here, to what actually happened
3 here?

4 "ANSWER: Well, his results are not -- are
5 corrupted by the fact that he used the very
6 heavy cyclist model. And so the magnitude of
7 these forces that Kato sees are almost
8 completely missing from Granat's measurements.

9 "QUESTION: Okay. And when you say he
10 used a heavy cycler model, what are you talking
11 about?

12 "ANSWER: He had a dummy mounted on a
13 bicycle, and he points out in his report that
14 he made sure that the dummy had the same weight
15 as the victim in this tragic case.

16 "And the flaw in that -- the flaw in
17 that -- and it really is a big mistake. The
18 flaw is that he measured the forces on this
19 cyclist using a strain gauge, which is a small
20 electrical thing that measures strain or -- or
21 motion of the -- of the cyclist model.

22 "When you use a massive model,
23 because it takes a long time for something
24 massive to start moving and because these
25 forces occur for such short times, there's no

1 time for his diagnostics to record the real
2 fluctuating, rapidly changing forces. So he
3 reports that he sees very weak forces, much
4 weaker than Kato and much weaker than my
5 estimate."

6 BY MR. KEMP:

7 Q. Okay. So, you've heard his criticism.

8 A. Sure.

9 Q. And he's right, if you use a 190-pound dummy,
10 that will -- you will measure less force than if you
11 used a hundred-pound dummy; right?

12 A. That's not accurate.

13 Q. So you think if you had done this test using
14 a hundred-pound dummy under the exact same conditions,
15 you would get the exact same force readings?

16 A. You would get basically the same force
17 readings.

18 Q. Okay. Well, then, let me give you a
19 hypothetical, then. If you had used a dummy that
20 weighed 5 pounds, do you think you'd get the same force
21 readings?

22 A. If you set up the test appropriately, sure.
23 It would have to be a very stiff piece of cardboard or
24 something like that. But the -- the force on the dummy
25 is dependent on the surface area of the cyclist.

1 So as long as you have the right size and
2 shape, you can use basically whatever mass you want.
3 The strain gauge is not a spring like Dr. Breidenthal
4 seems to be describing. The strain gauge is a force
5 measurement device. So once you apply a force to the
6 bicycle, it doesn't take time for that mass to move.
7 It's an instantaneous force measurement. That strain
8 gauge measures the actual force instantly.

9 Q. Dr. Breidenthal is the one with the degree in
10 aeronautics; correct?

11 A. Correct. But the force --

12 Q. You don't have that? You don't have that?

13 A. -- is dependent on Newton's laws.

14 Q. You don't have that?

15 A. I've got a mechanical engineering degree.

16 Q. Okay. Let's talk about -- well, first of
17 all, you said you're not an expert on proximity
18 sensors; right?

19 A. Right.

20 Q. But you do have a proximity sensor in your
21 car?

22 A. I do.

23 Q. So it doesn't take an expert to realize that
24 a proximity sensor is a good safety device?

25 MR. TERRY: Objection. May we approach, Your

1 Honor?

2 THE COURT: Yeah.

3 (A discussion was held at the bench,
4 not reported.)

5 BY MR. KEMP:

6 Q. Okay. Can you explain to the jury what the
7 concept of leverage is.

8 A. Sure. Leverage means you apply a force to
9 one end of a lever -- sorry.

10 Q. Go ahead. Can that help?

11 A. Sure. You apply a force to one end of the
12 lever, and it's pivoted around a joint, and the force
13 at the other end is different.

14 Q. Okay. And during your deposition, you told
15 me that you didn't know whether or not this bicycle,
16 the bicycle in this case, had any leverage? You didn't
17 know the leverage ratio? You told me that?

18 A. No, you told me you were talking about a
19 force at the contact patch of the tire.

20 Q. Okay. If you apply 2 1/2 pounds of force at
21 the tire and someone is gripping it 4 inches from
22 the -- the stem, how much leverage -- how much force
23 would that be applying the leverage?

24 A. Where are you applying the 2 pounds on the
25 tire?

1 Q. I'm applying 2 1/2 pounds on the tire, how
2 much force would you see there?

3 A. But I'm asking you where you're applying the
4 force on the tire. That's -- that's the critical
5 information.

6 Q. Let's just assume we get -- we pull it out
7 2 1/2 pounds, we have some sort of device --

8 A. You're trying to steer the --

9 Q. -- 2 1/2 pounds of force. How much force
10 will you see 4 inches away from here?

11 A. That's simply a measurement between the
12 distance from the -- where the force is applied to the
13 pivot axis and then also a measurement from where the
14 hands are applied to the pivot axis.

15 Q. Well, I didn't ask you how to measure it; I
16 asked you if you know how much force 2 1/2 pounds would
17 generate here.

18 A. 2 1/2 pounds, it would be multiplied by that
19 leverage ratio.

20 Q. And what is the leverage ratio?

21 A. I have not measured that. That's not
22 relevant.

23 Q. It's not relevant? The force that a
24 bicyclist would see at the handlebar, that's not
25 relevant to your opinion?

1 A. To -- to a 2 1/2-pound force? That's not
2 relevant.

3 Q. Okay. Have you looked at Alex LaRiviere's
4 supplemental report?

5 A. I have.

6 Q. And do you see where he tests the leverage
7 ratio on the bicycle?

8 A. I saw where he stuck a bicycle out the side
9 of a van and tried to measure the force on the tire.

10 Q. And did you also see the testing where he
11 tested the leverage ratio?

12 A. I saw where he discussed that, and I didn't
13 see any documentation of that testing.

14 Q. Would you agree with me that you would have
15 to know the leverage ratio to determine what force a
16 bicyclist would see if he was holding onto the bike
17 with one hand?

18 A. For a 2 1/2-pound force?

19 Q. Right.

20 A. Well, the 2 1/2-pound force that's measured
21 in the aerodynamics tests is applied --

22 Q. I'm not asking about your test; I'm asking
23 about --

24 MR. TERRY: Your Honor, may the witness be
25 allowed --

1 BY MR. KEMP:

2 Q. I'm asking about my test, Doctor.

3 THE COURT: Yes?

4 MR. TERRY: May the witness be allowed to
5 complete his answer?

6 THE COURT: Sustained.

7 BY MR. KEMP:

8 Q. Let's try to go to the yes-and-no method.
9 Okay? I'm entitled a yes-or-no answer if you can do
10 so.

11 MR. TERRY: Your Honor, the witness was not
12 given an opportunity to complete the answer, if he
13 still remembers the question he was asked.

14 MR. KEMP: Your Honor, I'm trying to do
15 Mr. Terry a favor here. We could break today and I
16 could come back tomorrow and we can spend --

17 THE COURT: Okay. No. Sustained.

18 BY MR. KEMP:

19 Q. Can you answer yes or no with regards to, if
20 you have a 2 1/2-pound force like we've hypothecated,
21 what the leverage would be seen right here?

22 A. It's about a 4-to-1 lever ratio given
23 geometry, so -- but if you apply that force to the body
24 of the rider, it's -- it's not relevant.

25 Q. So if we apply a 2 1/2-pound force to the

1 bicycle tire, you will see -- what? -- 10? 4 times
2 2 1/2 is 10; correct?

3 A. Potentially, but you'd have to have some
4 reason to apply a 2 1/2-pound force.

5 Q. Now, when the bus passes, would I be correct
6 that the air displacement will first hit the back tire?

7 A. In a very short succession of time, it would
8 basically hit the whole bike from rear to front.

9 Q. The first thing it hits is the back tire;
10 correct?

11 A. Sure.

12 Q. And the back tire doesn't move, so there's --
13 there's no potential for wobble with the back tire;
14 correct?

15 A. Are you talking about a moving bicycle?

16 Q. A moving bicycle.

17 A. Well, sure, the back tire is affected by
18 the --

19 Q. The back tire doesn't turn.

20 A. Well, sure.

21 Q. Okay. And the center of the bike, the body
22 where the rider is, that's the next thing hit by the
23 air displacement; correct?

24 A. Well, basically, the air is contacting the
25 body of the rider.

1 Q. And then the final part that is hit is the
2 rear of the right front tire; correct?

3 A. No, it would be the front of the tire. That
4 would be the final part.

5 Q. So you think an air displacement from the
6 passing bus is going to hit the front of the tire
7 before it hits the back of the tire?

8 A. No, you said the final part. So that would
9 be the end of the bicycle.

10 Q. But it will hit the rear tire; correct?

11 A. A very small portion of the wind will hit the
12 back tire. The most -- the brunt of the wind would be
13 affecting --

14 Q. And the specific air displacement --

15 MR. TERRY: Your Honor, he's interrupting the
16 witness again.

17 MR. KEMP: Your Honor, I'm trying to get
18 yes-or-no answers. You know, fine. We can do this
19 tomorrow if you want.

20 THE COURT: I would like you to approach for
21 a moment. Come on up.

22 (A discussion was held at the bench,
23 not reported.)

24 MR. KEMP: Judge, are you going to ...

25 THE COURT: Yes. When Mr. Kemp asks you a

1 question, you can answer either yes or no because this
2 is cross-examination.

3 THE WITNESS: Okay.

4 BY MR. KEMP:

5 Q. Okay. So, after the air displacement hits
6 the rider, the next thing it will hit is the rear
7 portion of the front tire; correct?

8 A. No.

9 Q. No? What will it hit next?

10 A. The frame.

11 Q. Okay. Let me ask it this way: Would you
12 agree with me that, after the air displacement hits the
13 bicyclist, it will hit the rear portion of the front
14 tire before it hits the front portion?

15 A. Yes.

16 Q. And you will also agree that there are some
17 circumstances -- I know you don't think it's this
18 case -- but there are some circumstances where, if an
19 air displacement hits this portion of the tire, it can
20 make the bike turn to the left?

21 A. No.

22 Q. You don't think so, a 4-to-1 leverage ratio?

23 A. No.

24 Q. You don't think so? Okay.

25 Now, you told Mr. Terry a couple times that

1 the J4500 incorporated the 1993 alternative one test
2 design. That was your word, right, "incorporated"?

3 A. It incorporated some of the features of that
4 design. It's definitely not that same shape.

5 Q. Isn't it true that Mr. Hoogestraat -- you
6 read his deposition; right?

7 A. I don't recall.

8 Q. He didn't even know about the 1993 wind
9 tunnel tests until 2017; correct?

10 A. I don't recall that.

11 Q. Assuming that to be the case, you do know he
12 was on the design team, that Mr. Hoogestraat was on the
13 design team?

14 A. On the 1993 coach? I don't believe that's
15 the case, but ...

16 Q. He was on the design team for the J4500.

17 A. Okay. That's after the 1993 time frame.

18 Q. And he didn't even know about the 1993 wind
19 tunnel tests. Would you accept that?

20 A. I will accept that, sure.

21 Q. How could he have incorporated the 1993 wind
22 tunnel tests if he didn't even know about it?

23 MR. TERRY: Objection. Your Honor, may we
24 approach?

25 THE COURT: Yes.

1 (A discussion was held at the bench,
2 not reported.)

3 BY MR. KEMP:

4 Q. Okay. Mr. Granat, back to the word
5 "incorporated." You said that the wind tunnel testing
6 was incorporated into the design of the J4500; correct?

7 A. No.

8 Q. You didn't use the word "incorporate" over
9 and over again?

10 A. I did. I'll explain if you want me to.

11 Q. You did use the word "incorporate"?

12 A. I did.

13 Q. You want to change that now?

14 A. No. I -- I will explain it --

15 Q. Because you know -- you know that
16 Mr. Hoogestraat didn't see that wind tunnel test? You
17 know that, don't you?

18 A. I don't really know what Virgil saw or not.

19 Q. You had his deposition for review?

20 A. I might have. I don't recall reviewing it.

21 Q. All right. Let's try to move onto another
22 area.

23 You don't know the threshold it takes to
24 have -- to make a bike go out of control?

25 A. I do to some degree based on my subjective

1 analysis, but I would defer to Dr. Carhart for a more
2 numerical analysis.

3 Q. Okay. You told me four different times at
4 your deposition that you cannot tell the threshold
5 that's needed for a bike to lose control. You told me
6 that four times.

7 A. I can't tell you the actual force value, but
8 I can tell you, based on my experience from riding past
9 a coach, that it's not at that level.

10 Q. Okay. So you can't tell me what level it
11 needs to be; you can just tell me you don't think it
12 was the level in this case? Is that what you're
13 saying?

14 A. I can tell you it would be much greater than
15 the level of a passing coach.

16 Q. All right. Now, with regards to the
17 aerodynamics -- and -- and I think you tried to compare
18 the shape of the alternative one with the shape of the
19 J4500. Do you recall that?

20 A. Sure.

21 Q. And the CJ3; right?

22 A. Sure.

23 Q. Now, the CJ3 was a .60 drag coefficient;
24 correct?

25 A. I don't recall the specific numbers.

1 Q. Okay. It's in the -- it's in the wind tunnel
2 tests, .6; right?

3 Right?

4 A. Okay. I don't recall the specific number.

5 Q. Okay. Didn't you tell me at your deposition
6 that you didn't know what the drag coefficient of the
7 J4500 is?

8 A. Yes, I did tell you that. I do not know
9 that.

10 Q. You don't know it because it's never been
11 tested; right?

12 A. I'm not aware of any tests.

13 Q. Could be a .6, could be a .7; right?

14 A. I don't think so.

15 Q. In your deposition, did you not tell me that
16 it would be a .6 or a .7?

17 A. I said I don't know what the actual value is.

18 Q. And it could be a .6 and it could be a .7;
19 right?

20 A. It could be. I don't know what the value is.
21 I think it's much lower than that.

22 Q. Well, to determine that, we'd have to do a
23 wind tunnel test; right?

24 A. That would be the best way to determine that.

25 Q. And you suggested doing a wind tunnel test;

1 correct?

2 A. What do you mean?

3 Q. When you were performing work on this case,
4 you suggested that MCI do a wind tunnel test on the
5 J4500; correct?

6 A. I did not, no. I evaluated doing a wind
7 tunnel test, but I decided that that was not the best
8 route.

9 Q. You considered doing a wind tunnel test?

10 A. I did.

11 Q. And if you had done a wind tunnel test, you
12 would know what the drag coefficient is; right?

13 A. I suppose so. That wasn't the purpose of my
14 testing.

15 Q. Okay.

16 Let's have Dr. Breidenthal's summary chart,
17 please.

18 Okay. These are a summary of his opinions.
19 Let's -- aerodynamic problems. You -- first of all,
20 you didn't talk about the window frame molding, did
21 you?

22 A. Only in passing based on serviceability
23 issues.

24 Q. And would you agree with me that the window
25 frame molding in the CJ3 is -- is exactly the same as

1 in the J4500 placed at the right corner?

2 A. I don't have a way of knowing that that
3 window frame molding is the same. The J4500 has a more
4 rounded --

5 Q. I'm not talking about rounded --

6 A. -- window.

7 Q. -- I'm not talking about the window frame
8 molding. It's placed at the exact same spot; right?

9 A. I don't know. You would have to get a
10 side-by-side of a CJ3 and a 4500 and take measurements
11 to figure that out.

12 Q. You just got done telling Mr. Terry that you
13 looked at them and they were the same.

14 A. A J4500 and a CJ3?

15 Q. You just got done telling Mr. Terry that you
16 looked at them and that it was more rounded, that it
17 was -- right?

18 A. Right. I told him they were different.

19 Q. Okay. And but the window frame is the same;
20 yes?

21 A. No, it's a completely different window.

22 Q. Okay. We'll look at the window frame.

23 Okay. So you do agree that there's a push
24 and a pull threshold; right?

25 A. There's definitely a displacement of air

1 outboard from the coach. It's very minor.

2 Q. Okay. And you measured -- well, 2.5 is what
3 you measured?

4 A. Miles per hour?

5 Q. No, 2.4 pounds of force is what you measured.

6 A. At 9 inches of separation, that would be
7 about right, less the --

8 MR. KEMP: Can I have the chart, please,
9 Shane, so we can establish this before we leave.

10 No, no, not that, the -- the force -- I think
11 it's 52, 52 or 54.

12 The -- the -- his test chart run, 52 or 54.

13 MR. GODFREY: Do you have an exhibit number?

14 MR. KEMP: Your Honor, I don't think we're
15 going to finish today.

16 Can we approach?

17 THE COURT: Yes. I would like everyone up,
18 please.

19 (A discussion was held at the bench,
20 not reported.)

21 THE MARSHAL: Is everyone able to stay
22 longer? 30 or so. 30 more? 30 plus? 30?

23 MR. KEMP: Okay.

24 THE MARSHAL: Yes, everyone is able, but we
25 need a restroom break quickly.

1 THE COURT: You need what?

2 THE MARSHAL: A restroom break.

3 THE COURT: All right. Let's take a
4 five-minute break. Excuse me.

5 Do you stipulate to the admonition?

6 MR. TERRY: I do.

7 MR. KEMP: Yes, Your Honor.

8 THE COURT: Okay.

9 THE MARSHAL: Okay. All rise. Department in
10 recess.

11 (Whereupon a short recess was taken.).

12 THE MARSHAL: Department 14 is back in
13 session.

14 THE COURT: All right. We don't need to go
15 on the record for this.

16 (Discussion was held off the record.)

17 THE MARSHAL: Are we ready, Your Honor?

18 THE COURT: Sure.

19 THE MARSHAL: All rise.

20 All the jurors are present, Your Honor.

21 THE COURT: All right.

22 THE MARSHAL: Please be seated. Come to
23 order.

24 THE COURT: First, I want to thank you for
25 your -- ladies and gentlemen of the jury, for your --

1 trying to accommodate and stay later, but, on second
2 thought, I think what we'll do is start tomorrow at
3 1:00 -- okay? -- instead. So I'm going to read you the
4 admonishment.

5 You're instructed not to talk with each other
6 or with anyone else about any subject or issue
7 connected with this trial. You are not to read, watch,
8 or listen to any report of or commentary on the trial
9 by any person connected with this case or by any medium
10 of information, including, without limitation,
11 newspapers, television, the Internet, or radio.

12 You are not to conduct any research on your
13 own relating to this case, such as consulting
14 dictionaries, using the Internet, or using reference
15 materials.

16 You are not to conduct any investigation,
17 test any theory of the case, re-create any aspect of
18 the case, or in any other way investigate or learn
19 about the case on your own.

20 You are not to talk with others, text others,
21 tweet others, google issues, or conduct any other kind
22 of book or computer research with regard to any issue,
23 party, witness, or attorney involved in this case.

24 You're not to form or express any opinion on
25 any subject connected with this trial until the case is

1 finally submitted to you.

2 Have a pleasant evening. See you tomorrow at
3 1:00.

4 THE MARSHAL: All rise.

5 (The following proceedings were held
6 outside the presence of the jury.)

7 THE COURT: Mr. Granat, can you step down.
8 Thank you.

9 THE WITNESS: Excuse me, Your Honor. Can I
10 leave this stuff here? Is there anything else
11 happening?

12 THE COURT: You're fine there.

13 MR. BARGER: We got to move them, Kevan,
14 because you have a docket tomorrow; right?

15 THE COURT: Yes, but I'm not going to have
16 anybody testify.

17 THE CLERK: I need that exhibit.

18 MR. TERRY: I'll work with you on the
19 exhibits.

20 MR. BARGER: Oh, yeah, you can't take -- is
21 this --

22 MR. TERRY: That's not the exhibit.

23 (Discussion was held off the record.)

24 THE COURT: 12:30 tomorrow. Half an hour
25 before the jury comes back.

1 But, in the meantime, what -- what -- do we
2 need to review anything now? What -- I just don't want
3 to take a break again if I don't need to.

4 MR. ROBERTS: And, Your Honor, I have one
5 clarification on Dr. Baden, Dr. Michael Baden, our
6 forensic --

7 THE COURT RECORDER: Do we need to be on the
8 record?

9 MR. BARGER: Yes.

10 THE COURT RECORDER: Yes.

11 MR. BARGER: Sorry.

12 THE COURT RECORDER: Okay.

13 THE COURT: Are we on?

14 THE COURT RECORDER: Yes, Your Honor.

15 THE COURT: Go ahead, Mr. Roberts.

16 MR. ROBERTS: Yes, Your Honor. There was
17 a -- I'm asking a clarification question regarding
18 Dr. Michael Baden, our forensic pathologist. If you'll
19 recall, there was a motion in limine which
20 Mr. Christiansen filed to prevent us from bringing out
21 the fact that he had retained Dr. Baden as a collateral
22 issue.

23 THE COURT: Right.

24 MR. ROBERTS: And, in our response, we said,
25 well, maybe, but they shouldn't be able to bring up the

1 fact that Dr. Baden had been retained to represent OJ
2 Simpson.

3 THE COURT: Correct.

4 MR. ROBERTS: And what the Court ended up
5 holding was that they could bring up his opinion in the
6 Simpson case if they could show substantial similarity,
7 but they couldn't mention the name OJ Simpson.

8 Since that time, I have had a chance to look
9 at the opinion that he rendered in the Simpson case,
10 and there is an opinion that he gave as to whether or
11 not Nicole Brown Simpson would have been unconscious
12 based on a brain bruise that she had. And it probably
13 at least is close enough that they should be able to
14 try to impeach him with it.

15 And in looking at that, the facts of that
16 case and the impeachment testimony, in my view, it's
17 probably going to become obvious to the jury what the
18 situation is, and I may go ahead and diffuse that by
19 addressing that opinion on direct. And I'm thinking
20 that I might as well mention the Simpson case if
21 everyone is going to know it. I'll have to confer with
22 my client to be sure.

23 But I just wanted to make sure that if,
24 strategically, I decided to discuss that issue with him
25 and the opinion he gave and why it's not inconsistent

1 with this case, that I wasn't precluded by the Court's
2 ruling from mentioning the Simpson case since I was the
3 proponent of that request.

4 THE COURT: I'm not hearing anything.

5 MS. WORKS: We have no objection.

6 MR. ROBERTS: You have no objection? There
7 you go. Okay. I just didn't want to violate my own
8 motion in limine without clearing it with the Court,
9 Your Honor.

10 THE COURT: It's fine.

11 MR. CHRISTIANSEN: Your Honor, I just -- no
12 objection subject to that somehow they don't think
13 that, since they're going to mention the OJ Simpson
14 case, they get to say to Dr. Baden, "And isn't it true
15 that Christiansen hired you 20 years ago?" I mean, the
16 ruling as to my retaining him in a state-appointed case
17 in 1999 has still been precluded from evidence.

18 THE COURT: Yes, it was still precluded.

19 MR. ROBERTS: I understand.

20 THE COURT: But, Mr. Roberts, you think it's
21 that similar?

22 MR. ROBERTS: I don't, but I -- it's similar
23 in the extent that he was opining as to whether someone
24 would have been unconscious after a blow to the head.

25 THE COURT: Okay.

1 MR. ROBERTS: So I --

2 THE COURT: Understood.

3 MR. ROBERTS: So I -- I do think that it's
4 appropriate cross-examination.

5 THE COURT: All right.

6 MR. ROBERTS: Thank you, Your Honor.

7 MR. RUSSELL: And, Your Honor, as far as what
8 you're going to have to review tonight, this is the
9 Plantz's deposition. We've got it all highlighted and
10 color-coded. That's an old -- that's an older version.

11 THE COURT: Is it an older version? I've
12 already started looking at it.

13 MR. RUSSELL: That's okay.

14 MR. HENRIOD: It looks like it's only 250
15 pages.

16 MR. RUSSELL: There's not a lot actually
17 taken out. The only sections you will need, there's
18 only three issues that we've narrowed it down to.
19 They're on pages 51 through 53 and page 61. That's --

20 THE COURT: Okay. Thank you.

21 MR. RUSSELL: -- that's everything.
22 Obviously, you'll read through the whole thing, but
23 you'll see those are the parts marked as objected
24 areas.

25 THE COURT: 51 through 53.

1 MR. RUSSELL: Yep, and 61.

2 THE COURT: Okay.

3 Is there anything else that may come up that
4 we need to --

5 MR. HENRIOD: One last little thing. I don't
6 think it will come up, but --

7 THE COURT: I'd rather -- I'd rather discuss
8 it now, just in case. I mean --

9 MR. HENRIOD: Okay. So jury instructions.

10 THE COURT: Yes.

11 MR. HENRIOD: I doubt we're on a course to
12 actually settle those Friday afternoon or Friday
13 evening, but I just wanted to make sure that Your Honor
14 didn't intend on doing that because I've got a family
15 thing -- okay. Perfect. That's it.

16 THE COURT: That's it.

17 MR. CHRISTIANSEN: We don't object. I know
18 what Joel's family thing is. He's taking his daughter
19 to get her driver's license. Good for him. We want
20 him to do that.

21 MR. HENRIOD: I don't know. We may need to
22 buy comfort food afterwards or celebrate. I don't
23 know.

24 THE COURT: Oh, I -- I have lived it. I've
25 lived it. I understand. Yes.

1 All right. That's it for this evening?
2 Okay.

3 MS. WORKS: Thank you, Your Honor.

4 THE MARSHAL: Court is adjourned.

5 (Thereupon, the proceedings
6 concluded at 5:20 p.m.)
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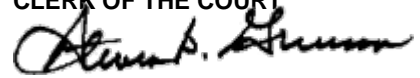
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12 ATTEST: FULL, TRUE, AND ACCURATE TRANSCRIPT OF
13 PROCEEDINGS.
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Steven D. Grierson
CLERK OF THE COURT

1 CASE NO. A-17-755977-C

2 DEPT. NO. 14

3 DOCKET U

4 DISTRICT COURT

5 CLARK COUNTY, NEVADA

6 * * * * *

7 KEON KHIABANI and ARIA)
8 KHIABANI, minors by and)
9 through their natural mother,)
10 KATAYOUN BARIN; KATAYOUN)
11 BARIN, individually; KATAYOUN)
12 BARIN as Executrix of the)
13 Estate of Kayvan Khiabani,)
14 M.D. (Decedent) and the Estate)
15 of Kayvan Khiabani, M.D.)
16 (Decedent),)

17 Plaintiffs,)

18 vs.)

19 MOTOR COACH INDUSTRIES, INC.,)
20 a Delaware corporation;)
21 MICHELANGELO LEASING, INC.)
22 d/b/a RYAN'S EXPRESS, an)
23 Arizona corporation; EDWARD)
24 HUBBARD, a Nevada resident, et)
25 al.,)

Defendants.)

21 **REPORTER'S TRANSCRIPTION OF PROCEEDINGS**22 BEFORE THE HONORABLE ADRIANA ESCOBAR
23 DEPARTMENT XIV

24 DATED THURSDAY, MARCH 15, 2018

25 RECORDED BY: SANDY ANDERSON, COURT RECORDER

TRANSCRIBED BY: KRISTY L. CLARK, NV CCR No. 708

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I N D E X

Witness:	Direct:	Cross:	Redirect:	Recross:
Kevan Granat		44	128	155, 164
Michael Baden, M.D.	166			

E X H I B I T S

Number:	Marked:	Admitted:	Joint:
578		182	
577-1		189	
577-2		192	
577-3		192	
577-5		192	

1 LAS VEGAS, NEVADA, THURSDAY, MARCH 15, 2018;

2
3 P R O C E E D I N G S

4 * * * * *

5
6 THE MARSHAL: All rise. Department 14 is now
7 in session with the Honorable Adriana Escobar
8 presiding.

9 THE COURT: Good afternoon.

10 THE MARSHAL: Please be seated. Come to
11 order.

12 THE COURT: Okay.

13 MR. CHRISTIANSEN: Good morning, Judge.

14 THE COURT: Am I on?

15 THE COURT REPORTER: Yes. Do you want to go
16 on the record?

17 THE COURT: Yes, we do want to go on the
18 record.

19 Okay. I believe that what we need to review
20 right now is -- let's see. This is the deposition of
21 Mr. Plantz, and there were some objections. This is
22 what we -- correct? I think Mr. Roberts --

23 MR. BARGER: There was, like, three different
24 pages that were objections.

25 THE COURT: I was -- I was told that it was

1 page -- I believe by Mr. Russell, but I'm not
2 positive -- page 51 and 53 and 61.

3 MS. WORKS: I think were three spots, Your
4 Honor. I apologize.

5 MR. BARGER: I think -- Your Honor, I think
6 it starts at 52 -- can Kendelea and I compare?

7 THE COURT: Yes, of course.

8 MR. BARGER: I know for a fact at page 52,
9 line 13, through page 53, line 21, is -- where it's
10 underlined in red where we objected.

11 And is this -- is this objected to, page 51?

12 THE COURT: I show that it's objected to by
13 the defense.

14 MR. BARGER: Right. Your Honor, starting on
15 page 50, line 24, through page 51, line 13, was
16 objected to.

17 And there was a third one, which is --

18 THE COURT: Wait. Wait. I'm sorry. I
19 didn't -- okay. 50, line --

20 MS. WORKS: I think that's withdrawn.

21 THE COURT: I thought that was withdrawn.

22 MR. BARGER: I'm sorry.

23 THE COURT: That's okay. That's okay.

24 All right.

25 MR. BARGER: Howard is in a mediation, so

1 that's why he's not here.

2 So it was page 52 --

3 THE COURT: Yes.

4 MR. BARGER: -- line 13, through page 53,
5 line 20.

6 THE COURT: Just so you know, I have page 51.
7 So it is probably at the bottom of page 51 -- I think
8 it's line 24 -- where the question begins.

9 MR. BARGER: Yes, you're right. Yes.

10 THE COURT: Okay. I -- I just want to make
11 sure the record is complete.

12 So that shows plaintiffs' objections.

13 MS. WORKS: Correct, Your Honor.

14 THE COURT: The question posed by
15 Mr. Christiansen, "So at this juncture, it's very clear
16 to you that the driver, Mr. Hubbard, sees
17 Dr. Khiabani?"

18 "ANSWER: Yes, because he verbally said,
19 'I see you, buddy.'"

20 MR. BARGER: Right.

21 MS. WORKS: And our objection, Your Honor, is
22 hearsay speculation, and it also goes to the fault of
23 the driver. It implies that, you know, he saw him at
24 some point and then later he doesn't, and that it would
25 go to his credibility of his testimony.

1 But, more so, the answer is "Yes, I -- it's
2 clear to me because I spoke to him."

3 Well, the "yes" would be speculation by
4 itself, but the "because he verbally said, 'I see you,
5 buddy,'" then makes it hearsay. So, either way, it's
6 inadmissible on that basis, but it also goes to
7 implicate driver fault, which has been precluded here.

8 MR. BARGER: I don't think it goes to
9 implicate driver fault. And the hearsay would be -- a
10 present-sense impression would be an exception to the
11 hearsay rule.

12 THE COURT: My notes, "comes in,
13 presence-sense impression doesn't unfairly prejudice."
14 So it comes in.

15 All right. Then the next I have is going
16 down further on page 52, I have defendant objections,
17 and they start at line 13.

18 "QUESTION: And help me -- help all of us
19 understand what your experience is in cycling."

20 He started cycling in graduate school and --
21 in the '80s and so forth. That goes through line 1900
22 [sic]. We'll take that -- that 13 through 19 first.

23 MR. BARGER: I'm sorry. 13 through 19,
24 that's the question.

25 THE COURT: Well, it actually goes all the

1 way through page 53 --

2 MS. WORKS: 21.

3 THE COURT: -- 21.

4 MR. BARGER: That's -- yeah, that's the --
5 that's the lines that we're objecting to.

6 THE COURT: Yes. Beginning at page 52, line
7 13, ending on page 53, line 21. That's my
8 understanding. Correct?

9 MR. BARGER: Yes, Your Honor.

10 THE COURT: Okay.

11 MS. WORKS: I believe that's the defense
12 objection.

13 MR. BARGER: That's our objection. And if
14 you read it, it's talking about scientific -- he's not
15 an expert in the case. He's talking about the
16 Bernoulli effect, which is what they're talking about
17 in the case. And he's just a guy who's an eyewitness
18 as opposed to giving expert opinions and information
19 like that.

20 MS. WORKS: Your Honor, I believe he's laid
21 the foundation in the deposition about his scientific
22 background, what he does for a living. And much like
23 other witnesses in this case who have been fact
24 witnesses, for instance, Ms. Witherell, who had a
25 background sufficient to establish a foundation to

1 answer the question, that same foundation has been laid
2 here in the deposition with Mr. Plantz.

3 He answers that he does have a scientific
4 background, that he is familiar with Bernoulli's
5 principle, and, based on his experience as a cyclist,
6 he has experienced that and he has some knowledge to
7 offer.

8 So I think he's similar to other lay
9 witnesses who offered the same type of testimony in
10 this case. There's a sufficient foundation for it, and
11 it should be admitted.

12 MR. BARGER: Your Honor, he is not an expert
13 in the case. There's been no testimony about a
14 Bernoulli effect. That's not what they're talking
15 about; it's the air blast as opposed to this Bernoulli
16 effect.

17 MS. WORKS: The Bernoulli effect actually has
18 come in, Your Honor.

19 THE COURT: There's been some discussion,
20 but ...

21 MR. BARGER: If -- if -- even if it's come
22 in, it's totally -- he's not a designated expert, and
23 for him to talk about that invades the province of the
24 jury.

25 THE COURT: Well -- anything else, Ms. Works?

1 MS. WORKS: Only that in order to stay
2 consistent with the record, other nonexpert lay
3 witnesses have been permitted to testify to such
4 matters, provided that the foundation was laid. And
5 that foundation was laid here with Mr. Plantz as well.

6 MR. BARGER: What they testified to is
7 they've experienced some air displacement. And that's
8 what the eyewitnesses, those people are, the bus
9 driver. This guy is a scientist expert, and they're
10 talking very specifically.

11 THE COURT: Well, okay. So I -- I -- this
12 will not come in. I have a note here this is -- I
13 don't think this is similar, Ms. Works, to the others
14 that have been allowed to testify to some -- some
15 understanding of certain principles; this goes far
16 beyond that. And this is, you know, in my view, like
17 an expert testifying. So I'm not going to allow it.

18 MS. WORKS: Well, then I would ask the Court,
19 Your Honor, just, if I could -- I understand the
20 Court's ruling.

21 But starting on 53, line 14, that question
22 is --

23 THE COURT: Wait. I'm sorry. Page 53 at
24 line 14?

25 MS. WORKS: 14 just to 21, that's about his

1 own personal experience just as a cyclist. There's,
2 again, a foundation.

3 THE COURT: The foundation of him being a
4 cyclist is on page 52 at line 13 -- 13 through 19.

5 MS. WORKS: Correct. So I think that we
6 could enter 52, 13 to 19, and -- and then exclude based
7 just on the Court's ruling -- of course, we still
8 object -- but then exclude --

9 THE COURT: Understood.

10 MS. WORKS: -- 52, lines 20, all the way down
11 to 53 at 13, but start again with that 14. And he's
12 not offering testimony -- it doesn't appear that, with
13 those exclusions, he would be offering expert testimony
14 that the jury could mistake that for. It's simply
15 based on his personal experience having, as a cyclist,
16 experienced that type of air suction.

17 MR. BARGER: With all due respect, that's
18 talking about the theory going all the way up to the
19 Bernoulli effect. That's not what -- what these other
20 witnesses said, they've experienced some -- some air
21 dispersion, but this guy is now referring back to the
22 theory -- the question is the theory behind it. And
23 that's -- that's my understanding, and you've
24 experienced it. Well, I think that still goes to the
25 expert issue, Your Honor.

1 THE COURT: I'm sorry, Ms. Works. What
2 lines?

3 MS. WORKS: So if we kept in just, Your
4 Honor, 52, lines 13 to 19, to establish the foundation
5 for his experience cycling, and then the question that
6 starts on 53 at line 14 down to the response on line
7 21. If we would just limit the designations to just
8 those two specific questions and answers.

9 MR. BARGER: Judge, I don't have any
10 objection if they're putting 13 -- excuse me --
11 page 52, line 13 through line 19. That's fine. I
12 don't have any problem with that. But I do have a
13 continuing objection when they start talking about the
14 theory and so forth.

15 THE COURT: Okay.

16 MS. WORKS: Well, I would want it all out,
17 then. I'm never going --

18 THE COURT: Okay. Then, if you want it all
19 out --

20 MR. BARGER: Okay.

21 THE COURT: -- I'm not going to allow this --
22 this witness to -- to testify to theories. Is the
23 period behind the effect that when, you know. And --
24 and, in that regard, I'm not going to allow this in.

25 So -- so, given my decision, page 52, line 13

1 to 24, and page 53, lines 1 through 21, are out.

2 MR. BARGER: Okay.

3 THE COURT: Okay. Do we have -- do we have
4 page 61?

5 61, I show the defense objections from line
6 11 through 16. The question is, "And if you were --
7 and if you were consistent and he intended to turn left
8 on Griffith Peak, up here on eastbound to Griffith
9 Peak, he would have presumably got into that left turn
10 lane, where" -- I'm sorry -- "Where is it? -- about the
11 250-foot mark; fair?"

12 "ANSWER: Yes."

13 MR. BARGER: And, Judge, I -- while I
14 objected there as to form and that's calling for
15 speculation -- that's why we made that objection -- as
16 to what he would -- as to what the bicycler was going
17 to do.

18 THE COURT: Right.

19 MS. WORKS: And I'm not sure it's just a
20 typical speculation objection in this case with the way
21 the question is framed, Your Honor, because it's asking
22 if you were -- if he were consistent in his pattern.
23 And so, because this witness observed him make a turn
24 previous to this, it lays the foundation for that
25 knowledge that he saw him signal at the earlier turn,

1 and if he were consistent with that behavior, he would
2 again signal on the next one.

3 So I don't know that it's speculation. It's
4 not "What was he doing? Was he turning?" It's simply
5 if he were being consistent with the prior turn, would
6 he have made that signal again? And the answer
7 obviously is "yes" if he were being consistent.

8 MR. BARGER: Pure speculation, Your Honor.

9 THE COURT: I believe this is speculation as
10 well at line -- page 61, 11 through 16, is out.

11 And, you know, this is something that you
12 could argue it during closing, I expect, if you wanted
13 to, without any objection, because you could -- okay?
14 But I'm not going to bring it in as -- okay.

15 I think that's it for --

16 MR. BARGER: That was the last objection.

17 MS. WORKS: It is, although I think we need
18 to rule on the overall objections that plaintiff has to
19 the defense now offering both Mr. Pears and Mr. Plantz,
20 which was set forth in our objections as a general
21 objection. Initially, we --

22 THE COURT: Okay. Let's back up. Let's
23 start again with that.

24 MS. WORKS: Okay. So plaintiff has an
25 overall objection to defendants offering the deposition

1 testimony of Mr. Pears and Mr. Plantz in that if they
2 intend to offer those depositions, they have, in fact,
3 opened the door pursuant to the Court's motions in
4 limine to the -- all of their prior statements, whether
5 they be consistent or inconsistent.

6 And those are admissible under 51.035,
7 because, here, we have a situation where these two
8 witnesses in particular have given a number of sworn --
9 sworn statements. First, to the officer, they have
10 transcribed statements as well as e-mail
11 correspondence; second, they gave notarized statements
12 to the defense investigator, Sonny Hildreth; and then,
13 third, they had their deposition taken.

14 And so to offer --

15 THE COURT: First to the officer?

16 MS. WORKS: Correct.

17 THE COURT: Okay.

18 MS. WORKS: And an e-mail additionally from
19 Mr. Plantz, although, of course, that's not a sworn
20 statement; it's in writing.

21 THE COURT: All right. And then second to?

22 MS. WORKS: Second to Mr. Hildreth, they
23 gave -- I believe they were notarized statements.

24 MR. BARGER: I don't think so, Kendelea.

25 MS. WORKS: They gave statements, in any

1 event -- written statements -- to --

2 THE COURT: Was Mr. Hildreth the
3 investigator?

4 MS. WORKS: The investigator for MCI, but, at
5 that time, it was for all the defendants but, of
6 course, MCI's investigator as well.

7 THE COURT: And third?

8 MS. WORKS: And third, they gave deposition
9 testimony.

10 THE COURT: Okay. And so your -- your
11 objection -- you're objecting or what are you -- what
12 is this --

13 MS. WORKS: Our position is just that if they
14 intend to offer those statements, then the questions
15 about Mr. Hildreth which were initially excluded by the
16 Court pursuant to motions in limine would be -- that
17 would open the door to the questioning regarding the
18 statements elicited by Mr. Hildreth, because, then, we
19 got now three different sets of statements -- some of
20 them being consistent; some of them being inconsistent.

21 But, in any case, they're still admissible
22 under the rules of evidence because you have these two
23 witnesses giving three differing versions of events --
24 sometimes consistent; sometimes not -- depending on the
25 particular facts. I could go through those with the

1 Court, but it would be a time-consuming task.

2 But, suffice to say, whether they were
3 inconsistent or consistent with one another, they would
4 still be admissible. And offering that testimony at
5 all -- which plaintiffs ultimately opted not to do.
6 Offering those statements by the defense pursuant to
7 the Court's order on motion in limine No. 17, it would
8 open the door to questions about Mr. Hildreth eliciting
9 those statements, drafting the statements for the
10 witnesses -- which he testified under oath, he did --
11 the witnesses testified under oath he drafted those
12 statements for them. They reviewed and signed.

13 And Mr. Pears in particular testifies in his
14 deposition that he believes those statements, despite
15 having signed, were not correct, that he didn't draft
16 them himself, and that certain details were left out of
17 those statements.

18 So by offering any of their testimony as to
19 what happened, they've opened the door to those
20 questions because their bias, their credibility, is
21 always at issue. And the fact that some of their
22 inconsistent statements were consistent statements have
23 changed, their positions have changed, is relevant
24 always. Bias and credibility is always relevant. It's
25 always going to be an issue before the Court.

1 And the reason why their statements are
2 changing is relevant and goes directly to those issues,
3 and it opens the door under the Court's earlier order.

4 In addition to that, we would also ask that
5 we be allowed to admit the deposition testimony which
6 we designated yesterday of Mr. Hildreth as to the
7 manner in which he elicited those statements and
8 prepared those statements.

9 THE COURT: Okay. I have to be very frank
10 with you. You probably did provide me with
11 Mr. Hildreth's depo, but I was studying for my calendar
12 today. And I did review this. I -- I haven't seen it.

13 MR. BARGER: They just filed it last night.

14 MS. WORKS: Understood, Your Honor. The
15 objections, though -- the overall general objection --
16 we had filed before yesterday. And I believe that the
17 Court had that. So I apologize if not. But we do have
18 an overall objection to defendants offering the
19 statements of both Mr. Pears and Plantz.

20 If they do intend to, then we would ask that
21 we be permitted to elicit, at a minimum, the statements
22 from Mr. Pears as to how those statements were obtained
23 by Mr. Hildreth, which is all contained within his
24 deposition transcript which the Court has.

25 MR. BARGER: Your Honor, I'm going to -- Joel

1 is going to respond, but let me make one -- I was at
2 that deposition. And I think the parts that we're
3 playing is what -- is what Mr. Christiansen had asked
4 before he even went into this other thing with the
5 investigator.

6 Each witness affirmed that they read and that
7 was the truth, and they signed those statements. So I
8 think it's irrelevant, but Mr. Henriod will argue this
9 opening-the-door issue because that's fairly
10 significant.

11 MS. WORKS: Mr. Pears does not affirm the
12 accuracy of those statements. In fact, he testifies in
13 his deposition that there were certain details left
14 out. And it was Mr. Barger and that firm that hired
15 Mr. Hildreth. They've done work with him before. He's
16 a known quantity. And so the issue of bias and
17 credibility goes directly to this defendant's
18 motivations and those witnesses -- the reliability of
19 their statements.

20 MR. BARGER: Well, let me say this and I'll
21 let Mr. Henriod take over.

22 We're not even going into those statements,
23 but I'm just telling the Court -- we didn't designate
24 that, of course. I'm telling the Court I was there,
25 and I asked Mr. Pears and I asked Mr. Plantz those were

1 their -- they were handwritten -- not their
2 handwriting, but they read them and they were true and
3 they signed them. They both said that.

4 Now, it's not relevant to what we're arguing
5 right now, but I will sit.

6 MR. HENRIOD: Honor is at stake. I get it.

7 And, Your Honor, I'll be -- it's almost
8 1 o'clock already, so -- so --

9 THE COURT: I really --

10 MR. HENRIOD: Right.

11 THE COURT: And I don't want to take a
12 two-hour break to go research, but -- but -- and I
13 won't do that, but I think this is very important. So
14 make sure you make all the points.

15 I'm sorry, Ms. Works. You do too.

16 MR. HENRIOD: I'll make all the points you
17 need to hear again. I won't go over the hour-long
18 argument that took place between Mr. Christiansen and
19 Mr. Polsenberg when we were talking about the propriety
20 or impropriety of somebody taking a general statement,
21 like a paralegal or a secretary does, writing it down,
22 and then handing it back to the person, saying, "Hey,
23 if this is right, go ahead and sign it."

24 I think that's improper, but I understand
25 that the Court has said that's out unless we want to

1 get it in, in which -- or put it in, and then, in which
2 case, we opened the door.

3 But if there was any question as to what you
4 meant by that -- and they're, I think, trying to
5 exclude all of the deposition -- I think that this was
6 hashed out after the testimony of Mr. Caldwell, where
7 he was asked about Mr. Pears. And he blurted a
8 reference to the statement. And Mr. Barger had to say
9 "No, no, no, the deposition." He was not asking him
10 about any statement.

11 And then there was a dispute at the bench,
12 but then it was put on the record later that day, in
13 which the Court drew the line that the testimony under
14 oath in the deposition comes in. If there is a
15 reference to the statement because the statement is
16 inconsistent with what was said under oath and so it
17 comes in as an inconsistent to impeach what is sworn
18 to, then so be it.

19 But we're not referencing the statement. And
20 I don't think they are referencing the statement in
21 order to impeach what either of these people said under
22 oath.

23 So just as any witness coming in and giving
24 testimony under oath, what they're saying is
25 admissible, then you only get to the admissibility of

1 the statement. And this was not a sworn statement.
2 But you only get to that if the party crossing wants to
3 say that there was something inconsistent with the
4 previous statement and they want to impeach with the
5 previous statement.

6 We're not asking to introduce the statement.
7 We are not designating testimony about the statement.
8 If they want to bring in the statement to impeach
9 the -- the articulation of events under testimony, then
10 so be it. But I don't think that they are doing that.

11 And when it comes to opening the door, the
12 experts, they've been asking the experts, "Well, what
13 did Mr. Pears say happened? What did Mr. Pears say
14 happened? What did all of these different witnesses
15 say?"

16 So for them to refer to the substance of what
17 those witnesses said in their depositions and then to
18 block us from bringing in those depositions is to use
19 the Court's order as a sword more than a shield. And
20 I -- I think it's improper. But, again, we've had
21 hours on this. I can keep going, but I'm thinking
22 this -- this should be enough.

23 MS. WORKS: And, Your Honor, I will try to be
24 brief here.

25 And I completely agree with Mr. Henriod as to

1 what the order of examination and impeachment would be
2 if these witnesses were here live. The problem is that
3 they're not. And whether you refer to this statement,
4 that statement given to who, that statement given to
5 who or not, the substance -- the crux of the testimony
6 is the same. And there are inconsistencies with those
7 three sets of statements, and consistencies, but
8 inconsistencies all over the place.

9 And so if these witnesses were here live, we
10 would absolutely stand up and say, "Mr. Plantz, on this
11 date, you give a statement to Detective Salisbury, and
12 you said X," and "Mr. Plantz, then this grand
13 investigator came along and your statement from him,
14 which you didn't author but you signed off on, says Y
15 and then, at your deposition, you said Z."

16 And so what's the reason for those
17 inconsistencies? What's the difference? After you
18 speak to Mr. Hildreth, things seemed to change. And so
19 that would be what we would do if these witnesses were
20 here live. They're asked about how that -- how those
21 statements were obtained within the deposition. That's
22 the impeachment, and that's what we're seeking to use
23 if, in fact, the Court decides to allow in these
24 statements at all.

25 Our position is, the safest thing to do at

1 this point, Your Honor, because of the severe
2 admissibility issues, the credibility, the bias
3 interjected into the case by defendants who retained
4 Mr. Hildreth, is to err on the side of caution and not
5 injecting those issues, potentially reversible issues,
6 into this case by precluding their testimony at all.

7 However, if it is allowed, if defendant
8 chooses the tactical litigation strategy to enter those
9 statements of Mr. Pears and Mr. Plantz, any of their
10 statements, then plaintiff should be permitted to
11 elicit testimony vis-a-vis the deposition as to how at
12 least one of those statements were obtained and what
13 plaintiff believes to be, with the support of an expert
14 witness, an improper manner in which to obtain a
15 statement.

16 And even if the Court doesn't allow in
17 Mr. Hildreth's testimony on those issues, or Mr. Roger,
18 it certainly should allow in the testimony -- the
19 direct impeachment of these witnesses vis-a-vis the
20 deposition questioning about how Mr. Hildreth obtained
21 those statements and whether they still believe those
22 statements to be accurate.

23 MR. HENRIOD: I think the rules apply as much
24 in a deposition that is being prepared in case the
25 witness can't attend trial. It's why we're having this

1 exercise right now over designations and how the
2 typical rules of admissibility apply as to how those
3 depositions are used now.

4 They were taken in anticipation of trial.
5 They had -- plaintiffs had the statement. He was
6 cross-examined with it then. And if -- if, again, they
7 wanted to use the statement because they thought the
8 statement was more correct than the testimony that was
9 being given, then they would be the ones coming in to
10 say they want to use it.

11 Instead, what they're saying is "this is the
12 show" -- to use Mr. Christiansen's word from yesterday
13 -- this is the little show that they wanted to put on
14 to make it look like Mr. Pears and Plantz are just
15 liars, because, like anyone who ever signs an
16 affidavit, they were able to -- to get some kind of
17 discrepancy between a prior statement and -- and
18 something said in testimony.

19 But -- but that's not impeachment unless
20 there is some averment effect that Pears and Plantz
21 will be saying in their designated testimony that they
22 believe is untrue in light of that statement and that
23 they want to bring in the statement to impeach.

24 Otherwise, the suggestion is, is that,
25 because they gave a statement to Mr. Hildreth and they

1 signed it, not being notarized -- well, since it's not
2 notarized, it doesn't have the effect they're saying it
3 does. Even if it did, all that would do is allow them
4 to bring it in to impeach them. But I don't hear them
5 saying that the statements that we have designated,
6 that those contain averments that they believe are
7 contradicted by the statement and they think the
8 statement is more correct so they want to bring in the
9 statement.

10 Instead, what we hear is it just goes to
11 credibility because there exists this statement in the
12 world. But that's not credibility impeachment.

13 So I -- I mean, again, we can go around and
14 around for a fifth time, but I think that the line that
15 was drawn by the Court correctly in -- in explaining
16 the Court's order we did right after the Caldwell
17 testimony where this came up, it's testimony about the
18 statement that would open that door. It doesn't mean
19 that the witnesses are tainted, to use the word.

20 MR. BARGER: I will tell you, that's not
21 going to be played today, just for the Court's relief.

22 THE COURT: Good.

23 MR. BARGER: Okay.

24 MS. WORKS: And just two clarifications for
25 the record.

1 First, Your Honor, your order says "If
2 defendant alludes to or elicits testimony of the
3 allegedly false statements." Well, what we are saying
4 is that some of these statements within the deposition
5 testimony, we believe to be false. And we -- so the
6 Court has it, we designated additional page/line
7 designations specific to Mr. Pears only with regard to
8 the Hildreth testimony, which would be, in effect, what
9 we would do to impeach if these witnesses were here at
10 the time.

11 That was filed, Your Honor, 3/13 at 2:38 with
12 our objections and cross-designations. And what we
13 said in there was the overall objection to Pears and
14 Plantz, but said, however, if the Court allows
15 defendants to offer that deposition testimony, then we
16 would ask that these additional designations for
17 Mr. Pears as to the Sonny Hildreth issue -- this is
18 Mr. Pears' testimony about how Mr. Hildreth obtained
19 those statements. Those designations are Exhibit 1 to
20 that filing on the 13th.

21 And what -- so our only -- to be clear, we
22 said, look, we know the Court may allow this in. If
23 the Court allows us -- allows this testimony to be
24 played, here are the additional designations that we
25 believe should be offered with respect to Mr. Hildreth

1 having obtained those statements from Mr. Pears.
2 Effectively, that's our impeachment evidence, Your
3 Honor.

4 MR. HENRIOD: But impeachment of what?
5 Perhaps I -- I don't understand. There are -- I don't
6 think there are designations from us where plaintiffs
7 think that there is a more truthful statement in the --
8 which one? I mean, if we could -- if we could talk
9 about that -- that particularity where it's actually
10 the Hildreth statement that you think is more correct.

11 MS. WORKS: I have the designations here. I
12 have the Mr. Pears' transcript. So maybe we can take a
13 break and --

14 THE COURT: You have what?

15 MR. HENRIOD: Yeah, maybe, because I think
16 that that's --

17 THE COURT: Let's do that, because I need to
18 bring this jury in, because, after yesterday, I'm
19 afraid -- just -- you know, I'm afraid we're going to
20 start losing the jury. And so, I mean, we should get
21 going.

22 MR. CHRISTIANSEN: Judge, I think all of our
23 suggestions is that we got Mr. Granat to finish,
24 Dr. Baden is in the anteroom. Let's do the live
25 witnesses. And maybe even, if we still have arguments,

1 you could just let the jury go until tomorrow morning
2 after the live witnesses. So nobody's waiting around.

3 And then I don't want to speak for
4 Mr. Barger -- it's his case -- but I betcha he sort of
5 is on the same page about not having them wait around.

6 MR. BARGER: I agree. And I will tell the
7 Court, the earliest this would be played would be
8 tomorrow afternoon, late.

9 THE COURT: Okay. We start tomorrow at 9:30.

10 MR. BARGER: 9:30, right. We have an
11 economist first, and then Virgil Hoogestraat, who is
12 our company witness. And that may take some time.

13 THE COURT: So you can discuss things. I
14 will make sure I find --

15 MR. CHRISTIANSEN: And if there was extra
16 time this afternoon, Your Honor, maybe this could get
17 ruled on once you let the jury all go, or whatever,
18 just because you don't have them waiting. And I think
19 that's what --

20 MR. HENRIOD: I think we're all on the same
21 page.

22 THE COURT: But I want you to remember this
23 is week five. And I'm worried we're going to be losing
24 our jury. I just -- that we told them it was between
25 four weeks. At some point, somebody told me it was

1 three weeks after voir dire. And so understand that --
2 that this is a concern.

3 MR. BARGER: We do.

4 THE COURT: And I'm not trying to make you --

5 MR. BARGER: I understand.

6 THE COURT: -- cut your case short.

7 MR. HENRIOD: We're as frustrated by it as
8 anyone.

9 MR. BARGER: When you told -- I think when
10 you told the jury, at least the first group, that it
11 was going to be four weeks, nobody anticipated it would
12 take nine days to pick a jury either.

13 THE COURT: No, I know. And I know that I've
14 taken some time to do some research, but I'm trying to
15 get it right. And, also, anything that you have that
16 can be presented to me before so I can study it at
17 night or on the weekend, I'm happy to do -- okay? -- so
18 that we don't take -- I don't take any time during the
19 day. All right?

20 MR. CHRISTIANSEN: Thank you, Your Honor.

21 THE COURT: So I think we need to get the
22 jury back in.

23 MR. BARGER: Can we have two minutes?

24 THE COURT: Yes. Do you need to use the
25 restroom at all? I'll be right back.

1 (Discussion was held off the record.)

2 THE COURT: Are we ready for the jury, ladies
3 and gentlemen?

4 Oh, another thing that I need to discuss with
5 you is that, with respect to exhibits, we need to be
6 very careful, because the court clerk has to have a
7 copy of the exhibits and let you know where in line
8 they're going to go, because our record needs to be
9 kept very carefully. I don't want a mistrial because
10 we missed an exhibit. Okay?

11 So, for all parties, I need you to make sure
12 that you follow through with the exhibits, make sure
13 that -- that you -- you give them to Madam Clerk
14 beforehand, and let her know -- ask her what exhibit it
15 is if you're not sure, or let -- let -- you know,
16 she'll tell you what's next in line. All right?

17 MR. TERRY: I apologize both to the clerk and
18 to the Court. Yesterday, we had arranged the witnesses
19 to be Dr. Krauss and Mr. Carhart, and we had put
20 together the exhibits.

21 THE COURT: Understood, yes.

22 MR. TERRY: So we had assigned the
23 next-in-line numbers that we had a record of and marked
24 the documents with those numbers. And then, when he
25 was pulled out of rotation and I went on with Carhart,

1 I did not realize the sensitivity of the numbers being
2 assigned. I thought we could just simply, when
3 Mr. Krauss testified -- or Dr. Krauss testified, plug
4 them back in.

5 So it was my error because I was relying on
6 documents having been offered and admitted that were
7 not because of the change-up in the rotation. So the
8 error is really mine; it is not the clerk's.

9 THE COURT: It's fine.

10 MR. TERRY: And I'm not sensitive enough to
11 the high signs she was giving to know that it was
12 upsetting.

13 THE COURT: Right. So just as long as we
14 keep that in mind.

15 And then are we ready for the jury -- or
16 you're going to give her the exhibits.

17 MR. TERRY: May I make one housekeeping
18 notation with that in mind?

19 THE COURT: Yes, absolutely.

20 MR. TERRY: And could I have the attention of
21 the clerk when I do it.

22 THE COURT: We're on the record.

23 Madam clerk, Mr. Terry wants to speak with
24 you.

25 MR. TERRY: Yesterday -- yesterday, during

1 the court, Your Honor -- yesterday, during the course
2 of the deposition -- or the presentation of Carhart, we
3 displayed certain -- I'm sorry.

4 MR. BARGER: Not Carhart.

5 MR. TERRY: I'm sorry.

6 During the testimony Mr. Granat, we displayed
7 certain videos to the jury. I identified those videos
8 by numbers that had been assigned. At the conclusion
9 of his testimony, we downloaded the videos that were
10 actually displayed onto a thumb drive. And we
11 presented the thumb drive to the clerk. But we did not
12 designate the thumb drive with a number because we
13 thought -- we didn't know how she wanted to keep it,
14 whether it's -- we thought that we would assign a
15 number to the thumb drive.

16 THE CLERK: Are you talking about -- the
17 notes said 57 through -- 577 through 585. That's what
18 the number had.

19 MR. TERRY: Those are the --

20 THE CLERK: On the thumb drive.

21 MR. TERRY: Those are the videos that are on
22 the thumb drive. And I do not know whether or not the
23 system is we mark the thumb drive because it's a single
24 physical object or we mark the thumb drive with the
25 videos that are contained.

1 THE COURT: What's your thoughts on that?

2 THE CLERK: The next in line is 576. You
3 want to mark this 576. And then any exhibits that you
4 print from this and admit, we'll start with 577, or
5 576A, B, C, D. As long as I have them ahead of time,
6 I'll have them marked with the numbers and there will
7 be no confusion.

8 MR. TERRY: Well, I apologize to the Court
9 and to you.

10 THE CLERK: No, it's okay. It's okay.

11 MR. TERRY: No, it was intentional. The
12 reason I did not do it is because the videos that were
13 going to be displayed was very -- I didn't know how
14 many we would actually display. And so I didn't want
15 to create the exhibit until we had displayed them.

16 THE CLERK: All I need is these things ahead
17 of time.

18 MR. TERRY: No, I will. But I wanted to
19 explain to the clerk that the reason she did not have
20 the stick beforehand is because I wanted the stick to
21 represent what had occurred.

22 THE COURT: Understood.

23 MR. TERRY: And I apologize. That will not
24 happen again.

25 THE COURT: Okay. That's fine.

1 MR. TERRY: Whereupon, Your Honor --

2 THE COURT: As long as we're on the same
3 page, that's great.

4 So, right now, are you marking these?

5 THE CLERK: Okay. 567, that's the one he
6 mentioned during the attachment and he showed the
7 video. See, that's not admitted, nor were any of the
8 exhibits mentioned yesterday that I didn't have. None
9 of those were admitted, so -- well --

10 THE COURT: They were. They were offered.

11 THE CLERK: The ones that I didn't have
12 yesterday and that there were just numbers being called
13 out, they need to be put back on the record so they can
14 be admitted properly --

15 THE COURT: Okay.

16 THE CLERK: -- for the record.

17 THE COURT: So --

18 MR. TERRY: So, Your Honor, at this time, the
19 number having been assigned to the stick with the
20 videos that were actually displayed, I offer 576 into
21 evidence.

22 THE COURT: Yes.

23 THE CLERK: You're offering --

24 THE COURT: We need to start.

25 THE CLERK: -- the thumb drive.

1 MR. TERRY: The thumb drive.

2 THE CLERK: Okay.

3 MR. TERRY: Did I use the right number?

4 THE CLERK: That's one of them, yeah.

5 THE COURT: Well, I -- I can't promise I
6 took -- well, we have notes here. But I -- I take a
7 lot of notes, as you've probably noticed. And there
8 are more exhibits that we need to discuss. And the
9 ones that I show -- let me know if you show others,
10 Madam clerk -- is not just the thumb drive, but there
11 was an -- we -- I really want to move through this as
12 quickly as possible, but it's very important.

13 THE CLERK: Let me say what they gave me last
14 night.

15 THE COURT: Okay.

16 THE CLERK: Last night, I was given 568, 569,
17 570, 571, 572, 573, 574, and 575. Also, 576, which
18 I've just marked just now as another thumb drive.

19 All of those that I was given last night are
20 photo exhibits, paper exhibits, except for this thumb
21 drive.

22 THE COURT: Right, but I have a question.

23 There -- there's one that says -- I don't
24 know if I misunderstood it, but it was -- I understood
25 it as 153-001. I also have one that says --

1 THE CLERK: They did discuss --

2 THE COURT: -- 574-001-11.

3 MR. TERRY: 574, Your Honor, was the book
4 that Mr. Granat put together that was his report.

5 THE CLERK: Okay.

6 THE COURT: Then I also show -- oh, my God.
7 The jury is waiting -- Exhibit 126.

8 THE CLERK: Yes, they --

9 MR. TERRY: 126 --

10 THE CLERK: There was 127, 510, and 245.
11 They discussed those, but those were already in. And
12 they --

13 THE COURT: And Exhibit 126-032?

14 THE CLERK: I don't know.

15 MR. TERRY: 126 is the report on the 1993
16 wind tunnel studies.

17 THE COURT: Okay.

18 MR. TERRY: And it has been admitted.

19 THE CLERK: That was already admitted.

20 MR. TERRY: We were designating the specific
21 pages from that document.

22 THE COURT: All right. Then I also have
23 Exhibit 32, 126 to 017. Has that been admitted?

24 THE CLERK: Here's -- here's what I think
25 happened: Those were numbers that were called off from

1 the bottom of some of these pages, but because I didn't
2 give out exhibit numbers before you guys did this,
3 there were a lot of numbers that were called out that
4 I -- I didn't have any way of knowing what they were.

5 That's why I got with Audra. And, last
6 night, they gave me what he talked about. I marked
7 them and they should be admitted today. That's all I
8 know.

9 THE COURT: Understood.

10 Let me ask the parties, will you stipulate,
11 please, to being able to discuss these exhibits towards
12 the end of the day?

13 MR. KEMP: Absolutely.

14 MR. TERRY: Absolutely. The witness has
15 no -- he has no role to play in it.

16 MR. KEMP: Yeah, I will not --

17 THE COURT: Okay? Because I really want to
18 bring the jury in.

19 MR. KEMP: I -- on the thumb drives, the only
20 problem I had that I expressed to Mr. Terry yesterday
21 is, in my experience, the jurors don't have the
22 capability to look at the thumb drives when they get to
23 the jury room. So if you give them a thumb drive,
24 that's probably not a -- I'm not objecting to
25 foundation.

1 THE COURT: Understood. I think we should --
2 because I show a lot of other exhibits, and I want to
3 make sure that -- that we discuss, I think we should do
4 that after --

5 MR. KEMP: I'm fine with that, Your Honor.

6 THE COURT: -- the jury is gone --

7 MR. KEMP: I didn't object to the foundation
8 and I didn't objection to the --

9 THE COURT: -- because they've waited now 25
10 minutes.

11 MR. TERRY: May I have one moment to confer
12 with the witness?

13 THE COURT: Will you please bring the jury
14 in?

15 MR. TERRY: May I have one moment before you
16 bring the jury in?

17 (Discussion off the record.)

18 THE COURT: All right. Madam Clerk has to
19 leave at 3:00 to go to the doctor. Will you
20 stipulate -- you won't be here tomorrow?

21 THE CLERK: No, because I'm sick. I'm going
22 to the doctor then.

23 MR. KEMP: She doesn't sound good. I think
24 we should excuse her.

25 THE COURT: No, I understand that. But I

1 want to make sure that the exhibits that the defense
2 needs to -- you know, to offer and have admitted, I
3 don't want them to just go by the wayside either.

4 MR. KEMP: Judge, we'll stipulate to be
5 flexible.

6 MR. TERRY: Your Honor, my recollection is
7 that the collection of documents that were actually
8 offered into evidence were a collection of his work
9 product and his report, where he did measurements and
10 drew some lines on the bus which was admitted.

11 MR. KEMP: There was a book that we admitted.

12 MR. TERRY: And then there was a book that is
13 in front of him that is his report on the first phase
14 of the testing and drive-by testing.

15 And then I -- I marked a collection of
16 photographs -- I used 126, and then I marked a
17 collection of photographs of side-by-side comparison --

18 THE COURT: Understood.

19 MR. TERRY: -- which I offered for
20 demonstrative purposes only.

21 MR. KEMP: I think we can let the clerk go.
22 I think we can figure this out.

23 THE COURT: She's going to go at 3:30. All
24 right?

25 All right. Let's bring the jury in.

1 THE MARSHAL: All rise.

2 (The following proceedings were held in
3 the presence of the jury.)

4 THE MARSHAL: All the jurors are present,
5 Your Honor.

6 THE COURT: Thank you, Marshal.

7 THE MARSHAL: Please be seated. Come to
8 order.

9 THE COURT: And, Madam Clerk, please take
10 roll call.

11 THE CLERK: Yes, Your Honor.
12 Byron Lennon.

13 JUROR NO. 1: Here.

14 THE CLERK: John Toston.

15 JUROR NO. 2: Here.

16 THE CLERK: Michelle Peligro.

17 JUROR NO. 3: Here.

18 THE CLERK: Raphael Javier.

19 JUROR NO. 4: Here.

20 THE CLERK: Dylan Domingo.

21 JUROR NO. 5: Here.

22 THE CLERK: Aberash Getaneh.

23 JUROR NO. 6: Here.

24 THE CLERK: Jaymi Johnson.

25 JUROR NO. 7: Here.

1 THE CLERK: Constance Brown.
2 JUROR NO. 8: Here.
3 THE CLERK: Enrique Tuquero.
4 JUROR NO. 9: Here.
5 THE CLERK: Raquel Romero.
6 JUROR NO. 10: Here.
7 THE CLERK: Pamela Phillips-Chong.
8 JUROR NO. 11: Here.
9 THE CLERK: Gregg Stephens.
10 JUROR NO. 12: Here.
11 THE CLERK: Glenn Krieger.
12 JUROR NO. 13: Here.
13 THE CLERK: Emilie Mosqueda.
14 JUROR NO. 14: Here.
15 Thank you.
16 THE COURT: Mr. Kemp, if you --
17 MR. KEMP: Yes, Your Honor.
18 THE COURT: You may proceed, please.
19 MR. KEMP: Good afternoon, ladies and
20 gentlemen.
21 THE COURT: Speak loudly, please.
22 MR. KEMP: Good afternoon.
23
24 /////
25 /////

1 CROSS-EXAMINATION (Continued)

2 BY MR. KEMP:

3 Q. All right. Mr. Granat --

4 THE COURT: You need to speak louder.

5 MR. KEMP: Sorry, Your Honor. I didn't turn
6 on --

7 THE COURT: I just don't want you to start
8 and have to interrupt you.

9 MR. TERRY: Your Honor, the parties do
10 stipulate to the presence of the jury.

11 THE COURT: Oh, thank you very much.

12 MR. KEMP: Are we ready, Your Honor?

13 THE COURT: Yes. Please go ahead.

14 BY MR. KEMP:

15 Q. Okay. Mr. Granat -- all right. Before we
16 get into it, can we agree with some basic science from
17 Dr. Kato and elsewhere?

18 A. Sure.

19 Q. Okay. One, we know from the Kato paper that,
20 when you increase the bus speed, you increase the air
21 displacement; right?

22 A. That's accurate, sure.

23 Q. Okay. And we also know from the Kato paper
24 that the closer a bike gets to a moving bus, that the
25 more air displacement the bike will experience; right?

1 That's basic science?

2 A. Yes, that -- both of those match the testing
3 that I did.

4 Q. So if you go from 3 to 2 to 1, you will
5 expect the force to increase the closer you get to the
6 bus?

7 A. Right. 3, 2, and 1 feet away from the bus,
8 the closer you get, the --

9 Q. That's basic science?

10 A. Sure.

11 Q. And then Kato said that you have a push and
12 then you have a pull that's greater; right?

13 A. He provided an example that showed a slightly
14 greater pull, but he didn't offer conclusions on the
15 pull.

16 Q. He didn't say how much greater; he just said
17 it was slightly -- he said it was greater?

18 A. Right.

19 Q. We're talking about Figure 7?

20 A. I believe that's true.

21 Q. So do you agree with that?

22 A. In general, sure. There can be some
23 variation, but yes.

24 Q. Okay.

25 Can I have my slide, please. Skip over

1 Breidenthal. Let's go to -- skip over that.

2 So this is the basic science: The faster the
3 bus goes, the more air displacement, one. Two, the
4 closer the bike gets to the bus, the more force it will
5 see. And then, three, there's a push and a pull, and
6 the pull is the greater force.

7 So you agree with all three of those; right?

8 A. In general terms. I think the pull is not
9 necessarily always greater, but it's of a similar
10 magnitude.

11 Q. Okay. And by "similar magnitude," you're
12 saying you think that the push and the pull is -- is at
13 least as great or --

14 A. They're of --

15 Q. You said "similar magnitude." What do you
16 mean?

17 A. Could be greater or less, but of a similar
18 magnitude.

19 Q. Okay. And -- and similar magnitude means the
20 same; right?

21 A. It means in the ballpark. They're similar.

22 Q. Now, Dr. Breidenthal told us that, in his
23 opinion, when this bus goes 25 miles an hour, it causes
24 10 pounds of side force and 35 miles of air
25 displacement to a bicyclist within 2 or 3 feet. That

1 was his opinion; right?

2 A. Right. I'm not sure if he limited it to 2 or
3 3 feet, but he did say that he estimated that to be
4 the -- the force.

5 Q. Okay. And you disagree with his opinion?

6 A. Right. My testing shows that that opinion is
7 not valid.

8 Q. Okay. So your opinion is that you see
9 1 pound of side force and about 3.5 miles of wind?

10 A. No. My opinion is that I -- I see, on the
11 average, about 1 mile an hour -- I'm sorry -- 1 pound
12 of side force for a 25-mile-per-hour bus, but the --
13 the wind speed, I did not measure. So that was based
14 on Dr. Breidenthal's testament. I said that if his
15 value was 35, then he's -- he's off by about a factor
16 of 10.

17 Q. Well, in your deposition, didn't you tell me
18 that 3.5 would be the right ballpark for you?

19 A. Based on Dr. Breidenthal's estimate. You
20 would have to scale his speed down by about a factor of
21 10 to estimate.

22 Q. And that's 3.5 miles per hour?

23 A. Based on his estimate, yes.

24 Q. Okay.

25 So can I have my next one, please.

1 I'm just trying -- this is Dr. Breidenthal's
2 opinion on the left, and this is what you're saying on
3 the right based on your testing; correct?

4 A. The 3.5 miles per hour is not really my
5 opinion; that's based on Dr. Breidenthal's opinion. I
6 did not measure the -- the air speed -- I did not
7 measure the air speed on the bus.

8 Q. You want to look at page 40, line 9, of your
9 deposition and see the question where I asked you about
10 this subject, and you said, quote, it's in the right
11 ballpark, unquote.

12 A. Right. That's based on Dr. Breidenthal's
13 estimate.

14 Q. Okay. Is there any other number than 3.5 we
15 can put up there for you?

16 A. My opinion would be that it would be a low
17 speed. I don't have a number that you can provide,
18 though.

19 Q. And 3.5 is the lowest speed? That's what
20 you're referring to as the low speed?

21 A. That's a low speed. I don't claim to have
22 measured it. I think if you wanted to know that actual
23 number, you should measure it.

24 Q. Okay. And you didn't measure it because you
25 didn't put any sort of device to measure wind speed

1 next to the stationary bike?

2 A. No. I measured the force on the stationary
3 bike.

4 Q. I know, but you didn't measure the wind
5 speed?

6 A. That's correct.

7 Q. Okay. It could have been measured, but you
8 didn't do it?

9 A. I did not do that.

10 Q. But you could have done it?

11 A. That's certainly possible, sure.

12 Q. All right. Now, yesterday, I suggested to
13 you that there were two fundamental problems with your
14 testing. Okay?

15 One, that you used a 200-pound weight to
16 measure the force. And, two, that there were a lot of
17 differences in the wind direction and wind speed during
18 the testing.

19 Do you recall that?

20 A. Sure.

21 Q. Okay. And the first point I think we talked
22 about already, we went through Dr. Breidenthal's
23 opinion. We already talked --

24 A. Yes.

25 Q. The 200-pound weight? Okay. Let's talk

1 about the second point.

2 You were doing all your testing outdoors;
3 correct?

4 A. That's right.

5 Q. Okay. And, when you were outdoors, you're
6 subjected to whatever the wind is at the time you're
7 doing the tests?

8 A. Correct.

9 Q. And the tests were done on October 7th and
10 8th?

11 A. The pass-by tests would have been on the 7th
12 and 8th. I think that's right.

13 Q. Of 2017?

14 A. Correct.

15 Q. Okay. So you would agree with me that if
16 there's -- well, in the best of all possible worlds,
17 when you're doing an outdoor test, you would rather
18 have zero wind; right?

19 A. That would be helpful, sure.

20 Q. That would be optimal?

21 A. That would be optimal.

22 Q. And the next best thing would be to have 1-
23 or 2-mile-an-hour wind when you're outside because
24 there'd be less potential disturbance from the wind;
25 correct?

1 A. I think the next best thing would be to -- to
2 do repetitious runs, so to repeat runs and account for
3 the ambient conditions that way.

4 Q. So you would rather have, say, 20- to
5 21-miles-an-hour wind than 2- or 3-miles-an-hour wind?

6 A. Certainly, the lower the better, but
7 repetitious winds would be better too.

8 Q. And the reason the lower, the better is
9 because the wind can affect this type of testing when
10 you do it outdoors; right?

11 A. Absolutely, in the sense that the testing is
12 meant to test the difference between the ambient-level
13 wind and the effect of a passing coach.

14 Q. So if we do the exact same test -- 25 miles
15 an hour, 2 feet away -- and the wind's blowing 10 miles
16 an hour this way, the results can be different than if
17 the wind is blowing 10 miles an hour that way; correct?

18 A. Right. There is an offset in the data based
19 on whatever the local conditions are at that point in
20 time.

21 Q. And by "offset in the data," what you're
22 saying is the data is not consistent in some places?

23 A. No, it's consistent, but it's reflecting the
24 ambient conditions. What I mean by ambient conditions
25 are the local conditions on the test track.

1 Q. Is there a point that you would say, time
2 out, we're not doing this type of testing if the wind's
3 over 15, 16 miles an hour?

4 A. I don't know if I'd have threshold for that.
5 I can say that I was out there that entire set of days,
6 those two days, and there were no conditions that I
7 thought were -- were windy or would affect the test
8 dramatically.

9 Q. Okay. A lot of times, people plan tests
10 ahead of time; right?

11 A. Sure.

12 Q. And they have what's called a test protocol?

13 A. Right.

14 Q. And sometimes the test protocol says, "if
15 this happens, we're not going to do the test because it
16 won't be reliable"; right?

17 A. In some -- certain circles.

18 Q. Did you have a test protocol for this test?

19 A. Not a test protocol per se, no. I had a test
20 plan that I put together.

21 Q. Fair enough. And in your test plan, did you
22 have any contingency for, if it was too windy, whether
23 you should stop the test or delay it?

24 A. Just my judgment. If it was too windy, I
25 would stop. If it was an acceptable level, I would

1 continue.

2 Q. And what was too windy for you in this
3 particular testing?

4 A. Well, based on my observations at the test
5 site, I didn't feel anything that was too windy.

6 Q. Okay. 'cause you already told the jury you
7 thought the average wind speed was what?

8 During your testing, you thought --

9 A. The average for the whole weekend was about
10 6 miles per hour; the variation was obviously greater
11 than the average.

12 Q. Okay. So the average was 6 miles an hour.
13 That's your testimony?

14 A. That's right.

15 Q. Okay. Now, yesterday, I suggested to you
16 that Dr. Rosenthal had filed a rebuttal expert report
17 that had weather data that was pertinent to your
18 testing.

19 Do you recall those questions?

20 A. I recall those.

21 Q. And I said the Phoenix airport; what I should
22 have said was the -- is it the Deer Valley Airport?

23 A. I'm not familiar.

24 Q. The Deer -- the Phoenix Deer valley Municipal
25 Airport?

1 A. Okay.

2 Q. You know what that airport is; right?

3 A. I don't.

4 Q. It's about 1.38 miles away from your test
5 facility.

6 A. Okay.

7 Q. And have you looked at Dr. Rosenthal's report
8 that has the data for the wind speeds on October 7th
9 and October 8th?

10 MR. TERRY: Excuse me, Your Honor. May we
11 approach the bench?

12 THE COURT: Yes.

13 (A discussion was held at the bench,
14 not reported.)

15 BY MR. KEMP:

16 Q. All right. Where were we? Where were we,
17 Mr. Granat?

18 A. Dr. Rosenthal's report.

19 Q. The -- the data for the wind speed at the
20 airport, 1 point --

21 THE COURT: 3.

22 BY MR. KEMP:

23 Q. -- 3 miles away from your test facility at
24 the time you're doing your testing. That's -- that's
25 what we're going to show you; right?

1 A. Okay.

2 MR. KEMP: Let's have it up.

3 BY MR. KEMP:

4 Q. Okay.

5 And can we get that as big as we can.

6 Okay. You said the average was 6 miles an
7 hour.

8 Can we move it over a little bit, Shane, so
9 we can get the wind speed on there.

10 These are the wind speeds; right? Can you
11 read that?

12 A. I can. Well, I guess some of them.

13 Q. And why don't we --

14 Shane, can you get me over here so we can get
15 a time to use as a reference. Can you slide the chart
16 over just a little bit.

17 Okay. You see the times over here,
18 Mr. Granat, on the far, far left?

19 A. Yes.

20 Q. You see we start with 1:00 a.m., 2:00 a.m.,
21 3:00 a.m., and we go down?

22 A. Right.

23 Q. Okay. Now, keeping those in mind, can we
24 look at the wind speed during your testing on
25 October 7th.

1 And what do we have here? Can you read that?

2 A. I think we have a lot of zeros, then an 8,
3 and then I'm not sure what that next number is.

4 Q. That's 11.

5 A. And then the next one looks like a 10, 7, 3,
6 9, 4 -- something -- 7, 5.

7 Q. 4 is at the end the day. When we're doing
8 the testing, it's actually 8, 11, 11, and -- in fact,
9 hang on a second. Let me see if I can help out a
10 little bit.

11 So at 2:00 p.m., we have 9 miles an hour;
12 right?

13 A. That looks to be right, yes.

14 Q. And at 3:00 p.m., we have 9 miles an hour;
15 right?

16 A. Is that the one that's illegible? I'm not
17 sure what that one is. It looks like a 4.

18 Q. Okay. Next hour, at 4:00 p.m., we have
19 9 miles an hour; right?

20 A. I was going to say 8 or 0, but I'm not sure
21 what it is.

22 Q. Okay. And the wind kept changing direction
23 all day; right? Do you know what the degrees mean
24 here?

25 A. Sure. That's a compass heading.

1 Q. And so the compass heading changed from 140
2 to 230; right?

3 A. Correct.

4 Q. There's 360 in a compass?

5 A. Correct.

6 Q. So, basically, the wind blew one way and then
7 it blew the other way; right?

8 A. There was variability in the wind, yes.

9 Q. So we have 9 miles an hour, more than the 6
10 you told us, and we have the wind blowing one way and
11 the wind blowing the other way. That's October 7th;
12 right?

13 A. At the Deer Valley Airport, yes.

14 Q. Okay.

15 Okay. Let's take a look at October 8th.

16 Let's try to do the same thing, Shane.

17 Okay. Again you see it's 1:00 a.m.,

18 2:00 a.m., and it goes down?

19 A. Right.

20 Q. Okay. And then you see the wind on this
21 side?

22 A. I do.

23 Q. Yeah. I apologize, Mr. Granat. We do have a
24 better slide. For some reason or another, it didn't
25 get into the set.

1 Okay. So 8 miles an hour at 9:00 a.m.

2 A. I'm -- I'm not sure. I mean, it looks like a
3 0, but it might be an 8. I don't know.

4 Q. Okay. I'll be happy to show you a better
5 copy when -- when we have a moment.

6 11 miles an hour at 9:00 a.m. -- excuse me --
7 11 miles an hour at 10:00 a.m.

8 A. 10:00 a.m.?

9 Q. 10:00 a.m.

10 A. Well, you mean 10:53? That's 5 miles an
11 hour.

12 Q. At 9:00 a.m., it's 11; right?

13 A. I see a 0 then a 5. I'm sorry.

14 Q. Look at -- let me get you a better copy on
15 the break, but let me suggest to you that what you're
16 going to find here is that it was 8 miles an hour at
17 9:00 a.m., 11 at 9:00 -- or at 10:00 a.m., 10 at
18 11:00 a.m., and, in the afternoon, we had 8- and
19 9-mile-an-hour winds; right? Can you accept that?

20 A. Well, I -- I don't see anything that looks
21 like an 11, so I'm not sure that that's ...

22 Q. Okay. I'll get you the better copy. I
23 promise.

24 All right. And on October 8th, the wind
25 direction also changes back and forth; right? Do you

1 see the degrees there?

2 A. It's variable, yes.

3 Q. And by variable, it blows one way and then it
4 blows entirely the other way; right?

5 A. It's variable wind, yes.

6 Q. So the two days you did testing, we have 9-,
7 10-, 11-hour winds, and they're blowing one way and
8 they're blowing another way; right?

9 A. They are variable winds, yes.

10 Q. And you're doing outdoor testing attempting
11 to measure wind force; right?

12 A. Measuring the pass-by force created by the
13 coach.

14 Q. And that is a wind force; right?

15 A. That is a air displacement measurement, yes.

16 Q. Okay. Now, would I be correct that the test
17 results are not consistent? Even on an hour-to-hour
18 basis, your test results are not consistent?

19 A. Well, they are consistent with the conditions
20 out there. That's what I mentioned earlier, that the
21 testing is -- is testing the pass-by force of the
22 bus --

23 Q. Okay.

24 A. -- and it's subject to ambient conditions.

25 MR. KEMP: Can I have 27 to 28.

1 BY MR. KEMP:

2 Q. These are the actual test graphs of the
3 testing; right?

4 A. These appear to be, yes.

5 Q. And 27, you're going by at 25 miles an hour;
6 right?

7 A. Approximately, yes.

8 Q. And 28, you're also going by at 25 miles an
9 hour?

10 A. Yes.

11 Q. The only difference is one's done about 25
12 minutes after the other?

13 A. I think that's probably true.

14 Q. Okay. And what do you get in terms of
15 poundage for the first one?

16 A. Looks like on the order of a pound.

17 Q. And what do you get for the second one?

18 A. Maybe one point --

19 Q. Oop, oop, oop. Test 27 is the first one?

20 A. Correct.

21 Q. And what did you say you get?

22 A. Looks like about a pound.

23 Q. Can you look at your deposition and tell me
24 what you said at your deposition you got, page 103,
25 line 10.

1 A. Sure. I said 1 to 1 1/2 pounds.

2 Q. So you said 1 1/2 pounds during your
3 deposition; right?

4 A. I said 1 to 1 1/2 pounds.

5 Q. Okay. Well, let's stick with the 1 1/2.
6 What do you get -- what do you see on Test 28?

7 A. That's similar, 1 to 1 1/2. I would say
8 1 1/2.

9 Q. Okay. Similar, but different. It's
10 different; right?

11 A. To some degree, sure.

12 Q. And by "to some degree," you're referring to
13 the time period; correct?

14 A. No, I was only talking with respect to the
15 size of the force.

16 Q. Well, let's talk about duration. This
17 measures the duration of the force; right?

18 A. Well, the length of that area of force
19 measurement would be the duration, yes.

20 Q. Okay. So in 27, how long is the duration,
21 roughly?

22 A. Maybe 3 seconds.

23 Q. And in 28, how long is the duration?

24 A. Maybe 6 seconds.

25 Q. So you do the exact same test a half an hour

1 apart at the same speed. And in one test you have a
2 force that's 3 seconds, and in another test you have a
3 force that's 6 seconds?

4 A. That's right.

5 Q. Different results?

6 A. Correct.

7 Q. And the reason they're different is because
8 the wind keeps changing and increasing and decreasing,
9 isn't it?

10 A. Right. That's what I've been saying. The
11 forces that I measured out there are subject to the
12 ambient conditions.

13 Q. And so, in other words, you -- all of your
14 testing is subject to these ambient conditions; right?

15 A. Absolutely.

16 Q. Okay. And because we had such elevated winds
17 on that day -- 9, 10, 11 miles per hour -- it affects
18 your -- your entire testing? It's not just one test;
19 it's your entire testing because you're comparing the
20 back-and-forth?

21 A. The wind speed that I used was based on the
22 measurements taken at the test track. And my
23 observations of ambient conditions on the ground, and,
24 in my experience out there, there was not a significant
25 wind at all. But all of my measurements are subject to

1 the actual wind conditions on the test track, that's
2 right.

3 Q. Okay. In other words, the actual wind makes
4 your test change from test to test, day to day, minute
5 to minute?

6 A. That's the variability that I talked about
7 that requires you to do repeated tests.

8 Q. Okay.

9 Can I have my next in order, please.

10 This -- one second.

11 MR. GODFREY: Bear with me.

12 BY MR. KEMP:

13 Q. Okay. This is a comparison of Test 78 with
14 Test 62; right?

15 A. Yes.

16 Q. And Test 78 is run at 40 miles an hour;
17 right?

18 A. Correct.

19 Q. And Test 62 is run at 30 miles an hour?

20 A. That's correct.

21 Q. And in Test 40, we measure 2.8 pounds of
22 lateral force?

23 A. That looks to be about right.

24 Q. And in Test 62, we measure 2.8 pounds of
25 lateral force?

1 A. That appears to be about right, yes.

2 Q. So the -- the miles per hour of the bus has
3 changed from 30 miles an hour to 40 miles an hour, but
4 the force you measure with your test is exactly the
5 same; right?

6 A. The force magnitudes are very similar. It
7 looks like the offset from the bus is a little
8 different.

9 Q. Okay. And the reason they're the same is, in
10 one or the other of these tests, or maybe both, the
11 wind is changing and going stronger, different
12 directions; right?

13 A. No. I think the -- the main reason is more
14 likely the difference in lateral offset. These are
15 both very close to the cyclist. And one's at 1.6;
16 one's at 1.3 feet. So there's a good portion of the
17 variability. We would expect the 1.3 feet to be
18 higher --

19 Q. So --

20 A. -- if it were at the same speed.

21 Q. So when you told the jury yesterday that you
22 thought that it was 1 pound at 2 to 3 feet at 25 miles
23 an hour, you could have been off by 2 pounds? 3 pounds?
24 what?

25 A. No, the -- the ambient conditions out there,

1 the local wind that was on the track at the time, would
2 account for a varied level of force. And that force
3 level varied about a pound.

4 So based on all my tests, I could see the
5 trend when the bus was close, but just the -- just the
6 local conditions, just the local wind, would have an
7 effect of about a pound. So that's the variability.

8 MR. KEMP: Could I have the next one, please.

9 BY MR. KEMP:

10 Q. Now we're comparing Test 102 with Test 67;
11 right?

12 A. Okay. Yes.

13 Q. Okay. And now we have a 45-mile-an-hour test
14 and a 35-mile-an-hour test. And one's at 2.8 lateral
15 feet and the other's at 2.8 lateral feet; right?

16 A. Well, just the -- the appearance of the graph
17 does not -- it does not look like the left one is at
18 the same offset as the right one. So I would say that
19 one was probably over 3 feet away.

20 Q. So one's 2.8 feet and one's 3 feet?

21 A. Well, it's over 3 feet. The other one looks
22 to be 2.4.

23 Q. But we have a 10-mile-per-hour difference,
24 and you have the same force, 2.3, in both of these;
25 right?

1 A. Right. With a different offset, yes.

2 Q. And this defies basic science because you
3 already told me that, under basic science, if you go
4 faster, the poundage should go up; right?

5 A. Absolutely. If you look at the trend lines,
6 that's exactly what happens. In this one, I think
7 you've got the wrong --

8 Q. The trend lines. Okay. Why don't we look at
9 the actual tests. We'll get to the trend lines. These
10 are the actual tests; right?

11 A. Right. I think you've got the wrong lateral
12 offsets labeled there.

13 Q. Okay.

14 Can I have my next one, please.

15 Now we're comparing three different tests at
16 45 miles an hour. And we have one -- and they're all
17 at about 1.2. You will agree with that?

18 A. No, that top right one is clearly at 3 1/2
19 feet or so.

20 Q. Okay. Do you see any that are similar or the
21 same?

22 A. Well, the bottom two are maybe 9 inches or a
23 foot away from the -- from the cyclist.

24 Q. Okay. And what forces do you get in the
25 bottom two?

1 A. On the bottom two, one of them looks to be
2 about 6 1/2, and the other one looks to be about 5.

3 Q. So in one test, go with the exact same speed,
4 you get 6 1/2, and the other one, you get 5; right?

5 Right?

6 A. That's about right, yes. It looks like the
7 speed is a little off on the right one.

8 Q. And in one test, you get a long period of
9 force, the one on the left?

10 A. Correct.

11 Q. How long is that?

12 A. Maybe about 8 seconds.

13 Q. Okay. And how long is this one?

14 A. Which one are you pointing to?

15 Q. The one on the right.

16 A. The lower right is maybe on the order of 5
17 seconds, 4 seconds, 5.

18 Q. So exact same bus, exact same test facility,
19 exact -- miles per hour the same, run at the same point
20 in time, and we have this type of difference; right?

21 A. Absolutely.

22 Q. But the difference is, because the wind is
23 changing direction, the wind is changing force. That's
24 the difference; right?

25 A. That's certainly my opinion, that the ambient

1 conditions -- the conditions on the test track are
2 going to add some offset to the test.

3 Q. Well, that's your opinion. Dr. Breidenthal's
4 opinion is that you just can't have a 200-pound weight
5 to try to test wind force. That's his opinion.

6 A. That is. And I can explain my opinion if you
7 would like.

8 Q. Let's go through a couple more
9 inconsistencies.

10 Do we have another one?

11 MR. GODFREY: We do.

12 BY MR. KEMP:

13 Q. Okay. Now we have 45 miles an hour at
14 2.9 feet, 4 feet, 6 feet, 4.5 feet. And in each one of
15 these, at least the top three, we get the exact same
16 force; right?

17 A. Well, it looks like the top right -- not to
18 be nitpicky, but that looks like a lower force. And
19 definitely the bottom right is lower than the top left.

20 So I think there's some inconsistency there.
21 If you look at the top left, that's a greater force
22 than the bottom right for sure. So ...

23 Q. Are you being nitpicky here?

24 A. Absolutely. The -- the --

25 Q. 45 miles an hour, that's when you would

1 effect -- you would expect the test to be the most
2 reliable; right?

3 A. No, I think they're all equal reliability.

4 Q. You think if you measure a bus going 10 miles
5 an hour with a 11-mile-an-hour wind coming into it,
6 it's going to be equally as reliable as if you measure
7 the bus 45 miles an hour?

8 A. Sure. If the equipment doesn't change, the
9 measurements are the same.

10 Q. Okay. All right.

11 Can I have my next, please.

12 I don't have a summary chart?

13 Now, this is the summary of differences that
14 I showed you before the examination; correct?

15 A. Correct.

16 Q. It's -- some of these, we have gone through,
17 but we're comparing these two tests here. There's a
18 potential discrepancy; right?

19 A. Right. These are all going to show variation
20 based on local conditions.

21 Q. And by "variation," you mean the same or
22 similar tests yields different results. That's what
23 you're calling a variation; right?

24 A. Well, I'm saying that all of the tests show
25 effects from local conditions. And the local

1 conditions are the -- the weather that we talked about.

2 Q. The wind going to the left and the right and
3 changing from 11 miles an hour to 4 miles an hour,
4 that's what you're talking about?

5 A. Right. That effect of the wind changing, as
6 you say, 11 to 4 miles per hour, that effect is on the
7 exact same order of magnitude for the -- the air
8 displacement being created by a bus passing 3 feet away
9 from a cyclist.

10 Q. Okay. Let's just see how many of these tests
11 we have this variation.

12 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 --
13 you can go a little slower, please.

14 Let's start over. Okay. I'm fast, but I'm
15 not that fast. We should get that captain back here.

16 All right. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10,
17 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24,
18 25, 26, 27, 28, 29, 30, 31, 32 -- up -- 34. Are we
19 done? Oh, 35, 36, 37 --

20 MR. GODFREY: Start at the top. 35.

21 BY MR. KEMP:

22 Q. Oh. 35, 36, 37, 38, 39, 40, 41, 42, 43, 44,
23 45, 46, 47, 48, 49.

24 49 tests where we have a variation by the
25 local wind; right?

1 A. I would expect every test to have a variation
2 caused by the local wind. That's why I did repetitive
3 runs.

4 Q. But 49 -- how many are there? 103? 103 of
5 these in total?

6 A. The number of tests? I'm not sure.

7 Q. Yeah, of these type of tests.

8 A. I think 110 or so.

9 Q. Okay. I counted 103, but we'll go with 110.

10 So 43 out of 110, we had a variation caused
11 by the local wind?

12 A. No, 110 out of 110 are affected by local
13 wind. That's absolutely accurate.

14 Q. So all of your testing is affected by the
15 local wind; right?

16 A. Exactly, yes.

17 Q. So if we did that exact same testing the very
18 next week and we had no wind, we would get different
19 results?

20 A. I think you would get the same results.

21 Q. If these differences are explained by the
22 wind changing, going one way and another, and the force
23 changing from one to another, why, if you went to the
24 very next week, would you get the same results?

25 A. Because the measurements are measuring the

1 effect of the coach passing by the cyclist. And that's
2 the change that I'm looking for. And so when I measure
3 the force of the bus passing by the cyclist, what I get
4 is a change from the local conditions to the effect of
5 the bus passing by. The local conditions, as you can
6 see in all of these tests, produce a force of around
7 1 pound. When the bus passes by --

8 Q. Around 1 pound. Okay. Let's examine --

9 A. Let me finish.

10 When the bus passes by, the forces are
11 extremely low. The forces are on the order of a pound.

12 Q. You just told me it was 1 pound, just got
13 done telling me it was 1 pound; right?

14 A. I think, on average, it's about a pound.

15 MR. KEMP: Can I have 53, please.

16 BY MR. KEMP:

17 Q. Here's a test, 25 miles an hour; right? This
18 is the one between 52 and 53 that -- or 54 that we
19 discussed at the deposition. Not trying to trick you;
20 I'll be happy to show you your deposition.

21 A. Okay.

22 Q. This is 25 miles an hour. Remember
23 discussing this at the deposition?

24 A. I do.

25 Q. And at 25 miles an hour, at the deposition,

1 you told me this was 2.4. Do you recall that?

2 A. 2.4.

3 Q. 2.4 pounds of force.

4 A. That looks to be about right.

5 Q. Okay. So you just got done saying a pound,
6 and now we have the test showing it's 2.4 at 25 miles
7 an hour; right?

8 A. Right. I'm talking about the ambient effect
9 is about a pound. This is the effect of the bus.

10 Q. Oh. So -- so now you would agree with me
11 that the bus at 25 miles an hour at least causes 2.5,
12 2.4 pounds of pressure; right?

13 A. For a pass-by of about 10 inches, close to
14 the bus, that would be accurate. For all pass-bys
15 3 feet or greater, it's a pound or less.

16 Q. Okay. And let's talk about the time period
17 here. What is the time period that this 2.5 pounds
18 exposes potentially a bicyclist to a force?

19 A. Well, the 2.4 is right there at just past 30
20 seconds. So that's one of the peaks. The total force
21 over that period would be, obviously, much less than
22 2.4 pounds because, most of the time, the force is less
23 than 2.4 pounds. So the recorded value that I've given
24 you is the peak force.

25 Q. Okay. I think you misunderstood my question.