

UNITED STATES OF AMERICA

NATIONAL TRANSPORTATION SAFETY BOARD

\* \* \* \* \*

Investigation of: \*

WMATA SMOKE AND ELECTRICAL ARCING \*

ACCIDENT IN WASHINGTON, D.C. \*

\* \* \* \* \*

Board Room and Conference Center  
National Transportation Safety Board  
429 L'Enfant Plaza East, S.W.  
Washington, D.C. 20694

Tuesday,  
June 23, 2015

The above-entitled matter came on for hearing, pursuant  
to Notice, at 9:00 a.m.

BEFORE: NTSB BOARD OF INQUIRY

## APPEARANCES:

NTSB BOARD OF INQUIRY

CHRISTOPHER A. HART, Chairman  
 T. BELLA DINH-ZARR, Ph.D., Vice Chairman  
 ROBERT L. SUMWALT, Member  
 EARL F. WEENER, Ph.D., Member

NTSB STAFF

KRISTIN POLAND, Ph.D., Hearing Officer  
 ROBERT "JOE" GORDON, Investigator-in-Charge  
 JOSEPH PANAGIOTOU, Chair, Panel 1  
 RUBEN PAYAN  
 XIAOHU LIU, Ph.D.  
 JOSEPH GREGOR, Ph.D.  
 STEVE BLACKISTONE, Chair, Panel 2  
 JOSEPH GREGOR, Ph.D.  
 DAVID BUCHER  
 RICK DOWNS  
 BENJAMIN ALLEN, Assistant General Counsel

PARTY REPRESENTATIVES

KLARA BARYSHEV, Tri-State Oversight Committee (TOC)<sup>1</sup>  
 THOMAS LITTLETON, Federal Transit Administration (FTA)  
 JAMES DOUGHERTY, Washington Metropolitan Area Transit  
 Authority (WMATA)  
 CHRISTOPHER GELDART, D.C. Fire and Emergency Medical  
 Services (D.C. EMS)  
 JAMES MADARAS, Amalgamated Transit Union, Local 689  
 (ATU Local 689)  
 DABNEY HUDSON, International Association of  
 Firefighters, Local 36 (IAFF Local 36)

WITNESS PANEL 1: State of WMATA's Infrastructure

CLAY BUNTING, WMATA  
 PAUL MILLER, WMATA  
 RANDALL GROOMAN, WMATA  
 MARSHALL S. EPLER, P.E. WMATA  
 TEDDY KAVALERI, D.C. Office of Unified Communications  
 (D.C. OUC)

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<sup>1</sup> The TOC provided clarification to their testimony in a separate document. That document is titled "Tri-State Oversight Committee Review of Hearing Transcripts".

## APPEARANCES:

WITNESS PANEL 2: Emergency Response Efforts

DERRON HAWKINS, D.C. Fire and EMS

STEPHEN WILLIAMS, D.C. OUC

SCOTT GOLDSTEIN, Montgomery County Fire and Rescue

RONALD BODMER, WMATA

HERCULES BALLARD, WMATA

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P R O C E E D I N G S

(9:00 a.m.)

1  
2  
3 CHAIRMAN HART: I would like to call the meeting to  
4 order.

5 Good morning. Welcome to the board room of the National  
6 Transportation Safety Board. I'm Christopher Hart, and it is my  
7 privilege to serve as chairman of the NTSB and of this Board of  
8 Inquiry. I'm joined today by my colleagues, Vice Chairman Bella  
9 Dinh-Zarr, Member Robert Sumwalt and Member Earl Weener.

10 Over the next 2 days, we will hear testimony relating to  
11 an accident on the Washington Metropolitan Area Transit  
12 Authority's Metrorail system that exposed hundreds of passengers  
13 to heavy smoke on January 12th, 2015, resulting in one fatality  
14 and dozens of others seeking medical treatment.

15 In a few minutes, Investigator-in-Charge Joe Gordon will  
16 present a summary of the accident. For the NTSB, this accident  
17 was very close to home. It occurred beneath this building, and  
18 many of the staff here today, including members of this Board,  
19 ride Metrorail train directly, as I did, to come here this  
20 morning. It underscored a core NTSB position: While we are  
21 acutely aware and appreciative of the convenience that mass  
22 transit provides, safety is always more important than  
23 convenience. Unfortunately, the events of January 12th clearly  
24 demonstrated that the attention that was given to safety was  
25 inadequate.

1           As a result of this accident, 86 passengers were  
2 transported to local medical facilities for treatment and another  
3 9 passengers sought medical attention, and tragically, 1 passenger  
4 died. On behalf of the entire NTSB, I offer condolences to the  
5 family and friends of the passenger whose life was lost. We know  
6 that nothing can replace your loved one, and we hope that our work  
7 will not only serve to answer some of your questions, but will  
8 also help prevent this from happening again. For those who were  
9 injured, we wish you well during your recovery. And we know that  
10 there are family representatives and those who were injured, both  
11 present today and also watching on the Internet.

12           Our objective in this hearing and throughout this  
13 investigation is to determine what went wrong so that we can  
14 recommend ways to help prevent similar tragedies in the future.  
15 We have begun to do so based on the facts that we have found to  
16 date.

17           On February 11th, the NTSB issued urgent recommendations  
18 to WMATA, the Federal Transit Administration, and the American  
19 Public Transportation Association concerning tunnel ventilation  
20 procedures. We also issued a recommendation on June 8 to WMATA  
21 concerning potential electrical short-circuiting hazards.

22           We are also mindful that yesterday was the sixth  
23 anniversary of the crash near WMATA's Fort Totten Station that  
24 killed 9 people and sent 52 others to local hospitals. While  
25 progress has been made on our recommendations stemming from the

1 Fort Totten investigation, 6 years later, we are still  
2 encountering concerns that we addressed in those recommendations.

3 This hearing will elicit additional factual information  
4 about the L'Enfant Plaza accident as part of our ongoing  
5 investigation. At a future date, we will issue an accident report  
6 that will include a determination of probable cause and any future  
7 safety recommendations that are warranted.

8 NTSB investigations are aided by the participation of  
9 the parties. The NTSB designates as parties those organizations  
10 or individuals whose participation is necessary in the public  
11 interest and whose special knowledge will contribute to the  
12 development of pertinent evidence.

13 At a prehearing conference on June 2nd, the NTSB and the  
14 parties to this hearing agreed upon the issues to be discussed  
15 today, a list of witnesses who would testify, and the exhibits to  
16 which we will refer today. We will be adding additional exhibits  
17 to that list of exhibits. Although we are still gathering  
18 evidence regarding all aspects of this accident, testimony and  
19 questioning in this hearing will be limited to the four broad  
20 issue areas that are outlined in the hearing agenda.

21 Today we will look at the state of WMATA's  
22 infrastructure. That will be this morning. This afternoon, we  
23 will look at emergency response efforts, because we want not only  
24 to figure out how to keep it from happening again, but also how to  
25 improve emergency response if it does happen. Tomorrow morning,



1 we will look at WMATA's organizational culture, and tomorrow  
2 afternoon, the Federal Transit Administration Tri-State Oversight  
3 Committee efforts to address public transportation safety, in  
4 other words, the regulatory oversight.

5 I will now introduce the parties. As I call the name of  
6 each party, I ask the designated spokesperson to identify  
7 themselves and their affiliation with the party they represent,  
8 and to introduce the others that are seated at the table. I will  
9 start with the Tri-State Oversight Commission.

10 MS. BARYSHEV: Good morning, Mr. Chairman. My name is  
11 Klara Baryshev, and I am Chair of Tri-State Oversight Committee.  
12 With me is Sharmila Samarasinghe; she is the Vice Chair of Tri-  
13 State Oversight Committee. And Joe Tebo, he is a member of Tri-  
14 State Oversight Committee. And also, our consultant, Robert  
15 Kogan, and Joshu Shih, present.

16 CHAIRMAN HART: All right. Thank you, Ms. Baryshev.  
17 Federal Transit Administration?

18 MR. LITTLETON: Good morning, Mr. Chairman. My name is  
19 Tom Littleton. I'm the Associate Administrator for Transit Safety  
20 and Oversight of the FTA. I'm the party spokesman. Joining me at  
21 the table this morning are George Good, investigator with the FTA;  
22 Kimberly Burtch, who is our team lead for investigations and data  
23 management; and our esteemed colleague and senior counsel, Scott  
24 Biehl, Esquire.

25 CHAIRMAN HART: Thank you, Mr. Littleton.

1 Washington Metropolitan Area Transit Authority?

2 MR. DOUGHERTY: Good morning, Chairman Hart, members of  
3 the Board. Jim Dougherty, Chief Safety Officer for WMATA. And  
4 across from me is Louis Brown, our Assistant Chief Safety Officer.  
5 Seated next to him is Louis Viner, who is our Chief of  
6 Infrastructure Engineering. Andrew Off is our Director of Capital  
7 Programs and Engineering. Darvin Kelly is our General  
8 Superintendent of Track and Structures. And to my immediate right  
9 is Lynn Bowersox, our Assistant General Manager of Customer  
10 Service, Marketing and Communications.

11 CHAIRMAN HART: Thank you, Mr. Dougherty.

12 District of Columbia Emergency Medical Services, D.C.  
13 EMS?

14 MR. GELDART: Good morning, sir, Mr. Chairman, members  
15 of the Board, my name is Chris Geldart. I'm the Director of  
16 D.C.'s Homeland Security and Emergency Management Agency, as well  
17 as the Office of Unified Communications. Across from me I have  
18 Teddy Kavaleri, who is the IT Director of the Office of Unified  
19 Communications; Deputy Chief Derron Hawkins, from the Fire and  
20 Emergency Medical Services; Commander Sund, Steve Sund, from the  
21 Metropolitan Police Department; Stephen Williams, the Operations  
22 Chief for the Office of Unified Communications; and Assistant  
23 Chief Eddie Mills from Fire and Emergency Medical Services.

24 CHAIRMAN HART: Thank you, Mr. Geldart.

25 Amalgamated Transit Union, Local 689?

1           MR. MADERAS: Good morning, Chairman Hart. My name is  
2 Jim Madaras. I'm the Safety Officer for Local 689. To my right  
3 is Marlene Flemmings-McCann, and next to her is Dion Baker.  
4 They're both executives at WMATA -- I mean at ATU 689. Thank you.

5           CHAIRMAN HART: Thank you, Mr. Madaras.

6           International Association of Firefighters, Local 36?

7           MR. HUDSON: Good morning, Mr. Chairman. I'm Dabney  
8 Hudson, Second Vice President, IFF Local 36, and I oversee all the  
9 investigations and fire-related safety issues.

10          CHAIRMAN HART: Thank you, Mr. Hudson.

11          I thank all of the parties for their assistance and  
12 cooperation with the NTSB investigation thus far. We appreciate  
13 your valuable time, and we look forward to working with you  
14 further as the investigation continues. So thank you. We know  
15 you're doing this on -- you're busy and you're doing this on your  
16 work time, and you've got other things to do, but you're helping  
17 us get to the bottom of this and we appreciate it.

18          The order of the hearing will be as follows: First  
19 Hearing Officer Kris Poland will follow my remarks with a safety  
20 briefing, some scheduling information, and a description of the  
21 exhibits to be used during the hearing. We will then turn to  
22 Investigator-in-Charge Joe Gordon, who will provide an overview of  
23 this accident. Following the overview, we will proceed in  
24 sequence through the issue areas that I listed before.

25          For each issue area, Dr. Poland will introduce NTSB

1 technical panelists and will swear in the witnesses. The  
2 witnesses have been prequalified and their qualifications and  
3 biographical information are available on the NTSB website. The  
4 witnesses will then be questioned by the NTSB technical panel and  
5 then by the spokesperson for each party, and then finally, by us,  
6 the Board of Inquiry. After one round of questions, due to time  
7 constraints, a second round will be limited to pertinent questions  
8 that serve to clarify the record or to address any new matter that  
9 was raised in the first round. Please raise your hand, and I will  
10 determine whether the issue warrants a second round of questions.

11 As Chairman of the Board of Inquiry, I will make all  
12 rulings on the admissibility of exhibits, the appropriateness of  
13 questions, and the pertinence of proffered testimony with the  
14 assistance of NTSB General Counsel, David Tochen, who is seated  
15 behind me. All such rulings will be final.

16 I must emphasize that NTSB investigations are, by  
17 regulation, fact-finding proceedings with no adverse parties. The  
18 Board does not assign fault or blame for an accident or incident.  
19 Witnesses should provide only the facts as they understand them,  
20 and they may not speculate or give any analysis. Likewise,  
21 questions will be limited to the four issue areas that are already  
22 described. NTSB participants will not ask and any party  
23 representatives will not be permitted to ask questions that call  
24 for speculation or analysis or that are related to fault, outside  
25 litigation or legal liability in general.

1           The exhibits contain redactions noted with opaque boxes,  
2 which are the result of negotiations between the parties and the  
3 NTSB regarding the disclosure of information that is claimed to be  
4 personally identifiable, security sensitive, or proprietary  
5 information. The NTSB is authorized by statute to disclose  
6 information to carry out its mission, but we try to protect  
7 confidentiality and proprietary information to the greatest extent  
8 possible. While the NTSB has access to all the information, the  
9 exhibits disclose to the public relevant materials that are part  
10 of the investigation and/or will be discussed at the hearing. A  
11 white paper explaining our authority to use propriety information  
12 is available on the NTSB website.

13           Dr. Poland will now provide important safety and  
14 scheduling information and describe the exhibits.

15           Dr. Poland?

16           DR. POLAND: Thank you, Chairman Hart. Let's start with  
17 safety. Please note the nearest emergency exit. You can use the  
18 rear doors that you came through to enter the conference center.  
19 There is also a set of emergency doors on either stage -- on  
20 either side of the stage up front. There's an AED in the lobby.

21           Next, some courtesy and planning considerations. If you  
22 have not already done so, please silence your electronic devices.  
23 Please plan for a 30-minute break at 10:30 a.m. and a lunch break  
24 from 12:30 to 2 p.m. The 30-minute afternoon break will occur at  
25 3 p.m.

1           Now let's discuss the exhibits. The exhibits for this  
2 hearing are in nine separate groups. The exhibits are identified  
3 by group and number. Group A are administrative exhibits and  
4 witness biographies used to prequalify witnesses who will testify  
5 in this hearing. Group B are NTSB Group Chairman's factual  
6 reports. Group C are exhibits related to the first panel in this  
7 hearing, "The State of WMATA's Infrastructure." Group D are  
8 exhibits related to Panel 2, "Emergency Response Efforts." Group  
9 E are exhibits related to Panel 3, "WMATA's Organizational  
10 Culture." And Group F are exhibits related to Panel 4, "FTA and  
11 the Tri-State Oversight Committee's Efforts for Public  
12 Transportation Safety." Group G are NTSB-introduced interview  
13 transcripts. Group H are party-introduced exhibits, and Group M  
14 are reserved for other miscellaneous exhibits; none have been  
15 identified thus far.

16           In addition, the District of Columbia party recently  
17 submitted 12 additional exhibits. Those exhibits have been  
18 accepted and will be labeled Exhibit H4 through H15. Following  
19 the hearing, they will be shared with the parties and entered into  
20 the docket. Also, I believe Member Sumwalt would like to request  
21 additional exhibits for the hearing docket.

22           Member Sumwalt.

23           MEMBER SUMWALT: Good morning. Dr. Poland, you're  
24 right. I would like to enter the final report of the Federal  
25 Transit Administration that was dated June the 17th. I'd like to

1 enter that into the docket, please, as an exhibit. And in  
2 addition to that, the companion to that would be the FTA's Safety  
3 Directive 15-1, which was issued also in response to the FTA's  
4 audit that was completed last week.

5 DR. POLAND: Thank you, Member Sumwalt. We'll label  
6 those Exhibit H16 and H17. And those will be circulated to the  
7 parties and also entered into the exhibit following this hearing.

8 The exhibits entered into the record and any  
9 presentations, along with other records of the investigation,  
10 become part of the NTSB public docket and are available via the  
11 NTSB website at [www.nts.gov](http://www.nts.gov). The public docket is opened as of  
12 this morning. Party spokespersons have been provided electronic  
13 copies of the public docket containing the exhibits identified  
14 above. A transcript of the testimony taken during the hearing  
15 will be prepared and entered into the docket as soon as possible.

16 In addition, Mr. Allen, seated behind me, will keep a  
17 list of any documents that are discussed during the hearing that  
18 are not currently exhibits in the NTSB public docket. These  
19 documents will be submitted after the hearing and entered into the  
20 docket. The parties will have the opportunity to submit proposed  
21 findings of fact, conclusions and recommendations to the Board of  
22 Inquiry after the closing of the hearing. Submissions will be  
23 made part of the public docket and will receive careful  
24 consideration during the Board's analysis of the evidence and  
25 preparation of the Final Report. I encourage the parties to make

1 use of this opportunity.

2 Please note that submissions must be sent to the NTSB  
3 within 30 calendar days of the closing of this hearing, by July  
4 24th, 2015, and copies must be provided to each of the other  
5 parties.

6 Thank you, Chairman Hart.

7 CHAIRMAN HART: Thank you, Dr. Poland.

8 Mr. Gordon will now provide a description of the  
9 accident.

10 MR. GORDON: Good morning, Chairman Hart, Vice Chairman  
11 Din-Zarr, Member Sumwalt, and Member Weener.

12 On January 12, 2015, about 3:15 p.m. local time,  
13 Washington Metropolitan Area Transit Authority, referred to  
14 through this presentation as WMATA, Metrorail Train 302 stopped  
15 after encountering heavy smoke while traveling southbound in a  
16 tunnel between L'Enfant Plaza Station and the Potomac River  
17 Bridge. This presentation will provide factual information of the  
18 investigation to date.

19 In a moment, I will play an animation to provide an  
20 overview of the accident, but first, I will give a brief  
21 description of third rail power used on the WMATA system. Train  
22 propulsion power on the WMATA system is supplied from electrified  
23 contact rail with 750 volts of electricity. The contact rail,  
24 also referred to as the third rail, is located parallel to the  
25 running rails. The third rail is typically shielded by a cover



1 board. High voltage cables are used to provide power to the third  
2 rail and maintain continuity.

3           This still image is shown to help prepare you for an  
4 upcoming animation. The image shows a portion of the map from the  
5 WMATA Metrorail system. The animation will show events that  
6 occurred on the Yellow Line. System direction north is toward the  
7 top of the screen. Certain events will be displayed to the right  
8 of the animation to document the duration of the accident. The  
9 following animation and footage from a WMATA surveillance video  
10 present factual information gathered thus far in the investigation  
11 as a way to introduce some of the issues addressed in this  
12 investigative hearing. The investigation is ongoing and this  
13 animation is not intended to provide any analysis. Please start  
14 the animation.

15           The accident began with an electrical arcing event  
16 associated with power supplied to the third rail of track number 2  
17 in the Yellow Line tunnel about 2,000 feet south of L'Enfant Plaza  
18 Station. At 3:05, a smoke alarm activated near the location of  
19 the electrical arcing.

20           At 3:06, an electrical circuit breaker tripped and  
21 remained open on a circuit feeding power from L'Enfant Plaza  
22 Station to the third rail of number 2 track. However, power was  
23 still being supplied to the third rail from an electrical feed  
24 south of the arcing area.

25           During a review of surveillance video footage, smoke was

1 first seen coming from the tunnel into the station at 3:09.  
2 Southbound Train 302 stopped at 3:13 to service the L'Enfant Plaza  
3 Station, allowing passengers to exit and board the train. About  
4 40 seconds later, the train proceeded south, entering the tunnel.

5 Train 302 stopped in the tunnel at 3:15 due to a heavy  
6 accumulation of smoke that restricted the operator's visibility.  
7 The rear of the train was about 386 feet from the station.

8 Due to reports of smoke in the L'Enfant Plaza Station,  
9 the WMATA control center sent a command to activate ventilation  
10 fans in the station in emergency exhaust mode at 3:16.

11 At 3:17, the operator of Train 302 contacted the WMATA  
12 control center and reported that the train had encountered heavy  
13 smoke and was unable to continue south.

14 In response to a civilian 911 call at 3:18 reporting  
15 smoke coming from the ventilation shaft opening near Water Street,  
16 first responders were dispatched to that location at 3:22. Also  
17 at 3:22, WMATA notified the D.C. Office of Unified Communication  
18 of smoke in the L'Enfant Plaza Station.

19 Southbound Train 510 stopped at the L'Enfant Plaza  
20 Station at 3:23. All passengers and the train operator exited the  
21 train.

22 The WMATA control center sent a command at 3:24 to  
23 activate fans in the ventilation shaft south of the station in  
24 emergency exhaust mode.

25 At 3:26, the D.C. Office of Unified Communication

1 dispatched first responders to the L'Enfant Plaza Station. D.C.  
2 first responders began arriving at the station at 3:31.

3 Third rail power to number 1 and number 2 track was  
4 de-energized in the station at 3:40; however, power was still  
5 being supplied from an electrical feed south of the arcing area.

6 At 3:49, the WMATA control center sent a command to  
7 de-energize the third rail power supplied from south of the arcing  
8 location, finally removing all power in the area where the arcing  
9 occurred.

10 Firefighters reported to incident command at 3:50 that  
11 they had arrived at the rear of Train 302. Incident command  
12 responded to proceed with an evacuation.

13 At 4:27, firefighters reported to incident command that  
14 all passengers were evacuated from Train 302 in the tunnel.

15 This is video from a surveillance camera inside the  
16 L'Enfant Plaza Station. The camera is facing southbound toward  
17 the tunnels for Metro's Green and Yellow Lines. The video is  
18 played 10 times faster than real time.

19 Smoke was first seen coming from the tunnel at 3:09 near  
20 the station platform. Shortly thereafter, the smoke had  
21 dissipated.

22 Southbound Train 302 stopped at 3:13 to service the  
23 L'Enfant Plaza Station, allowing passengers to exit and board the  
24 train. About 40 seconds later, the train proceeded south,  
25 entering the tunnel.

1           Event-recorded data shows Train 302 stopped at 3:15. At  
2 this time, the last car was about 386 feet from the end of the  
3 L'Enfant Plaza platform.

4           Looking at the southbound tunnel, smoke is beginning to  
5 emerge. Due to reports of smoke in the L'Enfant Plaza Station,  
6 the WMATA control center sent a command to activate ventilation  
7 fans in the station in emergency exhaust mode at 3:16. Heavy  
8 smoke can be seen coming from the southbound tunnel. Passengers  
9 on the platform can be seen evacuating the station.

10           Southbound Train 510 stops on the platform at about  
11 3:23, 10 minutes after Train 302 was at the platform. At about  
12 the same time, a northbound train stops without opening the train  
13 doors and then proceeds to the next station.

14           At 3:24, the WMATA control center sent a command to  
15 activate fans in the ventilation shaft south of the station in  
16 emergency exhaust mode.

17           During review of surveillance video, it was noted that  
18 380 people evacuated from Train 302 through the tunnel portal.  
19 Eighty-six people were transported from the accident scene to  
20 medical facilities. Another nine people sought medical attention.  
21 There was one passenger fatality.

22           NTSB investigators examined the area of the smoke  
23 initiation in the tunnel, which was less than one-quarter of a  
24 mile in front of stopped Train 302. The smoke seen on the  
25 surveillance video resulted from an electrical arcing event near

1 the third rail. The remaining damaged cables and cover board are  
2 shown here.

3 The NTSB investigation thus far as focused on several  
4 issue points, including the state of repair of the WMATA  
5 infrastructure, the response of WMATA employees and first  
6 responders to the accident, communication effectiveness, both  
7 procedural and radio functionality.

8 In response to the accident, on January 20th, WMATA  
9 announced early action items that would be implemented to enhance  
10 safety, which include changes to the standard operating  
11 procedures, increased frequency of emergency drills, enhanced  
12 safety signage on rail cars, increased inspection of electrical  
13 components in tunnels, electrical component upgrades and  
14 protection, and review of smoke detection capabilities.

15 Also, in response to the accident, on April 17th, WMATA  
16 announced early action items, which include establish an annual  
17 maintenance program addressing tunnel lighting, establishing a  
18 maintenance crew to clean tunnel walkways, conducting a review of  
19 protocols for responding to alarms received in the Rail Operation  
20 Control Center, and implementation of a quality audit of the  
21 ventilation system testing.

22 On February 11th, 2015, the NTSB issued urgent safety  
23 recommendations concerning tunnel ventilation systems. These  
24 recommendations address the functionality and proper use of  
25 ventilation fans in tunnels.

1           On June 8th, 2015, the NTSB issued a safety  
2 recommendation concerning electrical short-circuiting hazards.  
3 These recommendations address the proper installation of power  
4 cable connector assemblies.

5           As a result of this NTSB investigation, the FTA  
6 initiated a safety management inspection of WMATA. They issued a  
7 report on June 17th, 2015, detailing the results of a 3-month  
8 inspection, which identified 78 corrective actions to address 44  
9 safety findings on the Metrorail system.

10           Thank you, and this concludes my presentation.

11           CHAIRMAN HART: Thank you, Mr. Gordon.

12           Now I will call on the hearing officer, Dr. Poland, to  
13 introduce the first panel and to call and swear in the witnesses.

14           Dr. Poland?

15           DR. POLAND: Thank you, Chairman Hart.

16           Can the witnesses for the first panel please be seated?

17           Director Hall, can you please position the name plates  
18 and assist the witnesses? Thank you.

19           While the witnesses are being seated, I'll introduce the  
20 additional staff that are assisting with this hearing.

21           Mr. Benjamin Allen and Ms. Anne Gawalt are providing  
22 legal support, and Ms. Rachel Gunaratnam and Ms. Beverly Drake are  
23 handling the audiovisuals. In addition, Mr. Peter Knudson is  
24 handling public affairs, and Mr. Mike Crook is assisting -- is  
25 providing assistance to the survivors and to the families.

1 Chairman Hart, the first panel will address the state  
2 of WMATA's infrastructure. The panel will address the maintenance  
3 of traction power cables, water in tunnels, the tunnel ventilation  
4 systems, and the physical communications systems used within the  
5 Metrorail system and those used by emergency responders. Witness  
6 Panel 1 is composed of the following individuals from my left,  
7 nearest the Board Members: Mr. Teddy Kavaleri, District of  
8 Columbia, Office of Unified Communications, otherwise known as  
9 D.C. 911; Mr. Marshall Epler, WMATA; Mr. Randall Grooman, WMATA;  
10 Mr. Paul Miller, WMATA; and Mr. Clay Bunting, WMATA.

11 The NTSB Technical Panel, starting on my left, is  
12 composed of Mr. Joseph Panagiotou, the Panel Chairman, Mr. Ruben  
13 Payan, Dr. Xiaohu Liu, and Dr. Joseph Gregor.

14 I now ask that the witnesses please stand to be sworn.  
15 Raise your right hand. Please answer by saying I do.

16 (Witnesses sworn.)

17 DR. POLAND: Thank you. Please be seated.

18 Chairman Hart, these witnesses have been prequalified,  
19 and their respective experience and qualifications appear in the  
20 docket as exhibits in Group A. As a reminder to the witnesses,  
21 please push the microphone button to talk, and then push it again  
22 when finished. Also, please answer the questions factually and  
23 avoid analysis.

24 I now turn the questioning over to Mr. Joe Panagiotou.

25 MR. PANAGIOTOU: Thank you, Dr. Poland.

1           Good morning, Panel 1 witnesses. We will begin this  
2 panel this morning with a discussion of traction power cables.  
3 I'll now turn it over to my colleague, Mr. Ruben Payan.

4           MR. PAYAN: Thank you.

5           Good morning. As Mr. Panagiotou stated, the first topic  
6 we're going to cover is traction power cables used by WMATA in  
7 their third rail power propulsion system. So the bulk of my  
8 questions are going to be directed to you, Mr. Paul Miller. So  
9 we'll begin.

10           Mr. Miller, does WMATA or the cable manufacturer assign  
11 a life cycle to the cables used for the third rail? And if so,  
12 what is the life cycle for the different cables currently in use?

13           MR. MILLER: Sir, the manufacturers, or the providers of  
14 the cable, will not provide a service life of the cable. That is  
15 due to the manufacturer does not know what type of stress or  
16 environment that we're putting the cables under, so they have no  
17 way of knowing exactly what the condition of that cable or what  
18 kind of stress it's going to be given to.

19           In regard to the Metro or WMATA service life of the  
20 cable, it's extremely variable. What I'd like to do is when you  
21 go into the history of these cables, it's very important to know  
22 how these cables are manufactured because, like any product, if  
23 you have an outstanding product, the service life is going to be  
24 extended.

25           CHAIRMAN HART: Mr. Miller, would you pull the mike a



1 little bit closer, please? Thank you.

2 MR. MILLER: So as our quality continues with the  
3 cables, it's important to know how these cables are constructed.  
4 These cables, as they exist right now, are low-smoke, zero halogen  
5 cables. Their history in WMATA, in the original construction,  
6 these type of cables did not exist.

7 In the mid- to late 1970s, we had a flame retardant-type  
8 cable that was introduced. In the 1980s, we had a low-smoke cable  
9 that was introduced that WMATA continues to use. In the late  
10 1990s and the early 2000s is where we come into the actual cable  
11 that we're talking about, which is, again, is a low-smoke, zero  
12 halogen cable.

13 These cables are put under -- before they even get to  
14 Metro, these cables are put under severe testing. This testing  
15 will include bake tests, burn tests, water immersion tests. They  
16 will include water absorption tests. There's a whole list of  
17 tests that have to be performed. This cable is a two kV cable.  
18 So --

19 MR. PAYAN: If I could stop you there. We'll get into  
20 the cable testing itself in a little bit.

21 MR. MILLER: Okay.

22 MR. PAYAN: Can you just briefly describe the process  
23 that WMATA currently uses to monitor the third rail cable  
24 integrity?

25 MR. MILLER: The third rail integrity of the cables --

1 is that currently, sir?

2 MR. PAYAN: Currently, yes, sir.

3 MR. MILLER: We use what's called a thermal imagery  
4 system. This is a camera that is mounted on one of our trains  
5 that periodically, or every quarter, will engross the entire Metro  
6 system with recorded observations of the cables. We also have  
7 track walkers that will provide reports to us if they see a  
8 anomaly out there. We also provide a meggering-type system, as we  
9 deem appropriate out in the system.

10 MR. PAYAN: Now, how often is the thermal imagery  
11 conducted?

12 MR. MILLER: Pardon?

13 MR. PAYAN: How often is a thermal imagery audit  
14 conducted or --

15 MR. MILLER: Every 3 months.

16 MR. PAYAN: Every 3 months, okay. And meggering is only  
17 as required, you said?

18 MR. MILLER: I'm sorry, sir. I can't hear --

19 MR. PAYAN: Meggering is only as required, or when does  
20 that happen?

21 MR. MILLER: Our meggering program, we -- are you  
22 speaking currently?

23 MR. PAYAN: So how does it get required?

24 MR. MILLER: Okay. Our meggering program will identify  
25 certain areas in the railroad that we know of that has a very

1 harsh working environment. We will revisit those areas in regard  
2 to that we know that we will go back and re-megger the cables. We  
3 also, if we have a known occurrence or an issue with a particular  
4 cable, we will visit that area and we will re-megger not only the  
5 cable that's an issue, but every cable in that entire area will  
6 also be re-meggered.

7 CHAIRMAN HART: The term meggering may not be well-  
8 understood. You might explain what that means, please?

9 MR. MILLER: Okay. A megger is an electrical instrument  
10 that is used in the electrical field, and this megger, or what we  
11 call meggering, is an instrument that is used to measure the  
12 resistance between a conductor through the insulation layer to a  
13 known ground source or a negative reference.

14 MR. PAYAN: So to break that down just to make sure we  
15 all understand it, meggering would be testing the insulation on  
16 the wire? Is that basically correct?

17 MR. MILLER: No, sir.

18 MR. PAYAN: No? Okay. Expand, please.

19 MR. MILLER: You are measuring the insulation resistance  
20 to the known conductor. In other words, you're looking for a  
21 possible path between the conductor, which is energized or could  
22 be energized at a later date, to a known ground source or a  
23 negative reference.

24 MR. PAYAN: Okay. Do you cross-megger to other cables?

25 MR. MILLER: Do I crosscheck the other cables?

1           MR. PAYAN: Do you cross-megger your cables, between  
2 cables and to ground?

3           MR. MILLER: No.

4           MR. PAYAN: Okay. Now, can you give us a brief timeline  
5 of previous cable monitoring programs that WMATA has had in place  
6 and either discontinued or replaced?

7           MR. MILLER: Yes. In the 1990s, we had a cable  
8 meggering program. And I'd like to point out, sir, that this  
9 cable meggering still exists today. In the 1990s, our cable -- we  
10 had meggering program. The meggering program was based on issues  
11 that originally came up as our system was aging. This program in  
12 the late 1990s gave us a very, very clear picture, or a snapshot,  
13 of the system in whole. The results of that brought on board a  
14 very aggressive and robust cable replacement program, which is in  
15 service today; we continue with it. Our cable program is a  
16 replacement that's a reflection of this. We do average in an  
17 annual given year of 80,000 feet of cable newly installed every  
18 year. Along with that meggering, when we install these cables,  
19 every single cable that we install is meggered, recorded, with the  
20 help of our engineering group, and all the data is collected to  
21 assure that every cable's integrity is intact.

22           MR. PAYAN: Okay. Now, you mentioned that's the current  
23 cable replacement program that you were talking about?

24           MR. MILLER: Yes, sir.

25           MR. PAYAN: How does WMATA prioritize which lines or

1 which locations are going to get renewed with this new cable? Is  
2 it by age, location, or malfunction reports? Can you expand on  
3 that?

4 MR. MILLER: Yes. It varies. The very, very first  
5 priority, and this is second to none, regardless of where we're at  
6 in any group in Metro, is absolute safety. So when we take safety  
7 into concern, it's in direct proportion to what could be called an  
8 issue with a cable or a malfunction. That cable is immediately  
9 addressed no questions asked. Now, granted, at the same time, our  
10 cable crews are in charge of both the emergency and the cable  
11 replacement. So if they're not working on a cable that's a  
12 priority -- and again, safety is first; the revenue of this  
13 railroad is second. So once we establish that, then they will go  
14 into their cable replacement program.

15 The cable replacement program is based on many factors.  
16 Age of the system. If you notice in our cable replacement  
17 program, the age of the stations are in direct relationship to  
18 where their locations are, which is the inner core of downtown.  
19 They are our priority areas. Along with that, we also take into  
20 account the requirements of the low-smoke cable versus the new  
21 technology that we have. So they both go hand in hand.

22 MR. PAYAN: So at the time of the accident, the January  
23 smoke incident, was the Yellow Line through the L'Enfant Plaza  
24 station completed under the cable replacement program?

25 MR. MILLER: Within the confines of the cable

1 replacement program, yes, sir, they were. And I'd like to  
2 elaborate on that. The L'Enfant Plaza, as Mr. Gordon mentioned  
3 earlier, the L'Enfant Plaza area has dual feeds. One is called  
4 the Ohio drive traction power. The other one is called the south  
5 tie breaker at L'Enfant. Both of them have individual traction  
6 power feeds with multiple cables. Both of those areas were  
7 replaced in our cable replacement program.

8 MR. PAYAN: Okay. Thank you. Does WMATA have an  
9 estimated timeline for the completion for the entire system for  
10 the cable replacement program?

11 MR. MILLER: Yes, in part. The track feeder cables, we  
12 are approximately 75 to 80 percent finished through the entire  
13 system in regards to main line. The actual locations from the Red  
14 Line to the Shady Grove, our traction power cables are 86 percent  
15 complete. Our Red Line to Glenmont is 99 percent complete. Our  
16 Yellow Line to Huntington is 99 percent complete. Our Orange Line  
17 to New Carrollton is 100 percent. Our Green Line to Greenbelt is  
18 100 percent. Our Green Line to Branch Avenue is 99 percent. Our  
19 Blue Line to Largo is 100 percent. Our Blue Line to Franconia is  
20 50 percent. And our Orange Line to Vienna is 60 percent.

21 But I would like to elaborate on that. When I make  
22 those comments, please keep in mind that Metro, as we expand and  
23 we add new stations, the new stations, logically, do not have new  
24 cables replaced again. So, as an example, Georgia Avenue is a new  
25 station. The outer Blue Line with Largo and Morgan Boulevard,

1 they're new stations. We don't include that in our cable  
2 replacement program at this time.

3 MR. PAYAN: Okay. Thank you. Switching subjects a  
4 little. You are assigned to the Force Account Capital Projects  
5 Department --

6 MR. MILLER: Yes, sir.

7 MR. PAYAN: -- or Division?

8 MR. MILLER: Yes, sir.

9 MR. PAYAN: In what regard does your department get  
10 involved in WMATA accident investigations, especially in smoke  
11 incidents or especially when an arcing event is identified?

12 MR. MILLER: It's very, very site specific. When you  
13 have a smoke event or a arcing event, it has to be identified as  
14 to a category of what it belongs to. In other words, you could  
15 have -- a smoking event could be as simple as debris, leaves, it  
16 could be insulators, and certainly, cables. Our group that I'm  
17 assigned to, if it involves a cable or cables for whatever reason,  
18 we will investigate it fully to try to find a root cause or what  
19 we think is a root cause. Then we will take immediate corrective  
20 action to assure that it doesn't occur again.

21 MR. PAYAN: Now, do you get to see the final report from  
22 either safety or TOC, review it, or suggest changes or implement  
23 changes for the system?

24 MR. MILLER: Yes, sir, we do.

25 MR. PAYAN: You are part of that review process?

1           MR. MILLER: We're not part of the review process, but  
2 this information is given to us through our -- like, during the  
3 TOC investigation, we rely on our safety group to mediate these  
4 investigations or come up with the conclusions and findings, and  
5 then it is handed down to our group.

6           MR. PAYAN: Okay. Thank you. I'm going to stop right  
7 here and pass the questioning over to Dr. Liu.

8           DR. LIU: Thank you. I will focus on the issue of water  
9 intrusion in side Metrorail's tunnel system and direct my  
10 questions to Mr. Bunting.

11           I'd like to first bring up Exhibit C10. This is a  
12 photograph of the arcing accident site taken by NTSB investigators  
13 the night after the accident. Please bring up Exhibit C10.

14           The photo shows that there's apparent water intrusion in  
15 the vicinity of the arcing location.

16           Mr. Bunting, could you describe to me, briefly, WMATA's  
17 procedures of identifying and repairing water leakage in  
18 Metrorail's tunnel system?

19           MR. BUNTING: Yes, I will. Water leaks are a challenge  
20 for our agency, as with all other transit agencies or highway  
21 agencies or anybody that has sub-surface facilities, so we are  
22 constantly chasing water leaks. And so our crews that are out in  
23 the system, our track walkers, our structural inspectors, or  
24 anybody who visits or is in the infrastructure can report a water  
25 leak. And we have a variety of ways of water leaks to be able to



1 be reported and to be acted upon, and it is all based on the  
2 severity of the water leak.

3 And our structural group has a -- you know, when they're  
4 out doing their tunnel inspections, they categorize water leaks in  
5 categories 1, 2's and 3's. Our track inspection group, if the  
6 water leaks are affecting infrastructure components, they will  
7 categorize the leaks as defects 1, 2 and 3, which are directly  
8 correlated with the structural priorities. And they are in a  
9 database, and we attack them based on the severity.

10 And of course, our number one emphasis is always the  
11 safe passage of our passengers regardless of the severity of the  
12 leak; if it affects safe passage of our passengers, we'll address  
13 it immediately.

14 There are approximately at any given time between 3- to  
15 5,000 water leaks within the system. And it is quite a challenge  
16 for us to react to all of them. And our tunnels, our stations,  
17 our cut and cover structures all have waterproofing capabilities  
18 and a certain amount of waterproofing condition. And simply  
19 chasing all these water leaks is a challenge, but we do, do it  
20 aggressively. And we repair about 2500 water leaks a year.

21 DR. LIU: Thank you, Mr. Bunting, for your information.

22 MR. BUNTING: Um-hum.

23 DR. LIU: I want to follow up on some of the things you  
24 mentioned. Basically, you mentioned two types of procedures. One  
25 is reactive repairs and the other type is based on -- repairs

1 based on preventive maintenance inspections. You mentioned tunnel  
2 inspections. Could you tell me what's the frequency of this type  
3 of inspection?

4 MR. BUNTING: Tunnel inspections structurally are done  
5 every other year. There are WMATA personnel in the tunnels twice  
6 a week walking these areas; they're track inspectors. So they  
7 contemporaneously report water leakage to us; anybody can, a train  
8 operator, a station manager, a passenger, any person who is in our  
9 system can report a water leak, and that water leak can be  
10 directed towards the office that's responsible for repairing water  
11 -- handling water control. So our leak inspections, essentially,  
12 are continuous. And anybody that has a basement understands the  
13 difficulty of trying to chase water. And we do. That is -- we  
14 are firefighting when it comes to water control and we do it --

15 DR. LIU: Thank you.

16 MR. BUNTING: -- on a continuous basis.

17 DR. LIU: Sorry to interrupt.

18 MR. BUNTING: No problem.

19 DR. LIU: So for the repair work, you mentioned that  
20 they are in reaction to the track inspections and structural  
21 inspections. Is there anything like a regular repair program that  
22 you conduct regularly over your tunnel system?

23 MR. BUNTING: No. We do not have, say, a schedule for  
24 tunnel repair. Again, civil-type structures are inspected.  
25 They're evaluated to a criteria. That criteria then drives your

1 repair program, your capital program, your schedule for the year.  
2 There's a lot of activities going on in WMATA. A lot of things  
3 are -- we're trying to rehabilitate this infrastructure. So  
4 tunnels -- like the rest of our infrastructure, we take a look at  
5 opportunities. When we're not out fighting, firefighting the most  
6 severe leaks that are causing problems with our infrastructure or  
7 creating safety hazards to our passengers, we will take advantage  
8 of track outages. We will take advantage of other activities, and  
9 we try to get as much activity done. We look at this as a time  
10 and space effort.

11 DR. LIU: Thank you.

12 MR. BUNTING: Water control is just one of the many  
13 things we do when we're out there repairing our infrastructure.

14 DR. LIU: Thank you for the information. I'd like to  
15 move on to my next question and focus on the area near the arcing  
16 location.

17 MR. BUNTING: Um-hum.

18 DR. LIU: From the various reports I have read, water  
19 intrusion in this area has been an ongoing, known issue that has  
20 been flagged repeatedly in reports dated from 2010 to 2014 and as  
21 recent as 3 month before the accident. You have talked about the  
22 general process of dealing with water intrusion. What is your  
23 strategy of dealing with the persistent, recurring situation like  
24 what we saw at the arcing location?

25 MR. BUNTING: Well, again, water control is quite a

1 challenge. It is not unusual to have reoccurring water leaks near  
2 vent shaft, vent structures. We have 217 vent structures in the  
3 WMATA system. Those are structures that penetrate the surface and  
4 allow water to either flow into our system or to have a certain  
5 amount of recharge.

6           To answer your question, if we feel that we cannot  
7 address the repetitive water issues, we will engage the expertise  
8 through our chief engineer's office, and we have done this, and  
9 look at doing other methodologies that will solve the problem so  
10 that we don't have to chase -- water leaks, as anybody knows, find  
11 a way to get into your structure. We stop a water leak in one  
12 area through either chemical grouting in this area, where the  
13 incident occurred, through packing lead between the panels, it'll  
14 go away, the area will dry up, it will come back a year later, and  
15 we'll have water leaks again, we'll chase them again.

16           But if we have a place that has consistent problems,  
17 we'll use state of the art methodology. We've done exterior  
18 tunnel grouting, we've put in grout collars, we've utilized other  
19 methodology to try to control it, and there are times that we just  
20 say the best thing to do is divert this water to our drainage  
21 system.

22           You need to keep in mind, and I want to be clear on  
23 this, our system was made to allow water to drain to it. And so  
24 we focus a lot of our efforts in keeping our drainage system open,  
25 our drain channels on the track bed open, to allow the water to be

1 collected and then discharged from the system. We discharge  
2 approximately 2 million gallons of water a day, which in layman's  
3 terms, about three Olympic-size swimming pools. So you can see  
4 the challenge we have with dealing with water, and we do a variety  
5 of things when we have reoccurring issues.

6 DR. LIU: Thank you. My understanding is that the leaks  
7 are really based on their severity. In the past reports, the leak  
8 in the concern area has been rated as category 1, which is  
9 classified as severe, active leaks that affect -- that may affect  
10 crucial components, such as the rail. My question to you is: Do  
11 you prioritize leak repair based on their severity?

12 MR. BUNTING: Yes, we do. And if you look at the  
13 history of this particular area, this tunnel section was inspected  
14 -- I believe the structural inspection report was signed off in  
15 December of '13. A work order was written in March of '14 to  
16 address the water leaks, and the water leaks were then addressed  
17 in July through a series of repairs, and at that time the area was  
18 considered essentially no longer problematic for us.

19 DR. LIU: Thank you. So you said the last leak repair  
20 performed in the area prior to the accident was in July '14; is  
21 that right?

22 MR. BUNTING: To the best of my knowledge, that's  
23 correct.

24 DR. LIU: I don't think I have documents showing that.  
25 Could you pass that to me after the hearing, please?

1           MR. BUNTING: Yes. I don't know if I have a copy of it  
2 with me, but I can provide it to you.

3           DR. LIU: Thank you. I appreciate that.

4           DR. POLAND: Can you tell me what the title of that  
5 document is so that I can be prepared to accept that exhibit after  
6 the hearing?

7           MR. BUNTING: It's just a Maximo work order. I do not  
8 have the work order number, but it's a Maximo work order called  
9 Tunnel Leak Repair.

10          DR. POLAND: All right. Thank you.

11          MR. BUNTING: You're welcome.

12          DR. LIU: Mr. Miller mentioned in his testimony that  
13 some of the work that he does in the cable department, in the  
14 power department, does some special things depending on the  
15 working conditions; if there's harsh working conditions, there may  
16 be some special procedures. And you also mentioned that if it's a  
17 recurring, persistent situation, there's some special strategy,  
18 special procedures you perform. My question to you is: Do you  
19 consider the location of the arcing accident a condition of harsh  
20 working environment? And if so, what have you -- what special  
21 procedures have you performed to that location?

22          MR. BUNTING: Given the knowledge of which I know now, I  
23 would say, yes, that is an area that we need to focus some  
24 additional attention on. Prior to that, I do not believe that  
25 that area was severe as it is now. Again, water conditions change

1 rather dramatically from time to time, and I will give you an  
2 example. The day of the incident and the day of the response, the  
3 area was, as you saw it, was wet. There was a certain amount of  
4 water. However, by the time the repair crews went down there that  
5 evening to address the repair to get the service back, there was a  
6 rather significant hydrostatic leak in the area bringing a  
7 tremendous amount of water into the area that had to be addressed  
8 immediately. So that's how these conditions change rapidly in our  
9 tunnels.

10 DR. LIU: Thank you. My next question is: Do you have  
11 a tracking system to monitor the status of leaks, for example,  
12 when they were repaired and when they started to leak again?

13 MR. BUNTING: No, we do not.

14 DR. LIU: Can we bring up Exhibit C19, please?

15 So this exhibit is a leak monitoring report that was  
16 created in 2010, which appears to meet or address the status of  
17 leak repairing in that year. So my question to you, Mr. Bunting,  
18 is was that a one-time thing or do you still do this?

19 MR. BUNTING: That is a one-time document. I never saw  
20 that document until this investigation. And my understanding from  
21 talking to the author, who has since retired, it was his attempt  
22 to form a tracking system, but it was never implemented.

23 DR. LIU: Well, first of all, the document was addressed  
24 to you, if you read --

25 MR. BUNTING: That's correct.

1 DR. LIU: And if you read the later pages, this document  
2 appears to be living throughout year 2010. And could you flip the  
3 pages? Scroll down, please. Go to the next page. You can just  
4 keep going to the next pages. So this appears to be living  
5 throughout the year 2010 and kept tracking the status of leaks of  
6 that year. But you said this was never actually implemented and  
7 certainly not in effect as of now; is that right?

8 MR. BUNTING: That is correct, sir.

9 DR. LIU: Thank you. I believe I'm running out of time.  
10 I'm going to turn it over to Mr. Panagiotou. Thank you. Thank  
11 you, again.

12 MR. PANAGIOTOU: Thank you, Dr. Liu.

13 I would like to begin this topic with a description of  
14 the ventilation system and its purpose. The following questions  
15 will be directed towards Mr. Randall Grooman.

16 MR. GROOMAN: Mr. Grooman, can you please provide a  
17 brief general description of the tunnel and station ventilation  
18 systems?

19 MR. GROOMAN: Yes. Good morning. WMATA's ventilation  
20 system was originally designed in the late 1960s and is comprised  
21 of several components. Underground stations have reversible fans  
22 that can exhaust air from the station or provide fresh air into  
23 the station. The fans can be controlled remotely from the rail  
24 operations control center or they can be operated locally as well.  
25 At the ends of each station are vent shafts venting to the



1 outside.

2           Generally, in the tunnel segments between stations,  
3 there are fan shafts that contain anywhere from two to seven  
4 individual fans that are reversible. Each fan shaft can be  
5 remotely controlled from ROCC or operated locally. We do have one  
6 exception. At our Forest Glen Station, the fans can also be  
7 operated from either of the two kiosks.

8           The tunnel fans are interconnected to the vent shafts  
9 that are located at the ends of the station. When fans are  
10 commanded to run, the fan shaft damper is open and the associated  
11 vent shaft damper is closed. On the outer F route, which opened  
12 in 2004, we changed the design and went to reversible jet fans,  
13 located in the tunnel walls. These are high-powered reversible  
14 fans that ventilate only the section of tunnel on the route.  
15 Those two are operated remotely and can be controlled locally.

16           WMATA's ventilation system was originally designed to  
17 control temperatures in the tunnels and stations and remove smoke  
18 and fumes. Again, at least 75 percent of our stations were  
19 designed pre-NFPA 130. However, it was recognized as early as  
20 1976 the need to utilize the fans in case of emergencies. The  
21 first agreements were made with the District of Columbia in  
22 Montgomery County, Maryland, and formalized the requirement that  
23 tunnel and station fans could be remotely controlled and  
24 reversible in case of emergency.

25           MR. PANAGIOTOU: Thank you. So you said that prior to

1 NFPA 130, so the older sections of the tunnel, the ventilation  
2 system was intended for the removal of heat and fumes?

3 MR. GROOMAN: The original --

4 MR. PANAGIOTOU: Is that correct?

5 MR. GROOMAN: Yes. I'm sorry, yes. The original design  
6 was for temperature control in the tunnels based on heat loads  
7 generated by wayside equipment and heat factors or heat loads  
8 generated by moving trains.

9 MR. PANAGIOTOU: And in the newer segments of the  
10 tunnel, those that would be classified as post-NFPA 130, what is  
11 the purpose of the ventilation system there?

12 MR. GROOMAN: As with the older system, as well, they're  
13 dual purpose for both emergencies, removing smoke. The newer  
14 systems, per NFPA 130, are obviously more powerful fans to meet  
15 the CFM requirements of air movement to remove smoke and heat.  
16 But they also do ventilate the tunnels, as well.

17 I'd like to say we constantly use the tunnel fans,  
18 almost daily, in our work routines. When we have work crews that  
19 are working, we have diesel-powered equipment and locomotives  
20 working in the area, we routinely turn on the tunnel fans to  
21 ventilate the tunnels to create a clean air work environment.  
22 When we do major shutdowns between tunnels or between stations, we  
23 put together a ventilation plan which dictates which fans to put  
24 in what direction to help ventilate the sections of tunnel where  
25 the work is being performed.

1           MR. PANAGIOTOU: Thank you. Which category does the  
2 tunnel where the accident took place fall into? Is it a pre-NFPA  
3 130 or post-NFPA 130 design?

4           MR. GROOMAN: Pre-NFPA 130.

5           MR. PANAGIOTOU: Thank you. Would you be able to tell  
6 me approximately how much of the tunnel network is pre-NFPA 130  
7 and how much is post-NFPA 130?

8           MR. GROOMAN: Seventy-five percent is pre-NFPA 130. So  
9 it's 75 -- there's 82 fan shafts and 36 jet fans. Seventy-five  
10 percent of the tunnel fans, or the vent shaft fans, are pre-NFPA  
11 130.

12          MR. PANAGIOTOU: Okay. Thank you. I would now like to  
13 discuss the ventilation system's performance. So in the past,  
14 WMATA had contracted with engineering firms to perform studies on  
15 the ventilation system. These studies examined certain existing  
16 portions of the Metro that were built prior to the NFPA 130  
17 standard. What was the purpose for conducting these studies?

18          MR. GROOMAN: To evaluate the existing capacities of the  
19 fans in relation to NFPA 130 requirements and the feasibility of  
20 making improvements.

21          MR. PANAGIOTOU: And have engineering analyses like this  
22 been done on all of the older segments of the tunnel network?

23          MR. GROOMAN: At the time of the contract, I believe so,  
24 which the first engineering study was performed in 1983.

25          MR. PANAGIOTOU: Do they cover the entire network,

1    though, or are they for specific locations that were selected as  
2    tests?

3               MR. GROOMAN:  I'm not -- I'd have to go back through the  
4    reports to pull that, to find out how many stations were involved.

5               MR. PANAGIOTOU:  If you could get back to us on what --  
6    how much of the network was examined by these studies that I was  
7    mentioning, that would be great.

8               So you mentioned that one of the purposes for these  
9    studies was to identify strategies to improve the ventilation  
10   system in these older segments which may not have been -- do not  
11   have a large capacity and certainly not what would be specified by  
12   an NFPA 130 design.  So what were the strategies that were  
13   identified to improve the performance of the ventilation system?

14              MR. GROOMAN:  There are three strategies identified.  
15   One strategy was to use blocking devices to block off a section of  
16   tunnel to improve the air flow of the other tubes.  Jet fans were  
17   evaluated, as well as increasing the capacity of existing fans.  
18   So that was the focus of the studies.

19              MR. PANAGIOTOU:  And were any of these strategies  
20   implemented in the tunnel network?

21              MR. GROOMAN:  The only strategy that was implemented was  
22   with the opening of the Glenmont to -- I'm sorry -- the Wheaton to  
23   Glenmont segment of tunnel.  They did go back and retrofit two fan  
24   shafts to increase the capacities to meet the requirements of NFPA  
25   130.  The other devices, it was determined that the blockage

1 devices, which were basically a parachute design, WMATA took that  
2 out of their design criteria because they thought it was, from an  
3 operational standpoint, unsafe to have all these devices out in  
4 the system, from accidental deployment and storage of these  
5 hydrogen tanks that it would take to deploy the parachutes.

6 I couldn't find any documentation to say otherwise, but  
7 the costs associated with the upgrades ranged from a blockage and  
8 jet fan upgrade in the order of 16 to \$19 million back in -- as  
9 late as 1997, I believe. To upgrade all of the existing fans to a  
10 higher capacity, the estimate came in at \$525 million. So, again,  
11 I haven't found anything written or documented why they steered  
12 away from it, but I could imagine cost was partially to play in  
13 it, as well, with a \$525 million price tag.

14 MR. PANAGIOTOU: Thank you. So for the most part, then,  
15 the older tunnel segments that were built pre-NFPA 130, have the  
16 original ventilation capacity that they were designed for at that  
17 time and no changes have been made?

18 MR. GROOMAN: Physical changes, no. The standard at the  
19 time was the 50,000 CFM exhaust and 35,000 CFM supply. We have  
20 found, to improve airflows in the tunnels, we needed to sequence  
21 the operation of the fans. In other words, in a given area, place  
22 a certain fan shaft in exhaust and put another fan shaft in  
23 supply, helps augment the air movement in the section of tunnel.

24 MR. PANAGIOTOU: Thank you. What division of WMATA was  
25 responsible for contracting and receiving the results of the

1 engineering analyses we've been discussing?

2 MR. GROOMAN: I believe that was our engineering  
3 department.

4 MR. PANAGIOTOU: And are there any mechanisms in place  
5 to help with sharing the knowledge that was gained from these  
6 analyses with other divisions within WMATA that could potentially  
7 benefit from such knowledge, for example, for the folks who plan  
8 emergency response?

9 MR. GROOMAN: From a maintenance perspective, we're  
10 probably poor on the communication. We know on a maintenance  
11 perspective in the operation of the fans what works best. That  
12 may not have been communicated very well to emergency responders.

13 MR. PANAGIOTOU: So, for example, in one of the studies,  
14 one of the conclusions was, at certain locations, the fans are not  
15 capable of reversing the flow and there is essentially only one  
16 direction which can be kept relatively free of smoke, so one  
17 evacuation route from a specific location. Is that information --  
18 how does that knowledge get transferred to the people who are  
19 going to eventually be in charge of orchestrating an emergency?  
20 Is there a mechanism internally for sharing that?

21 MR. GROOMAN: Not that I'm aware of. I'm not -- again,  
22 my expertise is not in the emergency response. I'm in the --

23 MR. PANAGIOTOU: I understand. I was just asking if  
24 there was a mechanism for getting it out.

25 Okay. One of the studies indicated that a means of

1 improving the effectiveness of the ventilation system in the older  
2 portions of the network would be through the reduction of a  
3 potential fire size that could occur during an emergency. Now,  
4 what steps has WMATA taken towards limiting the fire load in  
5 tunnels and train cars?

6 MR. GROOMAN: The construction of the tunnels use very  
7 little combustible materials. It's basically concrete and steel.  
8 Our rail cars, their design spec requires rail car manufacturing  
9 to comply with specific standards, one of which is to keep flames,  
10 smoke and toxic fumes as low as possible. Another example are  
11 low-smoke cables in the system. Other than that, there's not a  
12 whole lot to burn in a tunnel.

13 MR. PANAGIOTOU: That covers the tunnel. The train  
14 cars, you said they are built to standards that would prevent them  
15 from having materials that would be considered -- that would add  
16 significantly to a fire load?

17 MR. GROOMAN: The rail cars are designed for low  
18 combustible materials.

19 MR. PANAGIOTOU: One of the mitigation strategies for  
20 lowering the fire load on the train cars in these reports was  
21 identified as replacing the windows from Plexiglas to a plate  
22 glass. Do you know if that has been done?

23 MR. GROOMAN: I believe that has been completed, yes.

24 MR. PANAGIOTOU: Thank you very much. Thank you very  
25 much, Mr. Grooman. That concludes my line of questioning for now.

1           I will now turn the microphone over to Dr. Gregor for  
2 his line of questioning.

3           DR. GREGOR: Thank you. Good morning. I would like to  
4 ask a few questions concerning the systems that support radio  
5 communications in the WMATA underground. And these will go to  
6 Mr. Marshall Epler and Mr. Teddy Kavaleri, variously.

7           There are two largely independent trunk radio systems  
8 servicing the downtown areas of the Washington Metro system, the  
9 WMATA comprehensive radio communication system and the D.C. Public  
10 Service Radio System.

11           Mr. Epler, would you give us a brief description of the  
12 WMATA system, with emphasis on how the below-ground components  
13 work?

14           MR. EPLER: Okay. WMATA operates a 490 megahertz  
15 trunked radio system. Above ground, the radio system consists of  
16 an aboveground component, a below-ground component, and  
17 approximately 5,000 subscribers. The aboveground system consists  
18 of 2 redundant core sites attached to 10 antennae sites that  
19 broadcast over a 1600 square mile area. The system is  
20 maintainable and suffers extremely few faults.

21           The below-ground system is an extremely difficult to  
22 maintain system. And the way the system works is an RF signal  
23 originates aboveground and it's converted into fiber optic signal.  
24 The fiber optic signal is routed to the below-ground system, where  
25 it is distributed to 26 fiber optic head ends. At these fiber



1 optic head ends, the signal is converted from a fiber optic signal  
2 to an RF signal. The RF signal is coupled into what's called a  
3 leaky coax cable. This leaky coax cable is shared between both  
4 the WMATA CRCS system and six different public safety agencies at  
5 different places throughout the underground.

6           And what basically happens is when the signal is  
7 injected, it goes down the leaky coax cable, and as the signal  
8 goes down the leaky coax cable, it radiates an RF signal. And as  
9 the signal goes, the conducted level diminishes to a point where  
10 it needs amplification. At the point it needs amplification, we  
11 place what's called a BDA, or a bidirectional amplifier, at this  
12 location. And the purpose of the bidirectional amplifier is to  
13 increase the signal level where it is reintroduced onto another  
14 section of leaky coax cable.

15           So, once again, the signal will propagate down the leaky  
16 coax cable until it needs amplified, at which point it runs into  
17 another bidirectional amplifier. It gets increased again. And  
18 this process continues until you hit the end of the segment. It  
19 is not unheard of to have more than 10 or 12 BDAs in one of these  
20 radio segments.

21           As the signal is going down, the leaky coax signal, if a  
22 station is encountered in the segment, we tap off that signal --  
23 tap off the leaky coax, distributed antenna system, and we will  
24 take it and we will run it, antennas and leaky coax cable, to  
25 cover what's called the red tile areas in the stations. And

1 basically, the red tile areas are public access areas of the  
2 station. When the system was originally designed, coverage was  
3 just required for the red tile. Since then, WMATA has a program  
4 underway to expand coverage to the backroom areas of stations so  
5 we do have coverage. That's the way the downlink signal works.

6 Uplink works just the same. You'll take a portable  
7 radio. It will couple onto the leaky coax. The signal will go to  
8 the BDA, get amplified to the next BDA. It will go all the way  
9 back to the fiber optic head end. At the fiber optic head end, it  
10 is converted from RF to fiber optic, and it goes aboveground.

11 Like I said earlier, the system is extremely difficult  
12 to maintain. Some of the reasons it's hard to maintain is the  
13 leaky coax is a 75 ohm leaky coax cable. Our radio system --

14 DR. GREGOR: If I could interrupt? I'm sorry.

15 MR. EPLER: Go ahead. Sorry.

16 DR. GREGOR: Just to make everything clear, the leaky  
17 coax is designed to be that way so that we can receive and  
18 broadcast RF as part of the antenna system, as I understand?

19 MR. EPLER: Yes, sir. It leaks RF energy.

20 DR. GREGOR: I'd like to stop there and ask Mr. Kavaleri  
21 if you could briefly describe the underground portions of the D.C.  
22 Public Service Radio System, again, with emphasis on the below-  
23 ground portions. And you can just limit your response to the  
24 differences between it and the WMATA system.

25 MR. KAVALERI: The D.C. Public Safety Radio System is a

1 10-site system. It's a Motorola P25 system, version 7.15. At the  
2 time of the incident, it was version 7.13. The system provides  
3 over 10 million calls a year. We have over 8,000 radios accessing  
4 the system on a daily basis on the District side, as well as  
5 interoperable communication capability with some federal partners,  
6 as well as the regional partners, all the COG members and regional  
7 partners. The system is monitored 24/7, 365 days a year. We have  
8 on-call technicians. We have a network operation center that  
9 monitors the system and capabilities. The below-ground system, we  
10 provide the signal handoff at one of our radio sites to WMATA.  
11 WMATA takes care of all the signal transmission, equipment  
12 maintenance and upkeep on all the stations within the District.

13 DR. GREGOR: Okay. I understand you have separate BDAs  
14 for amplifying your signal downstairs?

15 MR. KAVALERI: We don't manage any of the BDAs or any of  
16 the system, cables, BDAs, on the WMATA system. Our handoff point  
17 is at one of our radio sites. We have a directional coupler  
18 specifically designed to provide, you know, that handoff point,  
19 the signal handoff point.

20 DR. GREGOR: Okay. We can follow up on that.

21 Mr. Epler, who's responsible for the maintenance of the  
22 below-ground components of these radio systems, and how is this  
23 responsibility assigned? Is it via contract, an MOU, what have  
24 you?

25 MR. EPLER: The maintenance of the below-ground radio

1 system is handled by our system maintenance com department. The  
2 specific mechanism, I could not find any MOU or agreement to why  
3 -- who maintains what.

4 DR. GREGOR: Parameters of the maintenance control? In  
5 other words, the standards it's being maintained to?

6 MR. EPLER: We use a preventive maintenance inspection  
7 to adjust the radio system. It's a continual process, and because  
8 all the BDAs are strung in a long string, they actually interact  
9 with one another. So one of our major maintenance actions is to  
10 do what's called the aligning the radio system. And what that  
11 means is you change amplifier settings. And when you change  
12 amplifier settings, it has an impact on both the signal, as well  
13 as noise ratio. And since communication is a function of the  
14 signal to noise ratio, it's a delicate balance between the signal  
15 and the noise. So one of our primary maintenance actions is to  
16 adjust this radio system.

17 DR. GREGOR: Okay. So could you please describe the  
18 ongoing testing and maintenance program used to assess and  
19 maintain the health of these systems and to identify when there's  
20 a problem to address? And how it existed prior to the accident of  
21 January 12th?

22 MR. EPLER: Me or him? Me?

23 DR. GREGOR: To you, Mr. Epler, please.

24 MR. EPLER: Okay. Prior to the incident, it was  
25 basically an informal process. If one of the local jurisdictions

1 tested their system, they would contact our system maintenance  
2 radio manager, he would put in a work ticket, and then our system  
3 maintenance department would go and troubleshoot and rectify the  
4 problem.

5           Since the incident, we've changed a whole lot of things.  
6 The first thing we're doing is the local jurisdictions are testing  
7 on either a weekly or a biweekly basis. They have a formal test  
8 procedure, where they test different areas within the WMATA  
9 system; test the mezzanine, they'll test the platforms, they'll  
10 test the tunnel entrances. They will then take this on a once-a-  
11 week basis, and they will input this to a webpage we develop. So  
12 unlike the past, we get both the good test results as well as the  
13 bad test results.

14           Then the second thing we're doing is, based on the  
15 testing, we will generate what's called a Maximo work ticket. A  
16 Maximo work ticket is then -- we look at all the Maximo work  
17 tickets in the system, and we've animated a map. So on this map,  
18 you can tell -- you can now tell areas that have poor radio  
19 coverage based on Maximo work tickets.

20           Then, in addition to that, what WMATA did is they  
21 started what we call OAP 105 testing. And OAP 105-3 testing is  
22 where our system maintenance technicians will ride the train with  
23 some automated test equipment. They'll capture and record the  
24 data. Then they'll take that captured and recorded data, they'll  
25 take it back to their home office, and they'll work with

1 engineering and they'll analyze the data. And then based on this  
2 analyzed data, this captured data, they will then perform  
3 maintenance or do troubleshooting in areas that have problems.

4 DR. GREGOR: Okay. Thank you.

5 Mr. Kavaleri, did the D.C. OUC perform any testing and  
6 maintenance on the below-ground portions of the D.C. Public  
7 Service Radio System? And if so, what were the details of this  
8 program?

9 MR. KAVALERI: Yes. We used to test on a monthly basis.  
10 We didn't have the proper protocols, but we were reporting on a  
11 monthly basis on any fail locations. Those tests were conducted  
12 on individual lines versus what we've done since the incident.  
13 Since the incident, we actually test on a weekly basis. Those  
14 results are documented with our trouble ticketing system, as well  
15 as an email that's sent out to the WMATA maintenance and  
16 management team, and we also provide that information on the WMATA  
17 provided online Web portal.

18 DR. GREGOR: Can you tell me how often you make  
19 quantitative measurements of important parameters like signal  
20 strength, noise level, symbol error rate, that sort of thing, to  
21 assess system health?

22 MR. KAVALERI: Yes. In the last 6 months, we've done  
23 two RSSI signal measurements. You got receive signal strength  
24 indicators, at all of the locations within the District, both the  
25 uplink and the downlink. That's what we've done.

1 DR. GREGOR: And how is this information utilized once  
2 you've taken it?

3 MR. KAVALERI: Yeah. Initially, what we wanted to do is  
4 evaluate if the signal strength was strong enough down in the  
5 Metro locations, on the platforms and in the tunnels. That  
6 information we provided to WMATA so they could evaluate the below-  
7 ground system.

8 DR. GREGOR: And, Mr. Epler, this OAP 105-P, these are  
9 also quantitative measurements?

10 MR. EPLER: Yes, sir, they are. They're actually  
11 recorded by a spectrum analyzer and they're logged.

12 DR. GREGOR: Can you go into any detail of what  
13 measurements you're making and how this information is used?

14 MR. EPLER: Okay. How is it used? As I told you  
15 earlier, the BDAs are in a series of BDAs where they interact with  
16 one another. And by riding the whole train down along the tunnels  
17 and checking the signal strength, what you should theoretically  
18 see on a perfect system is the signal will come out very strong on  
19 the BDA. It'll gradually diminish. You'll hit another BDA, the  
20 signal will go up, you'll go down, and you'll see this saw-tooth  
21 pattern going, you know, as you're riding the train. At places  
22 where that saw-tooth pattern does not exist, that gives you some  
23 type of indication that the problem is generally located where the  
24 pattern changes.

25 DR. GREGOR: Okay. Now I'd like to switch to the

1 location where the accident occurred. What routine testing was  
2 performed in the L'Enfant Plaza Yellow/Green Line platform areas  
3 and in the portal tunnels leading to the Pentagon in the months  
4 leading up to the January 12 accident? And Mr. Kavaleri?

5 MR. KAVALERI: Yeah, before the -- so the District  
6 system right before the incident, we have two, an older system and  
7 a newer system. We basically operated both systems at the same  
8 time during the transition period. We migrated the police  
9 department onto the new system back in 2013-2014 timeline. And  
10 then in December 2014 is when we migrated Fire and EMS to the new  
11 system. So we had both systems operating.

12 In August of 2014, there was a system-wide test done by  
13 Fire and EMS personnel. This was to validate the new system, the  
14 new system's operations throughout all of the stations, and most  
15 of the stations had passed at that point. And that's the level of  
16 testing that we've done.

17 DR. GREGOR: Okay. I'm specifically referring to the  
18 Yellow Line and the tunnel area between L'Enfant Plaza and the  
19 Pentagon, actually, where the accident train ended up. That  
20 platform and the Yellow Line train testing, is testing -- was  
21 testing done in that area, and if so, do you have records for it?

22 MR. KAVALERI: Yeah, testing is usually done to the  
23 L'Enfant Plaza platform location and then anywhere else within the  
24 District.

25 DR. GREGOR: Right. But there's some portion of that



1 tunnel that lies within the District. You guys don't test there?

2 MR. KAVALERI: No, not in the past. We started doing  
3 that about 2 weeks ago.

4 DR. GREGOR: But you are testing now?

5 MR. KAVALERI: Yes.

6 DR. GREGOR: Then, Mr. Epler, same question essentially?

7 MR. EPLER: One of the ways WMATA tests the radio system  
8 is we have approximately 5,000 subscribers that use the radio  
9 system throughout the WMATA underground. When an employee or  
10 somebody who's using a radio comes across an area where they do  
11 not have radio coverage, they're trained to contact MOC and say we  
12 don't have radio coverage in there. At that point, once again, a  
13 work ticket is generated, and system maintenance will go out and  
14 troubleshoot and resolve the issue. So it's the regular use of  
15 radios. If the radios don't work, because we have so many people  
16 using it, we're going to know that the radio doesn't work in that  
17 specific spot.

18 DR. GREGOR: Okay. Thank you very much.

19 And at this time, I'd like to pass the mic back to  
20 Mr. Panagiotou.

21 MR. PANAGIOTOU: Thank you, Dr. Gregor. I believe  
22 Xiaohu, Dr. Liu, has some follow-up questions he would like to  
23 ask, so I'm going to pass the microphone back to him.

24 DR. LIU: Thank you.

25 Mr. Bunting, I just want to follow up on the leak

1 tracking issue we discussed before I turned it over. So it  
2 appears that you experimented something back in 2010 but  
3 eventually decided to not establish a leak tracking system. So I  
4 suppose you came to the conclusion that you don't need such a  
5 system, and you concluded that your current inspection and  
6 reactive repair procedures is adequate? Could you -- is that the  
7 case? If so, could you elaborate a little bit?

8 MR. BUNTING: Well, let me clarify for a second because  
9 I did misrepresent the issue regarding do we have a way of  
10 tracking reoccurring leakage. We have an enterprise maintenance  
11 management system in WMATA called Maximo. And on top of that, we  
12 have a linear asset database at WMATA called OPTRAM. Both of  
13 those work orders and defect tracking records information systems  
14 can be utilized to track reoccurring defects. And a leak is  
15 simply a defect that's annotated in our work order system.

16 So to clarify my question, my answer is that we do have  
17 a methodology for doing that. That particular report, again, I  
18 will say I never saw that report. 2010, I believe sometime during  
19 that period, I had left that position where I was in charge of  
20 that group and went to another group. So it may have been  
21 utilized by my predecessor, but I am not aware of that. But, yes,  
22 there is a need to track reoccurring maintenance issues so that if  
23 they do become something more than a regular maintenance issue,  
24 that we can execute a plan to correct it so we don't have to  
25 continually fix the same thing over and over again.

1           But again, WMATA, as well as all other transit agencies,  
2 have a lot of issues with -- have a lot of challenges with water  
3 seepage into our system. We've had three blue ribbon panels come  
4 to WMATA to look at our water control issues. And so it has been  
5 a challenge, and we continually and aggressively fight this  
6 particular issue.

7           DR. LIU: Thank you. Just so I understand you, so  
8 basically the way you track leaks, you monitor leaks is through a  
9 bigger defect tracking system that tracks all the defects within  
10 WMATA's system; is that correct?

11           MR. BUNTING: That's correct. If a person opens a work  
12 order ticket and a correct work order is opened up on that, it  
13 would be -- there is a defect. And I will tell you the defect for  
14 water leaking is D-48. And that record can be tracked. And if  
15 another work order is opened for the same defect in the same  
16 general area, we can see these things not only by a list of  
17 reoccurring work orders, but with our OPTRAM system, a clustering  
18 of defects, which would then -- the maintenance personnel plus the  
19 engineering group that supports the maintenance group could take  
20 additional actions, if necessary. That's correct.

21           DR. LIU: Thank you for the clarification and thank you  
22 for answering all my questions.

23           MR. BUNTING: You're welcome, sir.

24           DR. LIU: That completes my questions.

25           MR. PANAGIOTOU: Okay. Thank you, Dr. Liu, and that

1 concludes questioning for Panel 1 for the moment. I pass the  
2 microphone back to Dr. Poland.

3 DR. POLAND: Chairman Hart, this concludes the technical  
4 panelists' questions.

5 CHAIRMAN HART: Thank you, Dr. Poland, and thank you to  
6 the panel. We will now take a 30-minute break. We will return to  
7 this room at 5 minutes before 11, and I would ask that the  
8 witnesses come back a few minutes early to be seated to resume the  
9 questioning. The next round of questioning will be by the  
10 parties. Thank you.

11 (Off the record at 10:25 a.m.)

12 (On the record at 10:55 a.m.)

13 CHAIRMAN HART: Good morning, everyone. We're back in  
14 session.

15 Now we are going to have questioning by the parties, and  
16 the parties have been advised, but just for the benefit of the  
17 audience, let me let you know the order of events. The idea would  
18 be to have the party who's mostly represented in the questioning  
19 panel will be the last to ask questions because they're -- then  
20 that way they will hear what other questions have come up from the  
21 other parties and can respond to those accordingly. And in  
22 general, we're going to go counterclockwise around the table with  
23 the party who's mostly represented being last. So on this first  
24 panel, since mostly it's a WMATA panel, then WMATA will be the  
25 last party asking the questions, which means we'll start with FTA

1 and go counterclockwise around the table.

2           The next session, "Emergency Response Efforts," since  
3 D.C. EMS is going to be mostly represented on that panel, then  
4 they will be last, and we'll go counterclockwise. Tomorrow it'll  
5 be -- for "WMATA's Organizational Culture," WMATA will be last.  
6 And then for the fourth panel on the oversight, then the Federal  
7 Transit Authority -- Administration will be last, and then we'll  
8 go counterclockwise.

9           The parties will each have 5 minutes to ask the  
10 witnesses questions, and then after that time, I'll see if there's  
11 a need for a second round of questions, and we'll take it from  
12 there. So again, with WMATA being last, we're going to start the  
13 first round of questions from the Federal Transit Administration.

14           Mr. Littleton.

15           MR. LITTLETON: Mr. Chairman, thank you. No questions  
16 from the Federal Transit Administration.

17           CHAIRMAN HART: Thank you.

18           TOC?

19           MS. BARYSHEV: Mr. Chairman, TOC doesn't have questions  
20 at this time.

21           CHAIRMAN HART: Okay. Thank you.

22           District of Columbia?

23           MR. GELDART: Thank you, Chairman Hart.

24           My first question is for Mr. Epler. Do any of the local  
25 jurisdictions, the District of Columbia or any of the local

1 jurisdictions that have underground tunnels in their jurisdiction  
2 own any of the radio infrastructure that is below ground?

3 MR. EPLER: You're asking does any local jurisdiction  
4 own the infrastructure underground?

5 MR. GELDART: Yes, sir.

6 MR. EPLER: I'm going to tell you I don't know the  
7 answer to that, because when you say own, I'm not 100 percent sure  
8 what you mean.

9 MR. GELDART: Let me clarify.

10 MR. EPLER: Okay.

11 MR. GELDART: Do we maintain or operate any of the  
12 infrastructure underground?

13 MR. EPLER: The line of demarcation between WMATA  
14 maintenance and a local jurisdiction varies from jurisdiction to  
15 jurisdiction. But for the most part, once it goes below ground,  
16 it is WMATA's responsibility to maintain. Some equipment  
17 aboveground is actually maintained by WMATA.

18 MR. GELDART: For the District of Columbia, in the case  
19 here, revolving all around this incident, does the District of  
20 Columbia maintain or operate any of the below-ground  
21 infrastructure for the radio system?

22 MR. EPLER: Once you're below ground, WMATA maintains  
23 the equipment.

24 MR. GELDART: Okay. My second question is for Teddy  
25 Kavaleri. What type of monitoring -- do we do remote monitoring

1 of the radio system in the District of Columbia?

2 MR. KAVALERI: Yes. All our systems are monitored 24/7,  
3 on the 10 sites, the core sites, the core equipment, as well as  
4 the prime site equipment, monitored 24/7. We have a dispatch  
5 service. If any of the infrastructure is down, somebody responds  
6 to repair the issue.

7 MR. GELDART: Okay. Then for Mr. Epler, is there any  
8 similar monitoring system for the below-ground infrastructure that  
9 WMATA maintains?

10 MR. EPLER: Currently, WMATA's underground radio system  
11 does not have remote diagnostics and/or remote monitoring.

12 MR. GELDART: Okay. Thank you.

13 For Mr. Kavaleri again. I'm sorry to go back and forth  
14 here. Were there any failures with the radio system reported on  
15 or around the time frame of this incident to WMATA for the  
16 L'Enfant Metro area?

17 MR. KAVALERI: No. The only incident that was reported  
18 was on January 7th, there was a Fire and EMS response to L'Enfant  
19 Plaza. There was a radio communication issue that was reported to  
20 WMATA by email. We had a follow-up, I think, communications with  
21 WMATA stating that, potentially, they were -- the BDA was taken  
22 down for maintenance or repair.

23 MR. GELDART: So, without speculation, there was an  
24 issue with the radio communications in the area of the L'Enfant  
25 station just prior to the event?

1           MR. KAVALERI: Yes, Wednesday, January 7th, yes, a  
2 couple of days before the incident.

3           MR. GELDART: Thank you.

4           That's all my questions, Mr. Chairman.

5           CHAIRMAN HART: Thank you.

6           ATU, do you have any questions?

7           MR. MADARAS: Good morning, Chairman Hart. I do have a  
8 couple questions.

9           My first question is for Mr. Epler while we're on the  
10 topic of radios. Radio concerns are a constant topic of  
11 discussion amongst the union members. Dead spots, intermittent  
12 reception, and the new digital radios timing out are some examples  
13 of the problems that they encounter. What do you think needs to  
14 be fixed to fix the radio system? Is it an equipment issue? Is  
15 it poor technology? Is it a lack of training? Or are there  
16 maintenance concerns? Can you please comment on that?

17           CHAIRMAN HART: Let me just clarify that we need the  
18 answer to be factual and not speculation or opinion.

19           MR. EPLER: Okay. WMATA has an extremely difficult to  
20 maintain radio system. The ultimate fix will be the new 700  
21 megahertz radio system required by the Job Creation Act of 2012.  
22 Basically, the Job Creation Act of 2012 states that if you operate  
23 on 490 megahertz, you need to vacate the 490 megahertz and  
24 transition to another frequency range. We have started that  
25 process. And when the new radio system comes in, all issues will



1 be resolved that we're dealing with right now.

2 Now, WMATA's current radio system. WMATA's current  
3 radio system was designed to provide radio coverage in the public  
4 areas of the station, and it was designed to provide what's called  
5 95 percent/95 percent coverage. And what that actually means is  
6 95 percent of the places in a red tile area must be provided with  
7 RF coverage at 95 percent of the time.

8 So the radio system, when we designed it, as I said, we  
9 put it in the red tile areas. After we put it in the red tile  
10 areas, we determined that we needed to extend the coverage beyond  
11 just the public areas and to push to some of the backroom areas,  
12 the service room areas, and other parts of the underground. We  
13 currently have a program underway to extend that coverage out to  
14 additional locations. The radio system is old. We currently have  
15 a program to update the core of the system. So we are constantly  
16 upgrading and improving radio system coverage.

17 CHAIRMAN HART: He just lost his mic. Is there another  
18 mike up there that works?

19 (Pause.)

20 MR. EPLER: Sorry about that. Talk too loud? Test,  
21 test. Okay. I'm sorry. I lost track. Did I answer your  
22 question?

23 MR. MADARAS: You did for the most part. But can you  
24 tell us when the new radio system will be completed and these  
25 problems will go away?

1           MR. EPLER: Good question. We hope to put it out on the  
2 street here in the very near future to get bid. The Job Creation  
3 Act says we must be done by 2021. We are doing everything  
4 possible to bring the date up toward the current time frame. At  
5 this time, I cannot tell you an exact date it'll be completed.

6           MR. MADARAS: Okay. Thank you.

7           And I have one additional question. This question is  
8 for Mr. Bunting. I'd like to call up the Exhibit C18B, please.  
9 It's a thermal imaging video.

10           Can you please describe what we're looking at here?

11           MR. BUNTING: It appears to be a thermal imaging image  
12 from our -- either from our TGV or from our revenue car that's  
13 outfitted with the thermal imaging camera. And it is  
14 differentiating the temperature of items within the tunnel  
15 structure.

16           MR. MADARAS: And at one point this video is going to  
17 stop at a location and obviously it caught the attention of the  
18 person who took the video. I believe it's right -- coming up  
19 here. Is this in the location of the accident?

20           MR. BUNTING: I have no idea where this image is from.  
21 I do not see a chainage or line or section of the railroad on the  
22 image.

23           MR. MADARAS: On the left side at the bottom, 70+29, I  
24 believe that's that chain marker.

25           MR. BUNTING: Okay.

1           MR. MADARAS: And the accident location was 70+50, which  
2 is just up beyond there a little bit. So the blue means that  
3 there's a lot of water in that location, or moisture. So I was  
4 just curious as to what type of corrective actions are taking  
5 place when these types of thermal imaging videos occur?

6           MR. BUNTING: Well, these thermal imaging videos are  
7 distributed to all the maintenance departments and our engineering  
8 staff. If there is a particular issue that shows a significant  
9 temperature change -- because mainly we're looking for heat  
10 signatures associated with the electrical system. It is not  
11 utilized for water inspection. Like I said in my previous  
12 testimony, there are track walkers that walk this section of the  
13 track twice a week, and if the water leak -- just the presence of  
14 water in a tunnel does not indicate a problem. Again, all our  
15 tunnels leak. Some of our tunnels are equipped with what's called  
16 HPRs, which are hydrostatic pressure release, that allow water to  
17 reach into the tunnel. So whether some action would be taken  
18 because of this, not unless -- not on a normal course of business.  
19 The answer is no.

20           We look for contemporaneous information. That's why the  
21 track walkers have been trained. People are out there every  
22 couple of days a week. And if it is creating an issue for us, a  
23 defect is noted, and then we will react to it based on priority  
24 and our ability to get into the track section.

25           MR. MADARAS: Okay. I just -- there was actually --

1 DR. POLAND: Mr. Madaras, I need to interrupt you for a  
2 moment. The 5 minutes for your questioning is over. I'm sure  
3 there will likely be time for a second round of questions, but we  
4 need to move on to the next party.

5 CHAIRMAN HART: Thank you, Mr. Madaras.

6 IAFF, any questions?

7 MR. HUDSON: Thank you, Mr. Chairman, not at this time.

8 CHAIRMAN HART: Okay.

9 WMATA?

10 (Pause.)

11 CHAIRMAN HART: Do we have a substitute mic for WMATA?

12 MR. DOUGHERTY: We have it now. Thank you. Ours shut  
13 off. Sorry.

14 Thank you, Chairman. Yes, we do have a couple of  
15 questions that I'd like to ask, the first one to Mr. Grooman.

16 Do you have plans underway to develop a fan operating  
17 guide to share information within WMATA?

18 MR. GROOMAN: Yes, we do. We've engaged an engineering  
19 firm to develop what we call a playbook. They'll analyze the  
20 entire system. Based on the slope of a given area, the tunnel fan  
21 layout and depending on where the incident site is, they'll  
22 develop the plans that will be shared with emergency operations,  
23 ROCC. So in case of an emergency or an incident, they go by the  
24 playbook, determine exactly what chain marker the incident has  
25 taken place, where the train is located, and then they'll be able

1 to develop the ventilation plan to effect providing fresh air and  
2 a safe evacuation route.

3 MR. DOUGHERTY: Next question is to Mr. Epler. Prior to  
4 the January 12th incident, can you explain how the radio issue was  
5 addressed that WMATA was working to troubleshoot with the fire  
6 department?

7 MR. EPLER: Yes, sir. Basically, on Thursday, which I  
8 believe was the 7th, we were notified by the District of Columbia  
9 that radio coverage at the L'Enfant region was substandard. At  
10 that time they contacted our system maintenance manager, and he  
11 explained to them that they're performing part of their general  
12 PMIs, where they disconnect cables and they reattach cables and  
13 they do adjustments.

14 And he took that information, and then he filled out a  
15 Maximo work ticket, and they actually started troubleshooting it  
16 as a D.C. issue. They started troubleshooting it, and they needed  
17 additional assistance, at which time they called engineering and  
18 asked for assistance and engineering started providing assistance.

19 So from Thursday up until Monday, they were  
20 troubleshooting the issue. Ultimately, where the problem was  
21 resolved is they had a -- not a reservation -- they were scheduled  
22 to go into the District of Columbia penthouse at One Judiciary  
23 Square to continue their troubleshooting effort. WMATA can't get  
24 in there without access being granted by D.C. And this is one of  
25 them areas where the demark, even though it's our responsibility,

1 it's still in their controlled room.

2 So troubleshooting was progressing up until the day of  
3 the incident. After the incident, we actually expedited it the  
4 next morning. They got entrance to this location in One Judiciary  
5 Square, and troubleshooting, they went in there and they resolved  
6 -- they pulled some what's called attenuation pads, and it seemed  
7 to resolve the issue at that time.

8 MR. DOUGHERTY: So you could not have made the repair  
9 without their assistance to gain access?

10 MR. EPLER: No --

11 CHAIRMAN HART: Thank you. We'll have to see what we  
12 can do about the mic issues. Now we can see if any parties have a  
13 second round. I know that Mr. Madaras has additional questions,  
14 follow-up, but does anybody else? Let's go, continuing  
15 counterclockwise again, anybody have a second round of questions?  
16 FTA? TOC? D.C. EMS? Yes, please.

17 MR. GELDART: Yes, sir.

18 For Mr. Kavaleri, do you recall when you were reached  
19 out to by WMATA to go and assist with our site at 441, where  
20 they're talking about the uplink coupler?

21 MR. KAVALERI: Yeah. As soon as we notified -- that  
22 WMATA was notified January 7th, that was supposed to be  
23 coordinated for them to get access. We were not aware that they  
24 needed access to where we hand off the signal at OJS radio site.  
25 We provide 24/7 support and access to any facilities. That

1 request was not provided to us to be able to get in from that  
2 January 7th date until right after the incident.

3 MR. GELDART: Okay, and one last question. The day of  
4 the incident, were there any other issues with the District of  
5 Columbia's radio system aboveground?

6 MR. KAVALERI: There were no issues aboveground before  
7 that date, after that date, for months and months, no issues.

8 CHAIRMAN HART: Thank you, Mr. Geldart.

9 Mr. Madaras?

10 MR. MADARAS: Thank you, Chairman Hart.

11 Mr. Bunting, just one follow-up question. On the  
12 thermal imaging videos that were part of the exhibits -- there was  
13 three of them, 16B, 17B and 18B -- on all three of those thermal  
14 imaging videos, the taker of the video stopped very close to that  
15 location. And what I was trying to ask the question was, what was  
16 the significance of him stopping and pointing it out at those  
17 locations when all three of them were almost exactly at the same  
18 point? But maybe you're not familiar with those videos?

19 CHAIRMAN HART: If you know. We're not asking you to  
20 speculate, but if you know.

21 MR. BUNTING: Right. I would not speculate on the  
22 reasoning why they stopped. I will further elaborate, though, we  
23 have -- the track department has a very similar piece of equipment  
24 that runs the system through once a month or quarterly and gets a  
25 still -- a very clear, detailed, high-definition picture of the

1 conditions in the tunnel structure. We don't need to rely on a  
2 thermal image to see the water leakage. So that's one of many  
3 tools that we use to look at the conditions of the tunnels, as  
4 well as we have people that walk the tunnels twice a week, and the  
5 people who are out there at all times. We have people in these  
6 tunnels all the time.

7 MR. MADARAS: Thank you.

8 CHAIRMAN HART: Thank you, Mr. Madaras.

9 Mr. Hudson?

10 (No response.)

11 CHAIRMAN HART: Thank you. The parties have concluded  
12 their questions for Panel No. 1. The Board of Inquiry will now  
13 begin our questions for the witnesses --

14 DR. POLAND: Chairman Hart?

15 CHAIRMAN HART: Oh, yes, I'm sorry.

16 DR. POLAND: I think Mr. Dougherty might have one more  
17 chance to have a second round of questions.

18 CHAIRMAN HART: Okay. Go for it, and I hope your mic  
19 works.

20 MR. DOUGHERTY: Thank you, sir.

21 Just one follow-on for Mr. Kavaleri. The District had  
22 recently moved to an encryption system for the fire radios. Did  
23 that have any impact with the inability to have the communications  
24 underground?

25 MR. KAVALERI: Yeah, encryption had no impact on the



1 communications during the incident. There was no coverage. If  
2 there's no coverage, encryption doesn't matter. Encryption is a  
3 capability, a software capability that rides on top of the radio.  
4 There were complete communications aboveground both for MPD and  
5 Fire and EMS, no communication issues aboveground. It was really  
6 below ground, the issues that occurred.

7 MR. DOUGHERTY: Thank you. That concludes our  
8 questions.

9 CHAIRMAN HART: Thank you. That concludes the parties'  
10 questions for Panel No. 1. The Board of Inquiry will now begin  
11 our questioning of the witnesses. Each Board Member will have 5  
12 minutes, and we'll start with Member Sumwalt.

13 MEMBER SUMWALT: Thank you, Mr. Chairman.

14 Mr. Grooman, this set of questions is for you. I'm  
15 going to not call for it to be pulled up, but what I'm going to be  
16 referring to is Exhibit B1.2, but we don't need to call that up  
17 right now.

18 But Mr. Grooman, in 1983, there was a study conducted by  
19 RKE, that's Raymond Kaiser Engineers. And according to this  
20 exhibit, the study concluded that the ventilation system in WMATA,  
21 quote, "has limited capabilities in maintaining airflow past a  
22 fire incident train and cannot control the smoke and hot air from  
23 relatively small to relatively severe train fires." Based on this  
24 conclusion RKE recommended to WMATA to, quote, "develop a means of  
25 improving the ventilation system at critical locations."

1 Do you know what was done in response to that study?

2 MR. GROOMAN: No, I do not, not specific to improving  
3 the air flows.

4 MEMBER SUMWALT: Thank you. What I'd like to do is, I  
5 understand that we have requested that information, a follow-up  
6 from WMATA. We have not gotten it, is my understanding, so I'd  
7 like to request that you submit for the record the WMATA response  
8 to that 1983 study, if you could provide that for us, please.

9 Also, there was a 1985 study conducted by DeLeuw, Cather  
10 & Company, and it had a number of recommendations. What I'd like  
11 to do, if you would, kindly, is for every recommendation that  
12 either came out of the RKE 1983 study -- and I believe there were  
13 two of those in 1983 -- for every recommendation that came out of  
14 the 1983 RKE studies and the 1985 DeLeuw study, I'd like for you  
15 to please provide for the record all of the recommendations and  
16 then WMATA's response to each of those. Can you do that for us,  
17 please?

18 MR. GROOMAN: I will do that research, yes, sir.

19 MEMBER SUMWALT: Thank you very much.

20 DR. POLAND: Can I just interrupt? I'm sorry, Member  
21 Sumwalt.

22 MEMBER SUMWALT: Yes?

23 DR. POLAND: Is that more than one report or is that a  
24 single report that will be provided to the Safety Board?

25 MEMBER SUMWALT: Yeah, Dr. Poland, it's actually -- as I

1 understand it, there were two studies done by RKE in 1983, and  
2 then there was one in 1985 by DeLeuw. And this is as referenced  
3 to Exhibit B1.2, page 4. So whatever is referenced on that page,  
4 I'd like to know how WMATA responded to each of those, please.

5 DR. POLAND: Thank you.

6 MEMBER SUMWALT: Yes, thank you for the clarification.

7 I'd also like to pull up now Group C, Exhibit 5, and  
8 we'll pull that up. And there it is right there, if we could  
9 scroll through that, please, just so Mr. Grooman can see what this  
10 is.

11 So this was a study done by Parsons Brinckerhoff in  
12 1987. And if we could actually scroll to the summary pages, which  
13 would be page 16 of that document -- actually page 15 -- and  
14 finding conclusion number 2 -- and yeah, page -- actually 15 of  
15 the document itself, conclusion number 2, and we can see it right  
16 here, we generally agree that the existing ventilation system is  
17 unable to control smoke without modification. Do you know,  
18 Mr. Grooman -- well, let me move to finding number 7, which then  
19 says -- which is on the next page. Finding 7 says the WMATA  
20 ventilation system lacks the capability to control smoke from even  
21 a moderate fire -- that's 20 million BTU per hour -- without  
22 equipment modifications and/or additions. Are you aware of any  
23 modifications that were made to the system in response to this  
24 study or any other studies?

25 MR. GROOMAN: I'm not aware of any modifications made in

1 reference to the study.

2 MEMBER SUMWALT: Thank you. If you would, if you could  
3 research that and let us know if any modifications were made in  
4 response to that.

5 So I'm out of time, so I'll wait for the second round.  
6 Thank you.

7 CHAIRMAN HART: Thank you, Member Sumwalt.

8 Member Weener?

9 MEMBER WEENER: I think I'd like to follow that on a  
10 bit. Obviously, there were some design standards that this was,  
11 the whole WMATA system was designed to, including ventilation  
12 standards. Where do those standards come from? And perhaps the  
13 question is for Mr. Grooman or Mr. Bunting?

14 MR. GROOMAN: The original design standards were  
15 designed by DeLeuw Cather. Once WMATA came into being, the  
16 engineering group took over the designs and control of the  
17 designs. All designs are stamped with a PE approval to meet local  
18 jurisdictional requirements.

19 MEMBER WEENER: So are there industry standards that are  
20 being followed here or are these all basically standards just for  
21 this project?

22 MR. GROOMAN: The original design, again, was based on  
23 sections of tunnel and heat loads generated either by wayside  
24 equipment and/or train traffic. Again, the original intent of the  
25 ventilation system was for temperature control in the tunnels.

1 Again, it was later -- or as soon as the system opened, the  
2 realization of, in agreements with the local jurisdictions, that  
3 the ventilation system would be used for emergency purposes.  
4 However, the system was not designed around heat loads that we're  
5 now familiar with the NFPA 130.

6 MEMBER WEENER: Given the particular structure of  
7 government standards in terms of transit rather than if this were  
8 heavy rail, would there have been different design requirements if  
9 this were heavy rail instead of transit?

10 MR. GROOMAN: I could not answer that question  
11 factually.

12 MEMBER WEENER: Does APTA or some other similar  
13 standards organization have standards that are applicable here?

14 MR. GROOMAN: From what I understand, the standard to  
15 follow is NFPA 130.

16 MEMBER WEENER: But that's for fire; is that correct?

17 MR. GROOMAN: That's fixed guideway ventilation systems.

18 MEMBER WEENER: Well, we've talked about the presence of  
19 water in the tunnel being acceptable, and presumably, the design  
20 intended to have water in the tunnel. I guess I'm just wondering  
21 where that became acceptable as a standard.

22 MR. BUNTING: Are you speaking about the amount of water  
23 that's allowed to flow into a tunnel? That was the question?

24 MEMBER WEENER: I'm trying to understand where the  
25 design standards came from, and using the water in the tunnel as

1 an example, where did that become acceptable? Was that acceptable  
2 through the design of the contract? Was there some underlying  
3 industry standards or practices that might have been followed in  
4 terms of the design?

5 CHAIRMAN HART: If you know. We're not asking you to  
6 speculate.

7 MR. BUNTING: Well, I can say, again, in regards to  
8 water intrusion into the tunnels, the predecessor, the Urban Mass  
9 Transit Administration had a general guideline that allowed  
10 1 gallon per minute per 1,000 feet of tunnel as an acceptable  
11 seepage rate into transit tunnels, and that varies throughout the  
12 country whether people are more stringent or looser. So that is  
13 the best of my knowledge on that area.

14 MEMBER WEENER: So are the same design standards applied  
15 throughout the WMATA system given that it spans three different  
16 political districts?

17 MR. BUNTING: In regards to water intrusion, our tunnels  
18 were constructed, have been constructed over the last 40 years or  
19 so. And at the time of construction, those guidelines were  
20 generally followed. We used the state of the art waterproofing  
21 techniques that were available at the time. And in the 1980s, we  
22 went to the most modern type of tunneling, which is the two-pass  
23 NATM tunneling, and those tunnels are virtually dry. So it's  
24 pretty much the acceptable standard nowadays in transit and  
25 highway tunnels, is dry.

1           MEMBER WEENER: Okay. And with regard to ventilation,  
2 the ventilation standards are the same throughout the three  
3 political districts?

4           MR. GROOMAN: Over the years, there have been minor  
5 variations to -- in agreement with the local jurisdiction. Each  
6 jurisdiction has final sign-off. Most jurisdictions have all  
7 signed off. The only exception was the Forest Glen Station. That  
8 station is a deep station with no escalator entrances, and  
9 Montgomery County fire marshal wanted additional -- they wanted  
10 modifications to the current system. For example, they wanted the  
11 adjacent tunnel fans connected to the fire alarm system. They  
12 also required a track bed deluge system. Other than that, that's  
13 the only change in a specific standard that was adopted by WMATA.

14           MEMBER WEENER: Okay. So there are some differences  
15 then in terms of design from one station to another, from one  
16 district to another?

17           MR. GROOMAN: Just in that one case in Montgomery  
18 County.

19           MEMBER WEENER: In that one case. Thank you.

20           CHAIRMAN HART: Thank you, Member Weener.

21           Member Dinh-Zarr?

22           VICE CHAIRMAN DINH-ZARR: Thank you, Mr. Chairman. Like  
23 you, I take Metro almost every day, as do my family, so -- does my  
24 family, so I appreciate this opportunity to ask questions. My  
25 first questions are regarding maintenance, so for Mr. Bunting.

1           Are the track inspectors, are they trained to identify  
2 and report tunnel leaks, and what does this training involve?

3           MR. BUNTING: Well, we categorize tunnel leaks in three  
4 categories. Category 1 is any tunnel leak or any leakage that can  
5 cause a safety hazard or cause damage -- is immediately causing  
6 damage to the infrastructure. Category 2 leaks are leaks that  
7 simply are leaking into the tunnel and contributing to the overall  
8 wetness and dampness and moisture content of the area. And  
9 Category 3 leaks are just seepage leaks that really are showing no  
10 degradation to the system. The track walkers have been trained on  
11 those general guidelines, and they do rate the leaks 1, 2 or 3.  
12 That's correct.

13           VICE CHAIRMAN DINH-ZARR: Thank you, Mr. Bunting. And  
14 could you provide documentation of that for our docket, of this  
15 type of training?

16           MR. BUNTING: I would have to go to our training  
17 department and see if they have such records or if this is just a  
18 on-the-job training, part of their on-the-job training. I don't  
19 have that information.

20           VICE CHAIRMAN DINH-ZARR: Okay. If you could find that  
21 out for us.

22           DR. POLAND: So, Mr. Bunting, based on the Vice  
23 Chairman's questions, we're going to mark down that you're going  
24 to provide an exhibit on the training, and if that's not correct,  
25 you'll have to provide us information after the fact that you



1 don't have those records. Thank you.

2 VICE CHAIRMAN DINH-ZARR: Thanks, Dr. Poland. Training  
3 specific to the maintenance of the track inspectors --

4 DR. POLAND: Thank you.

5 VICE CHAIRMAN DINH-ZARR: Yes.

6 DR. POLAND: Thank you.

7 VICE CHAIRMAN DINH-ZARR: So you mentioned earlier,  
8 also, Mr. Bunting, that your system can track defects, and I think  
9 you referred a term called Maximo. Does that mean that this  
10 tracking system, it generates reports so you can identify and  
11 prioritize and act on this given the severity of the potential  
12 consequences? I guess my question is what happens with this  
13 tracking? What kind of reporting is done?

14 MR. BUNTING: To answer your question, the answer is  
15 yes. All our components and systems are -- have a unique  
16 identifier to them, and we have defect and component codes. And  
17 any record that is entered can be tracked for repeat failures,  
18 repeat issues, and there is a lot of discussion on these things  
19 continuously, and it helps us prioritize our work. For instance,  
20 if we have a area where we have a surfacing problem with our track  
21 repeatedly, it would cause us to focus on -- we get a report -- we  
22 can generate a report any time there is a failure that tells you  
23 if there has been a repeat failure, that tells you what date that  
24 occurred and what action was taken, what measures were in place.  
25 And we can then analyze that data and make determinations on

1 actions based on that information.

2 VICE CHAIRMAN DINH-ZARR: And so what exactly happens?  
3 I mean, what's the system when something -- when all of these  
4 defects are tracked? Is there a systematic way, though, that the  
5 reporting is done so that you can prioritize them? I mean, how --  
6 I know you say that you do it continuously, but what does that  
7 mean specifically?

8 MR. BUNTING: Well, each office has an area of  
9 responsibility, and each office must develop an annual work plan  
10 based on the priorities of the Agency, based on what we want to  
11 get done, based on performance that's set by our executive  
12 leadership. And we look at all these factors when are building  
13 that work plan. And we do look at repeat failures.

14 In addition, we have anything that causes a disruption  
15 to service or causes us to react immediately or the fire  
16 department reacts, or anything, it ends up on an incident log.  
17 That incident log is then, every morning, discussed by senior  
18 leadership, and action plans are put in place. And in that  
19 reporting of the incident comes the entire work history for that  
20 whatever issue occurred in whatever area the incident occurred.  
21 And then we're able to -- this morning meeting includes executive  
22 leadership, the maintenance department who's responsible, and  
23 engineering responsible for that particular discipline. And we  
24 build work plans and actions based on those discussions and in  
25 developing our work plans annually and monthly, weekly.

1           VICE CHAIRMAN DINH-ZARR: Thank you. I'm afraid I'm out  
2 of time.

3           CHAIRMAN HART: Thank you, Vice Chairman Dinh-Zarr. I'm  
4 going to ask a few questions, and then we'll have a second round  
5 for the Board Members.

6           Did I hear a reference to a blue ribbon panel regarding  
7 water in the tunnel, a blue ribbon panel study regarding water in  
8 the tunnel?

9           MR. BUNTING: Yes, sir. There were three studies,  
10 significant studies done in WMATA. I believe the first one was  
11 done by UMTA in 1982. And then there was a blue ribbon panel put  
12 together by our executive leadership in the mid '90s, and then the  
13 USGS did a study in 2004, as well.

14          CHAIRMAN HART: Can those all be provided to be placed  
15 into the docket?

16          MR. BUNTING: I know of personally the UMTA study and  
17 the USGS study I'm in possession of. I would have to talk to our  
18 engineering group and see if they have the blue ribbon panel study  
19 from the 1990s.

20          CHAIRMAN HART: Could you do that so that we can have  
21 them brought in as exhibits?

22          DR. POLAND: So, Chairman Hart, that's three blue ribbon  
23 reports from -- are they from WMATA or are they from an outside  
24 organization?

25          MR. BUNTING: Like I said, the first one, the 1992, was

1 UMTA, was Urban Mass Transit Administration did a study for WMATA.  
2 The blue ribbon panel was initiated by WMATA, and the USGS -- it  
3 was the USGS did that study, and I'm not familiar with who  
4 initiated that study.

5 DR. POLAND: And then there were two additional studies,  
6 as well; is that correct?

7 MR. BUNTING: No, those were the three studies.

8 DR. POLAND: I'm sorry. Okay. So we'll add those to  
9 the exhibit list, then. Thank you.

10 CHAIRMAN HART: So thank you for that. On that subject  
11 of water leaks, you talked -- it sounded like the emphasis is on  
12 water leaks to the extent they may affect infrastructure. I'm  
13 wondering was there any program to say what about water leaks as  
14 they affect the electrical supply, especially to the third rail,  
15 since the third rail is down on the ground and the water is, too.  
16 So was there any emphasis on water leaks as it might affect power  
17 availability to the third rail?

18 MR. BUNTING: I'm not familiar with any of the studies  
19 that directly were focused on the electrical system. They looked  
20 at the entire infrastructure, the underground infrastructure, and  
21 the degradation caused by the water leakage into the system.

22 CHAIRMAN HART: Okay. Thank you.

23 Let me turn to ventilation. What was the purpose -- I  
24 heard reference to the NFPA 130 standard. What was the purpose of  
25 that standard, if you know, to -- you know, anybody who might know

1 that?

2 MR. GROOMAN: I think the purpose of the NFPA 130 was to  
3 standardize ventilation systems across the country and to provide  
4 standards developed by professionals for the jurisdictions to  
5 follow their expertise.

6 CHAIRMAN HART: And if you know, to what extent was it  
7 based on just having adequate ventilation so the people aren't  
8 breathing diesel fuel from your vehicles that are -- your repair  
9 vehicles that are going through the tunnels versus evacuation for  
10 a smoke event such as this one? Do you have any sense of -- do  
11 you have any knowledge of what the standard was intended to  
12 address?

13 MR. GROOMAN: It was to address safe evacuation and the  
14 control of smoke and heat in the tunnels during an event. The  
15 calculations were based on anywhere from 20 million BTU per hour  
16 to 40 million BTU per hour on calculations of how much air flow or  
17 how much velocity. It takes into consideration the grade of the  
18 tunnel, to be able to control what they call backdraft or back  
19 layering, where you've got smoke emitting -- you know, smoke rises  
20 and heat rises, and then you've got a fresh air supply that comes  
21 back under -- it's back layering underneath the smoke and heat  
22 that fuels the fire. So the intent is to develop air flow  
23 capacities that can offset that back layering effect and control  
24 where the smoke and the heat are going.

25 CHAIRMAN HART: Okay. Thank you. And is there a

1 program at WMATA to, when a ventilation fan is out of service, to  
2 report that and then take action on the report? How does that  
3 work when there are ventilation fans that are out of service?

4 MR. GROOMAN: What we developed several years ago to  
5 elevate what we call fire life safety components -- tunnel fans  
6 are one of them; fire lines are another. Whenever any fire life  
7 safety equipment is reported as having a problem, it gets an FLS  
8 designation. What that does is that immediately prioritizes the  
9 work. We have automatic email notifications each week that go out  
10 to managers that highlight the items that are out of service or  
11 need repair. If 30 days goes by, it gets elevated. Anything  
12 older than 30 days, it's highlighted in red, so that gives upper  
13 management, anyway, visual -- a visual status of what's going on  
14 up there, and then to take appropriate actions, as necessary, to  
15 get the FLS work order closed.

16 CHAIRMAN HART: And just one last question on this  
17 round, and that is who would know that a ventilation fan is not  
18 working and how would they know? What would be their source of  
19 information to know that a ventilation fan is not working?

20 MR. GROOMAN: All right. Two processes. We do the  
21 monthly preventative maintenance. If anything is found during the  
22 preventative maintenance, the work order would be opened.  
23 Additionally, because ROCC has control of the fans to clear work  
24 areas, if a fan becomes operational, there is an alarm that is  
25 generated to the ROCC, who then would open up the work order and

1 assign the FLS designation to it.

2 CHAIRMAN HART: You said if it becomes operational. You  
3 mean if it fails to operate? You said if a fan becomes  
4 operational.

5 MR. GROOMAN: I'm sorry. Inoperable.

6 CHAIRMAN HART: Okay.

7 MR. GROOMAN: If any individual fan does not spin.

8 CHAIRMAN HART: Okay.

9 MR. GROOMAN: We have flow sensors that detect movement  
10 of air, so then we know whether or not we've lost power, whether  
11 or not a fan is not spinning; we know there is a problem and it  
12 shows up on the alarm list within ROCC.

13 CHAIRMAN HART: Okay. Thank you.

14 Now we'll commence with the second round. Member  
15 Sumwalt?

16 MEMBER SUMWALT: Thank you.

17 Mr. Grooman, I'd like to follow up to Chairman Hart's  
18 question about NFPA 130. When did that come into being? Was that  
19 somewhere around the early to mid '90s?

20 MR. GROOMAN: NFPA 130 came into existence in 1983, and  
21 I believe it's updated every 3 to 4 years.

22 MEMBER SUMWALT: I see. Thank you.

23 I was reading in Exhibit 1.2, and there's no need to  
24 pull that up, but there was some reference made to what -- did  
25 WMATA make a significant change to its ventilation system sometime

1 after the mid '90s?

2 MR. GROOMAN: With the opening of the segment from  
3 Wheaton to -- I'm sorry -- from Wheaton to Glenmont, the last  
4 segment on the B line, on the Red Line, they did go back and  
5 retrofit the existing tunnel fans to come up to NFPA standards.  
6 The outer F line, which uses jet fans met the NFPA standards, as  
7 well as the N line, the new Silver Line.

8 MEMBER SUMWALT: Thank you. And I think you referenced  
9 that earlier, so -- and I think they replaced two fans with jet  
10 fans, or something like that, I believe. But to upgrade that  
11 throughout the entire system, I believe you or Mr. Bunting said  
12 that might have been \$550 million, or something like that; is  
13 that --

14 MR. GROOMAN: To upgrade the existing fans to a higher  
15 capacity, the cost estimate going back to 1991, the estimate back  
16 then was over \$500 million.

17 MEMBER SUMWALT: Okay. Thank you.

18 I'm not sure which representative from WMATA could best  
19 answer this, but what SOPs and training does the OCC have for  
20 smoke in the tunnel?

21 MR. GROOMAN: They have developed a procedure on how to  
22 operate the fans depending on where the incident is, where the  
23 train is, and where the fans are located.

24 MEMBER SUMWALT: And that's post-January the 12th; is  
25 that correct?



1 MR. GROOMAN: Post-January 12th, yes.

2 MEMBER SUMWALT: And prior to this event, this accident  
3 that we're referring to?

4 MR. GROOMAN: Prior to this event, the only training  
5 they had was basically an owner's manual, how to operate the AIM  
6 system to either turn a fan on, turn a fan off, put it into supply  
7 or put it into exhaust or turn it off or on or place it in  
8 automatic mode.

9 MEMBER SUMWALT: Thank you. Again, no need to pull this  
10 up, but Exhibit 1.1 of Group B, it says that a -- it states that a  
11 biannual inspection of the L route, which is the L route between  
12 the L'Enfant Plaza and the L'Enfant portal, which was performed in  
13 October of 2014, found that the condition of the drains and  
14 troughs of having a rating of 4, which is considered to be poor  
15 condition. So what's the significance of having the drains and  
16 troughs be poor condition? And to be clear, the L route tunnel,  
17 that is the route between L'Enfant Plaza platform headed towards  
18 the Pentagon; is that correct?

19 MR. BUNTING: That is correct.

20 MEMBER SUMWALT: Okay. Good. I just wanted to clarify  
21 that. And so what's the significance of the drains and portals --  
22 I'm sorry -- drains and troughs having a rating of 4?

23 MR. BUNTING: Well, if you have a rating of 4, which is  
24 a poor condition, if my memory serves me correctly, that would  
25 mean that there's an obstruction of some type that the water is

1 not draining to the area which it's intended. And my  
2 understanding after review of that report is that the drainage  
3 trough was -- had debris in it, had a significant amount of  
4 newspapers and other debris that was causing water to flow all  
5 over the track bed, as opposed to down the drainage trough and  
6 into the main drain.

7 MEMBER SUMWALT: Okay. Thanks. And so to be clear, is  
8 it your testimony that after this particular drainage system was  
9 found to be of a rating of 4, which is, in fact, poor, that that  
10 was the problem and that it was corrected?

11 MR. BUNTING: I have no knowledge myself that it was  
12 corrected. However, I've been in the tunnel since then, and the  
13 area is clear of -- the drainage troughs and drains are flowing  
14 freely, so my assumption is, yes, it was cleaned at some point.

15 MEMBER SUMWALT: Could you please, Mr. Bunting, for the  
16 record, supply any records that you may have, that WMATA may have  
17 in reference to this particular finding of the October 2014, where  
18 this -- where these drains and troughs were found to have a rating  
19 of 4 in this particular area of the accident? If you could do  
20 that, any records or any records that WMATA may have? So I'm out  
21 of time, but thank you very much.

22 Dr. Poland, do you know exactly what it is we're  
23 referring to?

24 DR. POLAND: So, Mr. Bunting, you're going to provide a  
25 WMATA record of the drains and troughs in the tunnel L-1, is that

1 correct, from October 2014?

2 MR. BUNTING: I will look for a record of maintenance  
3 activities in the area to see if it was documented. Let me  
4 explain that many times this work will be done undocumented if  
5 it's simply an obstruction, a newspaper, a bottle, or something.  
6 A track walker in the performance of their duties will clean that  
7 up, and that will not show up on any maintenance record. So when  
8 it's the troughs that are clogged, that's very possible that's how  
9 that situation was rectified. But I will do a search and let the  
10 Board know.

11 DR. POLAND: Thank you. Please let us know positive or  
12 negative, if you find a report and if you are not able to find a  
13 report.

14 MEMBER SUMWALT: Thank you. And to make sure that we're  
15 talking about the same thing, what I am referring to is Group 4 --  
16 I'm sorry -- Group B, Exhibit 1.1., on page 5, and that's where  
17 the discussion about this biannual inspection is. So thank you  
18 very much.

19 CHAIRMAN HART: Thank you, Member Sumwalt.  
20 Member Weener?

21 MEMBER WEENER: Yes. We had a lot of discussion about  
22 how to get smoke out of the tunnel. I'd like to talk a little bit  
23 about how smoke comes into the tunnel in the first place. How  
24 many smoke events does WMATA have in a typical year?

25 MR. GROOMAN: I don't have that number in front of me.

1 I think the last number I saw, so far for this year was 200 some,  
2 which is an increase over previous years. I do know that. I  
3 believe it's attributed to an increase in awareness of reporting  
4 incidents of sparking insulators, smoke, any fire. Any fire  
5 alarms that are activated are recorded as well. So there is an  
6 uptick, but again, I believe it's directly related to a higher  
7 awareness or a higher, increase in awareness of reporting.

8 MEMBER WEENER: Okay. So we're talking about a couple  
9 of hundred events in 5 months, 6 months?

10 MR. GROOMAN: Yes, sir.

11 MEMBER WEENER: Is arc tracking the major cause for  
12 these events?

13 MR. GROOMAN: I'm sorry. The question again?

14 MEMBER WEENER: Is arc tracking -- the NTSB has recently  
15 put out a recommendation for sealing of the connectors because of  
16 the potential for arc tracking.

17 MR. GROOMAN: Oh, I don't think that's the leading cause  
18 at all, no, sir.

19 MEMBER WEENER: You what?

20 MR. GROOMAN: I don't think that's the leading cause of  
21 the smoke incidents, smoke and fire incidents. Arcing insulators  
22 are probably the leading cause of smoke or reports of smoking or  
23 arcing in the tunnel. It isn't necessarily cables, but --

24 MEMBER WEENER: Okay. But it is -- you did say arcing  
25 on the insulators, so it would be arc tracking?

1           MR. GROOMAN: I'm not familiar with that term, arc  
2 tracking.

3           MEMBER WEENER: You're not familiar with the term?  
4 Okay. Well, arc tracking is a continual leakage of current across  
5 a surface because of developing electrical path. I guess it was  
6 my understanding that since we sent the recommendation on sealing  
7 the connectors, that arc tracking would have been high on  
8 somebody's list.

9           MR. GROOMAN: Mr. Miller will have more -- is more  
10 involved in that.

11          MR. MILLER: Sir, back on the original number of  
12 incidents, which Mr. Grooman is going to provide for you, the last  
13 6 months of this current year, we have had four cable issues, if  
14 that clarifies any of your questions regarding cable.

15          MEMBER WEENER: I guess I'm trying to understand where  
16 the majority of these smoke events come from. What is burned?  
17 What produces the smoke? We've been talking about arc tracking,  
18 which we put out a recommendation on, and you say that's a fairly  
19 rare event, 4 in this past year out of 200 events?

20          MR. MILLER: We had four -- there's four cable incidents  
21 for the calendar year 2015.

22          MEMBER WEENER: Four cable events. So a cable event  
23 would be, then, typified by the event of the 12th of January?

24          MR. MILLER: Yes, sir. The L'Enfant issue would be --  
25 was actually the first one this year, and immediately after that,

1 in February, we had a cable event at Courthouse. And then in  
2 April, we had one at Rosslyn. And then in early June, we had one  
3 at Friendship Heights. And they were directly -- the cables were  
4 involved. And please understand, when you have a smoke event it  
5 could be any number of issues. It could be debris. It could be  
6 leaves, cable, as we talked about. It could be arcing insulators,  
7 which is, I think, is what you're referring to when you regard --  
8 when you're making comments as tracking, I think you're referring  
9 to arcing insulators.

10 MEMBER WEENER: I think the predeceasing, or preceding  
11 event for arc tracking would be just a leakage path across the  
12 insulator or a leakage path to ground from the --

13 MR. GROOMAN: Of all the incidents that have been  
14 recorded, we track cause, so we can provide that. That'll show  
15 whether it's a debris fire. When a shoe comes off the third rail,  
16 it can spark, can cause a cross-tie fire. So we do have a list of  
17 all the reported incidents. Again, Mr. Miller said that cable  
18 incidents were only four this year, but there's other reasons for  
19 smoke and small fires.

20 MEMBER WEENER: Okay. Could you provide that?

21 MR. GROOMAN: Yes.

22 MEMBER WEENER: Thank you.

23 CHAIRMAN HART: Thank you, Member Weener.

24 Member Dinh-Zarr, Vice Chairman Dinh-Zarr?

25 VICE CHAIRMAN DINH-ZARR: Thank you, Chairman Hart.

1           This is a question for Mr. Grooman. So because there  
2 are these different capabilities and limitations at different  
3 sites -- and I understand that, in answer to a previous question,  
4 you'd asked -- you'd said that there is playbook being developed  
5 by consultants regarding ventilation; is that correct?

6           MR. GROOMAN: That is correct.

7           VICE CHAIRMAN DINH-ZARR: So at the time of the incident  
8 and before that and now, is there any guidance, any type of map or  
9 playbook that is currently being given at different locations so  
10 that people know how to act -- I mean, your staff would know how  
11 to act within WMATA regarding, you know, either for the train  
12 operators, dispatchers, others, when there is a smoke event? Is  
13 there any type of guidance related to that?

14          MR. GROOMAN: Currently, it is the ROCC controllers have  
15 received a diagram of certain scenarios, location of the station,  
16 location of the fans, and location of an incident, and location of  
17 where a train may be. That has been provided to the ROCC  
18 controllers as a precursor to our formal playbook, if you will.

19          VICE CHAIRMAN DINH-ZARR: And that's since the incident  
20 has happened --

21          MR. GROOMAN: Yes, ma'am.

22          VICE CHAIRMAN DINH-ZARR: -- you've done that; is that  
23 right?

24          MR. GROOMAN: Yes, ma'am.

25          VICE CHAIRMAN DINH-ZARR: And does that also tell the

1 ROCC operator or dispatchers about which direction the fans, the  
2 operation of the fans? Because I understand that some fans only  
3 operate in one direction; is that correct?

4 MR. GROOMAN: That is incorrect. All of our fans are  
5 reversible. They can supply or exhaust. Their playbook does  
6 indicate which direction to place the fans depending on where the  
7 incident is.

8 VICE CHAIRMAN DINH-ZARR: Okay. So when you were  
9 mentioning before, though, some fans operate in only one  
10 direction, that's not a limitation of the equipment, then; is that  
11 correct? That's just that they're operated in one way in order to  
12 be effective at that location?

13 MR. GROOMAN: I'm sorry. Repeat that?

14 VICE CHAIRMAN DINH-ZARR: Because I believe in a  
15 previous answer, you mentioned that there are some fans that are  
16 only operated in one direction, but that's not a limitation of the  
17 equipment? It's just done that way because of a certain location?  
18 Am I understanding that --

19 MR. GROOMAN: There's no limitation on the operation of  
20 the fans. They can be controlled in either direction.

21 VICE CHAIRMAN DINH-ZARR: Okay. Thank you.

22 MR. GROOMAN: The next panel would have more information  
23 on the ROCC operations.

24 VICE CHAIRMAN DINH-ZARR: Okay. And related to that,  
25 because of all these differences, do you pass on this information



1 -- do you give that to someone related to emergency response or  
2 does somebody from emergency response contact you to have this  
3 type of operations equipment information?

4 MR. GROOMAN: We did coordinate with the ROCC post the  
5 incident on ensuring the operation of the fans was specific to  
6 where an incident was happening, and again, the layout of the --  
7 where the incident site is, and again, where the train is, where  
8 the path of evacuation would be.

9 VICE CHAIRMAN DINH-ZARR: So that's information that you  
10 passed to them?

11 MR. GROOMAN: To our -- in coordination with ROCC, yes.

12 VICE CHAIRMAN DINH-ZARR: Okay. Thank you.

13 Just moving on, in remembrance of the time, Mr. Miller,  
14 I'd like to ask you a question about the cables. So you mentioned  
15 that you follow up on smoke reports, and you do a full  
16 investigation when it involves a cable; is that correct?

17 MR. MILLER: Yes, ma'am.

18 VICE CHAIRMAN DINH-ZARR: Thank you. So based on that,  
19 have you -- are there fewer arc -- are there fewer incidents of  
20 this -- of any type, I suppose, where the cables have been  
21 replaced than in the old cables?

22 MR. MILLER: Yes. Let me go back in history with the --  
23 you know, as I indicated earlier, the -- excuse me -- as I  
24 indicated earlier, we have progressed with the technology of the  
25 low smoke cables. When we go into replacing cables, it's very

1 important to know with the environment that they're under. We  
2 have cables that are in the original insulation from construction  
3 that are in the perfect environment, with humidity, water, heat,  
4 sunlight, that they actually look and test as if they were  
5 pristine, in perfect condition. On the other hand, we have cables  
6 in our system -- back into our cable replacement program, we have  
7 replaced areas five times within the last 10 years at the exact  
8 same location. The original -- as an example, a couple weeks ago,  
9 we replaced cables that were 16 months old. So, again, site-  
10 specific locations are what drive this cable replacement.

11 VICE CHAIRMAN DINH-ZARR: Given the same conditions,  
12 though, you'd say the new cables have fewer arcing incidents; is  
13 that correct?

14 MR. MILLER: In a general sense, yes, but I don't have  
15 that data to support that.

16 VICE CHAIRMAN DINH-ZARR: Thank you, Mr. Miller.

17 MR. MILLER: Yes, ma'am.

18 CHAIRMAN HART: Thank you, Vice Chairman Dinh-Zarr.

19 DR. POLAND: Chairman Hart, can I interrupt for a  
20 minute?

21 CHAIRMAN HART: Yes, please.

22 DR. POLAND: Dr. Dinh-Zarr brought up a line of  
23 questioning, and I'm not sure that we have the exhibit that  
24 Mr. Grooman was referring to.

25 You spoke about a diagram that was used by the Rail

1 Operation Control Center operators that would give them some sort  
2 of a scenario so that if the train was in a certain position, they  
3 would know which ventilation fans to turn on. I don't believe  
4 that's currently an exhibit. Can you provide that to us as an  
5 exhibit, please?

6 MR. GROOMAN: Yes.

7 CHAIRMAN HART: Thank you, Dr. Poland.

8 I have a question about how this -- you talked about the  
9 change in the process for knowing the big picture about where the  
10 fans are and where the sources are and where the trains are, and  
11 I'm just trying to picture it in my mind. There's a dispatcher  
12 sitting in front of a board, which we toured a couple weeks ago,  
13 and is there any one person -- would it be that dispatcher, or is  
14 there any one person who would know where the train is, where the  
15 smoke is, where the fans are, to have the big picture to say,  
16 well, I want to put this one in supply and this one in exhaust in  
17 order to keep the smoke away from the train? Is there any single  
18 point of information or am I asking the wrong group? Should I  
19 just go to the emergency response folks?

20 MR. GROOMAN: I'd refer you to the next panel, sir.

21 CHAIRMAN HART: Okay, because I wasn't -- did not see  
22 how that information would come to one person to make the  
23 decision. Because, to me, it's intuitively obvious you get a  
24 report, smoke in the L'Enfant Station, and then the immediate  
25 response is going to be exhaust -- put those fans in exhaust to

1 get the smoke out of the station. Little did they know that by  
2 doing that, now they've drawn the smoke from the source, through  
3 the train, into the station, whereas if smoke had gone the other  
4 way, away from the train -- but that would not be something that a  
5 person would know unless they had the big picture. And that's  
6 what I'm trying to find out is how -- would some individual know  
7 the big picture to say this fan needs to be in exhaust, this fan  
8 needs to be in supply, keep the smoke away from -- et cetera. So  
9 that would be a question that would be more appropriate for the  
10 emergency response people?

11 MR. GROOMAN: Yes, sir.

12 CHAIRMAN HART: Okay. Thank you.

13 Any more questions from the Board before we return it to  
14 the tech panel? Any further questions?

15 (No response.)

16 CHAIRMAN HART: Okay. I'd like to return the  
17 questioning, then, to the tech panel, and we'll go until you're  
18 finished, or 12:30, whichever first occurs.

19 DR. POLAND: Thank you, Chairman Hart. I'm going to  
20 turn the questioning over to Mr. Joe Panagiotou.

21 MR. PANAGIOTOU: Thank you, Dr. Poland.

22 I want to follow up on this last few questions that were  
23 asked. So there are predetermined configurations for the  
24 ventilation system operation. Basically, they're location  
25 specific. So certain fans would be turned on in supply, certain

1 would be turned on in exhaust, depending on the origin of the  
2 smoke. So my question is: Does WMATA have a smoke detection  
3 system throughout the station and tunnel network with which to  
4 identify the source of the smoke?

5 MR. GROOMAN: We have no smoke detection in the tunnels.  
6 There is smoke and heat detection in service rooms in the  
7 stations.

8 MR. PANAGIOTOU: Thank you. One of the early action  
9 items WMATA was going to undertake after the incident was to do a  
10 study or generate a report on the feasibility and cost of adding a  
11 smoke detection system throughout the network. Has that taken  
12 place? And if so, what decisions were made?

13 MR. EPLER: Yeah. That's my department. We did an  
14 exhaustive survey of what other agencies actually do, and we did  
15 an exhaustive survey on what technologies are available. And we  
16 did generate a report, and we forwarded it up the chain of  
17 command.

18 MR. PANAGIOTOU: Do we know if any action will be taken?

19 MR. EPLER: Right now, that's above my paygrade, to be  
20 perfectly honest.

21 MR. PANAGIOTOU: Okay. Thank you very much.

22 I will now pass the microphone over to Dr. Liu for some  
23 follow-up questions he has. Thank you.

24 DR. LIU: Thank you. Before I ask questions, I want to  
25 clarify on the Exhibits C16 through C18, the thermal imaging

1 videos that came up during Mr. Madaras' questioning. To my  
2 knowledge, those videos were provided to NTSB by WMATA as a  
3 special effort to support NTSB's investigation. And those videos  
4 were part of a longer run through the tunnel system and the  
5 reason, again, to my knowledge, the reason that video stopped at  
6 the accident location because that's where the investigation,  
7 we're focusing on. And I believe the annotations, even the  
8 annotations were later added by WMATA.

9           Okay. So I have a few follow-up questions to  
10 Mr. Bunting. You mentioned that some of the tunnel segments were  
11 designed and built 4 years ago and Member Weener asked about the  
12 design standards they conform to. Some of the reports I read  
13 describe a tunnel rehabilitation program that was performed  
14 sometime, if I remember correctly, sometime in the '90s. If you  
15 are -- my question is: Are you familiar with the program? And if  
16 so, could you describe to me the program or similar program that's  
17 currently in place in WMATA?

18           MR. BUNTING: My knowledge on that is limited. I was in  
19 maintenance at the time. Those types of projects were undertaken  
20 by our infrastructure renewal group. We supported the project, so  
21 I have some familiarity of what occurred at the incident tunnel,  
22 you know, the bolts replaced, water leaks were stopped, the panels  
23 were painted. And under our current capital program, there are  
24 tunnel rehabilitations underway as well, in a variety of different  
25 areas for a lot of different things, not only water leaks, but for

1 lighting and other things as well. The stations -- our capital  
2 program covers a big portion of our infrastructure.

3 DR. LIU: Thank you. If I understand you correctly, so  
4 there's currently a bigger program that is going on whose purpose  
5 is to bring the infrastructure of the Metrorail to a better state  
6 of good repair; is that correct?

7 MR. BUNTING: That is correct, sir.

8 DR. LIU: Thank you for that.

9 I want to circle back to the subject of tunnel  
10 inspections. I know you have touched on that, but I want to go a  
11 little deeper, if I may. Prior to 2013, WMATA had two types of  
12 tunnel inspections going parallel: a general structure inspection  
13 and the special leak inspection whose sole purpose was to identify  
14 leaks. However, the leak inspections stopped in 2013 and now  
15 there's only the tunnel structure inspections. Could you explain  
16 to me what was the reason behind this change?

17 MR. BUNTING: Yes. Again, we are a maturing agency.  
18 And as we mature in our technologies and our tools improve, we  
19 drop off some things that we used to do and we now use different  
20 tools. As I reacted to Mr. Madaras' question, we have a visual  
21 way for our maintenance people to look at the conditions of the  
22 tunnel through our TGV that photographs the entire tunnel -- the  
23 entire infrastructure, tunneling infrastructure, with high  
24 definition cameras. We have our track walkers who are out there  
25 every -- twice a week, who notate the different leaks and other

1 conditions and defects out there. We have tools with which we can  
2 now analyze these things.

3           The tunnel leak inspection was a snapshot for at the  
4 time period of which it was done. A tunnel leak inspection in  
5 February provided very little valuable data in August. The  
6 conditions change continuously out there, like I had spoke  
7 earlier. So the methodology in which we now monitor our  
8 infrastructure is much more continuous and much more  
9 contemporaneous.

10           So I can get into the database today and query all the  
11 D-48 defects in any section of the railroad and see how many leaks  
12 are in that area that have been reported that are affecting the  
13 infrastructure. Or I can go to the TGV, which is the track  
14 geometry vehicle analytical group and get their latest video run  
15 and get a clear, high definition run of the section of which I  
16 have interest in. And there are procedures in place that require  
17 the managers who are responsible for these areas to actually go  
18 into the field and to know the condition of the infrastructure  
19 which they're responsible for. One of our OAPs says that the  
20 maintenance manager responsible for that area must inspect that  
21 area on foot four times a year.

22           So, again, just because we stopped that one effort,  
23 which was a snapshot which quantified the leaks in the area, we  
24 still, we feel that -- or I feel that we have a better inspection  
25 program today than we did back when we used to take that 1 day,



1 2-week snapshot of -- it took about a month to walk the entire  
2 section and notate all those leaks. But again, what I collected  
3 in February did not provide me value in August.

4 DR. LIU: Thank you for the information. But please  
5 keep your answers to factual information as opposed to personal  
6 opinion or analysis. I appreciate that.

7 The main reason for my question is that the latest  
8 tunnel structural inspection identified no leaks near the arcing  
9 location, as evidenced by Exhibit C14. Could you please -- can we  
10 bring up Exhibit C14, please?

11 On the other hand, the leak inspection identified many  
12 leaking conditions near the arcing location, as shown by Exhibit  
13 C13. Since there are no longer leak inspections, my question was,  
14 is there any other sources apart from the structural inspections  
15 to identify leaking conditions? And based on the information you  
16 just provided, it appears to me that you believe that the new  
17 procedures that are currently in place can effectively replace the  
18 leak inspections that were conducted before 2013. Could you  
19 confirm that or comment on that, please?

20 MR. BUNTING: Well, what I can say is that the date of  
21 the incident, there were leak-related defects within the database.  
22 There were two priority 3 defects of water condition and leaking  
23 in the area and water condition defects between chain marker 66+00  
24 and 71+00. So the data was there. It had been collected through  
25 our current program, and the data was there. So what I'll say is

1 that the data is available to be used when we prioritize our work.

2 DR. LIU: Thank you. I don't believe I have that data.  
3 Could you provide that source of data to me after the hearing,  
4 please?

5 MR. BUNTING: Um-hum.

6 DR. POLAND: Xiaohu, can you clarify what that report is  
7 that you're asking for, please?

8 DR. LIU: Yes. I was asking about the status of the  
9 water intrusion status at the arcing location close to the time of  
10 the accident. The reason for my asking that is the structural  
11 inspection that was conducted in October 2014 didn't identify any  
12 leaking conditions at that location. However, Mr. Bunting just  
13 said that there are other sources of data that show there was a  
14 defect, a water leaking condition at that location sometime close  
15 to the accident. So that's what I was asking him to provide me  
16 after the hearing.

17 DR. POLAND: So just to clarify -- I'm getting some  
18 information from our investigation-in-charge. Is that report D-48  
19 that would talk about the leaks reported over the last 5 years, as  
20 well as at the L'Enfant Plaza location?

21 DR. LIU: I'm not aware of that.

22 MR. GORDON: Okay. Mr. Bunting, you referred to you  
23 could run a query of your database for -- I'm assuming that D-48  
24 is the defect code that corresponds with a leak in the tunnel?

25 MR. BUNTING: Yeah, D-48 and D-42. D-48 is water

1 leaking. D-42 is water condition.

2 MR. GORDON: Okay. If you could provide us that  
3 information -- how far back does that go? Is that a report that's  
4 been generated for the past 5 years?

5 MR. BUNTING: Our use of the Maximo defect database  
6 probably goes back 5 years, or so. Prior to that, we did not have  
7 Maximo available to us. I would be glad to do that.

8 MR. GORDON: Okay. Yeah, if you could provide us with  
9 that information with those two defect codes going back to the  
10 beginning of the Maximo system, and we'll just carry it through  
11 today's date. Thank you.

12 DR. LIU: Just to make sure I understand this, so these  
13 type of defects, apparently, they were not identified by the  
14 structural inspections. So, I mean, if they exist in the system,  
15 they must have been identified during procedures such as track  
16 inspections or other type of procedures you described; is that  
17 correct?

18 MR. BUNTING: I would have to look in the database to  
19 see exactly who entered them to tell you what group they came out  
20 of, but that would be my assumption.

21 DR. LIU: Thank you. So your system not only is able to  
22 provide not only the existence of defects, but also provide the  
23 source of the defects -- the source of how the defects were  
24 identified?

25 MR. BUNTING: That's correct. Every person has a unique

1 sign-on into the system, and when they record or modify data, that  
2 data -- there's a log, and it requires your employee number, the  
3 date, and all of that is auditable and trackable, yes; correct.

4 DR. LIU: Thank you. That completes my questions.  
5 Thank you.

6 I'll turn it over to Mr. Payan.

7 MR. PAYAN: Thank you.

8 Mr. Miller, I'm going to go back a little bit on the  
9 current program that WMATA uses to monitor the third rail cable  
10 integrity. You mentioned that in the late 1990s WMATA had a  
11 periodic meggering program, and that has migrated now to a  
12 meggering as required, along with thermal imagery and track  
13 walkers; is that correct?

14 MR. MILLER: WMATA had a full-time meggering program in  
15 the late 1990s. We had a dedicated crew to that.

16 MR. PAYAN: Okay.

17 MR. MILLER: The -- excuse me. I'd like to continue for  
18 a second?

19 MR. PAYAN: Sure.

20 MR. MILLER: The results of that meggering program told  
21 us very clearly where we had to take immediate action to start our  
22 cable replacement program. When you go to the current values of  
23 how we're meggering today, it actually goes to three individual  
24 aspects. We will revisit areas that are known to have a shorter  
25 cable life. We will also go into known problem areas and megger

1 additional cables in the entire area. And we will also, as we  
2 install new cables, we will megger each and every cable that we  
3 install to assure its integrity.

4 MR. PAYAN: But system-wide, there's no periodic  
5 meggering program in place right now?

6 MR. MILLER: No, sir.

7 MR. PAYAN: Okay. And how effective is the thermal  
8 imaging to identify a degrading third-rail cable?

9 MR. MILLER: The thermal imaging is a -- it's a  
10 wonderful product. What happens is we will get this report every  
11 3 months. That report is recorded. It went through the entire  
12 system, and then, immediately, that report is given to our  
13 engineering folks. Once our engineering folks look at it -- they  
14 will analyze it -- they will sit down with us and we'll discuss  
15 what issues we see, or anomalies, and then we will, either our  
16 group or the operations group will take immediate actions to what  
17 the recommended investigation should. And it has paid us  
18 dividends, many dividends.

19 MR. PAYAN: Okay. So educate me a little bit. I'm  
20 familiar with the meggering, and I have tests from different  
21 times, 10-year periods or 4-year periods, and you can see a cable  
22 degrading by the insulation resistance slowly showing a degrading  
23 cable.

24 MR. MILLER: Yes, sir.

25 MR. PAYAN: Can you do that same analysis with the

1 thermal imagery? Can you see a cable slowly degrading over time?

2 MR. MILLER: No, but what you do see is anomalies. And  
3 by doing that -- I'll give you an example. If you have an entire  
4 set of negative return cables that are coming off of within a high  
5 current bond, in our system, you will see anywhere between 6 and  
6 12 of those cables lined up right in a row. So we're looking at  
7 -- the thermal imagery will give you an ambient air temperature of  
8 each individual connection if they're different. So in other  
9 words, if all the connections are cool -- let's just say there are  
10 six of them out there. If all the connections are cool, you're  
11 going to see an ambient air temperature of probably whatever is in  
12 the tunnel. However, what we find is we will see one connection  
13 in the middle of that entire row that might have an ambient or  
14 elevated temperature. What that tells us is that there's  
15 something that needs to be investigated with that cable. It could  
16 be anything from a little bit of water on the cable. It could be  
17 a loose connection. It prompts our investigation to go find what  
18 that is because it's different.

19 MR. PAYAN: Okay. And the thermal imagery is effective  
20 in capturing cables that are laying outside of the third rail,  
21 away from where the running rail -- running at track speed?

22 MR. MILLER: Yes. What happens, if you look at the  
23 imaging reports, you will see the third rail cable stub-ups along  
24 with the actual cables that may be installed up or down the track,  
25 and if there is an anomaly, you will see it in that thermal

1 imagery report. And typically, it's by an elevated ambient air  
2 temperature.

3 MR. PAYAN: Okay. Thank you.

4 Switching channels a little bit, in discussions with  
5 WMATA personnel, we were told that WMATA used to have a cleaning  
6 program for their insulators. And we were told also that they  
7 were -- WMATA was revisiting that issue as to possibly  
8 re-implementing the insulator washing program. Can you tell us  
9 the status of that, if it is in fact going to be implemented?

10 MR. MILLER: I would like to defer that question to my  
11 colleague, Mr. Bunting.

12 MR. PAYAN: Okay. Very good.

13 MR. BUNTING: Well, I will tell you that I don't know  
14 where the information comes from that we are not cleaning  
15 insulators. We have cleaned over 40,000 -- we have cleaned over  
16 30,000 insulators in the last 5 years, and we have replaced 40,000  
17 insulators in the last -- over the last 5 years. So we are  
18 aggressively upgrading that system and cleaning that system, and  
19 trying to prevent any arcing conditions that cause these service  
20 disruptions that we observe.

21 MR. PAYAN: So is this a periodic program that's in  
22 place right now?

23 MR. BUNTING: This program is ongoing and has been  
24 ongoing.

25 MR. PAYAN: Okay. Now, does that cleaning program

1 include cleaning third rail cables?

2 MR. BUNTING: No, sir, it does not include cleaning  
3 third rail cables. It focuses on the insulators between the track  
4 bed and the bottom of the third rail.

5 MR. PAYAN: Okay. Thank you. That's all the questions  
6 I have.

7 DR. POLAND: I would like to clarify one of the reports  
8 that was discussed between Mr. Epler and Mr. Panagiotou. I  
9 believe it was called the smoke detection feasibility report, and  
10 I wanted to clarify. I believe that is a report that we have  
11 already been provided at the NTSB. Is that correct?

12 MR. PANAGIOTOU: Yes, it is.

13 DR. POLAND: Okay. I would like to enter that into the  
14 docket as an exhibit as well. And then I believe Mr. Panagiotou  
15 had a follow-up question?

16 MR. PANAGIOTOU: Yeah, one last question for Mr. Epler.  
17 You said that the decision that would be based on this report just  
18 mentioned was not yours to make. Whose is it? Who will make that  
19 decision on whether or not to go ahead with installing smoke  
20 detectors in the tunnels and when could we expect that decision to  
21 be made?

22 MR. EPLER: This is really not a question to be answered  
23 by me. It'll be answered in one of the later panels. But  
24 basically the way the system works is, this will come before the  
25 Capital Improvement Program, and the Capital Improvement Program



1 on a yearly basis makes recommendations and makes decisions. Once  
2 again, there will be a panel later that will -- Mr. Troup can  
3 answer that question later.

4 MR. PANAGIOTOU: Okay. Thank you very much. Thanks to  
5 all of you.

6 MEMBER SUMWALT: There's a mic on over here, and I think  
7 only three mics can be on at the same time, so if you could unkey  
8 that mic?

9 MR. EPLER: I'm trying to turn it off.

10 DR. POLAND: Chairman Hart, this concludes the tech  
11 panelists' questions. Thank you.

12 CHAIRMAN HART: Thank you very much. Before we close  
13 with this panel, Dr. Poland, can you please review the exhibit  
14 items that have been requested in this panel?

15 DR. POLAND: Yes. I'm going to ask Mr. Benjamin Allen  
16 to review the list that he's been keeping.

17 Mr. Allen?

18 MR. ALLEN: Does this work? Hey, it works. Okay. All  
19 of these, I believe, are to WMATA. And if any of the people who  
20 have requested these, if I've got it slightly wrong, please let me  
21 know.

22 The first request was for the Maximo work order of July  
23 14th for the tunnel water repair.

24 The next was information on how much of the network was  
25 examined in the studies on ventilation.

1           Member Sumwalt asked for the WMATA response to the 1983  
2 ventilation study, the responses to all the recommendations in the  
3 RKE studies from 1983, and the DeLeuw studies from 1985, as well  
4 as responses to the 1987 studies that were discussed in Exhibit  
5 C5.

6           The Vice Chairman has also asked for documentation of  
7 the track walker training or the track inspector training, be it  
8 OJT or if there is a formal training program; so either  
9 documentation or information if it's not a formalized training  
10 program.

11           We've also asked for what I believe was the 1993 UMTA  
12 and USGS studies, as well as the blue ribbon reports.

13           We asked for the records of drains and troughs with a  
14 rating of 4 in the area of the accident. This is what we had  
15 discussed in Exhibit B1.1, page 5.

16           We asked for the number of smoke incidents to date in  
17 1995, as well as the sources of those incidents.

18           The ROCC diagram on the various scenarios for vent fan  
19 operation.

20           All reports of D-48 and D-42 for the entire duration of  
21 the Maximo data, but that was just going to be for the L tunnel,  
22 the one that was involved in the incident here.

23           And finally, the smoke detection feasibility study,  
24 which we've entered -- Dr. Poland asked to be entered will be  
25 Exhibit H18, H18.

1 Thank you.

2 CHAIRMAN HART: Thank you. That concludes the first  
3 panel of this hearing. I want to thank the tech panel for  
4 excellent questions. I want to thank the parties for  
5 participating in it and engaging in the process so well. And last  
6 but not least, thank the panelists for providing very -- the very  
7 informative presentations and answers. Appreciate that.

8 We will now break for lunch. We're a few minutes early.  
9 We were planning to come back at 2:00, but since we're a few  
10 minutes early, and I don't know how long the next panel is going  
11 to take, I'm going to take advantage of this 10 minutes extra and  
12 say let's return at 1:50 for lunch. But please return in time to  
13 pass through the security system, and I also ask that the  
14 witnesses for the next panel return early to ensure that they are  
15 seated at 1:50. So we are adjourned until 1:50 for lunch.

16 Thank you.

17 (Whereupon, at 12:20 p.m., a lunch recess was taken.)

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A F T E R N O O N S E S S I O N

(1:50 p.m.)

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2  
3 CHAIRMAN HART: Good afternoon, everyone. We are back  
4 in session. Welcome back to the first afternoon of the first day  
5 of the investigative hearing on the WMATA accident on January the  
6 12th.

7 Dr. Poland, can you please introduce the second panel?

8 DR. POLAND: Chairman Hart, the second panel will  
9 address emergency response efforts. The panel will discuss  
10 response activities, communication, coordination, protocols,  
11 training, and experience levels, including the experiences of a  
12 nearby jurisdiction.

13 Witness Panel 2 is composed of the following  
14 individuals, from left nearest the Board Members: Chief Derron  
15 Hawkins, District of Columbia Fire and Emergency Medical Services;  
16 Mr. Stephen Williams, District of Columbia Office of Unified  
17 Communications, or D.C. 911; Chief Scott Goldstein, Montgomery  
18 County Fire and Rescue Services; Mr. Ronald Bodmer, WMATA;  
19 Mr. Hercules Ballard, WMATA.

20 The NTSB technical panel is composed of, starting on my  
21 left: Mr. Steve Blackistone, the panel chair; Dr. Joseph Gregor;  
22 Mr. David Bucher; and Mr. Rick Downs.

23 I now ask that the witnesses please stand to be sworn.  
24 Raise your right hand. Please answer by saying I do.

25 (Witnesses sworn.)

1 DR. POLAND: Please be seated.

2 Chairman Hart, these witnesses have been prequalified in  
3 their respective experiences, and qualifications appear in the  
4 docket as exhibits in Group B.

5 As a reminder to the witnesses, please push the  
6 microphone button to talk, and then push it again when finished.  
7 Also, please answer the questions factually and avoid analysis.

8 I now turn the questioning over to Mr. Steve  
9 Blackistone.

10 MR. BLACKISTONE: Thank you, Dr. Poland.

11 Would you bring up the animation, please? We'd like to  
12 begin this session by providing an overview of the emergency  
13 response to the incident.

14 First, Mr. Bodmer, could you please give us a brief  
15 3-minute description of WMATA's emergency response activities on  
16 January 12th?

17 MR. BODMER: Yes, sir.

18 Good morning, Chairman Hart, Board Members. Thank you  
19 for this opportunity to provide an overview of Metro's emergency  
20 response activities on January 12th.

21 At approximately 3:15 on January 12th, Yellow Line Train  
22 302 stopped after encountering smoke while traveling southbound  
23 toward the Potomac River Bridge from L'Enfant Plaza. The train  
24 operator immediately contacted Metro's Rail Operations Control  
25 Center, which we refer to as the ROCC. This notification followed

1 protocol and initiated a coordinated response.

2 That afternoon in the ROCC, four active incidents  
3 involving fire or electrical arcing were reported within minutes  
4 of each other. Managing these incidents, as well as the 100  
5 trains in service across the system, it was particularly fast-  
6 paced in the control center that afternoon.

7 The ROCC personnel engaged in the L'Enfant Plaza  
8 incident included a director, a superintendent, one assistant  
9 superintendent, all of whom are experienced Metro veterans. The  
10 two train controllers assigned to the other Green Line consoles  
11 include one experienced senior controller, one controller who was  
12 newer to Metro but was formerly a military air traffic controller.

13 ROCC controllers are trained in all aspects of Metrorail  
14 procedures, including incident response. They receive 26 weeks of  
15 additional training, as well as continuous refresher training  
16 provided through lessons learned reports, tabletop exercises, and  
17 incident review briefings following major service disruptions.

18 As the L'Enfant Plaza incident developed, the ROCC  
19 notified the District of Columbia Office of Unified Communications  
20 at 3:22, advising of heavy smoke at the station. This was  
21 followed less than 2 minutes later by a call for the Metro Transit  
22 Police requesting fire and medical response to L'Enfant Plaza. In  
23 this call, MTPD stated that there was smoke in the station and  
24 people could barely breathe.

25 An incident management conference call was also

1 initiated, as is standard procedure at Metro. That call includes  
2 senior officials for rail operations, transit police, emergency  
3 management, safety, car maintenance, track, power, bus operations,  
4 customer service, and communications, all on the line to ensure a  
5 timely and coordinated response, appropriate resource deployment  
6 and support from all necessary WMATA departments, as well as to  
7 provide accurate and timely information to our customers.

8           The Metro Transit Police Department dispatched all  
9 available resources to assist, as well as an official to the Rail  
10 Operations Control Center to serve as a liaison between the Metro  
11 Transit Police and Rail Operations. Once the fire department  
12 arrived at L'Enfant Plaza, the highest ranking Metro Police  
13 official at the scene attempted to participate in unified command.

14           The unified command structure allows Metro and other  
15 responding agencies to gain information from each other and  
16 coordinate their activities. This procedure, along with all  
17 procedures and policies governing emergency response activities on  
18 Metro is set forth in a formal agreement between WMATA and every  
19 fire chief in the region, called the Metrorail Transit Fire  
20 Emergency Procedures Policy Agreement.

21           MR. BLACKISTONE: Can you wrap it up in about 15  
22 seconds?

23           MR. BODMER: Okay. However, on January 12th, no unified  
24 command was established. On the scene, when fire department  
25 entered the station, MTPD officers on the platform advised that

1 there was a train in the tunnel with passengers aboard. WMATA's  
2 procedures indicated that the fastest, safest way to evacuate  
3 passengers aboard a train is to move the train to safety. ROCC  
4 personnel attempted to move the train to L'Enfant Plaza Station  
5 that was less than 400 feet away.

6 The operator of Train 302 stopped in the tunnel was  
7 directed to reverse operating ends of the train and return to  
8 L'Enfant Plaza. It is important to note that the mere presence of  
9 a train at the L'Enfant Plaza Station would not have prevented the  
10 train from returning. However, the reverse move was not  
11 successful because, unbeknownst to the train operator, there was  
12 insufficient power to the third rail to allow train movement.

13 MR. BLACKISTONE: Okay. We're going to have to wrap  
14 this up. Maybe we can -- a little bit later --

15 MEMBER SUMWALT: Wait a minute. Mr. Chairman, I think  
16 this is important to hear. Can we continue with this?

17 MR. BLACKISTONE: Yes, please.

18 MEMBER SUMWALT: Thank you.

19 MR. BODMER: Okay. Because the ROCC wanted to move the  
20 train back to L'Enfant Plaza, the third rail power was not taken  
21 down immediately. Later, Metro learned that the fire department  
22 personnel took down power on the station platform using the  
23 emergency trip station, or the ETS box. When the operator of  
24 Train 302 in the tunnel reported to the ROCC that passengers  
25 aboard the train were self-evacuating, ROCC personnel took power



1 down for the entire stretch of rail between the incident train and  
2 the station.

3           Soon after, the fire department personnel entered the  
4 tunnel to assist the evacuation of Train 302. Throughout the  
5 incident, the train operator provided frequent, informative  
6 messages to passengers on the train. All walking passengers were  
7 evacuated by approximately 4:16 p.m. One wheelchair passenger  
8 evacuated approximately 10 minutes later using a special cart for  
9 people with disabilities.

10           As service was suspended and many customers were  
11 disrupted, Metro communicated frequently with the riders through  
12 its email, its text message alert system, social media, digital  
13 screens; at stations, broadcast media, public address  
14 announcements to provide information about the severity of the  
15 service disruption and identify travel alternatives.

16           Thank you. That concludes my report.

17           MR. BLACKISTONE: Thank you.

18           And now, Chief Hawkins, will you give us a brief, 3-  
19 minute descriptions of your agency's response activities that day?

20           MR. HAWKINS: Good afternoon, ladies and gentlemen.

21           On January the 12th, 2015, the D.C. Fire Emergency Medical  
22 Services Department responded to three separate Metro calls within  
23 20 minutes. The focus of this hearing is the third call, which  
24 initiated D.C. Fire and EMS direct response to L'Enfant Plaza  
25 Metro Station. The first two calls, however, provide important

1 situational awareness about the emerging event.

2           The first call was at 1519 hours, report of debris fire  
3 at Gallery Place Metro Station. One engine company investigated  
4 and determined that no response was required. During this  
5 investigation, the station manager stated that there was reports  
6 of smoke at L'Enfant Plaza.

7           The second Metro call at 1522 hours was a report from a  
8 construction worker who saw smoke coming from a vent shaft at 9th  
9 and Water Street, S.W. Five units were dispatched to the  
10 incident. The responders found no evidence of smoke but noticed  
11 an odor. Moments later, two men came out of the exit shaft with  
12 soot around their nose and mouth. Moments later, while  
13 interviewing the men, the battalion chief overheard radio  
14 transmissions about a Metro station box alarm at L'Enfant Plaza  
15 Metro Station and began to suspect the two events were related.

16           At 1526 hours, a Metro station box, which included 13  
17 units, was dispatched to L'Enfant Plaza Metro Station in response  
18 to a report of smoke in the station. The first arriving unit,  
19 Rescue Squad 1, arrived on the scene at 1531 hours and entered the  
20 Metro station by way of the elevator. The first unit to enter the  
21 station from the Metro entrance was Engine 18, who reported smoke  
22 at the mezzanine level. Battalion 2 established incident command  
23 at 1539 hours and began managing and mitigating the emergency.  
24 Rescue Squad 1, upon hearing reports of a train with smoke inside  
25 the tunnels, immediately traveled to the blue light station and

1 shut off power to the third rail.

2 At 1543 hours, while Rescue Squad 1 was responding  
3 inside the station, the incident commander requested a second  
4 alarm, including nine additional emergency response vehicles. The  
5 response apparatus and personnel reported to the predetermined  
6 staging area and were given assignments based on the incident  
7 command.

8 Rescue Squad 1 was the first unit to reach the train and  
9 reported to incident command at 1550 hours that there were  
10 passengers having trouble breathing. Immediately, upon reaching  
11 the train, Rescue Squad 1 began evacuation.

12 At 1627 hours, all passengers had been removed from the  
13 train and smoke conditions were clear. Unfortunately, one  
14 unresponsive passenger who was transported to the hospital later  
15 died from her injuries. Together, Rescue Squad 1 and other box  
16 alarm assignment companies evacuated 86 people from the train.

17 That's all.

18 MR. BLACKISTONE: Thank you very much, Chief Hawkins.  
19 At this point, I'll turn the questioning over to Dr. Gordon [sic].

20 DR. GREGOR: Yeah, I'd like to continue to ask a few  
21 more questions concerning radio communications. Could you please  
22 -- and this is for Mr. Ballard from WMATA. Could you please  
23 describe the performance and effectiveness of WMATA's trunk radio  
24 system during the course of the emergency response on January  
25 12th?

1           MR. BALLARD: Yes, sir. On the day of the incident,  
2 there were no reported problems or radio communications problems  
3 with either the Operation Control Center staff, the train operator  
4 who was on the scene during the incident, nor from the supervisor  
5 who reported to the incident to assist the train operators at that  
6 location. So on the day, January 12th, we did not have any  
7 issues, any known radio issues during that incident.

8           DR. GREGOR: And that includes Metro Transit Police?

9           MR. BODMER: On January 12th, during this incident, we  
10 had good radio communications between staff at the scene and our  
11 police communications center. We went to an alternate channel.  
12 There was no issues with the communications on the alternate  
13 channel. In the station, some of the officers did report some  
14 bonking of the radio during this incident, especially towards the  
15 south end of the platform where they were going to make entry to  
16 go up to the incident train. But for the most part, for the  
17 entirety of the incident, the radio worked, and it worked well.

18          DR. GREGOR: Thank you.

19          Chief Hawkins, could you describe the performance and  
20 effectiveness of the District's public service radio system as it  
21 was experienced by first responders during the course of the  
22 emergency?

23          MR. HAWKINS: From the early stages of the incident,  
24 there was a report of communications problems. The first  
25 responders knew that they would have communication problems during

1 the event. The first arriving unit, Rescue Squad 1, started  
2 experiencing radio problems. They got -- the radio signal started  
3 emitting a distinct sound we refer to as "honked out" as they went  
4 down the elevator shaft. So the next procedure was to switch over  
5 to a talk-around channel, which they did, to communicate with  
6 another member of the rescue squad. Once the first arriving unit  
7 to enter the station from the mezzanine level also started  
8 experiencing radio problems -- so during the process of the event,  
9 there was numerous reports of radio problems, communication  
10 problems to manage the incident.

11 DR. GREGOR: How did the first responders in the station  
12 and the tunnels communicate with the on-scene command post?

13 MR. HAWKINS: Well, in terms of communications, a normal  
14 practice according to our standard operation guidelines for  
15 communications, the first process would be the 800 megahertz  
16 system. You will be assigned a tactical channel responding to the  
17 incident. If that started to have problems, you would switch over  
18 to a vehicle repeater system. And if that system is not  
19 successful, you would switch over to a talk-around channel. In a  
20 talk-around channel, we will form a line of sight to communicate.  
21 If that fails, we would use runners. So there's steps of process,  
22 things we do primary, secondary and tertiary, in terms of  
23 communication problems. So those was implemented as we managed  
24 the incident.

25 DR. GREGOR: Okay. And did you run through all of those

1 steps during this incident?

2 MR. HAWKINS: Okay. So the first assignment of the  
3 units responded on the 800 megahertz system, on the tac channel.  
4 And once they arrive on scene, once the members started to  
5 experience problems with the radio system, that information was  
6 relayed up to the incident commander. He requested that the units  
7 switch over to the vehicle repeater system. Once the units got  
8 below grade, they started experiencing problems with the talk-  
9 around [sic] channel. So the talk-around channel was implemented,  
10 and the first responders used a talk-around channel to communicate  
11 back and forth to get the message back to the incident commander.

12 DR. GREGOR: Essentially, formed a human chain?

13 MR. HAWKINS: That's correct.

14 DR. GREGOR: Okay. Have any new capabilities been added  
15 since the January 12th accident to address problems when you run  
16 into communications problems in a large building or an underground  
17 structure?

18 MR. HAWKINS: There has been a series of testing that's  
19 been going on with WMATA and OUC, as well as some key officials in  
20 our department in terms of radio testing. There has been the bi-  
21 directional amplifier that's been used and been testing in the  
22 tunnel. So we've been ongoing working with WMATA as well as OUC  
23 to make sure we have the capability. But it's been an ongoing  
24 process. And in terms of that having anything implemented, other  
25 than the bi-directional antennas, that's the only thing thus far.

1 DR. GREGOR: Okay. Thank you. One more line of  
2 questioning. At the time of the accident, how were communications  
3 supported between the incident commander on the scene and the D.C.  
4 Fire liaison that you would send to the WMATA Rail Operations  
5 Control Center?

6 MR. HAWKINS: Normal communications between the incident  
7 commander and the chief officer that we send to the regional  
8 operation command is made by 800 megahertz. That communication is  
9 aboveground. They communicate and relay information to the  
10 incident commander by way of 800 megahertz. There's been times  
11 where he may use another method to contact incident command, such  
12 as a cell phone. Most of the time the communications is 800  
13 megahertz transmission.

14 DR. GREGOR: Okay. So were there any issues with that  
15 communication link during the response?

16 MR. HAWKINS: Yes. Sometimes the communication was  
17 intermittent. There was a problem. Once he got out there with  
18 communications, he had a problem with his radio being, once again,  
19 the term honked out, started emitting a distinct sound. So he  
20 used his BlackBerry to communicate with incident command, as well  
21 as other officials on the scene.

22 So, once again, you know, once the 800 megahertz system  
23 failed to operate, he switched to VRS, and then after that, pretty  
24 much he used his cell phone.

25 DR. GREGOR: All right. But I was talking about the

1 aboveground communications, so the link between the incident  
2 commander upstairs and the ROCC?

3 MR. HAWKINS: The communication between -- upstairs,  
4 between -- communications between the incident commander and ROCC  
5 was 800 megahertz, and then at some point he used a cell phone.

6 DR. GREGOR: So was the problem on the incident  
7 commander's end or at the ROCC's end or do you know?

8 MR. HAWKINS: It was a combination, I believe, at the  
9 ROCC, there was communications issues trying to get through from  
10 the second chief to the ROCC. I believe he mentioned that the  
11 call didn't go through. He had got placed on hold. But the  
12 communications started with a secondary chief going to the ROCC  
13 trying to communicate, establish communication lines with the  
14 ROCC.

15 DR. GREGOR: Okay. Has anything been addressed to try  
16 to increase the reliability of that link since the January 12  
17 accident?

18 MR. HAWKINS: We have been doing training with WMATA in  
19 terms of improving our communications and identifying ways to  
20 enhance their capability. I know there's been discussion on a  
21 regional level to look at having the fire department personnel at  
22 the ROCC. So that's still being explored and discussed right now.  
23 So we've been looking at ways to improve and enhance our  
24 communication with the ROCC, fire department personnel responding.

25 DR. GREGOR: Okay. And the last one is for Mr. Ballard.



1 Are there any other resources at the WMATA ROCC that could have  
2 been used to bridge the communications gap or are you developing  
3 any new resources for that?

4 MR. BALLARD: That question requires a technical  
5 response, so I would have to pass that to someone with a technical  
6 understanding of how the radio system works.

7 DR. GREGOR: Well, and I mean not just radio systems,  
8 but telephone or WMATA radio, what have you.

9 MR. BALLARD: And your question relates to communication  
10 with the fire department or people in the rail system?

11 DR. GREGOR: Yeah, something that could have been used  
12 to help bridge that communication gap when they had a problem?

13 MR. BALLARD: The communication gap between the fire  
14 department and the Rail OCC?

15 DR. GREGOR: Correct.

16 MR. BALLARD: That's your question?

17 DR. GREGOR: Correct.

18 MR. BALLARD: That's a question that I would have to  
19 pass to the technical communication group, maintenance group, or  
20 the communication engineers.

21 DR. GREGOR: Yeah. If you could provide any information  
22 that's -- if there's work being done in that area, that would be  
23 good.

24 DR. POLAND: Mr. Ballard, is that something that is  
25 documented in a report that could potentially be submitted to the

1 NTSB?

2 MR. BALLARD: Because the Rail Control Center staff does  
3 not monitor or manage or track the emergency responders' radio  
4 system, if there is a report to OCC that there is an issue, then  
5 it would be placed into -- entered into the Maximo recording  
6 system. But as far as the operation control staff and myself,  
7 because we deal primarily with the operations part of the system,  
8 that is not something that I would personally address other than  
9 if we have a report of a radio issue and information is passed  
10 onto the maintenance crews to respond to.

11 MR. BODMER: Could I add something on that? There's two  
12 other ways that the fire department can communicate with the OCC.  
13 There's an established command conference line, which is the  
14 landline that comes from the incident commander to the ROCC. And  
15 there's also the unified command process, as well, communicating  
16 to the ROCC.

17 DR. GREGOR: Okay. Thank you very much. And that's all  
18 I have for now. I'd like to pass the mike to Mr. Dave Bucher.

19 MR. BUCHER: Thank you, Dr. Gregor.

20 Good afternoon. My first question I think would be for  
21 Mr. Ballard, but I think Mr. Bodmer should also be included.  
22 According to the accident times included, or provided to NTSB by  
23 WMATA, the first report of trouble on Train No. 302 came from a  
24 transit police officer located on board the train at 3:15 p.m.  
25 This officer reported that the 302 train was stopped and there was

1 a fire on the train, there was smoke in the tunnel, and the 302  
2 train needed assistance. The D.C. Office of Unified  
3 Communications was first notified of smoke in L'Enfant Plaza  
4 Station at 3:22 by a WMATA official.

5 Can you describe what was happening in the WMATA control  
6 center during the time between 3:15 and 3:22 p.m.?

7 MR. BALLARD: Yes, sir. When the train operator became  
8 aware of the situation in the tunnel that prevented that train  
9 from moving forward, the train operator immediately contacted the  
10 Rail Operations Control Center via the train console radio. The  
11 transit officer may have contacted her department using her  
12 portable handset. Once OCC became aware -- let me go back and  
13 start with early incident reports of smoke in the system.

14 MR. BUCHER: Okay.

15 MR. BALLARD: When we, when Rail OCC received a report  
16 of smoke at L'Enfant Plaza prior to that, there were other reports  
17 simultaneously coming into OCC. We had a report of smoke arcing  
18 insulator on the lower upper level of Gallery Place. We had a  
19 report of smoke at Mount Vernon. And then we had a report of  
20 smoke at L'Enfant Plaza. OCC was in the process of investigating  
21 all of these incidents. And as we know post-incident  
22 investigation, that these reports at Gallery Place, at Mount  
23 Vernon, they were unsubstantiated.

24 So OCC, in dealing with those situations -- and also  
25 during this incident, when this incident occurred, OCC was

1 managing a signal problem at Anacostia. So managing the multiple  
2 incidents -- and of course, you know, the console that manages the  
3 Yellow Line, L'Enfant Plaza, also manages all of the Green Line  
4 trains, all of the Yellow Line trains, and the Blue Line trains  
5 from Franconia to Pentagon.

6           So in an effort to better get an understanding of what  
7 was going on, was there any, really -- you know, where the problem  
8 was, OCC initially made a call to D.C. Fire at 1513 letting D.C.  
9 Fire know about the report of smoke at the upper and lower levels  
10 at Gallery Place. Later on, as you stated, at 1522, OCC notified  
11 D.C. Fire about the smoke at L'Enfant Plaza.

12           Also, at 1520, 1520 and 59 seconds, OCC received a fire  
13 alarm in OCC. And immediately, within 1 minute, less than 2  
14 minutes, OCC made a notification to D.C. Fire about the fire at --  
15 fire or smoke at L'Enfant Plaza.

16           MR. BUCHER: Thank you. And a follow-up question to  
17 that, for both yourself and Mr. Bodmer, can you tell us why there  
18 was no mention of the stranded train in the tunnel at the time of  
19 the 3:22 call?

20           MR. BALLARD: Yes. In the investigation of the  
21 incident, trying to determine what the problem was, OCC wasn't  
22 immediately able to determine the exact origin of the smoke,  
23 whether it was in the tunnel or whether it was in the station.  
24 And the intent was always to get Train 302 back to the platform.  
25 OCC, according to their procedures and protocol, the effort was

1 being focused on getting Train 302 back to L'Enfant Plaza Station,  
2 and that effort continued until the power was removed by someone  
3 initiating the ETS button at L'Enfant Plaza Station and third rail  
4 power was lost. So the thought was that OCC would be able to get  
5 Train 302 back into the platform.

6           The issue didn't start out -- the report didn't start  
7 out there was an issue, a mechanical issue with Train 302. The  
8 problem was reported that there was a smoke incident. So based on  
9 OCC's understanding of what was occurring, a functioning train  
10 entered the tunnel at L'Enfant Plaza. OCC's thought was that this  
11 train could easily reverse and to move back onto the platform at  
12 L'Enfant Plaza. So the initial report to the fire department was  
13 related to the smoke and stuff rather than that about the train.

14           MR. BUCHER: Okay. Thank you.

15           My next question, I guess, goes to both of you again.  
16 WMATA's rail operations plan book for major incidents includes  
17 directions on steps to follow if a train encounters smoke. These  
18 instructions include protocols for stopping following trains  
19 behind a stopped train. At a previous station, records show that  
20 the 510 train, the following train to 302, arrived at L'Enfant  
21 Plaza approximately 7 minutes after the initial report of smoke  
22 from Train No. 302. Can you explain why the 510 train was not  
23 held at a previous station?

24           MR. BALLARD: The post-incident discussions on this  
25 incident from the staff involved, it was reported that once 510

1 got to the interlocking at L'Enfant Plaza, the plan was to allow  
2 510 to continue towards Branch Avenue. Since Train 302 was in a  
3 separate tunnel, the thought was that, if the tracks were  
4 unobstructed, for the train to move from L'Enfant Plaza down  
5 towards Navy Yard. So the initial plan was to continue 302 -- I'm  
6 sorry -- 510 through L'Enfant Plaza without stopping at the  
7 station.

8 MR. BUCHER: Okay. Thank you.

9 One more for Mr. Ballard. What kind of training to you  
10 give your control center operators in communicating with emergency  
11 services agencies?

12 MR. BALLARD: When there's an incident, the control  
13 center staff, depending on the incident, depending on the origin  
14 of the incident, depending on the type of incident, if it's a  
15 train incident, something related to the rail system itself,  
16 inside the tunnel area or the station aboveground, then the Rail  
17 OCC assistant superintendent will notify the emergency responders,  
18 to include Metro Transit Police, our executives within WMATA, the  
19 local emergency responders. If there's something occurring, such  
20 as a smoke incident in the station, then our ROIC staff, they make  
21 a notification to the emergency responders.

22 The training that they receive is -- the controllers  
23 receive 26 weeks of training. And in that training, controllers  
24 are trained on how to troubleshoot trains, how to manage  
25 incidents, how to manipulate the AIM computer in OCC. There is a

1 phase of their training that includes what's called on-the-job  
2 training, where a controller will sit with an experienced  
3 controller for 2 weeks on each shift, and after 26 weeks, then  
4 that controller is evaluated, and it is determined whether or not  
5 that controller can be certified to become a controller. The 26  
6 weeks is a minimum number. If it is determined that the  
7 controller needs additional training, then that controller is  
8 given additional training until either that controller is  
9 certified or that controller is removed from the position.

10           The training that they receive for communications is  
11 based on the incident. Our procedures tell us exactly what you  
12 are supposed to relay to the emergency responders. And during  
13 that 26 weeks training, the controllers go over those rules and  
14 procedures extensively. Also, within the control center itself, a  
15 controller is not there in an isolation, by themselves situation.

16       There is a support system there. At each console, we have two  
17 controllers there to support each other. And along with that, we  
18 have an assistant superintendent there to assist them, you know,  
19 in all of their efforts to make notifications and to resolve  
20 issues.

21           MR. BUCHER: Okay. Thank you.

22           I'm going to pass the questioning to Mr. Downs.

23           MR. DOWNS: Thank you. The following questions relate  
24 to emergency preparedness training activities, and the first two  
25 questions I'm going to address to Mr. Williams of the D.C. OUC and

1 then Chief Goldstein of Montgomery Fire and Rescue.

2 First question to Mr. Williams. What training is  
3 provided to your 911 call takers and dispatchers for handling a  
4 report of an incident in a Metrorail tunnel, such as a heavy smoke  
5 condition?

6 MR. WILLIAMS: Our employees are all certified on the  
7 911 side by the International Association of Emergency Dispatchers  
8 in protocols that deal with train accidents and other fire and EMS  
9 and police emergencies. They also attend a 40-hour class with  
10 APCO, which is the Association for Public Communications  
11 Officials, along with a regular training, which lasts anywhere  
12 from 4 to 8 months, depending on the position that they're going  
13 to have inside the 911 agency.

14 We also have participated in multiple mass casualty  
15 events, tabletop exercise, as well as actual exercises with  
16 various agencies, police, fire, military agencies throughout the  
17 District. As it relates specifically to WMATA, we have not  
18 participated in any WMATA incident or exercise training to that.  
19 We have participated in street car training with the new street  
20 cars in D.C.

21 MR. DOWNS: Thank you. A follow-up to that question, do  
22 you have a protocols or scripts for information to be obtained  
23 from callers during this call processing, the 911 call processing?

24 MR. WILLIAMS: Yes. If a call is received by a 911 call  
25 taker, they do follow a script which is part of their training



1 from the International Association of Emergency Dispatch. It's  
2 priority dispatch. They do follow a script from a 911 call taker.  
3 That differs from a phone call received by a supervisor. A  
4 supervisor does not have, on a non-emergency line, does not have  
5 access to that.

6 MR. DOWNS: Okay. Thanks very much. And I'll repeat  
7 those questions for Chief Goldstein of Montgomery County. What  
8 training is provided to your 911 call takers and dispatchers for  
9 handling a report of an incident in the Metrorail tunnel, such as  
10 a heavy smoke condition?

11 MR. GOLDSTEIN: As Mr. Williams stated, the protocols in  
12 use in Montgomery County are the same as in the Office of Unified  
13 Communications in D.C. Our communications call takers are driven  
14 on the chain marker. Our geo-based system through our CAD  
15 identifies the chain marker as a correct or an accepted address  
16 location, and when provided by the ROCC staff of a track number  
17 and chain marker, that is entered as if it was a street address.  
18 That's then provided to the response algorithm for that specific  
19 location, same training as Mr. Williams cited.

20 MR. DOWNS: Okay. Thank you. And like I mentioned  
21 before, as a follow-up, what you're saying, I think, is that  
22 protocols and scripts for information to be obtained from the  
23 callers would likewise be provided?

24 MR. GOLDSTEIN: Correct. We utilize the same protocol  
25 system now. We started that back in the April time frame. Prior

1 to that, we were not on a fire protocol. We were only on the  
2 medical protocol, but our 911 system operates both police --  
3 excuse me -- EMS Fire protocol and soon to be the police protocol  
4 from the same vendor.

5 MR. DOWNS: Thank you.

6 Next question will be for Mr. Ballard of WMATA. What  
7 training is provided to train controllers for handling any report  
8 of an incident in a Metrorail tunnel, such as a heavy smoke  
9 condition that's received from a train operator or other WMATA  
10 employee?

11 MR. BALLARD: As part of that initial 26 weeks training,  
12 there is a review of the rules and procedures. And in those  
13 procedures, it lists how the control center, how the train  
14 operator, how the supervisor are supposed to respond based on  
15 smoke incidents. There is a separate procedure -- I think it's  
16 number 6 -- dealing with smoke/fire on the roadway. There's  
17 another procedure dealing with fire/smoke on the train. And then  
18 there is a separate procedure dealing with fire in the station.  
19 And all of the control center staff, train operators, supervisors,  
20 are trained on how to respond to incidents as it relates to fire  
21 and smoke.

22 MR. DOWNS: Thank you. And similarly, for WMATA, as  
23 occurs with the 911 system, are there protocols and scripts  
24 available for the train controllers, for the information to be  
25 obtained from the person making that report?

1           MR. BALLARD: We don't have any specific scripts, and  
2 we're looking going forward to -- based on the reports from by the  
3 NTSB, FTA, we're looking at adding additional scripts for -- not  
4 only for phone calls made to the emergency responders; we are also  
5 going back and reviewing our scripts for handling other incidents.

6       There's never been an issue where we feel that the adequate  
7 information has not been passed or there has been some kind of  
8 report back to us that something that should have been reported  
9 during the call to the emergency responder was not relayed to  
10 them. But we can always get better. There's always an  
11 opportunity to look at things differently. So we're looking at  
12 adding scripts just for calls to emergency responders.

13           We've always had scripts for our train controllers in  
14 managing incidents and they weren't always in use. But going  
15 forward, we reviewed these scripts. We are making sure that we  
16 have all of our procedures covered in the script fashion, and  
17 we're going to add that as a part of our future incident reporting  
18 of incidents that occur in the system.

19           MR. DOWNS: Okay. Thank you. Just to make sure I'm  
20 following this, pre-event as well as the event itself there were  
21 no scripts engaged or employed, but there was a lesson learned,  
22 more or less, as a result of the event that now you're going to be  
23 utilizing that particular process? Would that be a fair  
24 characterization?

25           MR. BALLARD: There were no scripts specific to phone

1 calls to emergency responder. There were scripts available for  
2 managing incidents.

3 MR. DOWNS: Scripts available -- we're talking about to  
4 the particular train operator or any other WMATA employee in the  
5 field that experiences a problem?

6 MR. BALLARD: The train operators don't have a specific  
7 script. The train operators are trained. They're recertified  
8 every 2 years on incident management --

9 MR. DOWNS: I'm sorry. Let me clarify. Calls to the  
10 ROCC from a train operator. In other words, scripts utilized by  
11 the ROCC?

12 MR. BALLARD: No. Maybe I'm misunderstanding your  
13 question. If I understand you correctly, the scripts that we have  
14 relate to incidents that occur and could possibly occur in the  
15 system that correspond to our procedures, the controllers have  
16 those scripts. They weren't always being used. We are making  
17 sure, going forward, that the controllers are consistently using  
18 those scripts based on reported incidents that occur in the  
19 system. The train operators do not have a particular script for  
20 incident reporting. The operators are trained on how to report  
21 information to the control center as to what they are experiencing  
22 and what they see in the system.

23 MR. DOWNS: Okay. Thank you.

24 DR. POLAND: Mr. Downs?

25 MR. DOWNS: Yes?

1 DR. POLAND: Would it be valuable for you to see those  
2 scripts from the controllers?

3 MR. DOWNS: Yes, it probably would be, yes.

4 DR. POLAND: Mr. Ballard, could you please provide those  
5 scripts that you were referring to from the controllers for  
6 exhibits --

7 MR. BALLARD: Yes, I will.

8 DR. POLAND: -- for this hearing?

9 MR. BALLARD: Yes, I will.

10 DR. POLAND: Thank you.

11 Do you need some additional information, Mr. Allen, on  
12 that?

13 (No audible response.)

14 DR. POLAND: Thank you.

15 And I was also told that I could ask Chief Goldstein for  
16 that same type of information. Could you also provide your  
17 scripts for the NTSB to enter into the docket?

18 MR. GOLDSTEIN: That'd be correct.

19 DR. POLAND: So that would be a second set, Mr. Allen,  
20 from Montgomery County. Thank you.

21 MR. DOWNS: Thank you, Dr. Poland.

22 Next question I'd like to direct to Chief Hawkins, D.C.  
23 Fire. Could you please describe the command post that was  
24 established by the D.C. Fire and Emergency Medical Services  
25 incident commander?

1           MR. HAWKINS: Yes. So the incident commander was  
2 Battalion 2. He responded to the scene, and he established an  
3 incident command post right at the main entrance of L'Enfant Plaza  
4 Metro Station. And prior to that -- once he arrives on the scene,  
5 he established incident command. He identifies the command post.  
6 And this would be -- a Metro emergency would be a multi-agency  
7 problem, so he'd establish unified command. And that's when he  
8 links up with the Metro official on the scene, establishes that  
9 unified command post.

10           MR. DOWNS: Okay. Thank you. Were the transit police  
11 on-the-scene commander and other first responder agency commanders  
12 included when the incident command post was established on the  
13 scene?

14           MR. HAWKINS: That is correct. Once the battalion chief  
15 incident commander responded to the scene, there was a Metro  
16 official there. There was some coordination in terms of  
17 communications between the Metro official and D.C. Fire and EMS  
18 incident commander. The incident commander was trying to put a  
19 command structure in place to mitigate the emergency. There was a  
20 lot of information that was coming through the radio channel as  
21 well as reports from OCC from the second chief. So he was, you  
22 know, managing that incident and at the same time communicating,  
23 or attempting to communicate, with the WMATA Metro Transit Police  
24 officer at the incident.

25           MR. DOWNS: Okay. Thank you.

1           I want to do a follow-up question to Mr. Bodmer. In  
2 your summary a few minutes ago of the WMATA response to the event,  
3 you indicated that the WMATA transit police chief attempted to  
4 confer with the D.C. fire department incident command. Could you  
5 please elaborate what you meant by attempted?

6           MR. BODMER: Yes, sir. Deputy Chief Olson was our on-  
7 scene commander at the L'Enfant Plaza incident. He originally  
8 responded to the station prior to the District fire department  
9 arriving, and as they were coming in, he responded topside.

10           With any Metro box assignment, there is a lot of  
11 apparatus that comes to this. There's many different vehicles  
12 that come to this. There's SUVs that usually the command officers  
13 have. He perceived the one SUV as a captain, if they were  
14 incident command, and they said no and pointed to the direction of  
15 another one. So he proceeded to that SUV to talk to that  
16 battalion chief. As he was approaching the battalion chief and  
17 tried to engage the battalion chief about situational awareness of  
18 what was going on in the station, and the battalion chief rolled  
19 the window up and drove off.

20           He then reattempted to contact the battalion chief, who  
21 ended up at 7th -- our 7th and our D Street entrance, and that's  
22 where command was established. Once again, he tried to engage  
23 him. He had important information for that battalion chief. And  
24 again, he was not welcomed into the unified command process. We  
25 don't even think unified command was ever established on that

1 call.

2 MR. DOWNS: You say he was not welcome was the  
3 impression that the officer received at that time?

4 MR. BODMER: Repeatedly, he tapped on the glass of the  
5 SUV where the battalion chief was, he rolled down the window a  
6 little bit and then rolled it back up on our deputy chief. And  
7 our deputy chief had critical information that needed to be passed  
8 on to that battalion chief who was the incident commander.

9 MR. DOWNS: Thank you. I'd like to give Chief Hawkins  
10 an opportunity to respond to that --

11 MR. HAWKINS: Yes. So to respond to that, once the  
12 incident commander arrived on the scene, there was a issue with  
13 trying to locate the main entrance. The driver, which is his  
14 aide, he moved the vehicle from one location to the next. So that  
15 explains why the vehicle may have been moved. Also, in addition  
16 to that, the incident commander was getting a lot of reports of  
17 smoke. He was getting a lot of radio transmissions. He had  
18 firefighters down in harm's way, so he was trying to prioritize  
19 the information as it came in.

20 And if he didn't communicate through the window because  
21 he was in the process of prioritizing and making a decision on --  
22 to prioritize the information and give the firefighters below  
23 communications. So at some point, incident command did take  
24 place. It may not have been right, immediately when the  
25 conversation took place at the window, but the incident commander



1 was in a environment whereas though he had firefighters in a  
2 tunnel, and he was trying to get the reliable boots-on-the-ground  
3 information to make decisions at that split second there.

4 So the process, it may have not went smooth as we would  
5 like it to be, but we're doing things right now to improve that  
6 with WMATA, in terms of joint operation training. So moving  
7 forward, we're looking at ways to improve that. But incident  
8 command, unified command, was established, and there was  
9 communications between the Metro officials and the incident  
10 commander at some point, a critical moment, during the emerging  
11 event.

12 CHAIRMAN HART: Let me just caution that we're moving a  
13 little bit afield here because we're getting into a lot of he  
14 said, she said hearsay, speculation, and I don't want anything but  
15 facts. So let's try to keep it as much as we can to the facts.

16 MR. DOWNS: Thank you, Chairman.

17 That concludes my questions.

18 Mr. Blackistone?

19 MR. BLACKISTONE: Thank you.

20 First I want to follow up on a conversation that we had  
21 a few minutes ago regarding communication of location information  
22 regarding incident. And I know Chief Goldstein made the comment  
23 that they try and seek out detailed information regarding the  
24 chain marker location of any particular event. And my question,  
25 which goes really both to Mr. Ballard and to Mr. Williams is when

1 did the ROCC, the WMATA facility notify D.C. OUC of the location  
2 of the train, or when did they notify them that there was a  
3 problem on the train, as opposed to in the station?

4 MR. BALLARD: At 3:22 p.m., the Rail OCC contacted the  
5 D.C. Fire control center to notify them that there was a smoke  
6 incident at L'Enfant Plaza. As I said earlier, the intent at that  
7 point was to have the train, 302, return to the platform at  
8 L'Enfant Plaza. The efforts to move that train back to the  
9 platform continued until the fire department arrived at L'Enfant  
10 Plaza and activated ETS button, and the train was no longer able  
11 to move back to the platform. There was never a thought that the  
12 train would not be able to move back to the platform. It was  
13 never determined prior to that that the train was stalled in the  
14 tunnel.

15 OCC continued their effort to move the train back to the  
16 platform in anticipation that the train would move back to the  
17 platform. If OCC had become aware, as they eventually did, that  
18 the train could not move because as the train operator -- after  
19 the train operator reversed to the opposite end of the train, the  
20 operator determined that the train was not able to move under its  
21 own power, and the train operator began to troubleshoot the train.

22 So when OCC made the initial report to the fire  
23 department, the report was only for the station area itself that  
24 reported smoke being at L'Enfant Plaza Station. So there was no  
25 specific report to D.C. Fire that there was a train stopped in the

1 tunnel.

2 MR. BLACKISTONE: All right.

3 Mr. Williams?

4 MR. WILLIAMS: The first time we became aware of it was  
5 at about 1533, so 3:33, we received a call from a passenger on the  
6 train who advised he was on a Yellow Line train in the tunnel and  
7 it was filling with smoke. We received additional calls following  
8 that from citizens or a train -- people who were on the train  
9 advising of the same thing, that one person said he was on a train  
10 to the Pentagon, and he called at about 1533, as well.

11 The importance of that is that changes the response we  
12 would dispatch to D.C. Fire and EMS, and also who would we contact  
13 since the train was in the tunnel towards the Pentagon. And we  
14 would have notified Arlington County in that regard, because  
15 that's the protocol. If a train is in a tunnel, we're going to  
16 notify -- either send units -- if it's inside D.C. itself, we're  
17 going to send units to both entrances to that tunnel, both -- when  
18 I say both entrances, the two Metro stations to that tunnel, or in  
19 this case, since the line was between Washington D.C. and  
20 Arlington County, we would notify Arlington County that there is a  
21 train in the tunnel.

22 And not knowing how far the train was in the tunnel, in  
23 this regards, you know, where are those train riders going to exit  
24 that train. And that's where Chief Hawkins was talking about  
25 people came out of a vent shaft, which was a surprise to the units

1 there, because they had no idea there was a train in the tunnel.

2 MR. BLACKISTONE: Then that perhaps answers my follow-on  
3 question is what are the different dispatches between a station  
4 box alarm and a tunnel box alarm for incident between two  
5 stations.

6 So did you ever receive information from ROCC that there  
7 was a problem on a train in the tunnel?

8 MR. WILLIAMS: No. Based on our investigation, the only  
9 calls we received from the ROCC were the initial call for L'Enfant  
10 Plaza and then for -- the two calls for L'Enfant Plaza. There was  
11 the call for Gallery Place, but then the two calls for L'Enfant  
12 Plaza, the first one advising smoke, and then the second one  
13 advising EMS was needed and also that there was smoke in the  
14 station.

15 MR. BLACKISTONE: And let me follow up with Mr. Bodmer.  
16 Would it have been possible for Train 302 to have moved back to  
17 the station when the following train, Train 510, was sitting in  
18 the station? Or maybe it's Mr. Ballard that needs to answer that?  
19 Thank you.

20 MR. BALLARD: Yes. Let me clarify something earlier.  
21 OCC received the report from Train 302 that it was stuck in the  
22 tunnel. The call was made to the fire department about, like, 5  
23 minutes later. When the fire department arrives on the scene,  
24 then the expectation is that the fire department was in control of  
25 the incident, that we had transit police who were aware of the

1 situation at L'Enfant Plaza, who could have communicated that  
2 information to the fire department. So once the fire department  
3 arrived on the scene, then the expectation is that the fire  
4 department would gather all of their information needed thus far  
5 as how the incident was progressing from the persons at the  
6 incident scene, which was Metro's representative, and that is the  
7 on-scene commander, transit police.

8           To answer your question about Train 510 being on the  
9 platform at L'Enfant Plaza, as the reports reveal, Train 510 was  
10 not -- it stopped on the platform with space for at least two  
11 cars, 150 feet left for another train to move onto the platform.  
12 Having 510 train on the platform at no point prevented Train 302  
13 from moving back into the platform area at L'Enfant Plaza.

14           When we have situations where trains are, say, are  
15 stalled, unable to move, what we do is we use what we call a  
16 rescue train. And normally, the rescue train will move towards  
17 the stalled train. In this situation, it would have been just the  
18 opposite. Train on the platform, 510, would have been the stalled  
19 train, and Train 302 would move back towards Train 510, getting as  
20 close to the train as possible without coupling. The train doors  
21 would be on the platform, and the customers would be evacuated  
22 from the cars that were on the platform itself.

23           So having Train 510 on the platform did not at any time  
24 prevent Train 302 from being able to move back to the platform.  
25 But what we found out from our investigation is that there was not

1 sufficient third rail power being supplied to Train 302, so that's  
2 why Train 302 did not return to the platform at L'Enfant Plaza,  
3 not because Train 510 was there.

4 MR. BLACKISTONE: Would there have been an issue with --  
5 am I correct there is an interlocking switch immediately outside  
6 the station there?

7 MR. BALLARD: Yes.

8 MR. BLACKISTONE: Would there have been a problem with  
9 that switch having been moved to a position that would prevent the  
10 train from coming back, reversing back into the station? Or what  
11 procedures would you do in order to assure that that was not the  
12 case?

13 MR. BALLARD: What you can do -- let me try to explain  
14 this without being technical. What you can do is you can set a  
15 route towards -- from L'Enfant Plaza towards Pentagon, just as it  
16 was set for Train 302 to leave Pentagon -- I'm sorry -- leave  
17 L'Enfant Plaza. Then you would have the operator reverse ends on  
18 the train, give the operator an absolute block back to the  
19 platform at L'Enfant Plaza, with permission to pass a red signal  
20 at L'Enfant Plaza. So OCC was always able to properly align the  
21 switches to allow Train 302 to return to the platform at L'Enfant  
22 Plaza.

23 MR. BLACKISTONE: Okay. All right. Thank you. We may  
24 want to pursue that further later.

25 But I wanted to turn to Chief Goldstein and ask you to

1 talk a little bit about your experiences in Montgomery County. I  
2 understand that there have been a number of -- you have responded  
3 to a number of incidents, particularly in the Bethesda area, in  
4 recent weeks regarding smoldering wires, arcing insulators, that  
5 sort of thing. Could you share with us a little bit what the  
6 experience of your department has been in those responses?

7 MR. GOLDSTEIN: Thank you very much. Through calendar  
8 year 2012, 2013 and 2014, our average was about 20 incidents a  
9 year throughout the Metro system to a smoke or brake incident  
10 through a medical emergency involving a patient in the roadway.  
11 Those calls, that 20 to 30 calls per year do not include any  
12 events that are medical in nature that do not involve the roadway  
13 itself.

14 Throughout those experience of time, we saw an uptick in  
15 the Bethesda Medical Center and Friendship Heights area. Our  
16 concentration of brake or insulator call types were  
17 proportionately higher along the A line red track, or excuse me,  
18 the Red Line, A tracks in those areas. For the first 6 months or  
19 up until yesterday afternoon, for the first 6 months of 2015, so  
20 far, we've seen about a 500 percent increase in our calls for  
21 service specifically in our smoke, insulator or brake concerns.  
22 We've had 51 calls so far in the first just shy of 6 months this  
23 year compared to 22 calls cumulatively in calendar year 2014.

24 When we break those out and look at the location of  
25 those events, unproportionately, those numbers are Bethesda or

1 Medical Center. When you look at the events so far this year, as  
2 of yesterday afternoon, we've had 18 events in the Bethesda area  
3 and 10 events in the Medical Center component, and then a  
4 cumulative of four identified as Friendship Heights.

5 As we talked earlier with Mr. Williams, we will dispatch  
6 resources to the primary point of entry based upon the information  
7 from the ROCC, be it Bethesda, and we'll send a reduced amount of  
8 apparatus to the next closest entry point. Sometimes that Medical  
9 Center, sometimes that's Friendship. But that response counts as  
10 one event, where our primary point of entry or our primary  
11 dispatch point is identified for that incident.

12 MR. BLACKISTONE: Thank you. And just to note for the  
13 record, all of these are underground stations, underground areas  
14 that we're talking about here.

15 MR. GOLDSTEIN: Correct.

16 MR. BLACKISTONE: In your responses, could you talk  
17 about whether you've had communications issues, how well the  
18 radios have worked, or what you've used as work-arounds in case  
19 they haven't?

20 MR. GOLDSTEIN: The underground public safety radio  
21 system, as described earlier by one of your technical panel  
22 members, is comprised of amplifiers on the exterior that take the  
23 public safety system of the host jurisdiction down and then  
24 reamplify it underground and through a set area of track through  
25 an antenna that's strung along the walls, as is with the cellular



1 system. That system is in place. That system works. But that  
2 system is also highly delicate and requires a high level of  
3 maintenance.

4 Prior to the L'Enfant incident, Montgomery County was  
5 testing our radio coverage once a month by sending our radio  
6 technicians on the tracks, on the trains, and on the platforms to  
7 test communications back. Since the process of the L'Enfant  
8 event, in conjunction with WMATA transit folks, there has been an  
9 improved testing process by both public safety agencies as well as  
10 WMATA staff. There's been an improved radio reporting component  
11 as well as a radio outage map, a real-time system by which 911  
12 center operators and radio system managers can look at the status  
13 of any outage reports throughout the Metro system and identify the  
14 repair status of those reports. So the system is in place. The  
15 system works. It is delicate and needs a high level of  
16 maintenance to maintain that capability.

17 MR. BLACKISTONE: Thank you. And then let me ask about  
18 another element of communications, and that is in terms of the  
19 information that you receive from WMATA about incidents. Are  
20 there issues with receiving either incomplete or inconsistent  
21 information when units respond and are on the scene, such as  
22 between WMATA people on the scene versus what they're hearing from  
23 the ROCC?

24 MR. GOLDSTEIN: As it relates to the question of  
25 incomplete and inconsistent, that would be hard to judge and each

1 incident is unique and upon itself. Oftentimes, when we ask the  
2 controllers from the ROCC who is calling for the track marker or  
3 the chain marker, that causes a delay because that person is  
4 calling because of an event in Bethesda or an event at a specific  
5 station.

6           And as I mentioned earlier, we geo-locate that based  
7 upon a chain marker. That's easily overcome by the controller  
8 asking somebody else in the ROCC. But we do have occurrences  
9 where the information being relayed on the call to the Montgomery  
10 County 911 Center is initial and is then followed up with  
11 additional phone calls from the ROCC to the 911 center. And then  
12 once we have an on-scene incident commander present with Metro  
13 Transit, we have an effective means of communications that we are  
14 able to bridge there.

15           MR. BLACKISTONE: Okay. Thank you very much. We  
16 appreciate that.

17           Dr. Poland, that completes our Panel's initial round of  
18 questions.

19           DR. POLAND: Chairman Hart, that concludes the technical  
20 panel questions for Panel 2.

21           CHAIRMAN HART: Thank you, Dr. Poland. We will now take  
22 a 30-minute break. We will return to the room at 20 minutes after  
23 to resume, and I ask that the witnesses come back a few minutes  
24 earlier to be seated. Thank you very much.

25           (Off the record at 2:53 p.m.)

1 (On the record at 3:19 p.m.)

2 CHAIRMAN HART: Welcome back. We're now going to  
3 proceed to the questioning by the parties. The parties will each  
4 have 5 minutes to ask the witnesses questions. After that time,  
5 I'll ask the parties if there's a need for a second round of  
6 questions if we have time. I'm going to have the D.C. EMS be the  
7 last one to ask questions, so the first one, then -- we're going  
8 to go counterclockwise around the table, so I would like to start  
9 with Mr. Madaras and the Amalgamated Transit Union.

10 Do you have any questions for these parties?

11 MR. MADARAS: Chairman Hart, thank you. I do have a few  
12 questions. My first question is for Chief Hawkins. If unified  
13 command was established, did the battalion chief make an effort to  
14 communicate through transit police when he determined that the  
15 radios weren't working?

16 MR. HAWKINS: Yes. The battalion chief did communicate  
17 with the Metro Transit Police when he assumed unified command.  
18 Like I said, initially, when they first got there, there may have  
19 been a delay in terms of the Metro Transit Police officer and the  
20 window being rolled up, but they did communicate about the  
21 incident once he got to command post. So that did take place.

22 MR. MADARAS: So just for clarity, so there was  
23 communication between the battalion chief that was aboveground and  
24 the fire personnel that were down on the platform?

25 MR. HAWKINS: Yes, there was communications. At some

1 point, we lost communication, but it was sporadic, intermittent,  
2 so communication did take place at various points during the  
3 incident.

4 MR. MADARAS: Okay. Thank you.

5 My next question is for Mr. Ballard. What is the  
6 procedure for the on-scene commander to communicate with ROCC?

7 MR. BALLARD: In the SOP manual, it has identified  
8 specific operation persons who can be the on-scene commander.  
9 Normally, the on-scene commander, in most incidents, would be the  
10 train operator. Once the supervisor arrives on the scene, then  
11 the supervisor takes over as the on-scene commander, and it goes  
12 up the chain up to the manager director, which is me.

13 The on-scene commander on the operations group, they  
14 report to Rail OCC. They communicate directly to OCC. Once there  
15 is a situation requiring a external agency to respond to an  
16 incident, and then transit police is in charge, and they the on-  
17 scene commander when they arrive on the scene. And then transit  
18 police communicates with the rail person who's there and with the  
19 external agency that has responded to the incident. And transit  
20 police then responds to their control point, not the Rail OCC.

21 MR. MADARAS: And to follow up, briefly, do you know,  
22 was there communication between the on-scene commander and ROCC?

23 MR. BALLARD: Which on-scene commander, the rail on-  
24 scene commander or transit?

25 MR. MADARAS: The transit police on-scene commander.

1           MR. BALLARD: As I stated earlier, once transit arrives  
2 on the scene and they take over responsibility for the incident,  
3 then transit police respond to -- report to communicate with their  
4 control point, which is not Rail OCC.

5           MR. MADARAS: Okay. Thank you.

6           I have one more question. My question is to Mr. Bodmer.  
7 I'm not sure you can answer this, but if you can, please provide  
8 an answer. It was referenced in one of the interviews that when  
9 you hit a fan, the SCADA system tells you everything that you need  
10 to do. Would that system have provided the information to  
11 determine which way to set the tunnel fans to exhaust or supply?  
12 Do you know?

13           MR. BODMER: I'd have to refer that to the technical  
14 panel, the infrastructure panel.

15           MR. MADARAS: Mr. Ballard, could you answer that? Do  
16 you know?

17           MR. BALLARD: Let me get a good understanding of your  
18 question. Let me answer you based on my understanding of your  
19 question. In the control center itself, the controllers have the  
20 ability to turn the fans on, turn the fans off, turn the fans to  
21 supply, and turn the fans to exhaust from the AIM computer in OCC.  
22 So did that answer your question?

23           MR. MADARAS: Well, the one person who referenced it in  
24 their interview said that if you turn on a fan, that if you punch  
25 up the SCADA system, it will tell you exactly how to set the fans

1 to exhaust or supply.

2 MR. BALLARD: What we've done in our system --

3 DR. POLAND: Mr. Ballard, could you pull the microphone  
4 a little closer, please?

5 MR. BALLARD: Yes.

6 DR. POLAND: Thank you.

7 MR. BALLARD: I'm sorry. What we've done is, after this  
8 incident, we've gone and we have provided additional training to  
9 the OCC staff to inform them how to configure the fans based on  
10 specific incidents that occur, a train stopped in the tunnel, as  
11 we had at L'Enfant Plaza on January 12th, a fire in the station,  
12 smoke incident in the tunnel, even when there is not a train  
13 available. The controllers have the -- they get the initial  
14 training on how to configure the fans in their training.

15 And on an ongoing basis, as was said by the earlier  
16 panel, the controllers get an opportunity to practice fan  
17 configuration on a regular basis, such as, as Mr. Grooman said  
18 earlier, when there is maintenance activity occurring, if you use  
19 the system, you know that there's -- that's a regular occurrence  
20 of maintenance activity especially on the weekend. Controllers  
21 get a playbook, and it provides them with information on how the  
22 fans should be configured to move the smoke away from the workers  
23 at the incident. If we get a report of dust in the tunnel, the  
24 operators, controllers then operate the fans. If we get a report  
25 of hot brakes on a train, we configure the fans. We get a report

1 a person is working in the system, welding, whatever.

2 So the controllers get the initial training. They get  
3 the opportunity to exercise the fans based on specific incidents  
4 occurring. And during the testing process, when the maintenance  
5 groups enter the system in an effort to test the equipment, they  
6 contact OCC, and OCC activates the fan based on requests by the  
7 maintenance groups.

8 MR. MADARAS: Thank you.

9 DR. POLAND: Mr. Ballard, can I ask you a question about  
10 that playbook? Is that something that the NTSB already has?

11 MR. BALLARD: I'm not sure if you have it or not.

12 DR. POLAND: Could you -- wait, we do have the playbook?  
13 Is it already an exhibit?

14 Okay. We'll confirm that it's already in the docket.  
15 Otherwise, if it's not in the docket, we'll put that in the  
16 docket. Thank you.

17 MR. BALLARD: Thank you.

18 CHAIRMAN HART: Okay. Thank you, Dr. Poland, and thank  
19 you, Mr. Madaras.

20 IFF, Mr. Hudson, any questions?

21 MR. HUDSON: Just one quick question. In reference to  
22 communications -- and this is for Chief Hawkins -- between the  
23 battalion chief and the ROCC, the fire department's liaison that  
24 was sent to the ROCC, you stated that they had radio problems.  
25 Was that with the base station radio as well as their portables?

1           MR. HAWKINS: That's correct. They had experienced a  
2 problem with the base station radio at OCC.

3           MR. HUDSON: What was the problem with the base station  
4 radio?

5           MR. HAWKINS: One of the problems reported was they  
6 could receive, but they couldn't transmit out, so the  
7 communications back to incident command took place by way of his  
8 Blackberry, fire department Blackberry.

9           MR. HUDSON: Okay. Was that radio still operating non-  
10 encrypted or encrypted, the base station radio?

11          MR. HAWKINS: I can't remember. I believe it was -- I  
12 can't remember if it was encryption or not. I can't --

13          MR. HUDSON: Maybe Mr. Williams if you know --

14          MR. WILLIAMS: I'm not aware.

15          MR. HUDSON: Okay. That's it.

16          CHAIRMAN HART: Thank you, Mr. Hudson.

17          Mr. Dougherty, WMATA?

18          MR. DOUGHERTY: Thank you, Chairman Hart.

19                 This question is for Mr. Bodmer. And could you answer  
20 what -- was the WMATA actively engaged in troubleshooting the  
21 radio issue with D.C. Fire and unified command?

22          MR. BODMER: In reference to?

23          MR. DOUGHERTY: In reference to prior to the incident of  
24 January 12th, sorry.

25          MR. BODMER: Yes. WMATA's radio maintenance team was



1 out troubleshooting the problem. They determined that it might be  
2 in the comm. room at One Judiciary Square. They contacted reps  
3 from the OUC, and they scheduled an appointment on January 14th to  
4 gain access to that room.

5 MR. DOUGHERTY: And you know, as far as for access to  
6 the room, how did WMATA attempt to gain access to the D.C.-  
7 controlled site?

8 MR. BODMER: I believe that room belongs to the District  
9 of Columbia government, and they would have to allow access into  
10 that room.

11 MR. DOUGHERTY: And you had stated the schedule was for  
12 January 14th --

13 MR. BODMER: January 14th, sir.

14 MR. DOUGHERTY: Thank you.

15 Next, if possible, I'd like to request Exhibit D1, which  
16 is the Metrorail Transit Fire Rescue Emergency Procedures Policy  
17 Agreement. Okay. And this question is also for Mr. Bodmer. What  
18 is WMATA's role according to the Metropolitan Washington Council  
19 of Government's Agreement with fire departments?

20 MR. BODMER: The agreements that we have between the  
21 council of governments and all the jurisdictional fire departments  
22 that provide fire rescue services for the Metro System is a very  
23 defined working relationship that we have. Metro does not have  
24 its own fire department, so we rely on the jurisdictional fire  
25 departments to provide that service to the WMATA system.

1           The Passenger Rail Subcommittee, which is a subcommittee  
2 of the COG Fire Chiefs Committee is the one that are tasked with  
3 maintaining and updating that agreement. The agreement is revised  
4 approximately every 3 years. We just had the 2015 agreement  
5 signed off, I believe, on Monday of this week. It's signed off by  
6 the WMATA general manager, CEO, and all the jurisdictional fire  
7 chiefs in the COG region.

8           In the agreement, the agreement speaks to a couple  
9 things. It speaks to incident notification. It speaks to fire  
10 rescue emergency response. It refers to command and control. It  
11 refers to removal and restoration of third rail power. It talks  
12 to rail car movement and evacuation. It talks about the release  
13 of information. It talks about hazardous materials detection and  
14 operations. And it has a section there on the evacuation carts  
15 and the EMS storage cabinets that we have in our underground  
16 system and aboveground system. New to the agreement in 2015, they  
17 added a regional Metrorail radio communications section and a  
18 training section in that new agreement.

19           One of the big pieces of the COG agreement is command  
20 and control. In the COG agreement, it is governed by the National  
21 Incident Management System, NIMS. And part of NIMS is ICS, the  
22 Incident Command System. So it defines who is in charge of the  
23 incidents with the fire department response to Metro incidents,  
24 and that's the fire department. They are the incident commander.  
25 They are in charge of that. Part of that is the Metro on-scene

1 commander. So any time there is a jurisdictional fire department  
2 response to a Metro incident, the on-scene commander is the Metro  
3 Transit Police. Usually, it's the first officer arriving on-scene  
4 if the fire department is there. In this case, it was a deputy  
5 chief. And the on-scene commander -- we've been doing this since  
6 July of 2000, so it's nothing new to us. In fact, we're coming up  
7 on our 15-year anniversary of this. And we're always looking to  
8 improve our relationships with the jurisdictional fire departments  
9 on these incidents.

10 But the big thing about the on-scene commander is the  
11 on-scene commander is the one person that the incident commander  
12 can get real-time information about what's going on with that  
13 Metro incident. In the case of January 12th, he would have known  
14 that there was a train stuck in a tunnel with people in distress.  
15 He would have known where the trains were. He would have known  
16 what the third rail power status was. He would have known if the  
17 fans were on or off and what direction they were in. And that's  
18 the beauty of a unified command. You would get all that  
19 information, and then you could make decisions based on  
20 information that you were given. The on-scene commander is  
21 assigned<sup>2</sup> by the incident commander. He is not listed as the on-  
22 scene commander, as far as the agreement, but he is in the ICS  
23 format in the unified command.

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<sup>2</sup> Mr. Bodmer noted a correction. He stated the text should read "gets assignments" instead of "is assigned".

1           Any time we have a Metro incident, it's usually a multi-  
2 jurisdictional incident, based on where you are and the amount of  
3 folks that are coming to the incident. When it works, it works  
4 well. When it doesn't, okay, things can go -- things can happen.  
5 We experienced a very good unified command across the region. In  
6 fact, in 2006, 2007, the transit police went over to Arlington  
7 County. We were welcomed by their fire department, and we  
8 actually had lieutenants, captains and some sergeants ride along  
9 with their battalion chiefs on the different shifts just to learn  
10 that side of the incident command and how the fire service does  
11 it. And I think that was very, very beneficial to our officials  
12 on that.

13           So it's nothing new to us. It's protocol. It's  
14 automatic. We seek the incident commander out. That's what we do  
15 on these calls, and that's what we did on this L'Enfant Plaza  
16 call.

17           MR. DOUGHERTY: I'd just like to ask one last question.

18           DR. POLAND: Mr. Dougherty, I'm sorry to --

19           CHAIRMAN HART: Mr. Dougherty, your time is running kind  
20 of short. Thank you. You can bring that up on the second round  
21 if we have time.

22           DR. POLAND: Chairman Hart?

23           CHAIRMAN HART: Yes.

24           DR. POLAND: It's my understanding that Exhibit D-1 has  
25 recently been updated, the Metrorail Transit Fire Rescue Emergency

1 Procedures Policy, that there is a June 2015 version of that.  
2 Could WMATA please submit that so that we can enter that into the  
3 -- as an exhibit into the docket?

4 MR. BODMER: Yes, ma'am.

5 DR. POLAND: Thank you.

6 CHAIRMAN HART: Thank you. Next party to question would  
7 be Federal Transit Administration.

8 Mr. Littleton, you have any questions?

9 MR. LITTLETON: No question from the Federal Transit  
10 Administration.

11 CHAIRMAN HART: Thank you.

12 Tri-State Oversight Committee? Ms. Baryshev?

13 MS. BARYSHEV: No questions --

14 CHAIRMAN HART: Thank you.

15 D.C. EMS, Mr. Geldart?

16 MR. GELDART: Thank you, sir. I have a few questions.  
17 I'll start with Chief Hawkins.

18 Were there any issues at any time with the Fire and  
19 Emergency Medical Service's radio communication aboveground at the  
20 incident site?

21 MR. HAWKINS: The only issue that was noted was the OCC.  
22 When the battalion chief, second chief got to OCC, he had  
23 problems communicating with his mobile, and then at the base  
24 station at OCC.

25 MR. GELDART: Did the chief attempt to do anything to

1 establish radio communications once he realized he didn't have  
2 communications inside the ROCC?

3 MR. HAWKINS: What he did was he went -- he sent his  
4 aide back to his command vehicle, and he went back out to the  
5 command vehicle at some point to obtain situational awareness.

6 MR. GELDART: Did he have communications when he went  
7 back to the vehicle?

8 MR. HAWKINS: That's correct.

9 MR. GELDART: So once he went outside, he had  
10 communications?

11 MR. HAWKINS: Yes.

12 MR. GELDART: Okay.

13 A question for Mr. Ballard or Mr. Bodmer, either/or.  
14 Going through the timeline of events here, as stated earlier,  
15 there was a -- the attempt was, all along, to move the train back  
16 to the station. 1515 along the timeline is when the train was  
17 stopped in the tunnel. About 1522 was the first communications to  
18 the Office of Unified Communications that there was smoke in the  
19 tunnel, nothing about a train in the tunnel, or smoke, excuse me,  
20 in the station, nothing about the tunnel. We have 1531 is the  
21 time when FEMS are at the scene, excuse me, are dispatched. We've  
22 got 1539 when they actually established incident command of which  
23 then you build unified command off of. And at 1540, one minute  
24 after that, is when the blue light was pushed, or the rail was de-  
25 energized by firefighters down in the tunnel.

1           So by my math, and I could be wrong, Mr. Hart, but my  
2 math, that's about 25 minutes that went between the time when the  
3 train stopped and the time the blue light was pushed or FEMS de-  
4 energized the third rail. At any time in there, did that train  
5 move, 302?

6           MR. BALLARD: Once 302 came to the stopped position in  
7 the tunnel at L'Enfant Plaza, it was not able to move afterwards.  
8 Our post-incident investigation revealed that Train 302 entered an  
9 area where there was insufficient voltage to allow the train to  
10 move. The train went on emergency lighting, and the ventilation  
11 system stopped. It was not until we did a post-incident  
12 investigation that we really learned that sufficient voltage was  
13 not available at the location which would have allowed Train 302  
14 to move back to the platform at L'Enfant Plaza.

15           As I stated earlier, based on the information that OCC  
16 had available to them at that time, a decision was made to, as our  
17 procedures require, to move Train 302 back to the platform at  
18 L'Enfant Plaza because it's the safest course of action, you know,  
19 to get customers into a safe environment. As a last resort, we  
20 would have done -- we'd take any other action, but the intent was  
21 always, based on our procedures, our protocol, to move Train 302  
22 back to the platform at L'Enfant Plaza.

23           MR. GELDART: Okay. But it wasn't going to move.  
24 That's what you said, sir.

25           MR. BODMER: If I could add to that, Mr. Geldart, is

1 that's the purpose of the unified command, the purpose of sending  
2 somebody to the Rail OCC. That's why D.C. Fire sends somebody  
3 down there, is there's things that are going on in the Rail OCC  
4 that the incident commander may not know about, and that's maybe  
5 the movements of trying to get that train back to the station, as  
6 far as what the OCC is trying to do. Where the fire department  
7 may be trying to go in there and do the rescue or evacuation of  
8 the train, okay, OCC is trying to get that train back. So the  
9 coordination of that is key.

10 MR. GELDART: Right.

11 MR. BODMER: And when that ETS button was hit in the  
12 station, it took all the power down in the station, so that option  
13 was kind of out at that time.

14 MR. GELDART: Okay. But from the -- from what was just  
15 said, the post-incident review of that revealed that there was no  
16 sufficient power to move that train regardless, and it would not  
17 have been there?

18 MR. BALLARD: That's correct.

19 MR. GELDART: Okay.

20 I just want to turn to Chief Hawkins. That'll probably  
21 be the last I'll have on this round.

22 Chief Hawkins, a lot has been talked about here with  
23 incident command. I mean, we just talked about how quickly things  
24 happen on the scene. By the time incident command was  
25 established, not even a minute later, we were at the scene and our



1 first responders were actually effecting the response underground  
2 in the tunnel. Has there been anything done since the event to  
3 exercise with WMATA to work on how we do that unified command?

4 MR. HAWKINS: Yes. Post-L'Enfant Plaza, January 12th,  
5 we've been engaged with WMATA doing exercises, training, Metro  
6 safety training. We're doing joint supervisor training. We're  
7 looking forward to doing some exercises with them. So moving  
8 forward, we have been really engaged with WMATA.

9 MR. GELDART: So we have conducted an exercise with them  
10 that involves incident command?

11 MR. HAWKINS: We did a tabletop exercise pre --

12 MR. GELDART: Okay.

13 MR. HAWKINS: -- but we, moving -- we're looking forward  
14 to an exercise sometime this summer. But we've been doing joint  
15 supervisor training once a month with WMATA since the incident.

16 MR. GELDART: Very good. Thank you.

17 MR. HAWKINS: And that would address any issues, command  
18 and control issues, understanding roles and responsibilities,  
19 unified command.

20 MR. GELDART: Okay. I believe I'm out of time.

21 CHAIRMAN HART: Thank you, Mr. Geldart.

22 I think we have time for a second round. Does ATU, Mr.  
23 Madaras, have any further questions?

24 MR. MADARAS: No further questions.

25 CHAIRMAN HART: Thank you. AFF, Mr. Hudson?

1           MR. HUDSON: One quick question, and this is for  
2 Mr. Bodmer. In a perfect world, in non-hostile conditions, how  
3 long would it take for ROCC or the operator to change direction of  
4 that train? So to realize there's a problem, power down, change  
5 ends, power back up, and move the train?

6           MR. BODMER: I'll refer that to Mr. Ballard.

7           MR. BALLARD: In a perfect world, depends on the length  
8 of the train. We currently operate six-car trains and eight-car  
9 trains. Each car is 75 feet long. So it depends on the time of  
10 day, number of customers on the train, as to the operator's  
11 ability to quickly move from one end of the train to the opposite  
12 end of the train. So it varies based on, you know, conditions at  
13 that time. You say it would power down, power up? You had a  
14 question about power?

15          MR. HUDSON: It's my understanding that when the  
16 operator changes ends, they power down one end to go to the other  
17 end of the train to power back up to move the train, correct?

18          MR. BALLARD: Yes. We call it a keying down, keying up.  
19 It's basically like turning your car on and off. I mean, the  
20 train operator is instructed to go to the opposite end of the  
21 train. The train operator turns a key; the train powers down. The  
22 train operator goes to the opposite end of the train, insert the  
23 key, turn it, train powers up. So it's similar like your car.

24          MR. HUDSON: Fairly -- okay.

25          That's all. Thank you, Mr. Chairman.

1 DR. POLAND: Mr. Ballard, would you be able to give us a  
2 time estimate for that in a best case scenario, how long it would  
3 take to do that activity?

4 MR. BALLARD: The best case scenario would be an empty  
5 train and a short train, so I would say it would take maybe -- it  
6 depends on the operator -- 2, 3 minutes, I would think.

7 DR. POLAND: Thank you.

8 CHAIRMAN HART: Thank you, Mr. Madaras [sic].

9 Mr. Dougherty, WMATA?

10 MR. DOUGHERTY: Thank you, Chairman Hart.

11 This question is for Chief Hawkins. If unified command  
12 was established, did the fire department commander use the transit  
13 police radios to communicate with firefighters underground?

14 MR. HAWKINS: Let me make sure I understand the  
15 question. You're asking if unified command used Metro Transit  
16 Police officers to communicate with firefighters on the ground?

17 MR. DOUGHERTY: Yes, sir.

18 MR. HAWKINS: No, sir.

19 MR. DOUGHERTY: Okay.

20 MR. HAWKINS: We did not.

21 MR. DOUGHERTY: And Mr. Bodmer, does WMATA believe  
22 unified command was achieved successfully on January 12th per the  
23 MWCOG agreement?

24 DR. POLAND: Can I interrupt --

25 MR. BODMER: No, sir, we do not.

1 DR. POLAND: Can I -- I was going to ask you to answer  
2 that as factually as possible. Thank you.

3 MR. BODMER: Okay.

4 MR. DOUGHERTY: You want me to rephrase the question?

5 DR. POLAND: The question --

6 CHAIRMAN HART: Yes, could you rephrase the question?

7 DR. POLAND: -- had a potential for speculation, so we  
8 were asking for a more factual question.

9 MR. DOUGHERTY: Okay. And, Mr. Bodmer, had unified  
10 command been established successfully, could have the transit  
11 police radios been used for this incident?

12 MR. BODMER: They could have. Our radio system was  
13 working. We were communicating with people that were on the  
14 ground. We had police officers on the incident train. We were  
15 getting real-time information for what was going on on the train  
16 and in the station, as well.

17 MR. DOUGHERTY: Thank you. That concludes WMATA's  
18 questions, Chairman Hart.

19 CHAIRMAN HART: Thank you, Mr. Dougherty.  
20 Federal Transit Administration, Mr. Littleton?

21 MR. LITTLETON: No further questions, sir.

22 CHAIRMAN HART: Thank you.

23 Tri-State Oversight Committee, Ms. Baryshev?

24 MS. BARYSHEV: No further questions. Thank you.

25 CHAIRMAN HART: And excuse me if I'm pronouncing your

1 name incorrectly.

2 MS. BARYSHEV: That's fine.

3 CHAIRMAN HART: Okay. Thank you.

4 And do we have any further questions from the D.C. EMS,  
5 Mr. Geldart?

6 MR. GELDART: Yes, sir, just a couple questions, one for  
7 Mr. Williams.

8 Since the event, has the OUC done any coordination with  
9 WMATA to enhance the procedures for calls taken from the ROCC, and  
10 have we established any training within the OUC working with WMATA  
11 to better handle the calls that may come from WMATA?

12 MR. WILLIAMS: Yeah. So on the first part of your  
13 question, since the time of the incident, we've provided WMATA a  
14 10-digit telephone number to contact us. That goes directly to a  
15 911 operator. Since the WMATA ROCC is not located in the  
16 District, they simply can't call 911. They have to contact us via  
17 a 10-digit number. Once that call reaches our 911 call takers,  
18 we've also created a document above and beyond the protocols that  
19 they currently use for the call takers to gather pertinent  
20 details, including things like the chain marker. And it's a guide  
21 to help prod along the interview process to get that extra  
22 information from WMATA so we can provide it to the fire  
23 department.

24 As it relates to training, since the incident, we've had  
25 several roll call trainings with the D.C. Fire and EMS covering

1 specific Metro information concerning response, the apparatus that  
2 go on those responses, incident command, what occurs on those  
3 responses, as well. We've also recently met with WMATA to  
4 establish a communications channel. And when I say communications  
5 channel, just open up so we will meet with them on a regular basis  
6 to discuss information concerning responses, concerning WMATA  
7 contacting us with information, and also so our employees  
8 understand the -- what WMATA has, what WMATA is dealing with on  
9 their side, as well, when they contact us.

10 MR. GELDART: Thank you, sir.

11 For Mr. Bodmer, earlier, you answered a question about  
12 the scheduling of going out to One Judiciary Square to further  
13 investigate the issues that were going on pre-incident with the  
14 L'Enfant Plaza area and the radio system that WMATA maintains.  
15 You stated that it was scheduled for the 14th to go out there.  
16 Mr. Kavalieri earlier testified on the panel that the OUC radio  
17 operations are 24/7, so they're there to respond to anything that  
18 happens with our radio system 24/7. Is there a reason why it was  
19 scheduled for the 14th?

20 MR. BODMER: I can't answer as to why it was scheduled  
21 for the 14th, but when our radio comm. maintenance people needed  
22 to get into that facility, that was the date that was given to  
23 them.

24 MR. GELDART: Okay. So just to be clear, that was the  
25 date that was given by the OUC to your radio team?

1           MR. BODMER: The radio people that they were talking to  
2 gave them that date to go up there to One Judiciary Square to look  
3 at that com room, yes.

4           MR. GELDART: Okay. That's a little difficult because  
5 they're 24/7, so -- okay.

6           I have no further questions, sir.

7           CHAIRMAN HART: Okay. Thank you.

8           The parties have now concluded their questions for Panel  
9 No. 2, so it's now time for the Board of Inquiry to begin our  
10 questions for the witnesses. Each Board Member will be given 5  
11 minutes, and we'll see after that's over if we have time for a  
12 second round.

13           So let's start with Member Sumwalt.

14           MEMBER SUMWALT: Chief Hawkins, I want to thank you for  
15 the job that you and your team do. Most people run away from  
16 burning buildings, whereas your people run into them, and they do  
17 that to protect us all, so thank you.

18           In your testimony, you indicated that D.C. Fire has  
19 learned from this event. Could you please, if you haven't already  
20 done so, supply a list of those learning points to the NTSB? Has  
21 that already been supplied?

22           MR. HAWKINS: Yes. I submitted a list of initiatives  
23 post-L'Enfant Plaza incident concerning training exercises and  
24 some of the things we're doing to enhance and improve our  
25 relationship with WMATA and the whole system.

1           MEMBER SUMWALT: Great. Thank you. But of course,  
2 that's why we're here. We're here to learn what happened so that  
3 we can learn from it and keep it -- and make it better next time.

4           I do want to refer you to -- and we don't need to pull  
5 it up. I want to refer to Exhibit G37, which is the interview  
6 transcripts of Mark Olson. Mark Olson was the Metro Transit  
7 Police on-scene commander, and then he was -- and we don't need to  
8 pull it up -- it's not going to be pulled up, but he was the on-  
9 scene commander, and he was attempting to transfer, as you know,  
10 to your lead, who was -- it was Battalion Chief Chapman. And I'm  
11 going to read out of G37 just page 7. I'm just going to read some  
12 of this, and then I'm going to ask you a question about it.

13           So this is Mark Chapman [sic] from Metro Transit Police.  
14 He says:

15           "I caught up with the vehicle. I had to add that it was  
16 pouring rain. I identified myself to the gentleman who was the  
17 battalion chief, who was assuming the incident command of the  
18 incident. His name was Chapman. I explained that I'm the Metro  
19 Transit Police on-scene commander. I said immediately -- the  
20 first thing I told him is that we have a train stopped down there  
21 with patrons on board and I'm very concerned about self-  
22 evacuation. We need to get evacuation of patrons started  
23 immediately. He looked over at his driver, and then said  
24 something to the effect of, well, I have to get my personnel down  
25 there to assess where the smoke is coming from first. And then I



1 said to him again, well, we have passengers down there on that  
2 train and we need to get them evacuated. And he rolled his window  
3 up."

4 So we know it's raining. Let me ask you this. The  
5 buggy, which I guess is an SUV; is that correct?

6 MR. HAWKINS: That's correct.

7 MEMBER SUMWALT: Yeah, what is it? Like a Tahoe or a  
8 Suburban or something like that?

9 MR. HAWKINS: That's correct.

10 MEMBER SUMWALT: Is there any equipment or any reason  
11 why the -- why this person that I'm referring to could not have  
12 gotten into the back of the vehicle? Because it's pouring down  
13 rain. Could he have gotten in the back?

14 MR. HAWKINS: You know, the battalion chief carries a  
15 lot of equipment, but if he want -- he could have got in the back.  
16 It's a matter of just moving equipment around.

17 MEMBER SUMWALT: Okay. That's --

18 MR. HAWKINS: There should have been a seat back there.

19 MEMBER SUMWALT: Okay. I did not know if it would be  
20 full of electronic gear and things like that. Okay. So I'm going  
21 to -- so let me ask you this. In the previous round of questions,  
22 the topic of you mentioned joint survivor -- excuse me -- joint  
23 supervisory training. And I'll ask this to Chief Hawkins as well  
24 as Mr. Bodmer or Ballard. This joint supervisory training was  
25 started years ago, but then, apparently, it ceased; is that

1 correct?

2 MR. BODMER: That's correct, sir.

3 MEMBER SUMWALT: And Chief, so do you know why it's --  
4 why was it started and then why did it stop?

5 MR. HAWKINS: Well, it was started to improve our  
6 relationship roles and responsibilities on a Metro incident. You  
7 know, a Metro incident is a multi-agency problem with the  
8 jurisdictions. So we started to train to improve, you know, that  
9 process.

10 MEMBER SUMWALT: And why did it stop? Anybody know?  
11 Mr. Ballard, do you know, or Mr. Bodmer?

12 MR. BODMER: Yeah, on the Metro end of it, we went  
13 through a series of different trainings. We started a training, I  
14 guess, a course called Managing Metro Emergencies. We then went  
15 into a training block called Metro Emergency Response Training.  
16 And now we're back to the JST.

17 MEMBER SUMWALT: Now, why did it stop?

18 MR. BODMER: I think in the managing Metro emergencies  
19 training that we did, the jurisdictional fire departments were  
20 invited to that training, and it was very similar to the JST  
21 training. And then we got away from the JST, and we went to the  
22 MERT training, which is the Metro Emergency Response Training, but  
23 that was primarily for WMATA staff.

24 MEMBER SUMWALT: Thanks.

25 Chief Hawkins, do you have anything to add to that, why

1 it might have stopped?

2 MR. HAWKINS: Well, I'd like to add that over the course  
3 of -- from 2009 to 2014, D.C. Fire and EMS sent 752 firefighters  
4 to training with WMATA, various components of training, so we did  
5 do training. Some years, it wasn't as much as we would like, but  
6 we have done things post-event that we're trying to increase the  
7 level of training.

8 MEMBER SUMWALT: Okay. Thanks. I'm out of time.  
9 Thanks.

10 CHAIRMAN HART: Thank you, Member Sumwalt.  
11 Member Weener?

12 MEMBER WEENER: Thank you.

13 Mr. Bodmer, you talked about NIMS, National Incident  
14 Management System. Is that a means to standardize the emergency  
15 response?

16 MR. BODMER: Yes, sir.

17 MEMBER WEENER: And it's intended to identify the chain  
18 of command?

19 MR. BODMER: It's a National Incident Management System  
20 that's trying to bring the federal, state and local jurisdictions  
21 together in a common operating picture while managing incidents.  
22 ICS, the incident command structure, is part of NIMS. And that's  
23 the part where it identifies who's in charge of the incident, what  
24 the incident commander is, the structure of how the command is set  
25 up.

1           MEMBER WEENER: Okay. Then the reason they -- we had  
2 some discussion about the agreements between the Council of  
3 Government members, and that's to put those kinds of agreements in  
4 place; is that correct?

5           MR. BODMER: The NIMS, the Council of Governments Fire  
6 Agreement with the jurisdictions follows the NIMS format and uses  
7 ICS, yes, sir.

8           MEMBER WEENER: Now, how many jurisdictions does WMATA  
9 have to interact with in an emergency situation, potentially?

10          MR. BODMER: I believe we cover the entire COG region  
11 for the Metro side of it. Certainly, it's Montgomery and Prince  
12 George's County at the Maryland end, the District of Columbia. We  
13 have in Virginia, Arlington, Fairfax, Alexandria. We have the  
14 Metropolitan Washington Airport Authority, and we're moving into  
15 Loudon County.

16          MEMBER WEENER: Do you have the same kind of agreements  
17 with each of those jurisdictions?

18          MR. BODMER: Yeah, the agreement -- it's a COG  
19 agreement, so all those jurisdictions have signed off on that  
20 agreement.

21          MEMBER WEENER: And are the operating processes and  
22 procedures, then, identical for all of those areas?

23          MR. BODMER: That's correct, sir. Now, in the different  
24 jurisdictions, they may have their own protocols for operating on  
25 Metro incidents. Specifically, Northern Virginia has what they

1 call a Northern Virginia manual which all of the Virginia agencies  
2 follow, Alexandria, Arlington and Fairfax. I think the District  
3 of Columbia has their own independent SOP for Metro incidents, as  
4 well as does Montgomery County and Prince George's County.

5 MEMBER WEENER: Now, those SOPs are for the jurisdiction  
6 to operate within themselves? The interface between WMATA and the  
7 jurisdictions should be the same or not?

8 MR. BODMER: The COG agreement gives the basis for the  
9 basic operating structure of the Metro incidents, yes, and who  
10 does what. Definitions are all the same. Everybody follows that  
11 agreement, yes, sir.

12 MEMBER WEENER: Okay. And Chief Hawkins mentioned that  
13 you've got common training programs between D.C. and WMATA for  
14 these kinds of activities?

15 MR. BODMER: Yes, sir. In WMATA, the Office of  
16 Emergency Management is responsible for all training involved in  
17 the fire and rescue jurisdictions in the region. And we put on  
18 training throughout the years. The Passenger Rail Safety  
19 Subcommittee, which is the subcommittee of the Fire Chiefs  
20 Committee, we are -- attend those meetings. We offer up training.  
21 Throughout the year, the jurisdictions, based on their training  
22 calendar, will select when they can train, and we train them.

23 MEMBER WEENER: Now, you also mentioned that you had  
24 tabletop exercises. When is the last full-scale drill, emergency  
25 drill, that you have done with any one of the constituents of the

1 COG?

2 MR. BODMER: If I could give you a little history on  
3 some of the exercises that we've done in the past, in 2005, for  
4 the District of Columbia, we did Operation Deep Rescue, which was  
5 a train that was stuck on the Potomac River between Foggy Bottom  
6 and Rosslyn.

7 In 2007, we worked with the District of Columbia and  
8 Arlington County on Operation Troubled Waters, which was on the L  
9 line bridge, the L line bridge that crosses the Potomac River.

10 And in 2011, or 2010, I should say, we did three  
11 exercises. The first one was up in -- between the District of  
12 Columbia and Montgomery County. It involved an active shooter at  
13 our Friendship Heights Metro Station. We did another exercise in  
14 March of 2010 at -- between, again, Foggy Bottom and Rosslyn,  
15 which simulated a rail explosion in the middle of the river.  
16 Arlington County and D.C. and the FBI were involved in that. And  
17 then we did bus IED exercise with D.C. Fire and D.C. police, FBI,  
18 at the RFK stadium.

19 In 2012, we did a Clarendon single-track exercise, and  
20 this was an exercise that was done after an incident that we had  
21 at the Clarendon Metro, where a person was struck by a train. A  
22 subsequent fall out of that exercise revealed almost a mass  
23 casualty incident at the Roslyn Metro Station, where it was  
24 evening rush hour -- I think it was about 5:00 in the evening. We  
25 had all the local businesses, people were getting off work, and we

1 weren't moving people through that station because it was a side  
2 platform station, similar to the way L'Enfant Plaza is set up. So  
3 we met up with Arlington County, says let's see if we can do a  
4 single-track while we're doing a rescue, a rescue of a person that  
5 may have been struck, and it's still not a recovery but a rescue  
6 operation. And we did do that, and we successfully did that.

7           We did an exercise with the FBI at the Navy Yard Station  
8 called Marvel Challenge. And that dealt with an improvised  
9 explosive device. And we worked with the FBI, the D.C. Fire, I  
10 think, had a little bit of play in that one.

11           We've done numerous winter weather drills. We've done  
12 evacuation exercises, getting ready for the opening of the first  
13 phase at the silver line, we did two full-scale exercises. We did  
14 three tabletop exercises on that prior to going revenue. Our goal  
15 was originally to do, for Fairfax County, since they didn't have  
16 any tunnel segments, we wanted to do a full-scale of the tunnel,  
17 that little tunnel out there by Tyson's Corner. We wanted to do  
18 an aerial exercise because a lot of that rail out there is up in  
19 the air. And then we want to do an active shooter exercise. So  
20 the two full-scale was the active shooter and the aerial exercise,  
21 and we did a table top on the tunnel exercise on that one.

22           MEMBER WEENER: That's fine. I think I'm running out of  
23 time here.

24           MR. BODMER: Yeah, and just, if I could, this year,  
25 we've already done one exercise with Prince George's County, the

1 Greenbelt Metro in April. The next one is scheduled for Stadium  
2 Armory for the District of Columbia. That'll be August 23rd,  
3 full-scale.

4 CHAIRMAN HART: Thank you, Member Weener.  
5 Vice Chairman Dinh-Zarr?

6 VICE CHAIRMAN DINH-ZARR: Thank you, Chairman.

7 My first question is also to Mr. Bodmer, what I hope is  
8 a fairly simple question. The smoke alarm that triggered at 3:05,  
9 where did it alert? And what happens when any alarm is triggered  
10 in that manner?

11 MR. BODMER: I'll defer that to Mr. Ballard.

12 MR. BALLARD: The alarm that triggered at 3:05, that  
13 alarm was not received in the Operations Control Center. So I am  
14 not sure where that alarm went. It was not until, as I mentioned  
15 earlier, at 3:20 and 59 seconds that OCC received a fire alarm in  
16 the control center. So the earlier alarm, and I was told that it  
17 was in the vent shaft, was not received at OCC.

18 VICE CHAIRMAN DINH-ZARR: It was not received there?  
19 And Mr. Bodmer, you don't know where the alarm was received  
20 elsewhere within the system?

21 MR. BODMER: The alarms report directly into the Rail  
22 OCC, and not only the assistant superintendent monitors these  
23 alarms, but also, I believe Mr. Ballard at MOC monitors these  
24 alarms, as well.

25 VICE CHAIRMAN DINH-ZARR: But I think Mr. Ballard is



1 saying it wasn't received; is that correct?

2 MR. BALLARD: That's correct. It was not received in  
3 the Rail Operations Control Center on their computer system in  
4 Rail OCC.

5 VICE CHAIRMAN DINH-ZARR: So we don't know where this  
6 alarm, this first alarm was received at all?

7 MR. BALLARD: What we do know is that it was not  
8 received in OCC. I'm not sure where it was routed to.

9 MR. BODMER: Yes. We know that the alarm did activate,  
10 but it was not received in the Rail OCC.

11 VICE CHAIRMAN DINH-ZARR: Is it possible to find out  
12 where that alarm was received and why didn't it get received?

13 MR. BODMER: Yes, ma'am.

14 VICE CHAIRMAN DINH-ZARR: Thank you.

15 I don't know if that's --

16 DR. POLAND: Yes. Could you please provide us some sort  
17 of written documentation of where that alarm alarmed to, and we  
18 will enter it into the docket as an exhibit?

19 MR. BODMER: Yes, ma'am.

20 DR. POLAND: Thank you.

21 VICE CHAIRMAN DINH-ZARR: Thank you. And I know all of  
22 you have very difficult jobs and it's a complex system, so I  
23 appreciate your checking that out. I think it's an important  
24 question.

25 So reading all of the interviews, I felt that there were

1 a lot of different types of responses and different personalities.  
2 And I know that it takes a very calm personality to react to some  
3 of these stressful situations. So my question is, for the  
4 controller, because this is a very infrequent occurrence, could  
5 you walk us through the selection process for the people you have  
6 as controllers? And then I have a follow-up question about the  
7 training as well.

8 MR. BALLARD: The selection process for a controller is  
9 -- in the early days, it was primarily the persons who were former  
10 train operators who were supervisors. Then in the early 2000s, we  
11 also added to that individuals who were interlocking operators.  
12 Interlocking operators are persons who carry out the same type of  
13 responsibilities in our rail yard as OCC does with the management  
14 of trains on main line. Interlocking operators are responsible  
15 for the management of the rail yard, the movement of trains in the  
16 rail yards. So after, later, maybe around 2005, we received our  
17 first person who was not from a transit background. It was an air  
18 traffic control person, a military air traffic control person.  
19 Prior to that, we received some applicants from other transit  
20 agencies, but they had a transit background. But we received our  
21 first military air traffic control person.

22 So, basically, the personnel who are selected in the  
23 control center have prior transit experience, primarily in Metro,  
24 sometimes with other transit agencies. And now we are adding to  
25 that persons who have military experience in air traffic control

1 center environment, which is similar to Rail OCC.

2 VICE CHAIRMAN DINH-ZARR: Thank you, Mr. Ballard. So  
3 they have different backgrounds in, or different experiences with  
4 emergencies. In the 26-week training, are there aspects that are  
5 specific to emergency situations or simulations that are -- and  
6 triaging, such as prioritizing emergency, multiple emergency  
7 situations that they're given during their training?

8 MR. BALLARD: Yes. During this 26-week training, it  
9 involves going over all of the procedures, getting an  
10 understanding of how to apply what's being outlined in the  
11 procedure. There's a step-by-step process of what should be done  
12 in each type of situation identified in the various procedures for  
13 the train operator, for the OCC. Also, the control center staff  
14 who are doing the training, they are brought into the control  
15 center, and they work alongside of an experienced controller,  
16 getting experience on managing incidents, getting an understanding  
17 on how to operate under the conditions that are prevalent within  
18 the rail control center during emergency-type situations.

19 And so, also, during their training, the controllers are  
20 taught how to develop strategies on how to address the various  
21 types of situations that occur. What we do, even after the  
22 controllers have completed their training, they've been certified  
23 as a controller, we put them with a more experienced controller to  
24 make sure that the controller, if there is a situation where the  
25 controller needs some assistance or have questions, may not have

1 the level of familiarity that an experienced controller would  
2 have, that there is a controller sitting beside that person to  
3 provide any assistance. Also, in the control center itself, there  
4 is an assistant superintendent. So there is never a point where a  
5 controller is in the control center without the assistance of a  
6 second controller or a manager to provide any necessary assistance  
7 that the controller may feel that he or she may need to be able to  
8 address a specific incident.

9 VICE CHAIRMAN DINH-ZARR: Thank you, Mr. Ballard.

10 Sorry, Chairman, for taking over my time.

11 CHAIRMAN HART: Not to worry. Thank you for the  
12 question. Given that Mr. Bodmer said that the alarm, smoke alarm  
13 was supposed to show up in the control room and Mr. Ballard is  
14 saying it didn't, have you guys or our guys found out yet why it  
15 did not alarm in the control center, control room?

16 MR. BALLARD: I don't have that information available to  
17 me. One of the maintenance groups may have been researching the  
18 issue, and that information may be available within the  
19 maintenance groups, but I don't have that information.

20 CHAIRMAN HART: Okay. Well, I'm assuming our  
21 investigators are going to be looking into that.

22 MR. BALLARD: Yes, sir.

23 CHAIRMAN HART: Let me go to the reversal of Train 302  
24 and just ask you to walk me through the process of reversing a  
25 train in terms of what the operator does, what somebody does in

1 the control room, what anybody else does if there is any need for  
2 any -- just walk me through the process of how that occurs, how  
3 you can move a train backwards.

4 MR. BALLARD: Yes, sir. Unlike some other systems, each  
5 one of our rail cars are operating cars. So the operator -- if  
6 the operator becomes aware of a situation or if the train itself  
7 is not able to move from the operating car, the operator  
8 communicates with OCC. They begin their necessary troubleshooting  
9 trying to get the train moved in the same direction if there's a  
10 train -- as in the January 12th incident, it was something that  
11 was ahead of the train that prevented the train from being able to  
12 move forward in the same direction. So the Operation Control  
13 Center directed the operator to go to the opposite end of the  
14 train, which is another operating car, and move the train back to  
15 L'Enfant Plaza.

16 CHAIRMAN HART: So that's when you turn off the key,  
17 walk through the train, put the key in at the other end, and turn  
18 the key back on?

19 MR. BALLARD: Yes, sir.

20 CHAIRMAN HART: Okay. And then what's the next step?

21 MR. BALLARD: The next step is then the operator gets  
22 permission from OCC to move the train back to the station  
23 platform.

24 CHAIRMAN HART: And what happens to the track alignment  
25 in the meantime? What has to happen with respect to the track

1 alignment?

2 MR. BALLARD: When the train left L'Enfant Plaza, OCC  
3 can manipulate the switches to align the route for the train to  
4 leave L'Enfant Plaza and go towards Pentagon or go towards Branch  
5 Avenue. On this particular day, after the train left L'Enfant  
6 Plaza, I'm not sure what position the switches were laying in  
7 after the train left, but even if they were not laying in the same  
8 position as the switches were laying in when the train left  
9 L'Enfant Plaza, OCC has the ability to manipulate the switches  
10 from Landover to align a route for the train to reenter the  
11 station. Because the train was there and the train had moved away  
12 from the interlocking itself, the train was going in the opposite  
13 direction, the controller had to give the operator permission to  
14 move a portion of the distance without a speed command.

15 CHAIRMAN HART: I've heard some reference to a process  
16 called clamping the track. What is that all about?

17 MR. BALLARD: In this situation, and I'm doing this  
18 based on my experience being a controller in the control center.

19 CHAIRMAN HART: Yes, please, and I'm not asking you to  
20 speculate or give opinion on something you're not sure of. I'd  
21 like to know if you're factually aware of it, but if not, please  
22 let us know that.

23 MR. BALLARD: Oh, yes, sir, I'm aware. The only time  
24 that we have to clamp switches is if there is a situation where  
25 OCC cannot control the switches. OCC cannot control the signaling

1 at the interlocking itself. In this situation, there was no  
2 problem with the interlocking itself, so OCC had the ability to  
3 manipulate the switches to align the rail for the train to come  
4 back into the platform.

5           And what I would have done, what OCC would have done, is  
6 they would have set a route as if there was a train on the  
7 platform in L'Enfant Plaza going towards the Pentagon. The Train  
8 302 would not have seen a green light signal or lunar signal, but  
9 with authorization from OCC, because the tracks were aligned  
10 properly, the switches were locked into position and there was no  
11 possibility that the switches could move, OCC had the level of  
12 certainty that it was safe for that train to move back across the  
13 switches. So OCC would then give the operator permission to move  
14 the train at a reduced speed back to the platform at L'Enfant  
15 Plaza.

16           CHAIRMAN HART: So with Train 510 there, how much could  
17 302 have gone onto the platform to have cars that people could  
18 exit from onto the platform?

19           MR. BALLARD: Based on the post-incident investigation,  
20 it was revealed that there was space of about two cars left on the  
21 platform at L'Enfant Plaza. So 302 would have been able to move  
22 two of the six cars onto the platform at L'Enfant Plaza and have  
23 the customers to exit those two cars.

24           CHAIRMAN HART: Okay. So just one more question because  
25 my time is up, but where in this time frame of operator moving

1 from one end to the other, and all that, was it ascertained that  
2 there was not enough power to move the train? Is there any  
3 knowledge -- do we have a timeline of that? I'm not asking you to  
4 guess or speculate, but do we have a timeline regarding that?

5 MR. BALLARD: No, sir. It was not until the post-  
6 incident investigation that we determined that there was not the  
7 necessary voltage there available. Throughout the incident, OCC  
8 was operating under the assumption that the train, Train 302, had  
9 the necessary power, voltage being supplied to the third rail to  
10 allow it to move back to the platform.

11 CHAIRMAN HART: Okay. Thank you. My time is up.  
12 Member Sumwalt?

13 MEMBER SUMWALT: Thank you. So we're talking about  
14 coordination. And I really think there are three lines of  
15 coordination. There is the on-scene coordination. There is the  
16 coordination within OCC. And then there is the coordination  
17 between OCC and those who are on the scene.

18 So with respect to the on-scene coordination, the words  
19 that Mark Olson stated, his words from his interview, he said --  
20 the words he used were "dysfunctionality." He's referring to his  
21 communications with the D.C. Fire incident person who was supposed  
22 to assume the incident command. He said he felt ignored. So  
23 we've talked about that. That's in Exhibit G37. Within OCC, in  
24 Exhibit B5, somebody said that the left hand didn't know what the  
25 right hand was doing. There was yelling within the OCC. And



1 somebody said that we lost control of the railroad. And then  
2 between the OCC and the on-scene, I want to know who the heck is  
3 in charge. We've got Exhibit G31, where this is a person who is  
4 in the OCC, and he's saying that the incident commander is telling  
5 them that they need to put the fans in supply. He's questioning  
6 that. So they have to get on the phone to call and reaffirm it.

7           So you've got people that are in OCC that are having to  
8 rely on people that are on the scene. I'm wondering who is in  
9 charge in an emergency situation. Is it Metro Transit Police? Is  
10 it the OCC? Is it the fire department?

11           The people in the field have no authority to move the  
12 trains unless they coordinate with OCC. They have no authority to  
13 close a station. The train operator has got to receive permission  
14 to turn off the train air intake, the station air intake, or the  
15 train air intake without the OCC permission? There's a lot of  
16 people that have to -- there's a very centralized form of  
17 management. The people in the field aren't authorized to make  
18 decisions. So -- but the people that are in the responsibility of  
19 having to make the decisions aren't in a position of having  
20 complete knowledge of the situation.

21           So I'd like to ask both of the gentlemen from WMATA to  
22 comment on that, if you will, please.

23           MR. BODMER: Yes, sir. Any incident involving the  
24 response of fire jurisdictional personnel to a Metro incident, the  
25 fire department is in charge of that incident. And that's through

1 the COG agreement. They are in charge of that.

2 MEMBER SUMWALT: Okay. And I understand that. That's  
3 in the emergency situation after they get there, but how about  
4 things like, as I understand it, there was smoke that was coming  
5 into the cars. And in order to shut off the ventilation system  
6 air intake for the cars, train cars, that operator of that train  
7 had to request permission from OCC; is that correct?

8 MR. BALLARD: No, sir, that's not correct. The  
9 procedure states that OCC would instruct the operator to turn off  
10 the EV. Our procedures also say -- there is nothing in the  
11 procedure that specifically prohibits the operators from taking  
12 action him or herself to turn off the EV. We know from our post-  
13 incident investigation that the environmental, the ventilation was  
14 disabled when the train came to a stop at that point in the tunnel  
15 between L'Enfant Plaza and the portal. Our procedures also say  
16 that in the absence of any specific instruction, that Metro staff  
17 is supposed to -- they're obligated to take the wisest and the  
18 safest course of action.

19 What we've done post-incident, we've gone and clarified  
20 just in case there are other individuals who may have interpreted  
21 our SOPs to have an understanding that there's something in there  
22 that prohibits them from taking action, our new procedure states  
23 -- it specifically gives the train operator authorization. So if  
24 there are other train operators who are in a similar situation in  
25 the future, it's been clarified for them that they have

1 permission, they have the authority to disable the environmental  
2 when it becomes necessary.

3 MEMBER SUMWALT: Okay.

4 MR. BODMER: If I could add on that, when we get a call  
5 where the jurisdictional fire department responds, we send two  
6 police officials to the scene, one to the incident command post,  
7 one to act as a forward liaison. We also send a police official  
8 to the Rail OCC to act as the OCC liaison to the on-scene  
9 commander that is -- at the incident scene. We also, Rail also  
10 assigns rail transportation supervisors to go to the scene, as  
11 well, two just like the transit police, one to the command post  
12 and one to the forward liaison position, as well.

13 MEMBER SUMWALT: Okay. Thanks. My time is up, but  
14 okay, thanks. I was just looking for the testimony of the train  
15 operator, but I think that particular train operator of 302 felt  
16 that he could not deactivate the ventilation air intake system  
17 until he received permission from OCC; is that correct?

18 MR. BALLARD: I don't know.

19 MEMBER SUMWALT: I can find it if you don't know, but --

20 MR. BALLARD: Yes, sir.

21 MEMBER SUMWALT: That's okay. Thank you very much.

22 CHAIRMAN HART: Thank you, Member Sumwalt.

23 Member Weener?

24 MEMBER WEENER: Yeah. To follow on the questions asked

1 by the Chairman, the post-accident review<sup>3</sup> indicated that the  
2 train could not be moved because there wasn't sufficient power.  
3 But that wasn't known until the post-incident review; is that  
4 correct?

5 MR. BALLARD: Yes, sir. That is correct. Because of  
6 the indications that were received in the Rail Operations Control  
7 Center, the indication seen by controllers was an indication to  
8 them that third rail power was being still supplied, the  
9 appropriate voltages were still being supplied to the Train 302.

10 MEMBER WEENER: So as far as the train operator knew, he  
11 could have moved the train? He didn't -- he would have found out  
12 when he tried that he couldn't move it; is that correct?

13 MR. BALLARD: Yes, sir. The train operator would have  
14 determined that the train would not be able to move once he made  
15 the attempt to move it. The train operator, based on his action,  
16 didn't know the cause, the reason why the train was not able to  
17 move. The train operator just became aware when he attempted to  
18 move the train that the train was not able to move.

19 MEMBER WEENER: So as far as everybody knew, the train  
20 could be moved, so why -- who had the authority or whose authority  
21 was missing, in terms of actually moving, trying to move the  
22 train?

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<sup>3</sup> WMATA provided a correction to Mr. Ballard's testimony. WMATA stated that they did not develop an after action report, after action review, or a risk assessment. Initial discussion in the transcript concerning the post-incident investigation occurs on page 167.

1           MR. BALLARD: Sir, from the onset, when OCC initially  
2 got the report that the train could not go any further in that  
3 direction, the operator was told to go to the opposite end, the  
4 L'Enfant Plaza end of the train. And the operator, you know,  
5 followed OCC's instructions, and the operator made the attempt to  
6 move the train. After the operator made the attempt to move the  
7 train, the operator became aware that the train was not able to  
8 move. Then the operator and OCC went through a series of  
9 troubleshooting the trains, the train, and it was not until, like  
10 I said before, post-incident investigation that we got a clear  
11 understanding as to why the train was not able to move.

12           MEMBER WEENER: Okay. So there were actually attempts  
13 to move the train backwards?

14           MR. BALLARD: Yes, sir.

15           MEMBER WEENER: Okay. Just a follow-up on a couple of  
16 quick questions related to what I was questioning you about  
17 earlier with Mr. Bodmer regarding you obviously did a post-  
18 incident review, and we just talked about that, for the January  
19 12th. But for the exercises that you've done between WMATA and  
20 other members of the Council of Governments, do you do an after-  
21 action review with all of those, as well?

22           MR. BODMER: We do. After all the full-scale exercises,  
23 we will do a hot wash. Then we'll prepare an after-action report.

24           MEMBER WEENER: And what happens to these reports?

25           MR. BODMER: The reports are filed with the Office of

1 Emergency Management at WMATA. If there's any issues, they're  
2 brought up with the appropriate parties, whether it be within  
3 WMATA or any issues that may come up with the fire jurisdictions.

4 I will tell you on one of the silver line exercises, the  
5 aerial exercise, we found out that our ladders were not long  
6 enough to reach the track bed because of the way that construction  
7 was done out there. So we immediately had our engineers develop a  
8 kind of a platform that would be put on the trains, that would fit  
9 under the ladders so they would make contact with the roadway out  
10 on that section of the line. And we didn't know that prior to  
11 that exercise.

12 MEMBER WEENER: All right. Thank you. Yield my time.

13 CHAIRMAN HART: Thank you, Member Weener.

14 Vice Chairman Dinh-Zarr?

15 VICE CHAIRMAN DINH-ZARR: Thank you, Chairman.

16 Mr. Ballard, just to follow up on Member Weener's  
17 question, so are you saying that the operator tried to move the  
18 train but was unable to do so, so he actually attempted it and  
19 then realized he couldn't do it?

20 MR. BALLARD: Yes, ma'am. What happened is that when  
21 the train operator went to the opposite end of the train, that  
22 being the L'Enfant Plaza end of the train, the operator turned the  
23 train on, attempted to get the train to move, the train did not  
24 move. The operator went through his troubleshooting procedures,  
25 techniques, contacted OCC, alerted OCC that the train was not able

1 to move. OCC went through their normal troubleshooting  
2 techniques, questions to the operator as to what indication the  
3 operator was seeing on the train that prevented it from being able  
4 to move. And then the OCC, based on the information that the  
5 operator relayed to OCC, then the OCC staff instructed the  
6 operator to go to -- through the train to try to identify whether  
7 or not there was a specific car within the consist that prevented  
8 the train from moving. The operator identified two cars. The  
9 operator released the brakes in those two cars because there were  
10 indications on those cars that there was a problem. The operator  
11 returned to the operating car, expecting that the train would be  
12 able to move, got to the operating car, being the L'Enfant Plaza  
13 end of the train, and again attempted to move the train, and the  
14 train was not able to move under its own power.

15 VICE CHAIRMAN DINH-ZARR: Thank you.

16 MR. BALLARD: Yes, ma'am.

17 VICE CHAIRMAN DINH-ZARR: So I'd like to ask a question  
18 about the evacuation, but of course, I want to do it with the  
19 greatest respect for the passengers and families. So from the  
20 interviews, I understand that one unconscious passenger was  
21 carried out by a firefighter. But in getting a tour of WMATA, I  
22 saw that there were the emergency tunnel evacuation carts, the  
23 ETECs, I think they're known as. So could you explain either  
24 Chief Hawkins or Mr. Bodmer if the ETECs were used -- or I mean,  
25 in this situation, it wasn't because in the interview, it said

1 that the firefighter actually had to carry this passenger who was  
2 unconscious out. So were they not available? Was it too  
3 difficult? What were the reasons if they weren't used, and were  
4 they used later for other passenger?

5 MR. BODMER: On that particular incident, the ETECs were  
6 used. We had one passenger that was in a wheelchair, and they  
7 used the ETEC to bring that passenger out, I believe.

8 MR. HAWKINS: That's correct, ma'am. And to add to  
9 that, the first arriving unit to the train was Rescue Squad 1.  
10 The person at Rescue Squad 1 removed the unconscious victim, and  
11 when the remaining part of the fire department and recon group  
12 arrived, they started using ETEC carts.

13 VICE CHAIRMAN DINH-ZARR: And were they not available at  
14 that time, or they -- I mean, what was the reason behind not using  
15 it? I assume it would be easier to use it than to carry someone?

16 MR. HAWKINS: Yes. Initial response was people in the  
17 train trouble breathing. Rescue Squad 1 wanted to make to the  
18 train to do a quick assessment. And as more personnel, manpower  
19 got to the scene, we went and got the ETEC carts.

20 VICE CHAIRMAN DINH-ZARR: Okay. Thank you. I think I  
21 have time for one quick question.

22 So Mr. Bodmer -- I mean, sorry -- Mr. Ballard, could you  
23 explain when there is an emergency, does the controller continue  
24 managing all of the other trains that are within his or her  
25 purview or how does that work? I mean, you know, does someone



1 come to relieve that person?

2 MR. BALLARD: In the control center, when there is an  
3 incident, unlike some other transit agencies, we have two persons  
4 at each console to manage the lines controlled by that console.  
5 What happens is when there's an incident, then the decision is  
6 made by the controllers on how to respond to that.

7 DR. POLAND: Mr. Ballard, could you pull your microphone  
8 closer again?

9 MR. BALLARD: Yes, I'm sorry.

10 DR. POLAND: Thank you.

11 MR. BALLARD: When there's an incident, the controllers  
12 make a decision. They decide on the strategy that they're going  
13 to use, along sometimes with the assistant superintendent, that  
14 they're going to use to try to mitigate the impact of the incident  
15 on the rest of the system. So the controllers, as they're called  
16 controllers, they control the situation, they control the lines,  
17 they control the movement of the train, they control the  
18 signaling, they control the ventilation, they control the third-  
19 rail power. They're in direct communication with anyone, everyone  
20 working on that particular line.

21 So during an incident, when I was a controller, one of  
22 the first things we did is we made a blanket announcement to all  
23 of the individuals on that radio frequency letting them know that  
24 we have an emergency, and unless you, that person, those  
25 individuals have an emergency, that they were supposed to clear

1 the radio frequency. Also, we have the ability, because we --  
2 communication to hold trains at station platforms, just to stop  
3 all train movement until we feel that we have the situation under  
4 control. What we know in most incidents is that the first few  
5 minutes, you can get the incident under control, and then  
6 decisions are made on how you're going to mitigate.

7           Sometimes a technique that is used is we reduce the  
8 number of trains on the rail system itself. If the controllers  
9 feel that they've got too many trains for them to manage, they  
10 offload trains, they send them back to the yard and increase the  
11 frequency, the headway of trains so the controllers have the  
12 ability to manage the line at a level that they're comfortable  
13 with.

14           VICE CHAIRMAN DINH-ZARR: Thank you, Mr. Ballard.

15           CHAIRMAN HART: Thank you, Vice Chairman Dinh-Zarr.

16           I'd like to -- we heard some conversation about training  
17 of the controllers to -- regarding the operation of the  
18 ventilation fans. So if we had this problem today, and here's the  
19 train, and here's the source of smoke, and there's a fan on that  
20 side and there's a fan on this side, would a controller today have  
21 the information they would need to know, to know what to do with  
22 the fans and which one to put on exhaust and which one to put on  
23 supply, and just -- in other words, would they -- is there a way  
24 for them to have the big picture to know what to do with the fans?

25           MR. BALLARD: Yes, sir.

1           CHAIRMAN HART: And how would that occur?

2           MR. BALLARD: Yes, sir. After the incident on January  
3 the 12th, we had what we call a stand down, a safety stand down.  
4 The managers in OCC, along with myself, we devised a flowchart, a  
5 training tool, to provide to all of the OCC assistant  
6 superintendents, the controllers. Each controller was brought  
7 into a training room. They were given this material. They were  
8 instructed on how to configure the fans based on specific  
9 scenarios.

10           So as it was stated at an earlier panel, there was an  
11 RFP out to have a contractor come in to give us some additional  
12 information on how to configure fans, but -- and to get ahead of  
13 that to make sure that all of the staff is adequately trained to  
14 handle similar type incidents as January the 12th. We didn't want  
15 to wait until, you know, we get the product that's going to be  
16 provided to us in the future. So I am confident that, based on  
17 the information and material that we've provided, and I will  
18 provide that -- I think it's been requested -- to the NTSB. And  
19 it talks about, you know, trains at stations, trains in the  
20 tunnel, station incidents, incidents in the tunnel without trains  
21 being present.

22           CHAIRMAN HART: So did you say we have seen that  
23 protocol; that's part of the docket?

24           MR. BALLARD: I think it's been requested. I'm not sure  
25 if you have it, but if you do not have it, I will provide it.

1           CHAIRMAN HART: Okay. Another question about smoke and  
2 moving trains towards smoke, I'd like to get a timeline on when  
3 was the smoke known about versus when the -- when 510 came into  
4 the station southbound into that smoke and when this northbound  
5 train came into that station, given that smoke. What do we know  
6 about the timelines regarding those relative events?

7           MR. BALLARD: The report from Train 302 came to OCC at  
8 3:15. About 8 minutes later, Train 510 was riding into the  
9 platform at L'Enfant Plaza. And like I said earlier, the reason  
10 for that was that because OCC became aware that the problem, in  
11 their estimation, the problem was somewhat isolated to the tunnel  
12 outside of L'Enfant Plaza, going towards the portal, headed  
13 towards the Pentagon, that it's a a separate tunnel, and that they  
14 would be able to bring Train 510 into the platform at L'Enfant  
15 Plaza, not service the station, and continuing towards Branch  
16 Avenue.

17           CHAIRMAN HART: So did the report of smoke in the  
18 L'Enfant Plaza Station come before or after those two trains, one  
19 from the north and one from the south entered the station? Do we  
20 have a timeline on that? I'm not asking you to speculate. I just  
21 wanted to know if we have a timeline.

22           MR. BALLARD: Yes. The report of smoke in the station  
23 at L'Enfant Plaza came in at advance, but the report was  
24 nonspecific. And in OCC's estimation, the smoke incident was at  
25 the portal and -- at L'Enfant Plaza portal, in the portal going

1 towards the Pentagon.

2 CHAIRMAN HART: Okay. So it -- okay, well, then I'll  
3 just have to take a look at the timeline and see when that smoke  
4 report was received in the control room versus when those two  
5 trains were dispatched from the previous station to enter into the  
6 L'Enfant part of the station.

7 MR. BALLARD: Yes, sir, because we got the report from  
8 the train operator, and the train operator reported -- the train  
9 operator with 302 is located in the tunnel.

10 CHAIRMAN HART: Right.

11 MR. BALLARD: And so OCC -- and I'm -- I was not there.

12 CHAIRMAN HART: Yeah, that's why I'm asking about the  
13 report of smoke in the station when they had the order to use the  
14 exhaust fans to take the smoke out of the station. That's the  
15 report I'm talking about.

16 MR. BALLARD: Right, yes, sir.

17 CHAIRMAN HART: So I'll see that timeline when -- are we  
18 gathering -- are investigators gathering that timeline? I assume  
19 we are?

20 (No audible response.)

21 CHAIRMAN HART: Okay. Great.

22 My time is almost up, but one more question about the  
23 human chain and the talk-around. Explain to me what that's all  
24 about. I didn't understand how that worked.

25 MR. HAWKINS: Yes, sir, you're referring to the talk-

1 around channel?

2 CHAIRMAN HART: Yes.

3 MR. HAWKINS: Okay. Yeah. So we have communication  
4 procedures that we use the 800 megahertz first, and if we start to  
5 experience a problem, we would switch over to a vehicle repeater  
6 system. And if we start experience a problem there, we would use  
7 the talk-around channel. And what the talk-around channel is, is  
8 it's a separate zone of channels that we use to give us line of  
9 sight communications, pretty much forming a human chain. You have  
10 three firefighters in a row, the signal can transfer between  
11 portable radios.

12 CHAIRMAN HART: And they would literally have to be line  
13 of sight? That's why you call it that?

14 MR. HAWKINS: Yes, sir.

15 CHAIRMAN HART: I see. Okay. Okay. My time is up.

16 Do any other members have any, before we move back to  
17 the tech panel, any other members?

18 Member Sumwalt?

19 MEMBER SUMWALT: Thanks. I'd like to clarify something,  
20 Mr. Chairman. My last line of questioning was whether or not the  
21 operator of a train felt that he had permission, had to ask  
22 permission to move the train. And in fact, on Exhibit G15, page  
23 45 of that, in that interview, the train operator, operator of  
24 302, said that he was asking the ROCC for permission to move the  
25 train back, but he never got that permission. And also, on G15,

1 page 10, OCC kept telling the operator to standby, standby,  
2 standby, we need to clear the platform. So this operator,  
3 according to his witness -- according to his interview conducted  
4 after the accident, he did feel that he needed that permission.

5 But I want to move on. To Mr. Bodmer, Mr. Ballard, what  
6 would you say are the biggest threats to WMATA rail, Metrorail? I  
7 suspect, you know, train to train collisions may be one of them,  
8 active shooters, smoke/fire. Where does smoke/fire fit into the  
9 rank ordering of your threats?

10 MR. BODMER: I would just be speculating, sir, on that,  
11 I would think.

12 MEMBER SUMWALT: Is it -- and I don't want you to  
13 speculate, but Mr. Ballard, do you have any information on that?

14 MR. BALLARD: It would be very difficult for me to sit  
15 here and determine what would be the most critical incident and  
16 compare smoke as opposed to some other incident that may occur in  
17 the system and the severity --

18 MEMBER SUMWALT: That's okay. But -- and I realize that  
19 threats or hazards, you assess the risk associated with those  
20 hazards and then you mitigate those hazards and bring them to as  
21 low as is reasonably practicable. And so you do that by various  
22 things. For smoke/fire, we've got engineering and environmental  
23 solutions like ventilation systems and fire alarms, maybe even  
24 fire suppressions systems, in some cases. But on the human side,  
25 we've talked about the training. That's one way you mitigate

1 risk. But another way would be through standard operating  
2 procedures. So at the time of the -- at the time of this  
3 accident, what SOPs did you have specifically in the OCC regarding  
4 smoke or fire in a tunnel?

5 MR. BALLARD: SOP 6. It talks about fire in a tunnel,  
6 on the roadway. SOP 6 talks about fire on the roadway. So OCC  
7 was operating under that procedure. And what we're trained to --  
8 in the Rail Operations Control Center is always assume the worst  
9 case scenario. And until we have determined the severity of the  
10 incident, we operate as if it's a major incident. So --

11 MEMBER SUMWALT: No -- thank you. So how -- was that  
12 procedure referred to during this event, and is it a big, long  
13 textual thing or is it a checklist? I was an airline pilot for a  
14 long time. I had my quick reference handbook. It was literally  
15 right next to each pilot. It was right there. If I had a smoke  
16 or fire, I'd pull it out there and go to tab 42, and it would tell  
17 me step by step what to do. Cabin fans on. Evac fans off. You  
18 know, whatever it says. Cabin fans, lower extract fan. Did you  
19 have a step by step procedure, or was it some long, bureaucratic  
20 thing that somebody had to read and understand in the panic of the  
21 situation, the heat of the battle?

22 MR. BALLARD: We have checklists available to the  
23 controllers. The controllers are trained, tested on the  
24 procedures annually to make sure that they are aware of their  
25 responsibility based on the situation. As I said earlier, the



1 controllers don't always refer to the checklist that's available.  
2 And going forward, what we've required, we've gone and reviewed  
3 those checklists, and we are preparing, making sure that we have a  
4 checklist for all of the various situations that can occur that  
5 correspond to our SOPs. And we're making sure that the  
6 controllers use those checklists. In fact, it is going to be a  
7 part of the incident report after the incident has concluded to  
8 make sure that the assistant superintendent checks and makes sure  
9 that the list has been exhausted.

10 MEMBER SUMWALT: Yeah, but that's after the accident,  
11 and that's good. We want to learn from these things. But was the  
12 SOP checklist referred to during this emergency in the OCC?

13 MR. BALLARD: I was not in the OCC. All of the  
14 controllers have the SOP. There is a checklist. But I don't know  
15 today whether or not there was actually anyone, whether the  
16 controllers, the assistant superintendent, superintendent, or the  
17 director reviewed, looked at the SOP or checklist.

18 MEMBER SUMWALT: Is it your procedure that you would  
19 refer to the checklist in something like this?

20 MR. BALLARD: It's not a hard, fast procedure. It's a  
21 tool that's been made available to the staff to use.

22 MEMBER SUMWALT: Thank you very much.

23 MR. BALLARD: But it's not a hard, fast procedure --

24 MEMBER SUMWALT: Thank you.

25 CHAIRMAN HART: Thank you, Member Weener, do you have

1 any further questions? Vice Chairman Dinh-Zarr?

2 VICE CHAIRMAN DINH-ZARR: Thank you, Chairman, just one  
3 question.

4 Mr. Ballard and Mr. Bodmer, when it became clear that it  
5 was extremely busy and there was a potential for an emergency  
6 situation, why wasn't there a command that all trains were stopped  
7 until things were figured out?

8 MR. BALLARD: Again, I was not in the control center, so  
9 the decisions that were made in real-time during the incident, the  
10 staff in OCC at the time, I guess they made an assessment of what  
11 they had. And based on that assessment, I guess it was determined  
12 that they were capable of continuing to manage the movement of the  
13 trains on the line. It was 3:00. It was near the beginning of  
14 rush hour. So we don't have as many trains on the mainline at  
15 that time of day. So the headway that the trains were operating  
16 on during that time period may not have posed such a challenge for  
17 the controllers that they did not feel that they had the ability  
18 -- or they needed to reduce the number of trains, the frequency of  
19 trains on the mainline. So that was a decision that was made  
20 based on the staff in the control center making an assessment of  
21 what they could or could not handle.

22 VICE CHAIRMAN DINH-ZARR: And usual protocol is to stop  
23 the train or it's always up to the staff members on duty at the  
24 time?

25 MR. BALLARD: It's up to the staff members, because I

1 mean, there are different times of the day where we have different  
2 amounts -- number of trains in the system. It depends on the  
3 location of the incident. So it's a real-time decision based on  
4 what the managers, the controllers feel that they need to do at  
5 that particular time. So it varies based on the incident itself.

6 VICE CHAIRMAN DINH-ZARR: Thank you.

7 No more questions.

8 CHAIRMAN HART: Thank you, Vice Chairman Dinh-Zarr.

9 We'll take the remainder of our time and return to the  
10 tech panel, Dr. Poland, if the panel has any further questions.

11 DR. POLAND: Thank you, Chairman Hart. The tech panel  
12 does have further questions, so I'll refer the questions to  
13 Mr. Blackistone.

14 MR. BLACKISTONE: And I'll first pass the microphone to  
15 Mr. Bucher.

16 MR. BUCHER: Thank you, Steve.

17 My first follow-up question for Mr. Ballard, and it  
18 refers to the event recorder on the 302 train. And several of the  
19 times of the event recorder, they confirmed what we've already  
20 discussed, that the train stopped at 3:15, the operator keyed down  
21 from the leading end of the 302 train at 3:16, and at 3:18, he re-  
22 keyed up on the rear end of the train in preparation to return to  
23 L'Enfant Plaza. At 3:18, according to the event recorder, he had  
24 all of his systems were in operation on the 302 train and that the  
25 first time that he ran into problems with any of the systems was

1 at 3:32 when the brake pressure reduced to a point where he could  
2 not operate back.

3 And I guess you've already addressed briefly that there  
4 was somewhat of a power loss in that time, but the event recorder  
5 does not record any of that. Could you elaborate on that time  
6 between 3:18 and 3:32?

7 MR. BALLARD: Yes, sir. Yes, sir. Post-incident  
8 investigation revealed that the train operator reversed ends onto  
9 the L'Enfant Plaza end of the train. Our understanding is that  
10 when the operator keyed up the train, he did not have sufficient  
11 voltage to move the train. As we know, in rail transportation, in  
12 operations and maintenance, is that once a train gets into an area  
13 where there is a loss or a diminished level of third-rail power,  
14 that the train does not go into an emergency state immediately and  
15 that there is a period of time before the air pressure leaks and  
16 the train goes into an emergency state. But the reports that I  
17 received after the investigation was done was that the train was  
18 in a place that prevented it from having the -- even though the  
19 train had not gone into emergency state, when the train attempted  
20 to move, it would not have the necessary power to -- the 750 volts  
21 available to it to enable the train to move out of that section of  
22 the track.

23 MR. BUCHER: Okay. Could you give us a copy of that  
24 report?

25 MR. BALLARD: I will work with the technical engineering

1 group to get you a copy of the report.

2 DR. POLAND: Thank you. And we will enter that into --  
3 as an exhibit and enter it into the docket.

4 Do you need -- would we refer to that as a post-accident  
5 review from WMATA or is there a better name for us to refer to  
6 that document?

7 MR. BALLARD: There is the report, but I'm not sure  
8 today what the specific title of that report would be. But once I  
9 get that report, then I'll be able to forward that information to  
10 you, let you know what the title of the report is and the report.

11 DR. POLAND: In the meantime, can we refer to it as a  
12 post-accident report from WMATA and we'll know what we're talking  
13 about?

14 MR. BALLARD: Yes, ma'am.

15 DR. POLAND: Thank you.

16 MR. BUCHER: Okay. I have a second follow-up question  
17 for Mr. Ballard, and it refers to Train 510 arriving at the  
18 L'Enfant Plaza Station. And I understand that from the track  
19 layout at L'Enfant Plaza, the ability for trains to change tracks  
20 -- and my question refers to the 510 arriving -- in the control  
21 center, why was the 510 not routed down the Green Line in an  
22 emergency?

23 MR. BALLARD: Your question is why was Train 510 not  
24 routed to the Green Line?

25 MR. BUCHER: Yes.

1           MR. BALLARD: Once Train 510 arrived on the platform at  
2 L'Enfant Plaza, there was a transit officer there on the platform.  
3 The transit officer assisted the train operator onto the -- train  
4 onto the platform, instructed the train operator to offload the  
5 train, and ordered the train operator off the train and out of the  
6 station. So the train did not continue towards Branch Avenue  
7 because the transit officer felt that the train should be  
8 offloaded.

9           MR. BUCHER: Okay. Thank you. And my last question for  
10 Mr. Ballard and possibly Mr. Bodmer. You mentioned that you  
11 conducted a risk assessment post-accident. Can you elaborate on  
12 that risk assessment?

13           MR. BALLARD: I did not do a risk assessment. Maybe MR.  
14 Bodmer can answer that?

15           MR. BODMER: Yeah, we have not done a risk assessment  
16 after this accident.

17           MR. BUCHER: Okay. Thank you.

18           I pass questioning to Mr. Downs.

19           MR. DOWNS: Thank you. A follow-up to Mr. Bucher's  
20 question, we had a discussion a little bit ago about the Rail  
21 Operations Plan Book for Major Incidents. This question would go  
22 to Mr. Bodmer and maybe Mr. Ballard, as well. In that particular  
23 document which I have here, that's basically the checklist we were  
24 referring to, is that correct, in terms of step by step processes  
25 to follow in certain circumstances?

1 DR. POLAND: Mr. Downs, can you tell us what the title  
2 of that document is, please?

3 MR. DOWNS: Yeah, I just did. It's the Rail Operations  
4 Plan Book for Major Incidents. It's referenced in the Survival  
5 Factors Factual Report.

6 DR. POLAND: Great. Thank you.

7 MR. DOWNS: Again, the question is: Is that basically  
8 the checklist you were referring to?

9 MR. BALLARD: I'm not sure it's the checklist document.  
10 If I could -- is there -- are there checklists within that  
11 document?

12 MR. DOWNS: Well, that's what it appears to be is a  
13 checklist, a step by step process for how to proceed, for the Rail  
14 OCC to proceed in certain events. And the particular events on  
15 page 12, fire and stations-trains-right of way. And going down  
16 the list, right of way -- right away, not right of way --  
17 fire/heavy smoke, and it says -- it's a little check box, cops,  
18 MOC, rail supervisor, and so on. And the next bullet is stop all  
19 trains in both directions. So, basically, the question is: Is  
20 that the checklist you were referring to that the ROCC would  
21 follow?

22 MR. BALLARD: I won't be able to specifically say that's  
23 the checklist, but the checklist that we have in OCC has similar  
24 information, if not the exact information that you're looking at  
25 on that checklist, yes, sir.

1           MR. DOWNS: Great. Follow-up to that question. For the  
2 bullet here, stop all trains in both directions, in this case --  
3 we did have the 510 train roll into L'Enfant Plaza about 7 minutes  
4 after the 302 train had reported that they were stopped in the  
5 tunnel. Looking back at the schedule of the trains, that 510  
6 train had not arrived at the Archives Station yet. So the  
7 question is why wasn't the 510 train stopped at the Archives  
8 Station?

9           MR. BALLARD: In my interview with the persons involved,  
10 after the incident occurred, I was told that the plan was to have  
11 510 train continue towards Branch Avenue because OCC was operating  
12 with the understanding that the problem was isolated between --  
13 within the tunnel area between L'Enfant Plaza and the portal going  
14 to Pentagon, and that Train 510 could safely move through the  
15 area, L'Enfant Plaza, into a separate tunnel going towards Branch  
16 Avenue.

17           MR. DOWNS: So was it a case -- it sounds like, and  
18 correct me if I'm wrong, it sounds like the ROCC was not aware of  
19 the degree of smoke that was occurring in the L'Enfant Plaza  
20 Station at that time?

21           MR. BALLARD: At Train 302, when 302 entered L'Enfant  
22 Plaza, before going into the tunnel, the operator reported that  
23 the platform was clear of smoke. So OCC was operating under the  
24 understanding that the problem was located in the tunnel, as  
25 opposed to the problem being there at the station itself. So OCC



1 was operating under the understanding that it would be safe for  
2 Train 510 to move through the platform at L'Enfant Plaza and  
3 continue because it was a separate tunnel towards Branch Avenue.

4 MR. DOWNS: But with the report of the smoke in the  
5 station at about that same time, wouldn't that suggest that there  
6 is a fire in the station?

7 CHAIRMAN HART: Is that speculative?

8 MR. BALLARD: OCC got the alarm at 3:20 and 59 seconds  
9 letting them know that there was a fire. I don't know sitting  
10 here today that OCC deduced that there was a fire, that there was  
11 a smoke in the station when they allowed Train 510 to enter the  
12 platform.

13 CHAIRMAN HART: We only want to know what the facts are  
14 that you know, not -- no speculation, please.

15 MR. DOWNS: The Rail OCC has these large video screens,  
16 correct me if I'm wrong, that do show the views from the various  
17 security cameras in the station; is that correct?

18 MR. BALLARD: Yes, sir, they do.

19 MR. DOWNS: And is the fidelity of those cameras capable  
20 of showing the degree of smoke that might be in the station real-  
21 time?

22 MR. BALLARD: Yes, they are, but on this particular day,  
23 I'm not aware as to whether or not OCC viewed the station cameras  
24 or they had access to the station cameras, so I'm not sure what  
25 information as it relates to the condition of the platform at

1 L'Enfant Plaza that OCC had available to them at that moment that  
2 they made the decision to allow Train 510 to enter the platform at  
3 L'Enfant Plaza.

4 MR. DOWNS: Thank you. My time is up. I'll turn it  
5 back to Mr. Blackistone.

6 MR. BLACKISTONE: Thank you. We heard some discussion  
7 earlier about the incident command post at the scene. I'd like to  
8 direct a question to Chief Goldstein as to whether or not  
9 Montgomery County, or what are Montgomery County's policies  
10 regarding incident command posts, both who is to be there and what  
11 are the things that need to be done at the command post?

12 MR. GOLDSTEIN: As this incident unfolded and as a  
13 result of this incident, the Council of Government fire chiefs  
14 directed the Passenger Rail Subcommittee to look at all the  
15 regional policies. Mr. Bodmer talked about that earlier. Our  
16 policy specifically was dated and identified that our incident  
17 commander would be at the kiosk. That was not how we operated and  
18 that's not how we operate today.

19 All of the regional fire departments operate with their  
20 responding chief officer battalion chief, traditionally, as a  
21 stationary command post in the bus bay or the top-level component,  
22 most or best access via vehicle, an SUV, as you heard described  
23 earlier. That incident command post is where your battalion chief  
24 or chief officer will establish, where there'll be a  
25 representative of the transit police arriving.

1           You also, depending upon the incident specific, see a  
2 local law enforcement, county police or MPD, any other specialist  
3 from WMATA or building representatives. As we deal with some of  
4 these structures over top of Metro stations, you'll have a  
5 building representative from that structure itself.

6           So as we've identified unified command as a component,  
7 that's traditionally OC -- excuse me -- on-scene commander and the  
8 fire representative. You also have elements from local law  
9 enforcement, building representatives or those are represented by  
10 that structure that may also be involved at that unified command  
11 post.

12           Those start off as small SUVs, Suburbans or Tahoes, as  
13 an example, and then in a large-scale event like this, that would  
14 be transitioned ideally into a mobile command post vehicle and  
15 then, more suitably, into a hard structure nearby, because these  
16 are events where there's dozens of people or usually close to a  
17 dozen people that are integral in the information-sharing and the  
18 management of that incident. And you can't be in a vehicle, be it  
19 a SUV nor even a mobile command vehicle and adequately have those  
20 folks together for planning, briefing or strategy meetings.

21           MR. BLACKISTONE: And secondly, I wanted to follow up on  
22 some discussion earlier regarding training. Could you describe  
23 briefly the training that both Montgomery County Fire and Rescue  
24 and the local fire and rescue departments in Montgomery County do  
25 both in terms of hands-on training and then larger scenario

1 training?

2 MR. GOLDSTEIN: Mr. Bodmer talked about the exercises,  
3 and those exercises are critical more towards the full-scale and  
4 the tabletops. All of the regional fire departments initiate a  
5 recruit-level or initial level of training to all of our new  
6 personnel. That's then followed up by company-level training, and  
7 then a specialized training opportunity, because the extrication  
8 of personnel, or passengers, that are entrapped underneath these  
9 cars is a unique and specialized skill. So you have recruit  
10 initial training, company-level training. That should be followed  
11 up with a refresher or a reoccurring training level, specialized  
12 training for the rescue components or the extrication elements,  
13 command-level training, as we heard, through the joint supervisory  
14 operations and those training elements, and then full-scales or  
15 tabletops.

16 One of the components that has been charged to the  
17 Passenger Rail Subcommittee by the fire chiefs is to develop a  
18 training plan in conjunction with Mr. Bodmer's office at OEM so  
19 that there is a set criteria. One could best describe it as  
20 something similar to the ICS tiering. So you have a training at  
21 the initial level through command-level training, and that'd be a  
22 progressive component. That's in the works, and it is a product  
23 that we hope to see shortly.

24 MR. BLACKISTONE: Good. Thank you. My final question  
25 goes, really, to both of the WMATA representatives. At the

1 beginning of this Panel, you described a very hectic, high level  
2 of activity at the ROCC, which probably was out of the ordinary,  
3 but I suspect not totally unprecedented. What kinds of plans or  
4 preparations do you do for these very high-stress, high-incident  
5 times when you have a number of things going on? I suspect this  
6 was probably not unprecedented, but -- so how do you prepare for  
7 this sort of thing?

8 MR. BALLARD: In the rail control center itself, we try  
9 to select individuals who are capable of managing multiple  
10 incidents. The control center on a normal day, weekend, holiday  
11 is relatively quiet. The system is fully automatic, and normally,  
12 there's not a lot of interaction needed by OCC -- moving. On the  
13 days that incidents occur, it's part of my training, you know,  
14 it's part of the director of OCC's training now is that we train  
15 like the fire department, we train like individuals in the  
16 emergency room, to respond to those incidents when they occur. On  
17 a normal day, it's easy. There's not a lot to do. But when  
18 things happen, that's when the controllers actually, their  
19 training comes into use. The controllers are trained to respond  
20 to emergency type situations.

21 So one of the things that we're also looking at, back in  
22 July of this year, we got additional positions within OCC. And  
23 we're looking at the -- moving to an incident controller, so when  
24 situations occur, the incident could be moved to the incident  
25 controller. The incident controller will manage that situation.

1 And then when the situation is under control, then the section of  
2 track would be moved back to the controllers who would normally  
3 manage the system.

4 But of course, I'm not saying that the controllers  
5 aren't capable of handling the situations that they're presented  
6 with in the OCC. It's just that that would be a different  
7 approach which would allow us to make sure that there's better  
8 movement of the trains, the system trains that are not involved in  
9 the incident itself. So it's not a decision that's being made  
10 because I don't feel that the controllers can't handle the  
11 situation. It's that I think it would be more efficient, you  
12 know, in management of the system, the remainder of the system, by  
13 having an incident controller to manage certain incidents.

14 MR. BLACKISTONE: Great. Thank you very much.

15 And Dr. Poland, that concludes our panel's questions.

16 DR. POLAND: Chairman Hart, that concludes the technical  
17 panelists' second round of questions for Panel 2.

18 CHAIRMAN HART: Thank you very much. Before we close,  
19 Dr. Poland, can you please review the exhibit items that have been  
20 requested from this panel session?

21 DR. POLAND: Yes. And I'll ask Mr. Allen to review  
22 those at this time, as well.

23 MR. ALLEN: Okay. On Panel 2, we have requested -- I'll  
24 do it a little out of order -- from Montgomery County, we're  
25 looking for the 911 call scripts for how 911 operators deal with

1 calls from WMATA. The rest of the requests are to WMATA. The  
2 Rail OCC scripts for the controllers for dealing with incidents.  
3 We're going to check the docket and see if the WMATA playbook for  
4 handling smoke ventilation issues is in our docket. If not,  
5 that's a request to WMATA. We've requested an update for Exhibit  
6 D-1. We have the 2014 version in the docket. We need the 2015  
7 version, please. We're looking for the documentation on where the  
8 305 smoke alarm was received and why it was not received in the  
9 Rail OCC. We are looking for the WMATA protocol for handling  
10 ventilation in tunnels. We made a similar request for Panel 1.  
11 It may be the same document, and to the extent it is a different  
12 document, we would request both, please. The WMATA, what we're  
13 calling the post-accident review. We understand it may have a  
14 different title, ultimately, but whatever that is called, we would  
15 like that, please.

16           And, Mr. Chairman, that's all I have for this panel.  
17 Thank you.

18           CHAIRMAN HART: Thank you. That concludes the second  
19 panel and the first day of this hearing. So I would like to thank  
20 Dr. Poland for your guidance and leadership. I'd like to thank  
21 the tech panel for some very probing and informative questions.  
22 I'd like to thank the parties for their full engagement in this  
23 process. And last but not least, thank the panel that had to be  
24 the lions in the coliseum, as we were beating up on you, and I  
25 thank you for your very helpful answers in this process, as well.

1           MEMBER SUMWALT: And you wanted to thank your colleagues  
2 for the great questions, too, right?

3           CHAIRMAN HART: And I want to thank my colleagues for  
4 the great questions, obviously.

5           MEMBER SUMWALT: That's what I thought.

6           CHAIRMAN HART: Yes. So we will reconvene again  
7 tomorrow at 9:00, and we are adjourned for the day. Thank you.

8           (Whereupon, at 5:08 p.m., the hearing was adjourned.)



CERTIFICATE

This is to certify that the attached proceeding before the

NATIONAL TRANSPORTATION SAFETY BOARD

INVESTIGATION OF: WMATA SMOKE AND ELECTRICAL ARCING  
ACCIDENT IN WASHINGTON, D.C.

PLACE: Washington, D.C.

DATE: June 23, 2015

was held according to the record, and that this is the original,  
complete, true and accurate transcript which has been compared to  
the recording accomplished at the hearing.

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Edward Schweitzer  
Official Reporter