

## NATIONAL TRANSPORTATION SAFETY BOARD Investigative Hearing



Washington Metropolitan Area Transit Authority Metrorail train 302 that encountered heavy smoke in the tunnel between the L'Enfant Plaza Station and the Potomac River Bridge on January 12, 2015

Agency / Organization

Title

|  | OUC Metro                           | Radio Cover                           | age Testing S                         | Summary                                       |                                     |
|--|-------------------------------------|---------------------------------------|---------------------------------------|---|-------------------------------------|
|  |                                     | <b>~</b>                              | Ś                                     |   |                                     |
|  |                                     | 15, 20                                | 32,0                                  |   |                                     |
|  | 1123-14/2015                        | Thursday, January 15, 20'             | Tuesday, January 20, 20               | 1122.2312015                                  | Saturday, January 31, 2015          |
|  | Underground<br>Tunnel Test -<br>OUC | Underground<br>Tunnel Test -<br>WMATA | Underground<br>Tunnel Test -<br>WMATA | Signal Strength Test - Motorola / WMATA / OUC | Underground Tunnel<br>Test -<br>OUC |
| Red Line                                     |                                     |                                       |                                       |   |                                     |
| Tenleytown<br>Van Ness                       |                                     |                                       |                                       |   |                                     |
| Cleveland Park Woodley Park DuPont Circle    |                                     |                                       |                                       |   |                                     |
| Farragut North<br>Metro Center               |                                     |                                       |                                       |   |                                     |
| Gallery Place Judiciary Square Union Station |                                     |                                       |                                       | FAIL  |                                     |
| Blue Line                                    |                                     |                                       |                                       |   |                                     |
| Benning Road<br>Capitol Heights              |                                     |                                       |                                       | FAIL  |                                     |
| Orange Line<br>Foggy Bottom - GV             | VI I                                | FAIL                                  | FAIL                                  | FAIL  |                                     |
| Farragut West                                |                                     | FAIL                                  | FAIL                                  | FAIL  | FAIL                                |
| McPherson Sq<br>Metro Center                 |                                     |                                       |                                       | FAIL  |                                     |
| Federal Triangle                             |                                     |                                       |                                       |   |                                     |
| Smithsonian<br>L' Enfant Plaza               | FAIL                                |                                       |                                       |   |                                     |
| Federal Center SW Capitol South              |                                     | FAIL                                  | FAIL                                  |   |                                     |
| Eastern market Potomac Ave                   |                                     |                                       |                                       |   |                                     |
| Stadium Armory<br>Minnesota Ave              |                                     |                                       |                                       | FAIL  |                                     |
| Deanwood                                     |                                     |                                       |                                       |   |                                     |
| Green Line Fort Totten                       |                                     |                                       |                                       |   |                                     |
| Georgia Ave                                  |                                     |                                       | FAIL                                  |   |                                     |
| Columbia Heights U Street                    |                                     |                                       | FAIL                                  | FAIL  |                                     |
| Shaw - Howard U<br>Mt. Vernon Sq             |                                     |                                       |                                       |   |                                     |
| Gallery Place<br>Navy Archives               |                                     |                                       |                                       |   |                                     |
| L' Enfant Plaza Waterfront                   |                                     |                                       |                                       |   |                                     |
| Navy Yard                                    |                                     |                                       |                                       |   |                                     |
| Anacostia Congress Heights Branch Avenue     |                                     |                                       |                                       |   |                                     |
| Naylor Road                                  |                                     |                                       |                                       |   |                                     |
| NOTES  |                                     |                                       |                                       |   |                                     |

|                                 | <b>OUC Metro Ra</b>        |                             |                           |                           |                         |
|---------------------------------|----------------------------|-----------------------------|---------------------------|---------------------------|-------------------------|
|                                 | Tuesday, February 03, 2015 |                             |                           |                           |                         |
|                                 | 103,72                     | Saturday, February 07, 2015 | Friday, February 13, 2015 | Friday, February 20, 2015 | Friday, February 27, 25 |
|                                 | bruary                     | abrual.                     | uary                      | Jan                       | Wall                    |
|                                 | ker<br>'ay'                | 184,                        | Febre                     | Febre                     | Febru                   |
|                                 | (Vesde                     | Caturo                      | Criday'                   | Criday'                   | Ciday,                  |
|                                 | Underground Tunnel         | Underground Tunnel          | Underground               | Underground               | Underground             |
|                                 | Test -                     | Test -                      | Tunnel Test -             | Tunnel Test -             | Tunnel Test -           |
|                                 | OUC                        | OUC                         | OUC                       | OUC                       | OUC                     |
|                                 |                            |                             |                           |                           |                         |
| Red Line                        |                            |                             |                           |                           |                         |
| Tenleytown<br>Van Ness          |                            | FAIL                        | FAIL                      | FAIL                      |                         |
| Cleveland Park                  |                            | FAIL                        | FAIL                      | FAIL                      | FAIL                    |
| Woodley Park                    |                            |                             | TAIL                      | TAIL                      | TAIL                    |
| DuPont Circle                   |                            |                             |                           |                           |                         |
| Farragut North                  |                            |                             | FAIL                      | FAIL                      |                         |
| Metro Center                    | FAIL                       | FAIL                        |                           |                           |                         |
| Gallery Place                   |                            |                             |                           |                           |                         |
| Judiciary Square                | FAIL                       |                             |                           | FAIL                      |                         |
| Union Station                   |                            |                             |                           |                           |                         |
| Rhio Lino                       |                            |                             |                           |                           |                         |
| Blue Line<br>Benning Road       |                            | FAIL                        | FAIL                      |                           |                         |
| Capitol Heights                 |                            | FAIL                        | FAIL                      |                           |                         |
| capitorricignts                 |                            |                             |                           |                           |                         |
| Orange Line                     |                            |                             |                           |                           |                         |
| Foggy Bottom - GW               | U                          |                             | FAIL                      |                           |                         |
| Farragut West                   |                            |                             |                           | FAIL                      |                         |
| McPherson Sq                    |                            | FAIL                        |                           | FAIL                      |                         |
| Metro Center                    |                            |                             |                           |                           | FAIL                    |
| Federal Triangle                |                            |                             |                           | FAIL                      |                         |
| Smithsonian                     |                            | FA.11                       |                           | FAIL                      |                         |
| L' Enfant Plaza                 |                            | FAIL                        |                           | FAIL                      |                         |
| Federal Center SW Capitol South |                            | FAIL                        | FAIL                      |                           |                         |
| Eastern market                  |                            | FAIL                        | FAIL                      |                           |                         |
| Potomac Ave                     |                            |                             |                           |                           |                         |
| Stadium Armory                  | FAIL                       |                             | FAIL                      |                           |                         |
| Minnesota Ave                   |                            |                             |                           |                           |                         |
| Deanwood                        |                            |                             |                           |                           |                         |
| _                               |                            |                             |                           |                           |                         |
| Green Line                      |                            |                             |                           |                           |                         |
| Fort Totten                     |                            | FAIL                        | FAIL                      | FALL                      | FALL                    |
| Georgia Ave                     |                            |                             |                           | FAIL                      | FAIL                    |
| Columbia Heights U Street       |                            |                             |                           |                           |                         |
| Shaw - Howard U                 |                            |                             |                           |                           |                         |
| Mt. Vernon Sq                   |                            |                             |                           |                           |                         |
| Gallery Place                   |                            |                             |                           |                           | FAIL                    |
| Navy Archives                   |                            |                             |                           |                           |                         |
| L' Enfant Plaza                 |                            |                             |                           |                           |                         |
| Waterfront                      |                            |                             |                           |                           |                         |
| Navy Yard                       |                            |                             |                           |                           |                         |
| Anacostia                       |                            |                             | FAIL                      |                           | FAIL                    |
| Congress Heights                |                            |                             |                           |                           |                         |
| Branch Avenue                   |                            |                             |                           |                           |                         |
| Naylor Road                     |                            |                             |                           |                           |                         |
| NOTES                           |                            |                             |                           |                           |                         |

|                        | OUC Metro Radio Coverage Testing Summary |                         |                           |                                       |                                       |  |  |
|------------------------|--|-------------------------|---------------------------|---------------------------------------|---------------------------------------|--|--|
|                        |  |                         |                           |                                       |                                       |  |  |
|                        | ۸,5                                      | 2015                    |                           | S                                     | S                                     |  |  |
|                        | 20,                                      | 21,1                    | att.                      | 20,                                   | 1,20.                                 |  |  |
|                        | ,& <sup>*</sup> 6',                      | narci.                  | Kus                       | " " " " " " " " " " " " " " " " " " " | " " " " " " " " " " " " " " " " " " " |  |  |
|                        | War                                      | 4,                      | 2824,                     | Marc                                  | Mars                                  |  |  |
|                        | Friday, March 6, 2015                    | rurdo.                  | ednes                     | Friday, March 20, 2015                | Friday, March 27, 2015                |  |  |
|                        | Ku                                       | Saturday, March 7, 2015 | 1/1                       | Kir.                                  | 40                                    |  |  |
|                        | Underground                              | Underground             | Underground Tunnel Test - | Underground Tunnel                    | _                                     |  |  |
|                        | Tunnel Test -                            | Tunnel Test             | OUC                       | Test -                                | Test -                                |  |  |
|                        | OUC                                      | (RETEST) -              |                           | OUC                                   | OUC                                   |  |  |
| Dad Usa                |  | OUC                     |                           |                                       |                                       |  |  |
| Red Line               |  |                         |                           |                                       |                                       |  |  |
| Tenleytown<br>Van Ness |  |                         |                           |                                       |                                       |  |  |
| Cleveland Park         |  |                         |                           | FAIL*                                 | FAIL*                                 |  |  |
|                        |  |                         |                           | FAIL*                                 | FAIL*                                 |  |  |
| Woodley Park           |  |                         |                           | FAIL                                  | FAIL                                  |  |  |
| DuPont Circle          | FAU                                      |                         | FAII                      |                                       | FAU                                   |  |  |
| Farragut North         | FAIL                                     |                         | FAIL                      |                                       | FAIL                                  |  |  |
| Metro Center           |  |                         |                           |                                       |                                       |  |  |
| Gallery Place          |  |                         |                           |                                       |                                       |  |  |
| Judiciary Square       |  |                         |                           |                                       |                                       |  |  |
| Union Station          |  |                         |                           |                                       |                                       |  |  |
| Diverting              |  |                         |                           |                                       |                                       |  |  |
| Blue Line              |  |                         |                           |                                       |                                       |  |  |
| Benning Road           |  |                         |                           |                                       |                                       |  |  |
| Capitol Heights        |  |                         |                           |                                       |                                       |  |  |
| Orange Line            |  |                         | 1                         |                                       | T                                     |  |  |
| Foggy Bottom - GWI     | J  |                         |                           |                                       |                                       |  |  |
| Farragut West          |  |                         |                           |                                       |                                       |  |  |
| McPherson Sq           |  |                         | FAIL                      |                                       | FAIL                                  |  |  |
| Metro Center           |  |                         |                           |                                       |                                       |  |  |
| Federal Triangle       |  |                         |                           |                                       |                                       |  |  |
| Smithsonian            |  |                         |                           |                                       |                                       |  |  |
| L' Enfant Plaza        |  |                         |                           |                                       |                                       |  |  |
| Federal Center SW      |  |                         |                           |                                       |                                       |  |  |
| Capitol South          | FAIL                                     |                         |                           |                                       |                                       |  |  |
| Eastern market         |  |                         |                           |                                       |                                       |  |  |
| Potomac Ave            |  |                         |                           |                                       |                                       |  |  |
| Stadium Armory         |  |                         |                           |                                       |                                       |  |  |
| Minnesota Ave          |  |                         |                           |                                       |                                       |  |  |
| Deanwood               |  |                         |                           |                                       |                                       |  |  |
| Green Line             |  |                         |                           |                                       |                                       |  |  |
| Fort Totten            |  |                         |                           |                                       |                                       |  |  |
| Georgia Ave            | FAIL                                     | FAIL                    | FAIL                      |                                       |                                       |  |  |
| Columbia Heights       |  |                         |                           |                                       |                                       |  |  |
| U Street               |  |                         |                           |                                       |                                       |  |  |
| Shaw - Howard U        |  |                         |                           |                                       |                                       |  |  |
| Mt. Vernon Sq          |  |                         |                           |                                       |                                       |  |  |
| Gallery Place          |  |                         |                           |                                       |                                       |  |  |
| Navy Archives          |  |                         |                           |                                       |                                       |  |  |
| L' Enfant Plaza        |  |                         |                           |                                       |                                       |  |  |
| Waterfront             |  |                         |                           |                                       |                                       |  |  |
| Navy Yard              |  |                         |                           |                                       |                                       |  |  |
| Anacostia              |  |                         |                           |                                       |                                       |  |  |
| Congress Heights       |  |                         |                           |                                       |                                       |  |  |
| Branch Avenue          |  |                         |                           |                                       |                                       |  |  |
| Naylor Road            |  |                         |                           |                                       |                                       |  |  |
| -                      |  |                         | '                         | * Cleveland Park to                   | * Cleveland Park to                   |  |  |
| NOTES                  |  |                         |                           | Woodley Park Tunnel                   | Woodley Park Tunnel                   |  |  |
|                        |  |                         |                           | Failed                                | Failed                                |  |  |

|  |                               | OUC Metro Radio Coverage Testing Summary |                               |                               |                               |                               |  |
|--|-------------------------------|--|-------------------------------|-------------------------------|-------------------------------|-------------------------------|--|
|  | Friday, April 03, 2015        | Friday, April 10, 2015                   | Friday, April 27, 2015        | Friday, April 2A, 2015        | Friday, May 01, 2015          | Friday, May 08, 2015          |  |
|  | Underground Tunnel Test - OUC | Underground Tunnel Test - OUC            | Underground Tunnel Test - OUC | Underground Tunnel Test - OUC | Underground Tunnel Test - OUC | Underground Tunnel Test - OUC |  |
| Red Line                                     |                               |  |                               |                               |                               |                               |  |
| Tenleytown<br>Van Ness                       |                               |  |                               |                               |                               |                               |  |
| Cleveland Park Woodley Park DuPont Circle    | FAIL                          | FAIL                                     | FAIL                          |                               |                               |                               |  |
| Farragut North<br>Metro Center               | FAIL                          |  |                               |                               | FAIL<br>FAIL                  | FAIL<br>FAIL                  |  |
| Gallery Place Judiciary Square Union Station |                               |  |                               |                               |                               |                               |  |
| Blue Line Benning Road                       |                               |  |                               |                               |                               |                               |  |
| Capitol Heights                              |                               |  |                               |                               |                               |                               |  |
| Orange Line                                  |                               | FAIL                                     |                               |                               |                               |                               |  |
| Foggy Bottom - GWU<br>Farragut West          |                               | FAIL                                     |                               |                               |                               |                               |  |
| McPherson Sq                                 | FAIL                          |  |                               |                               |                               |                               |  |
| Metro Center                                 |                               |  |                               |                               |                               |                               |  |
| Federal Triangle Smithsonian                 |                               |  |                               |                               |                               |                               |  |
| L' Enfant Plaza                              |                               |  | FAIL                          |                               |                               |                               |  |
| Federal Center SW                            |                               |  |                               |                               |                               |                               |  |
| Capitol South                                |                               |  |                               |                               |                               |                               |  |
| Eastern market                               |                               |  |                               |                               |                               |                               |  |
| Potomac Ave                                  |                               |  |                               |                               |                               |                               |  |
| Stadium Armory                               |                               |  |                               |                               |                               |                               |  |
| Minnesota Ave<br>Deanwood                    |                               |  |                               |                               |                               |                               |  |
| Green Line                                   |                               |  |                               |                               |                               |                               |  |
| Fort Totten                                  |                               |  |                               |                               |                               |                               |  |
| Georgia Ave Columbia Heights U Street        |                               |  |                               | FAIL                          |                               |                               |  |
| Shaw - Howard U                              |                               |  |                               |                               |                               |                               |  |
| Mt. Vernon Sq                                |                               |  |                               |                               |                               |                               |  |
| Gallery Place                                |                               |  |                               |                               |                               |                               |  |
| Navy Archives                                |                               |  |                               |                               |                               |                               |  |
| L' Enfant Plaza                              |                               |  |                               |                               |                               |                               |  |
| Waterfront                                   |                               |  |                               |                               |                               |                               |  |
| Navy Yard                                    |                               |  |                               |                               |                               |                               |  |
| Anacostia                                    |                               |  |                               |                               |                               |                               |  |
| Congress Heights                             |                               |  |                               |                               |                               |                               |  |
| Branch Avenue                                |                               |  |                               |                               |                               |                               |  |
| Naylor Road                                  | * Cleveland Park to           |  |                               |                               |                               |                               |  |
| NOTES  | Woodley Park Tunnel Failed    |  |                               |                               |                               |                               |  |

|   | OUC Metro Radio Coverage Testing Summary |                      |                      |                       |  |  |  |
|---|--|----------------------|----------------------|-----------------------|--|--|--|
|   |  |                      |                      |                       |  |  |  |
|   | Friday, May 15, 2015                     | Friday, May 22, 2015 | Friday, May 29, 2015 | Friday, June 05, 2015 |  |  |  |
|   | igs, bus,                                | iday, Ma             | iga, us,             | iday, Jun             |  |  |  |
|   | Underground Tunnel                       | Underground Tunnel   | Underground Tunnel   | Underground Tunnel    |  |  |  |
|   | Test -<br>OUC                            | Test -<br>OUC        | Test -<br>OUC        | Test -<br>OUC         |  |  |  |
| Red Line                                    |  |                      |                      |                       |  |  |  |
| Tenleytown<br>Van Ness                      |  |                      |                      |                       |  |  |  |
| Cleveland Park                              |  |                      |                      |                       |  |  |  |
| Woodley Park                                |  |                      |                      |                       |  |  |  |
| DuPont Circle                               |  |                      |                      |                       |  |  |  |
| Farragut North                              |  |                      |                      |                       |  |  |  |
| Metro Center                                |  |                      |                      |                       |  |  |  |
| Gallery Place                               |  |                      |                      |                       |  |  |  |
| Judiciary Square                            |  |                      |                      |                       |  |  |  |
| Union Station                               |  |                      |                      |                       |  |  |  |
| Blue Line                                   |  |                      |                      |                       |  |  |  |
| Benning Road                                |  |                      |                      |                       |  |  |  |
| Capitol Heights                             |  |                      |                      |                       |  |  |  |
| Orange Line                                 | ı  |                      | ı                    |                       |  |  |  |
| Foggy Bottom - GWU                          |  |                      |                      |                       |  |  |  |
| Farragut West                               |  |                      |                      |                       |  |  |  |
| McPherson Sq                                |  |                      |                      |                       |  |  |  |
| Metro Center                                |  |                      |                      |                       |  |  |  |
| Federal Triangle                            |  |                      |                      |                       |  |  |  |
| Smithsonian                                 |  |                      |                      |                       |  |  |  |
| L' Enfant Plaza                             |  |                      |                      |                       |  |  |  |
| Federal Center SW                           |  |                      |                      |                       |  |  |  |
| Capitol South                               |  |                      |                      |                       |  |  |  |
| Eastern market                              |  |                      |                      |                       |  |  |  |
| Potomac Ave                                 |  |                      |                      |                       |  |  |  |
| Stadium Armory                              |  |                      |                      |                       |  |  |  |
| Minnesota Ave<br>Deanwood                   |  |                      |                      |                       |  |  |  |
|   |  |                      |                      |                       |  |  |  |
| Green Line                                  |  |                      |                      |                       |  |  |  |
| Fort Totten                                 |  |                      |                      |                       |  |  |  |
| Georgia Ave<br>Columbia Heights<br>U Street |  |                      |                      |                       |  |  |  |
| Shaw - Howard U                             |  |                      |                      |                       |  |  |  |
| Mt. Vernon Sq                               |  |                      |                      |                       |  |  |  |
| Gallery Place                               |  |                      |                      |                       |  |  |  |
| Navy Archives                               |  |                      |                      |                       |  |  |  |
| L' Enfant Plaza                             |  |                      |                      |                       |  |  |  |
| Waterfront                                  |  |                      |                      |                       |  |  |  |
| Navy Yard                                   |  |                      |                      |                       |  |  |  |
| Anacostia                                   |  |                      |                      |                       |  |  |  |
| Congress Heights                            |  |                      |                      |                       |  |  |  |
| Branch Avenue                               |  |                      |                      |                       |  |  |  |
| Naylor Road                                 |  |                      |                      |                       |  |  |  |
| NOTES                                       |  |                      |                      |                       |  |  |  |