UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

In the Matter of the	)	
FORT TOTTEN METRORAIL CASES	)	
Arising Out of the Events of June 22, 2009	)	
	)	
LEAD CASE: *Jenkins v. Washington*	)	**Case No.: 1:10-mc-314 (RBW)**
Metropolitan Area Transit Authority, et al.	)	
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	)	
THIS DOCUMENT RELATES TO:	)	
ALL CASES	)	
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DEFENDANT WMATA'S MEMORANDUM IN OPPOSITION TO THE CO-DEFENDANTS' JOINT MOTION FOR SUMMARY JUDGMENT

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Summary of the Argument

Proximate causation, including the issue of superseding negligence, is almost always a question of fact. This case is no exception. Significant questions of fact exist about whether it was reasonable or foreseeable under the circumstances for WMATA to respond to a perceived failsafe condition on its automatic train control system in the way that it did. As a result, Co-defendants' joint motion for summary judgment should be denied.[1]

A few days before the collision, WMATA's technicians observed a condition known as "bobbing" at the location of the June 22, 2009 accident occurred. They understood bobbing to be a failsafe condition, meaning that it would not affect safe movement of trains on the railroad. They did not know that an insidious spurious signal, known as parasitic oscillation, was causing the automatic train control system to stop detecting trains.

Co-defendants Alstom and Ansaldo, however, had been aware of parasitic oscillation on audio-frequency track circuits for decades. Parasitic oscillation was a well-known phenomenon in the signaling industry in the 1970s when Alstom designed and manufactured WMATA's original automatic train control (ATC) system. Ansaldo designed and manufactured replacement components for WMATA's system that were guaranteed to be compatible with the original Alstom equipment. And it had an internal memorandum from 1969 stating that parasitic oscillation was known to cause unsafe and unpredictable hazards in track circuits.

WMATA was unaware of the parasitic oscillation, however. Its technicians believed the ATC system was operating in a failsafe manner. WMATA's Operations Control Center (OCC) and Maintenance Operations Center (MOC) used a computer system from ARINC, known as

[1] For consistency, Defendant Alstom Signaling Inc., formerly General Railway Signal, will be referred to as "Alstom," Defendant Ansaldo STS USA, Inc., formerly Union Switch & Signal, Inc., will be referred to as "Ansaldo," Defendant ARINC, Inc., will be referred to as ARINC, and Defendant Washington Metropolitan Area Transit Authority will be referred to as "WMATA."

Advanced Information Management (AIM), which issued various alarms about the condition of the railroad. AIM issued hundreds of thousands of alarms per week. Many of these alarms were designed to indicate both hazardous and benign conditions, and they were frequently incorrect. As a result, ARINC's AIM system did not advise WMATA in a meaningful or effective manner of a hazardous condition on the railroad prior to the June 22, 2009 accident.

Accordingly, WMATA and its technicians and operators were unaware of the true hazard at B2-304 from June 17, 2009 to June 22, 2009. Believing the condition to be a benign maintenance issue, a question of fact exists about whether WMATA responded in a manner that was reasonable and foreseeable under the circumstances. As a result, the Co-defendants' joint motion for summary judgment should be denied.

Statement of Material Facts

June 22, 2009 Accident

On Monday, June 22, 2009, at approximately 4:58 p.m., a southbound WMATA train (Train No. 112) collided with another southbound WMATA train (Train No. 214) on the Red Line between the Takoma and Fort Totten stations in the District of Columbia. (SOF ¶ 6.)[2] Train No. 214, the struck train, was heading in the direction of downtown Washington D.C. when it lost speed commands from WMATA's audio-frequency automatic train control system. (SOF ¶ 6; CSOF ¶ 1W.) The loss of speed commands caused Train No. 214 to stop within a malfunctioning track circuit, known as B2-304. (CSOF ¶ 1W.)

Unknown to WMATA and its operators, a latent defect in the original automatic train control system, known as "parasitic oscillation," caused an unintended or spurious signal to be transmitted and interpreted as the correct track-vacant signal for B2-304. (CSOF ¶ 12.) As a

[2] Record citations to the Co-defendants' Statement of Material Facts shall be made to "SOF ¶ __." Record citations to WMATA's Counter-Statement of Materials Facts shall be made to "CSOF ¶ __."

result of the parasitic oscillation, Train No. 214 was not detected at B2-304, and Train No. 112 continued to receive speed commands as though the track circuit were vacant. (CSOF ¶ 12.) The operator of Train No. 112, Jeanice McMillan, struck the emergency-stop button as her train approached the rear-end of Train No. 214. (CSOF ¶ 2W.) There was not enough time to avoid the collision, and nine people died in the accident, including Ms. McMillan. Many others were also injured. (SOF ¶ 7; CSOF ¶ 3W.)

WMATA's Automatic Train Control System

WMATA employs an automatic train control (ATC) system to enforce safe train detection, separation, and speed restrictions. (CSOF ¶ 3, 12, 52W.) This system consists of track circuits of varying length. Located on the tracks are wayside devices known as impedance bonds. (CSOF ¶ 4, 52W.) Each circuit has two impedance bonds. (CSOF ¶ 12, 52W.) The impedance bonds communicate via transmitters and receivers on modules, which are located at the nearest station in an unmanned train control room. (CSOF ¶ 52W.) In this case, the train control room for track circuit B2-304 was located at the Fort Totten station. (CSOF ¶ 22.)

Communication between the impedance bonds and the modules is accomplished by receiver and transmitter modules that exchange audio-frequency signals. (CSOF ¶ 12, 52W.) A train's presence on the track is sensed when its wheels and axles cause a short between the rails. (CSOF ¶ 53W.) This is known as a "shunt." (CSOF ¶ 22, 53W.) A shunt causes a vital relay, which is connected to the modules, to de-energize or "drop." (CSOF ¶ 22, 53W.) The relay remains energized, or "picked," when the circuit is vacant. (CSOF ¶ 22, 53W.)

Alstom designed WMATA's original ATC system in the 1970s and represented that the system was "failsafe." (SOF ¶ 16; CSOF ¶ 3, 12.) Beginning in 2002, Ansaldo provided replacement track circuits to WMATA. (CSOF ¶ 4, 7W.) Ansaldo also represented that its

system was "failsafe." (CSOF ¶ 4.) In the context of an automatic train control system, the failsafe principle means that any failure of a track circuit's vital equipment will cause the system to revert to its last-known safe condition. (CSOF ¶ 12.) As a result, track circuits are configured to be extremely sensitive to a shunt. (CSOF ¶ 22.) WMATA's ATC technicians test a track circuit's shunting sensitivity by laying down a low-resistance .06-ohm shunt strap between the rails. (CSOF ¶ 22.) If the relay detects the shunt strap and interprets it as a train, the circuit is generally considered to be safe. (CSOF ¶ 22, 25, 28, 35, 44.)

A common problem on track circuits is "bobbing." (CSOF ¶ 25, 61.) This occurs when the vital relay of an unoccupied circuit fluctuates between energized and de-energized states. (SOF ¶ 23; CSOF ¶ 25.) Relay logic interprets anything other than an energized state as a train. (CSOF ¶ 25.) This has the effect of slowing trains approaching a bobbing track circuit. (CSOF ¶ 25, 26.) There are numerous causes for bobbing. (CSOF ¶ 25, 61.)

Because the system interprets a bobbing relay as a temporarily occupied circuit, WMATA considered bobbing to be a maintenance problem prior to the accident. (CSOF ¶ 25, 26.) Although it needed to be corrected, WMATA did not consider bobbing to be a threat to safe train movement. (CSOF ¶ 25, 26.) WMATA understood, however, that a circuit was not failsafe if a relay remained energized, or picked, under a train. (CSOF ¶ 35, 44.) Several witnesses from Alstom and Ansaldo, Neal Illenberg, Jack Ellsworth, Jim Hoelscher, and Denny Pascoe, agreed that bobbing presented a maintenance issue, not a safety problem. (CSOF ¶ 25.)

June 2005 Incident Near Rosslyn

In June 2005, WMATA's ATC engineers, Johann Glansdorp, Harry Heilmann, and Tom Kellough learned that a train operator had to brake unexpectedly to avoid a collision near the Rosslyn station. (CSOF ¶ 95.) During the investigation that followed, various tests were conducted. (CSOF ¶ 95.) At one point, the WMATA engineers cut the ties securing the bond-

lines cables above the train control room racks. (CSOF ¶ 95.) As soon as they separated the bond-line ties, the problem went away. (CSOF ¶ 95.)

WMATA's engineers invited Alstom to participate in the investigation about a week after the incident. (CSOF ¶ 95.) Jack Ellsworth, an Alstom engineer, came to Washington, D.C., to evaluate the problem. (CSOF ¶ 95.) Although neither WMATA nor Alstom ever identified a specific fault in the bond-line cables, they accepted the conclusion that a cable fault was responsible for the problem. (CSOF ¶ 95.) Specifically, they concluded that a fault or short between the cables caused a loss of train detection near Rosslyn . (CSOF ¶ 95.) After the June 22, 2009 accident, however, testing of the modules involved in the Rosslyn incident exhibited the same latent defect, parasitic oscillation, as the modules from B2-304. (CSOF ¶ 95.)

Loss of Shunt Tool

In response to the Rosslyn incident, Mr. Heilmann began working with Tim Shoppa in WMATA's Information Technology department to develop a loss of shunt tool. (CSOF ¶ 4W.) The loss of shunt tool is an algorithm on train detection data reported from the train control rooms' Remote Terminal Units (RTUs). (CSOF ¶ 97.) The algorithm employs what is known as the "three-second rule." (CSOF ¶ 97.) Based on the length of trains and track circuits and the speed of trains in the system, the loss of shunt tool reports an anomaly any time a train occupies two consecutive track circuits for less than three full seconds. (CSOF ¶ 97.) Several factors may result in a loss of shunt event under the tool, but the most important of these is potential loss of train detection. (CSOF ¶ 5W.)

Neither Alstom nor Ansaldo ever recommended that WMATA create a loss of shunt tool. (CSOF ¶ 4W.) Nor did they ever recommend that WMATA regularly review and analyze data generated from the track circuits. (CSOF ¶ 4W.) An evaluation of track circuit data reported

from the RTU is not part of the Alstom or Ansaldo track circuit maintenance procedures. (CSOF ¶ 106.) WMATA created this algorithm in response to the events at Rosslyn. (CSOF ¶ 4W.) WMATA's ATC technicians do not have the loss of shunt tool data, sometimes referred to as an AIM strip chart, available to them in the various train control rooms when they are adjusting and verifying track circuits. (CSOF ¶ 30, 31, 40.)

WMATA's engineers developed a procedure for the ATC maintenance supervisors to run and evaluate the loss of shunt tool on a monthly basis. (SOF ¶ 100.) Mr. Heilmann trained Matt Matyuf, who was then an Assistant Superintendant of Track Structures & System Maintenance (TSSM), on how to use the tool. (CSOF ¶ 104.) Mr. Matyuf testified, however, that TSSM did not accept responsibility for running the loss of shunt tool every month. (SOF ¶ 104.) Instead, he recalled running the loss of shunt tool on less than ten occasions, in response to specifically identified track issues. (CSOF ¶ 104.) Other TSSM supervisors do not recall receiving instructions to perform the loss of shunt tool. (SOF ¶ 103.) Nevertheless, Johann Glansdorp, a WMATA ATC engineer, continued to run the tool on a weekly or biweekly basis. (CSOF ¶ 100.)

Track Circuit Replacement Projects

Alstom designed, manufactured, and sold WMATA's original ATC system in the 1970s. (CSOF ¶ 3.) This included the modules, impedance bonds, and relays. (CSOF ¶ 3.) Notably, the original contract between WMATA and Alstom stated that "[a]ny amplifier breaking into spurious oscillations shall not result in an unsafe condition." (Contract No. 1Z2011 ¶ 9.4.3.1.) (CSOF ¶ 3.) The original equipment was more than 30 years old, and it became difficult for WMATA to obtain replacement parts. WMATA also wanted to run longer, eight-car, trains. This required more return current than the original equipment could handle. (CSOF ¶ 6W.)

As a result, WMATA began several measures to upgrade its track circuits. (CSOF ¶ 4, 6W, 7W, 8W.) As part of the Metro Matters program, WMATA began installing high-current impedance bonds to run eight-car trains. (CSOF ¶ 6W.) WMATA purchased the high-current bonds from Ansaldo. (CSOF ¶ 6W.) WMATA also entered into two track circuit replacement contracts with Ansaldo. (CSOF ¶ 4, 7W, 8W.) Under the first contract, Ansaldo provided track circuit replacement equipment, including bonds and modules, for three stations on WMATA's Orange Line. (CSOF ¶ 7W.) The second contract included track circuit replacements at 22 locations throughout WMATA's system. (CSOF ¶ 4, 8W.)

Due to various safety and scheduling issues, installation of the Ansaldo bonds preceded replacement of the Alstom modules. (CSOF ¶ 9W.) As such, the track circuits were being operated temporarily in a mixed configuration with Ansaldo bonds and Alstom modules. (CSOF ¶ 4, 10W.) As a result, WMATA's contract with Ansaldo specifically required Ansaldo to provide bonds that would be "compatible" with the existing Alstom modules. (CSOF ¶ 4, 10W.) Ansaldo's product engineer, Robert Bozio, understood "compatibility" to mean that the Ansaldo impedance bonds would not compromise the failsafe operation of the track circuit in a mixed configuration with Alstom modules. (CSOF ¶ 11W.)

Despite the requirement to provide compatible equipment, Ansaldo did not conduct any engineering analysis of how its impedance bonds would operate in track circuits with Alstom modules. (CSOF ¶ 12W-22W.) Other than a brief conversation about using the same bonds Ansaldo previously sold to WMATA for a new line installation, Mr. Bozio testified that he did not spend any time at all evaluating the use of the Ansaldo bonds in mixed track circuits. (CSOF ¶ 21W.) He could not recall evaluating the differences between the Alstom and Ansaldo impedance bonds. (CSOF ¶ 22W.) And he did not consider what, if any, impact those differences

could have on the safe operation of the mixed track circuits. (CSOF ¶ 21W, 22W.) Otherwise, Ansaldo's compatibility testing was limited to observing its bonds in a mixed configuration at a WMATA test circuit and at one location, Landover Yard, for about a month. (CSOF ¶ 16W.)

Ansaldo's failure to compare the electronic characteristics of its impedance bonds to the Alstom bonds and modules is significant. Most importantly, the Ansaldo and Alstom bonds were designed differently in terms of their turns-ratio, which created different levels of impedance between the two pieces of equipment. (CSOF ¶ 26W.) These differences resulted in WMATA's technicians needing to increase power levels during about one-third of the Ansaldo bond installations, including the June 17, 2009 installation at B2-304. (CSOF ¶ 24W.) The power increase at B2-304 created the electronic conditions necessary for parasitic oscillation, a latent defect on the Alstom modules, to mimic a valid track-vacant signal. (CSOF ¶ 23W-26W.)

Ansaldo was aware of the fact that WMATA's technicians were encountering difficulty during the bond installations. (CSOF ¶ 27W.) They knew that installers frequently needed to increase power levels on the Alstom modules after installing the Ansaldo bonds. (CSOF ¶ 27W.) They knew that WMATA had encountered bobbing problems at Farragut North during the bond replacement project. (CSOF ¶ 28W.) Prior to the accident, Ansaldo also learned of a compatibility problem with track circuit B1-245. (CSOF ¶ 29W.) After an Ansaldo high-current bond was installed at track circuit B1-245, a maintenance crew observed a loss of train detection during a routine inspection. (CSOF ¶ 30W.) WMATA had to remove the Ansaldo high-current bond from service and reinstall the original Alstom bond to remedy the loss of train detection. (CSOF ¶ 31W.) WMATA informed Ansaldo of this compatibility problem. (CSOF ¶ 29W.) But Ansaldo did not evaluate the issue to determine if there was a broader compatibility problem, and the track-circuit replacement program continued. (CSOF ¶ 12W-22W.)

Around the same time that the problem was discovered at B1-245, the Alstom receiver impedance bond for track circuit B2-304, the location of the June 22, 2009 accident, was replaced with a high-current bond from Ansaldo as part of the Metro Matters program. (CSOF ¶ 33W.) Shortly after the high-current bond was installed on December 12, 2007, track circuit B2-304 began bobbing. (CSOF ¶ 34W.) But there were no indications that B2-304 was losing train detection from December 12, 2007 until June 17, 2009. (CSOF ¶ 34W.)

Bond Installation on June 17, 2009

During the midnight shift on June 17, 2009, a WMATA Construction Inspection & Testing (CIT) crew reported to Fort Totten station to replace the second Alstom impedance bond at track circuit B2-304 with a new Ansaldo bond. (CSOF ¶ 22.) The crew's leader was Jonita Dowling. (CSOF ¶ 22.) Ms. Dowling was an "AA" mechanic, which is WMATA's highest designation for an ATC technician. (CSOF ¶ 22.) Ms. Dowling was joined by Victor Grubbs, an "A" mechanic. (CSOF ¶ 22, 34, 35.) Ms. Dowling worked in the Fort Totten train control room with an apprentice, Tyshia Jackson, while Mr. Grubbs and several other mechanics installed and tested the new impedance bond on the wayside. (CSOF ¶ 22, 35, 37.)

Once Mr. Grubbs and his crew installed the bond, Ms. Dowling began the adjustment and verification process. (CSOF ¶ 22.) To adjust the track circuit, a shunt with no resistance, also called a "hard shunt," was placed 20 feet outside of the receiver bond. (CSOF ¶ 22.) Once the hard shunt was in place, Ms. Dowling began adjusting the gain on the receiver module to get the relay to pick. (CSOF ¶ 22.) Ms. Dowling encountered difficulty getting the relay to stay picked. (CSOF ¶ 22.) As such, she informed her crew that she would need to adjust the power setting from 30 percent to 55 percent. (CSOF ¶ 22. 25W) On the Alstom modules, this is a one-step change in power levels. (CSOF ¶ 25W.)

After Ms. Dowling changed the power setting, she tried to readjust. (CSOF ¶ 22.) Again, she encountered difficulty with the relay bobbing out of the picked position. (CSOF ¶ 22.) She asked her crew to check all of their connections. (CSOF ¶ 22.) Then, Ms. Dowling tried to adjust again. (CSOF ¶ 22.) After she obtained the adjustment she wanted, the wayside crew began the verification process. (CSOF ¶ 22.) This consists of laying a soft shunt, adjusted to .06 ohms of resistance, between the rails. (CSOF ¶ 22.) Specifically, the crew placed the soft shunt ten feet inside the receiver bond, in the middle of the circuit, and ten feet inside the transmitter bond. (CSOF ¶ 22. 78) Each time the soft shunt was placed on the tracks, Ms. Dowling should have seen the vital relay drop to simulate the presence of a train. (CSOF ¶ 22.)

During this process, however, Ms. Dowling had trouble seeing one of the shunts. (CSOF ¶ 22.) She asked her crew to change the shunt strap. (CSOF ¶ 22.) Once they obtained a new shunt strap, Ms. Dowling re-adjusted the circuit, and her crew placed the verification shunts at three locations. (CSOF ¶ 22.) Both Ms. Dowling and Mr. Grubbs testified that the circuit successfully verified at three places. (CSOF ¶ 22, 78.) Ms. Dowling did not observe bobbing during the verification process. (CSOF ¶ 22.) Post-accident evaluation of the circuit's loss of shunt data, which was not available to Ms. Dowling on June 17, 2009, shows that B2-304 was bobbing during the verification. (CSOF ¶ 30. 40) However, according to WMATA's Assistant Chief of Engineering, Harry Heilmann, Ms. Dowling may have been seeing the malfunctioning operation of the track circuit relay, due to the parasitic oscillation, and interpreted the relay's action as a valid shunt. (CSOF ¶ 29.)

Shortly after the CIT crew completed the adjustment and verification process, however, Ms. Dowling observed bobbing, which she understood to be a failsafe condition, on track circuit B2-304. (CSOF ¶ 22, 25.) She informed the CIT supervisor, Christopher Lucas. (CSOF ¶ 46.)

She also had two conversations about the bobbing with Monica Jones, a Maintenance Operations Control (MOC) supervisor. (CSOF ¶ 46, 47.) Ms. Jones opened a work order for the circuit. (CSOF ¶ 47.) Ms. Jones also discussed the bobbing at B2-304 with Odency Johnson, an ATC supervisor, and Ms. Jones believes she informed her shift replacement about the situation as well. (CSOF ¶ 47.)

At this point, Ms. Dowling did not have a crew to go wayside for troubleshooting, and revenue service was about to begin. (CSOF ¶ 46.) Ms. Dowling, Mr. Grubbs, and Ms. Jackson stayed in the train control room to watch the relays as a couple of trains moved through the territory. (CSOF ¶ 34, 35, 37, 39, 46.) It is not clear precisely what time they were watching the relays, and they did not watch every train go through the circuits. (CSOF ¶ 34.) Nevertheless, they testified that the relay correctly dropped as a couple of trains moved through track circuit B2-304. (CSOF ¶ 34, 35, 37.) During one of the recorded conversations with between Ms. Dowling and Ms. Jones at MOC, Ms. Jones observed a train move through the territory. (CSOF ¶ 47.) After watching several trains move through the circuit, Ms. Dowling and Mr. Grubbs left the Fort Totten train control room and concluded their shift. (CSOF ¶ 34, 35, 37.)

Preventative Maintenance Inspection on June 18, 2009

On June 18, 2009, Tom Barcheski and Ken Tiffner, both "AA" mechanics, reported to Fort Totten to perform a quarterly inspection. (SOF ¶ 64; CSOF ¶ 44.) During their PMI, Mr. Barcheski and Mr. Tiffner verified the track circuits in their territory with a soft shunt. (CSOF ¶ 44.) As Ms. Dowling's crew did the prior day, Mr. Tiffner's crew placed a .06-ohm shunt strap on the circuit to see if the relay detected the low-resistance strap as a train. Mr. Tiffner's crew placed the strap ten-feet inside the transmitter bond at B2-304, and the circuit passed the verification test. (CSOF ¶ 44.)

Mr. Barcheski noticed bobbing on the track circuit, but lightning prevented the crew from troubleshooting further. (CSOF ¶ 71.) They understood bobbing to be a failsafe condition because it did not affect the safe movement of trains. (CSOF ¶ 25, 26.) They did not observe a track circuit relay energizing or "picking" under a train. (CSOF ¶ 44.) Nor did they observe any other condition that would lead them to believe that track circuit B2-304 was unsafe when they left Fort Totten. (CSOF ¶ 44.) Most importantly, by the time they left the train control room, Mr. Barcheski testified that the bobbing condition had resolved. (CSOF ¶ 44.)

Mr. Barcheski and Mr. Tiffner did not recall being informed about the work order for the bobbing track circuit at B2-304. (SOF ¶ 65.) Nor did they check, or know how to check, WMATA's maintenance system, MAXIMO, for an open work order. (SOF ¶ 65.) Even if they were not aware of the work order, their log entry makes the same observation of bobbing at B2-304. (CSOF ¶ 44, 80.)

NTSB Investigation & Factual Findings

After the June 22, 2009 accident, the NTSB conducted an extensive investigation. (CSOF ¶ 35W.) One of the investigation groups, the Signal & Train Control Group, included representatives from WMATA, Alstom, and Ansaldo. (CSOF ¶ 36W.) The Group's investigation required several weeks of testing and observation to determine that parasitic oscillation on the Alstom modules mimicked a valid track-vacant signal and resulted in a loss of train detection. (CSOF ¶ 12.)

Specifically, the Group found signal coupling between the Alstom transmitter and receiver modules. (CSOF ¶ 12.) According to the Group's factual findings, this coupling caused the relay to remain energized, despite the presence of the stopped train. (CSOF ¶ 12, 23W.) Testing identified parasitic oscillation generated by the power output transistors of the Alstom

transmitter module coupled into the Alstom receiver. (CSOF ¶ 12.) These oscillations migrated through the rack structure where the Alstom modules were installed. (CSOF ¶ 12.) Once coupled to the receiver module, the parasitic oscillations produced a false track circuit signal that bypassed the rails of the track. (CSOF ¶ 12.)

The parasitic oscillations were not continuous. (CSOF ¶ 12, 42.) They occurred only when a signal had reached an amplitude at which it was prone to oscillation. (CSOF ¶ 12.) The oscillations were synchronized with coded signal coming back from the track. (CSOF ¶ 12.) Once coupled with the power amplifier, the pulses were interpreted as the correct audio frequency for a clear track. (CSOF ¶ 12.) This caused the receiver amplifier to signal the relay to remain energized. (CSOF ¶ 12.)

The Group also reviewed track circuit data from B2-304 on June 17, 2009. (CSOF ¶ 37W.) The Group noticed that after WMATA installed the new Ansaldo impedance bond, B2-304's performance "changed significantly." (CSOF ¶ 37W.) The circuit was bobbing, and the relay was "seldom energized for more than 30 seconds between drop outs." (CSOF ¶ 37W.) Although intermittent, train detection failed for nearly every train passing through B2-304 from the time the second Ansaldo impedance bond was installed on June 17, 2009 until the time of the accident. (CSOF ¶ 37W.) B2-304 was bobbing before WMATA installed the Ansaldo bond on June 17, 2009, but the track circuit was properly detecting trains. (CSOF ¶ 37W.)

Prior Knowledge of Parasitic Oscillation

Alstom and Ansaldo were familiar with parasitic oscillation on audio-frequency track circuits prior to June 22, 2009. (CSOF ¶ 38W-43W.) WMATA was not. (CSOF ¶ 26.) Alstom's engineers testified they had been aware of "continuous" parasitic oscillation, or emitter-follower oscillation, since the 1970s. (CSOF ¶ 38W.) They generally agreed that parasitic oscillation was

an undesirable condition on an audio-frequency track circuit. (CSOF ¶ 39W.) They also agreed that it was possible to eliminate or reduce parasitic oscillations. (CSOF ¶ 40W.)

John Darrow, an engineer from Ansaldo, drafted a memorandum in 1969 concerning parasitic oscillation. (CSOF ¶ 41W-42W.) Mr. Darrow's memorandum, also called the "Darrow Guidelines," stated that parasitic oscillations had been known to create unpredictable and unsafe conditions on track circuits. (CSOF ¶ 41W.) The Darrow Guidelines provided design guidelines to prevent parasitic oscillations on Ansaldo modules. (CSOF ¶ 42W.) Mr. Bozio, Ansaldo's senior product engineer, testified that he did not evaluate the Alstom modules pursuant to the Darrow Guidelines as part of a compatibility analysis for the WMATA track circuit replacement project. (CSOF ¶ 43W.)

Although Alstom and Ansaldo were familiar with parasitic oscillation on track circuits, WMATA was not. (CSOF ¶ 26.) WMATA's ATC engineers testified that they were familiar with parasitic oscillation as a concept, but they had never seen parasitic oscillation on an audio-frequency track circuit. (CSOF ¶ 26.) They had never seen parasitic oscillation cause a loss of train detection. (CSOF ¶ 26.) And there is no evidence that either manufacturer ever warned WMATA about the potential for parasitic oscillation. (CSOF ¶ 26.)

WMATA's technicians were also unfamiliar with parasitic oscillation on track circuits. (CSOF ¶ 26.) As a result, there was no reason for the WMATA technicians involved in the bond replacement project on June 17, 2009 or the PMI on June 18, 2009 to believe that the bobbing track circuit presented a hazardous condition. (CSOF ¶ 26.) Based on years of experience, they believed the bobbing created a failsafe condition that restricted train movement. (CSOF ¶ 25, 26.) They were not aware of the spurious signal. (CSOF ¶ 26.) They did not observe the relay bob, energize, or pick under a train. (CSOF ¶ 35, 39, 44.) And they were not aware that the loss

of shunt data reflected a more serious problem. (CSOF ¶ 30, 31, 40.) Specifically, loss of shunt data was not a real-time warning. (CSOF ¶ 100.) It was not available to technicians in the train control rooms. (CSOF ¶ 30, 31, 40.) Reviewing the loss of shunt data was not part of the maintenance or troubleshooting procedures of either Alstom or Ansaldo. (CSOF ¶ 106.)

WMATA Operations Control Center & ROCS/AIM

WMATA's Operations Central Control (OCC) uses a software program called Advanced Information Management (AIM). (SOF ¶ 43; CSOF ¶ 5.) WMATA contracted with ARINC to upgrade its prior OCC system, which was called Rail Operations Control System (ROCS). (SOF ¶ 44; CSOF ¶ 5.) ARINC knew that AIM generated thousands of false occupancies (Always Reporting Blocks, or ARBs) and false vacancies (Never Reporting Blocks, or NRBs) each week. (SOF ¶ 45; CSOF ¶ 114.) These alarms are also associated with bobbing track circuits. (SOF ¶ 46; CSOF ¶ 114.) At the time of the accident, AIM generated between 100,000 to 300,000 alarms each week, overwhelming OCC controllers. (SOF ¶ 47.)

Despite the fact that an NRB signifies a track circuit failing vacant, ARINC's system categorized this alarm as "minor." (SOF ¶ 48; CSOF ¶ 114.) As a result, the NRB alarm was self-acknowledging and self-deleting. (SOF ¶ 49; CSOF ¶ 114.) Moreover, associating this alarm with a bobbing track circuit resulted in numerous alarms, which could not be evaluated and addressed by OCC operators. (SOF ¶ 50; CSOF ¶ 114, 120.) The NTSB reviewed the alarms generated on June 22, 2009 and found that the AIM data displayed on the OCC's monitor "likely … fails to accurately depict the true status and positions of trains #214 and #112." (SOF ¶ 51; CSOF ¶ 129, 131.)

Argument

I. WMATA's alleged negligence is not a superseding or intervening cause of the June 22, 2009 accident as a matter of law

Alstom, Ansaldo, and ARINC argue that WMATA's conduct was so reckless and unforeseeable that it breaks the causal nexus between their own negligence and the Plaintiffs' injuries. Their argument overlooks the fact that it was Alstom's defective modules that generated the spurious signal at B2-304 in the first place. They also ignore the fact that the track circuit was properly detecting trains before June 17, 2009, when WMATA's technicians installed Ansaldo's electronically incompatible impedance bonds. Nor does their motion address the fact that ARINC's unusable and ineffective alarm system failed to warn WMATA's OCC operators effectively or accurately about the true nature of the hazard at B2-304.

Essentially, Alstom, Ansaldo, and ARINC argue that WMATA failed to prevent their own negligence from causing the June 22, 2009 accident. Failing to stop another parties' conduct from injuring others is not a superseding or intervening cause as a matter of law. Issues of proximate causation and superseding negligence are nearly always questions of fact. District of Columbia authority on proximate causation demonstrates that WMATA's conduct was, if anything, a concurring cause of the accident that, together with the Co-defendants' negligence, does not sever the causal link and vitiate the Co-defendants' liability.

Even so, significant questions of fact exist concerning WMATA's reliance on the automatic train control system and its components to be failsafe. WMATA's lack of notice concerning the insidious nature of the parasitic oscillation hazard at B2-304 also presents a triable issue. And WMATA's expectation that ARINC's AIM system would alert operators of life-threatening hazards on the railroad in a meaningful way compels denying the joint motion for summary judgment.

A. Issues of proximate causation, including superseding and intervening negligence, are almost always questions of fact

According to the District of Columbia's jury instructions, "[t]here may be more than one proximate cause of an injury. Stevens, Ed., *Standardized Civil Jury Instructions for the District of Columbia* § 5.13 (Rev. 2009). In other words, "several factors or circumstances, or the negligent acts or omissions of two or more persons, may work at the same time, either independently or together, to cause an injury." *Id*. Even if one of these acts or omissions contributed more than others to the injury, each of the negligent acts or omissions is regarded as a proximate cause. *Id*.

A third-person's intervening wrongful, negligent, or criminal act may sever the causal nexus between the defendant's conduct and the plaintiff's injury. Stevens, Ed., *Standardized Civil Jury Instructions for the District of Columbia* § 5.14 (Rev. 2009). According to Jury Instruction § 5.14, if a "reasonably prudent person" would have "reasonably foreseen" the intervening acts or omissions and "protected against them," the defendant remains liable. *Id*. If a "reasonably prudent person" would not have foreseen the intervening acts or omissions and protected against them, then the defendant is not liable. *Id*.

Courts draw a distinction between "intervening" acts and "superseding" ones. An intervening cause produces harm to another, subsequent to an original negligent actor's conduct. *Rieser v. District of Columbia*, 563 F.2d. 462, 479-80, n.93 (D.C. Cir. 1977), citing Restatement (Second) of Torts § 441 (1977). A superseding cause is an intervening cause that extinguishes the liability of the original negligent actor. *See id*., citing Restatement (Second) of Torts § 440. Section 442 of the Restatement (Second) sets forth the factors for determining whether an intervening cause is also a superseding cause. *Id*. at § 442 One such factor is whether the intervening force brings about a different type of harm than that which would result from the

originally negligent actor. *Id*. Another factor is whether the intervening force is "operating independently" of the situation created by the originally actor. *Id*. at § 442A. Moreover, when the defendant's conduct "creates or increases the foreseeable risk of harm" through the intervention of another, then the intervening act is not a superseding cause." *Id*.

The question of whether an act or omission is a superseding cause is part of the proximate cause inquiry and it requires application of law to fact. *See Exxon v. Sofec, Inc.*, 116 U.S. 1813, 1819, 517 U.S. 830, 840-41 (1996). The application of law to fact is the role of the jury and is "subject to limited review." *Id*. In the District of Columbia, proximate cause includes the question of superseding cause and is a question of fact reserved for the jury. *See Rieser*, 563 F.2d. at 479-80, n.93 (D.C. Cir. 1977), citing *Hicks v. United States*, 511 F.2d. 407, 420-22 (D.C. Cir. 1975) (proximate cause of an injury is a question for the jury, not a question of legal knowledge); *see also Majeska v. Dist. of Columbia*, 812 A.2d 948, 950 (D.C. 2002) (only in exceptional cases will proximate cause "pass from the realm of fact to one of law") (citations omitted). Because evidence must be viewed in the light most favorable to the non-moving party, "cases are rare where issues of negligence and proximate cause can be taken from the jury and decided by the court as a matter of law." *District of Columbia v. Harris*, 770 A.2d. 82, 89 (D.C. 2001) (citations omitted).

B. Exceptional circumstances are required to remove the questions of proximate cause and superseding negligence from a jury

The "rare" cases in which District of Columbia courts have determined superseding cause as a matter of law include extraordinary situations in which no reasonable question about foreseeability exists. For example, *In re Korean Airlines Disaster of September 1, 1983*, 1985 WL 9447 (D.D.C. 1985), involved a Korean Airlines plane, bound for Seoul, South Korea with 269 civilian passengers onboard. *Id*. at *1. The plane "deviated from its assigned course" over

the Soviet Union. *Id*. Soviet military aircraft attacked the airliner, killing everyone onboard. *Id*.

Plaintiffs sued the manufacturer of the airplane and designer of the navigational system. *Id*. at *3. They claimed that a product defect caused the airliner to deviate from its assigned course. *Id*. Defendants argued that the Soviet military's act of shooting down the plane was an unforeseeable intervening cause. *Id*. The court agreed and granted defendants' motion for summary judgment. *Id*. at *8. Notably, to grant summary judgment on this issue, the court observed that "the record must reveal that the party opposing the motion would not be entitled to prevail under any discernible circumstances." *Id*., citing *Kreuzer v. American Academy of Periodontology*, 735 F.2d. 1479, 1495 (D.C. Cir. 1984).

The court found the record so clear and the facts so unusual in the *Korean Airlines* case. The court stated, "the Soviet act of firing upon an unarmed commercial airplane over the Sea of Japan, knowing this would inevitably result in the loss of life of all persons on board was, at the least, a deviation from accepted international norms, or, at the most, all that it has been characterized to be by our government. *Id*. (citation omitted). The court continued, "What it was not is 'expected,' or, in the language of the law, 'foreseeable.'"

The court required facts so extreme as a Soviet military intervention to award summary judgment on the issues of proximate and superseding cause. Even in cases with stronger evidence of foreseeability, however, District of Columbia courts consistently find that superseding cause is a jury question. *See, e.g., Smith v. Hope Village, Inc*. 481 F. Supp. 2d. 172 (D.D.C. 2007) (halfway house released an individual who five months later murdered a child); *see also Grant v. District of Columbia*, 597 A.2d. 366 (D.C. 1991) (two children died in a fire in District of Columbia public housing and the District argued that the actions of the parents superseded any negligence by the District).

C. WMATA's alleged negligence does not present the extraordinary circumstances required to determine proximate causation as a matter of law

Co-defendants' joint motion for summary judgment obfuscates the difference between the condition WMATA's technicians believed they observed on B2-304 and the problem that actually caused the accident. Relying on hindsight and speculation, Co-defendants make various claims about would have happened if WMATA's technicians had treated the bobbing at B2-304 differently. If WMATA had shut down B2-304, instituted an absolute block, or reviewed the loss of shunt data, for example, Co-defendants claim that the accident would not have happened. Each of these theories, however, depends on the Co-defendants' assumption that WMATA's technicians appreciated the hazardous nature of the condition at B2-304 to justifying taking the recommended actions. The record, however, demonstrates that this is a question of fact.

1. WMATA's technicians reasonably believed that the bobbing at B2-304 was a benign maintenance condition that presented no risk to public safety

WMATA's ATC technicians observed bobbing on track circuit B2-304 on June 17-18, 2009. (CSOF ¶ 22, 44.) This means that the track circuit's relay was fluctuating between vacant and occupied states when the track circuit was unoccupied. (SOF ¶ 23; CSOF ¶ 25.) Because the bobbing relay on an unoccupied track circuit signaled occupancy to following traffic, WMATA's ATC technicians understood the bobbing to be a failsafe condition. (CSOF ¶ 25, 26.) In other words, the technicians relied on the ATC system's relay logic to impose a more restrictive condition on traffic moving into B2-304 because the bobbing would cause the circuit to be treated as occupied, even though it was vacant. (CSOF ¶ 25, 26.)

WMATA's technicians uniformly believed that bobbing presented a failsafe condition. (CSOF ¶ 25, 26.) They agreed that bobbing needed to be addressed. (CSOF ¶ 25, 26.) But they understood the problem to be a maintenance issue. (CSOF ¶ 25, 26.) They had never seen a

bobbing track circuit create a unsafe condition for train movement. (CSOF ¶ 25, 26.) This was consistent with their observation of bobbing track circuits throughout the railroad. (CSOF ¶ 25, 26.) This was consistent with their training in ATC journeyman's school. (CSOF ¶ 25, 26.) And this was consistent with Alstom's representations that the system was failsafe. (CSOF ¶ 3, 12.) Even Jim Hoelscher, an Alstom engineer who participated in the design and testing of WMATA's system, agreed that bobbing was a failsafe condition. (CSOF ¶ 25.)

In addition to their understanding that bobbing was failsafe, the June 17, 2009 CIT crew verified the track circuit. (CSOF ¶ 22, 78.) Verification involves laying a .06-ohm shunt strap on the rails. (CSOF ¶ 22.) If the relay interprets the low-resistance strap as a train, then the track circuit verifies at that location. (CSOF ¶ 22.) Co-defendants argued that Ms. Dowling's crew could not verify a bobbing track circuit. (SOF ¶ 29.) However, Ms. Dowling did not observe bobbing during the shunt verification test. (CSOF ¶ 22.) She saw the relay bobbing during the initial adjustment and after the shunt test was completed. (CSOF ¶ 22.) But, she did not see bobbing when they completed the shunt verification at B2-304. (CSOF ¶ 22.) Because the track circuit appeared to verify under a .06-ohm shunt strap, Ms. Dowling had no reason to believe that B2-304 would not detect trains when it returned to revenue service. (CSOF ¶ 22, 25, 26.)

Tom Barcheski and Ken Tiffner, AA mechanics on the Red Line, also believed that B2-304 verified under a single shunt when they performed a PMI at Fort Totten on June 18, 2009. (CSOF ¶ 44.) Although they had not seen the work order from June 17, 2009 for the bobbing track circuit, they observed the same condition at B2-304. (CSOF ¶ 44.) During their PMI, they confirmed that the relay on B2-304 dropped under the .06-ohm shunt strap. (CSOF ¶ 44.) They could not troubleshoot the bobbing track circuit, however, because weather conditions turned adverse. (CSOF ¶ 71.) Nevertheless, Mr. Barcheski testified that the bobbing had resolved at B2-

304 by the time they left the train control room. (CSOF ¶ 44.)

As such, WMATA's ATC technicians did not observe a hazardous condition. They did not see a relay pick, or remain energized, under a train. (CSOF ¶ 35, 39, 44.) Yet, they understood that a relay picking under a train was a non-failsafe condition. (CSOF ¶ 35, 44.) On June 17, 2009, WMATA's ATC technicians, Jonita Dowling and Victor Grubbs, watched trains move through the territory on the circuits' relays and modules, and they did not observe a hazardous condition. (CSOF ¶ 35, 39.) Ms. Dowling also discussed the bobbing she observed on B2-304 with Monica Jones at MOC. (CSOF ¶ 46, 47.) During their recorded conversation at 5:46 a.m., Ms. Jones stated that she watched a train move through B2-304 on the AIM display and that the circuit bobbed as the train was leaving. (CSOF ¶ 47.) In other words, the AIM display showed the circuit properly detecting the train.

WMATA's ATC technicians were not aware of parasitic oscillation on the B2-304. (CSOF ¶ 26.) They were not even aware of the concept of parasitic oscillation. (CSOF ¶ 26.) Nor were WMATA's ATC engineers familiar with parasitic oscillation occurring on an audio-frequency circuit. (CSOF ¶ 26.) Alstom and Ansaldo, however, had been aware of parasitic oscillation for decades. (CSOF ¶ 38W-43W.)

WMATA's ATC technicians, therefore, were not aware of the loss of train detection at B2-304 on June 17-18, 2009. (CSOF ¶ 22, 25, 26, 35, 39, 44, 47.) They were not familiar with loss of shunt data or AIM strip charts. (CSOF ¶ 30, 31, 40.) Nor did they have this information available to them in the train control room. (CSOF ¶ 30, 31, 40.) Similarly, WMATA's OCC and MOC operators were not trained to analyze loss of shunt data. (CSOF ¶ 30, 31, 44.) Because the loss of shunt tool, which Alstom has described as "crude, experimental … software." (Alstom Motion In Limine Docket No. 457, at 13), was not part of the manufacturer-recommended

corrective or preventative maintenance, evaluating this data was beyond the job duties and skills of an ATC technician or an OCC/MOC operator. (CSOF ¶ 106.)

The loss of shunt data, therefore, was available only to WMATA's ATC engineers and senior personnel in the TSSM department. (SOF ¶ 99, 100; CSOF ¶ 30, 40, 104.) This is significant because the Co-defendants' motion seeks to impute knowledge of the loss of shunt data recorded on June 17-22, 2009 to the ATC technicians and the OCC/MOC operators. (SOF ¶ 30, 40.) Even if the loss of shunt data shows B2-304 bobbing and intermittently failing to detect trains, this information was not available to WMATA's ATC technicians or OCC operators on June 17-22, 2009. (CSOF ¶ 30, 31, 40.) Moreover, WMATA's Assistant Chief Engineer, Harry Heilmann explained the discrepancy between what the ATC technicians saw in the train control room and the loss of shunt data. Specifically, he noted that Ms. Dowling may have been seeing the malfunctioning operation of the circuit, due to the parasitic oscillation, and interpreted it as properly verifying under a shunt. (CSOF ¶ 29.)

2. Considering the failsafe nature of the perceived problem, the reasonableness of WMATA's response to the issue at B2-304 is a question of fact

WMATA's response to the condition at B2-304 between June 17, 2009 and June 22, 2009 must be viewed in light of the circumstances as they existed at that time, and not with the benefit of hindsight and speculation. WMATA's ATC technicians reasonably believed that B2-304 was exhibiting a failsafe condition. Two separate crews on two separate occasions verified the track circuit verified under a .06-ohm test. (CSOF ¶ 22, 44, 78.) Giving WMATA the benefit of every fair inference from these facts, the reasonableness and foreseeability of WMATA's response to the situation at B2-304 is a question of fact.

Considering that Ms. Dowling believed the track circuit had verified under the .06-ohm shunt strap and that the bobbing was failsafe, she took several appropriate steps in response to

her observations at B2-304. Ms. Dowling and another senior technician, Victor Grubbs, watched several trains step through the track circuits. (CSOF ¶ 34, 35, 37, 39.) They did not have the benefit of the loss of shunt data for the track circuit at that time, but they recalled seeing the track circuits properly detecting trains. (CSOF ¶ 34, 35, 37, 39.)

Ms. Dowling also had several conversations about the track circuit. (CSOF ¶ 34, 46.) She discussed the situation with Mr. Grubbs. (CSOF ¶ 34.) She spoke with Monica Jones at MOC about B2-304 at 5:29 a.m. and 5:46 a.m. (CSOF ¶ 46.) Notably, during the 5:46 a.m. conversation, Ms. Jones said that a train was detected at B2-304, which began to bob after the train left the circuit. (CSOF ¶ 47.) Ms. Dowling also recalled discussing the bobbing at B2-304 with her supervisor, Christopher Lucas. (CSOF ¶ 46.) Ms. Dowling's crew had left Fort Totten when they had completed their work, and she did not have a crew to continue troubleshooting B2-304. (CSOF ¶ 46.) But she reported the issue in the Fort Totten log book. (CSOF ¶ 46.)

Ms. Jones in MOC also took several steps to respond to the bobbing at B2-304. (CSOF ¶ 47.) She opened a work order for the bobbing. (CSOF ¶ 47.) She noted the bobbing the trouble log. (CSOF ¶ 47.) She spoke with Odency Johnson, an ATC supervisor, and Rahim Curtiss, a CIT supervisor about the issue. (CSOF ¶ 47.) She also believes that she told her replacement at MOC for the next shift about the issue. (CSOF ¶ 47.)

Although not assigned to respond to the work order, the June 18, 2009 crew found bobbing at B2-304. (CSOF ¶ 44.) During their inspection, they observed the same condition that was identified in the MOC work order. (CSOF ¶ 44.) The circuit verified under a shunt strap in one location. (CSOF ¶ 44.) But they could not troubleshoot the outdoor electrical circuit due to lightning in the area. (CSOF ¶ 71.) Even so, they noted that the bobbing had resolved by the time they left the train control room. (CSOF ¶ 44.)

The reasonableness and foreseeability of WMATA's response to the issues at B2-304 on June 17-22, 2009 should be viewed in proportion to the nature and severity of the perceived problem. WMATA's personnel observed a failsafe condition on a track circuit that appeared to verify under a shunt strap twice by two separate crews. Although Ms. Dowling has been criticized for leaving the train control room, the reasonableness of this decision is a question of fact because she was not aware of a condition that threatened safe train movement. (CSOF ¶ 26, 35.) Co-defendants have also argued that the crew's decision to return a bobbing track circuit to service violated requirements in WMATA's System Integrity Maintenance Practice manual to remove equipment that is "not in correspondence" from operation. (SOF ¶ 19, 24, 26.) However, none of the WMATA witnesses, including the author of the System Integrity Maintenance Practice manual, Harry Heilmann, agreed that bobbing fell within that rule. (CSOF ¶ 19, 24, 26.)

Co-defendants have also argued that WMATA's failure to respond specifically to the B2-304 work order from June 17, 2009 to June 22, 2009 constitutes superseding negligence. (SOF ¶ 53-57, 80-91.) They cite WMATA witnesses who testified that the work order should have been addressed earlier. Again, however, the reasonableness or foreseeability of the delay in responding to the work order must be viewed in the context of what was known at the time. WMATA's ATC technicians and OCC/MOC operators were not aware of a hazardous oscillation on the track circuit. (CSOF ¶ 25, 26, 35, 44.) They believed the bobbing at B2-304 was a failsafe condition. (CSOF ¶ 25, 26.) And the track circuit appeared to verify under a .06-ohm shunt strap on two occasions by two different crews. (CSOF ¶ 22, 44, 78.) Even assuming that WMATA should have responded earlier, a question exists about whether it was foreseeable that this track circuit would not be treated as an immediate priority under the circumstances.

Finally, Co-defendants argue that WMATA's failure to run the loss of shunt tool between June 17, 2009 and June 22, 2009 was unforeseeable. (SOF ¶ 95-112.) Alstom's and Ansaldo's arguments regarding the importance of running the loss of shunt tool are interesting because neither manufacturer recommended evaluating track circuit data as a form of preventative or corrective maintenance. (CSOF ¶ 106.) Alstom has even characterized the loss of shunt tool as "crude, experimental … software." (Alstom Motion In Limine Docket No. 457, at 13.)

Nevertheless, Co-Defendants argue that WMATA would have shut down the track circuit or instituted an absolute block if the loss of shunt data had been reviewed during that time. (SOF ¶ 58-63.) The loss of shunt tool was supposed to be run monthly. (SOF ¶ 100; CSOF ¶ 100.) If so, there is no reason to believe that the tool would have been run and evaluated on its regular schedule between June 17, 2009 and June 22, 2009. (CSOF ¶ 100.) The loss of shunt tool was also run in response to specific incidents. (CSOF ¶ 104.) Considering the fact that the circuit exhibited a failsafe condition and that the technicians believed that it verified under .06-ohm shunt, however, a question exists about whether it was foreseeable that senior maintenance personnel would not be informed of the condition at B2-304 or run the loss of shunt tool between June 17, 2009 and June 22, 2009.

3. The reasonableness of WMATA's OCC operators' response to the alarms on ARINC's AIM system is question of fact

Co-defendants also argue that WMATA OCC's operators' failure to respond to alarms on ARINC's AIM system was an unforeseeable superseding cause. (SOF ¶ 114-137.) During the design and implementation of the AIM system, however, ARINC knew that AIM exhibited too many alarms. (SOF ¶ 45, 47; CSOF ¶ 114.) AIM issues a Never Reporting Block (NRB) alarm for a track circuit failing vacant and an Always Reporting Block (ARB) alarm for a track circuit failing occupied. (SOF ¶ 45; CSOF ¶ 114.) However, AIM also issues these alarms in cascading

sequence for bobbing track circuits. ((SOF ¶ 46; CSOF ¶ 114.). As a result, WMATA's OCC operators receive between 3,000 and 5,000 ARBs and NRBs per week. (SOF ¶45; CSOF ¶ 114.)

WMATA's OCC operators have no way to distinguish between a failsafe bobbing condition reporting as an NRB and a hazardous track circuit failing vacant. (SOF ¶ 50; CSOF ¶ 114, 120.) ARINC's AIM system designated the ARB and NRB as "minor" alarms, meaning that they are self-acknowledging and self-deleting. (SOF ¶ 48; CSOF ¶ 114.) Moreover, the NTSB found that ARINC's AIM system inaccurately issued alarms for the wrong location prior to the accident. (SOF ¶ 51;CSOF ¶ 129, 131.) Under these circumstances, it is not surprising that WMATA's OCC operators did not respond to the NRBs, and a question of fact exists on this issue sufficient to justify denying the Co-defendants' motion for summary judgment.

D. Evaluating superseding, intervening cause requires an analysis of several factors, such as the type of harm and the independence of the actors' conduct

As discussed above, one of the important factors in determining whether an act is a supervening cause is to look at the type of harm that would result from the original negligent actor's conduct. See *Rieser v. District of Columbia*, 563 F.2d. 462, 479-80, n.93 (D.C. Cir. 1977), citing Restatement (Second) of Torts § 441 (1977). In this case, this factor requires an evaluation of whether Alstom's, Ansaldo's, or ARINC's conduct would have caused a different type of harm than that alleged to have been caused by WMATA. Equally important under the rubric of the Restatement is that Co-defendants would have to prove WMATA's alleged negligence was outside the scope of and unrelated to their original negligence. A comparison with other cases in the District of Columbia demonstrates that they cannot meet this burden.

In *Fisher v. Bell Helicopter Co.,* 403 F. Supp. 1165 (D.D.C. 1975), plaintiff was a District of Columbia police officer who sustained injuries as a passenger in a District-owned helicopter that crashed. *Id*. at 1168. "The engine failed because one of the two bolts used to

clamp the connecting rod of the sixth cylinder to the crankshaft parted, which in turn caused the rod to shatter as it blasted a hole in the side of the engine." *Id*. The helicopter's engine was made by a company called Avco. *Id*. In 1972, an overhaul of the engine was required and performed on behalf of the District of Columbia by Saguaro Aviation Corporation. *Id*. Saguaro's overhaul of the engine used Avco connecting rod assemblies, labeled #77450. *Id*.

Shortly after the major overhaul, Avco issued a service bulletin suggesting that engines with a certain number of flight hours need to have a #77450 rod assembly installed with shot-peened bolts. *Fisher*, 403 F. Supp. at 1169. When Saguaro installed the #77450 rod assembly on the District's helicopter, it did not have the recommended shot-peened bolts. *Id*. at 1168. Avco issued several other service bulletins that continued to recommend the #77450 rod assembly. *Id*. at 1169. Bell Helicopter assured the District of Columbia that its helicopter was in compliance with the Avco service bulletins, which later were incorporated into a FAA directive. *Id*. In fact, the helicopter was never in compliance, but the District of Columbia was unaware of this fact because the parts sheet from the Saguaro overhaul indicated the helicopter was already fitted with the #77450 rod assembly. *Id*. at 1170. What the parts sheet also indicated is that the bearings were not shot-peened, chrome backed bolts, as required by the FAA directive. *Id*.

Fisher was tried to the bench in this court, and Judge Gesell held that a proximate cause of the engine's failure was that Avco identified two different rod assemblies by the same label number. *Fisher*, 403 F. Supp. at 1173. The court also found the District of Columbia was negligent in not discovering Avco's error. *Id*. Months before the crash, the District's mechanics removed the engine, took it apart, and had an opportunity to discover that it was not in compliance with the service bulletins or the FAA directive. *Id*. The District's mechanics, however, did not identify the non-compliance problem. *Id*.

Nevertheless, the court held that the District's negligence did not bar plaintiff's claim against Avco. Specifically, the court stated, "The law in this Circuit is well settled by innumerable authorities that if, injury be caused by the concurring negligence of the defendant and a third person, the defendant is liable to the same extent as though it had been caused by his negligence alone." *Fisher*, 403 F. Supp. at 1173 (citations and internal quotations omitted). Moreover, the court continued, "It is no defense for a wrongdoer that a third party shared the guilt of the same wrongful act, nor can he escape liability for the damages he has caused on the ground that the wrongful act of a third party contributed to the injury." *Id*. (citations and internal quotations omitted). Thus, the District of Columbia's conduct was "a concurrent rather than a superseding negligence and does not absolve AVCO of liability …." *Id*. at 1174.

Similarly, in *Nautilus Insurance Co. v. Dolphin Pools Corp.*, 739 F. Supp. 664, 665 (D.D.C. 1990), the court addressed questions of superseding negligence involving a drowning death. Dolphin Pools provided maintenance and lifeguards for the pool, and it had been found liable by a jury. The company's insurer sought a declaration that individual lifeguard's negligence was a superseding, intervening cause, which extinguished his employer's liability. *Id*. The court disagreed. *Id*. Even though a lifeguard should close a pool when the water is murky, the court concluded that it was "foreseeable, and not highly extraordinary, that a lifeguard would fail to close a pool under such circumstances." *Id*. at 666. Most importantly, the court found that a negligent actor "cannot rely on others to exercise greater care than its own and thus save it from the foreseeable consequences of that negligence." *Id*.

As in *Fisher* and *Nautilus*, Co-defendants argue that WMATA's failure to prevent their own negligence from causing the accident was a superseding cause sufficient to sever the causal nexus. It was Alstom's failure to eliminate parasitic oscillations from its audio-frequency track

circuit modules that caused the failure mode to be present in the first place. It was Ansaldo's failure to evaluate the effect its impedance bonds would have on the failsafe characteristics of the ATC system when operating the bonds with Alstom modules would necessitate frequent power increases. And it was ARINC's failure to provide a meaningful alarm to alert WMATA operators of hazardous conditions on the railroad that deprived WMATA of an opportunity to prevent the accident. Considering WMATA's understanding that B2-304 was exhibiting a failsafe bobbing condition prior to June 22, 2009, *Fisher* and *Nautilus* demonstrate that WMATA's conduct is not a superseding cause as a matter of law. *See also Rogers v. Ingersoll-Rand Co.*, 971 F. Supp. 4, 11 (D.D.C. 1997), *aff'd* 144 F.3d 841 (D.C. Cir. 1998) (upholding jury verdict against product manufacturer in case where jury also found misuse on the part of machine operator through maintenance and/or operation); *Silivach v. Celebrity Cruises, Inc.*, 171 F.Supp.2d 241, 256 (S.D.N.Y. 2001) (jury could reasonably find that negligent design and negligent maintenance were concurrent causes).

E. The Co-defendants' joint motion relies on inapposite, distinguishable , and foreign authority

Co-defendants cite two cases from this court in which summary judgment was granted on issues involving superseding and intervening cause. On close examination, however, those cases are easily distinguishable. *Faris v. Potomac Elec. Power Co.* involved a *pro se* plaintiff who started a fire in her home with lit candles when the power company shut off her power for failing to pay her bill. 753 F. Supp. 388 (D.D.C. 1991). The court held that summary judgment was appropriate because plaintiff offered no facts to establish proximate cause. *Id*. at 389.

Baldwin v. Harris Corp. is also inapposite. *Baldwin* was a product liability case in which plaintiff's employer removed a safety device on a piece of equipment the manufacturer sold thirty years earlier in violation of a clear and unequivocal warning. 751 F. Supp. 2 (D.D.C.

1990). Unlike the situation in *Baldwin*, neither Alstom nor Ansaldo ever warned WMATA about the potential of parasitic oscillation to cause a loss of train detection. (CSOF ¶ 26.) For the same reason, the Co-defendants' reference to the Maryland district court's decision *Higgins v. E.I. Dupont de Nemours & Co.* is inapposite. 671 F. Supp. 1063 (D. Md. 1987) (finding that it was unforeseeable that industrial paint would be distributed to amateur painters in violation of a clear warning).

Co-defendants also reference several other Maryland decisions in a footnote of their brief. (Joint Br. at 23, fn. 8.) In *Kline v. ABCO Eng'g Corp.* summary judgment was entered because plaintiff's employer gave plaintiff an order to act in a manner warned against by the manufacturer. 991 F. Supp. 747 (D. Md. 1997). In *Singleton v. Manitowoc Co., Inc.*, the court found that the manufacturer's product, a truck crane, was not defective as a matter of law and that the installation of a toolbox in a blind spot on the exterior of the crane was a superseding cause. 727 F. Supp. 217 (D. Md. 1989). And, in *Housand v. Bra-Con Indus., Inc.*, the court granted summary judgment on the sophisticated user defense, while noting the decision of plaintiff's employer, General Motors, to construct a platform in a transfer area of its assembly line was superseding negligence. 751 F. Supp. 541 (D. Md. 1990).

The Maryland cases Co-defendants cite in footnote 8 of their brief do not support their arguments for summary judgment. Unlike each of the cited cases, the alleged superseding matter in this matter is not the conduct of the Plaintiffs' employer. WMATA did not instruct the Plaintiffs to act in a manner inconsistent with the manufacturers' instructions, as was the case in Kline. And WMATA's track circuit replacement program is not comparable to the modifications of a truck crane or an automotive assembly line involved in *Singleton* and *Housand*.

In support of their joint motion, Alstom, Ansaldo, and ARINC also rely on a Sixth Circuit case and two Wyoming Supreme Court decisions. In *Sisco v. Broce Mfg., Inc*., a self-propelled sweeper, with long-neglected brakes, spun out of control down a hill. 1 F.App'x 420, 421 (6th Cir. 2001). The operator jumped from the sweeper as it went out of control. *Id*. As a result of the jump, the operator hit his head on the pavement and died. *Id*. The operator's wife sued Broce, the manufacturer of the sweeper, for defective design and manufacture, claiming that "the hydraulic and parking brakes were not properly shielded from the harsh construction of the environment, and that a latent defect existed in the gear box which caused it to jump out of gear." *Id*. The manufacturer sought summary judgment against the employer, arguing that the employer's negligence in maintaining the sweeper was a superseding, intervening cause. *Id*. at 422. The Tennessee federal court granted summary judgment and the Sixth Circuit affirmed. *Id*.

The facts in *Sisco* make the Sixth Circuit's holding distinguishable from the facts in this case. For instance, in *Sisco*, the court found that the employer simply ignored maintenance of the sweeper's brakes altogether, having no record of even routine maintenance checks on the brakes for nineteen months prior to the accident. *Id*. at 423. In this case, however, WMATA conducted regular, 90-day preventative maintenance inspections at B2-304. Also, in *Sisco*, the court found it problematic that the employer had actual knowledge that the brakes were not working and that the employer knew they gave out one week prior to the operator's death. *Id*. Although WMATA was aware of the bobbing at track circuit B2-304, it was not aware of the parasitic oscillation that ultimately caused the accident.

Finally, the *Sisco* court found that the manufacturer could not have foreseen the employer's later negligence. *Id*. In this case, however, Alstom and Ansaldo had been aware of parasitic oscillation in audio-frequency track circuits for decades. Ansaldo even prepared an

internal memorandum, which stated that parasitic oscillation was known to create unpredictable and unsafe hazards. WMATA, on the other hand, was not aware of parasitic oscillations on audio-frequency track circuits. Moreover, ARINC was aware of the fact that its system issued too many alarms. Considering that the AIM system generated between 3,000 and 5,000 false-vacant or false-occupied alarms each week, it was foreseeable to ARINC that the volume of alarms would prevent operators from distinguishing between nuisance alarms and truly hazardous conditions on the railroad.

Co-defendants also rely on two Wyoming Supreme Court decisions. In *Estate of Coleman v. Casper Concrete Co.*, a general contractor subcontracted out electrical work for the installation of poles and a traffic light. 939 P.2d. 233, 235 (Wyo. 1997). A problem arose with the traffic light, causing it to malfunction. *Id*. The Wyoming Department of Transportation was informed of the specific danger the malfunctioning light presented, but failed to fix the light. *Id*.

In *Estate of Coleman*, the court relies on an earlier Wyoming decision, which Co-defendants also cite, *Lynch v. Norton Const. Inc.*, 861 P.2d. 1095 (Wyo. 1993). In *Lynch*, the plaintiff's employer hired a contractor to build a sidewalk. The contractor allegedly constructed the sidewalk in a negligent manner, allowing water to collect on the pavement, freeze, and create a hazardous condition. *Id*. at 1096-97. The plaintiff's employer was aware of the problem, took no corrective action, and did not notify the contractor. *Id*. Plaintiff fell on the ice, sustained injuries, and sued the contractor. *Id*. The contractor prevailed on summary judgment because the court held the contractor could not reasonably foresee that the plaintiff's employer would either not give notice of the condition or take no efforts to correct the problem. *Id*. at 1100.

Estate of Coleman and *Lynch* are distinguishable from the facts of this case. In both cases, the notice to the intervening tortfeasor was so clear and unmistakable that it provided them

with actual knowledge of a known dangerous condition. In this case, however, WMATA's technicians believed B2-304 was exhibiting a failsafe "bobbing" condition that presented no risk to safe train movement. They were not aware of the parasitic oscillation on the track circuit. And they did not know that B2-304 was losing train detection after June 17, 2009. The Co-defendants' reliance on these cases is misplaced, and their motion should be denied.

Conclusion

For the forgoing reasons, WMATA respectfully requests that this Court deny the Co-defendants' joint motion for summary judgment in its entirety.

Dated: December 2, 2011

Respectfully submitted,

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Certificate of Service

I HEREBY CERTIFY that on this 2d day of December, 2011, I electronically filed and served Defendant WMATA's Opposition to Co-Defendants' Joint Motion for Summary Judgment via CM/ECF for the U.S. District Court of the District of Columbia on all counsel of record.

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