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Nationwide Warnings of Faulty Transit Sensor

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WASHINGTON — Federal safety officials warned city transit systems nationwide on Tuesday about a dangerous flaw that may fool safety systems into indicating that a track is empty when it is actually occupied.

The warning was part of a federal investigation into the worst accident in Washington history, in which one train rear-ended another that was stopped, leaving nine people dead and more than 70 injured.

The safety officials said that while they had not determined the cause of that crash, on June 22, they had discovered that a malfunctioning piece of equipment mimicked an audio signal and tricked a sensor on the tracks into believing there was no stopped train that day.

It has been obvious for weeks that a main factor in the Washington crash was the failure of the control system to sense the stopped train, but just how that could have happened has been a mystery. While the [National Transportation Safety Board](#) did not reach a conclusion on Tuesday, and may not do so for several months, it has pointed out that a critical part of the sensing system was replaced days before the accident and that the subway's managers did not respond aggressively to earlier system failures that did not result in death or injury.

The sensor that was tricked listens for tones in the range audible to the human ear, similar to those toward the upper end of a piano's range, according to information released by the board. Electronic equipment unexpectedly generated the sound waves, which then traveled through the tracks to the sensor, safety officials said.

“Our findings so far indicate a pressing need to issue these recommendations to immediately address safety glitches we have found that could lead to another tragic accident,” said the board chairman, Deborah Hersman.

The safety board issued nine [recommendations](#), including six that are deemed urgent, to Washington's transit official officials; [Alstom Signaling Inc., its track circuit manufacturer](#); the Federal Transit Administration; and the [Federal Railroad Administration](#).

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