



Issued: February 25, 2022

Railroad Investigation Report: RIR-22/003

Southeastern Pennsylvania Transportation Authority Fatality at Spring Garden Station

Philadelphia, Pennsylvania
July 28, 2021

1. Factual Information

1.1 The Accident

On Wednesday, July 28, 2021, about 2:28 p.m. local time, a man was struck and killed by a train at the Spring Garden Station platform in Philadelphia, Pennsylvania.¹ As the Southeastern Pennsylvania Transportation Authority (SEPTA) Market-Frankford Line (MFL) passenger train number 78 entered the station for a normal station stop, the man fell from the platform into the path of the eastbound train and was struck and killed.² (See figure 1.) At the time of the accident, the weather was mostly cloudy skies.

¹ For more detailed information about this investigation, see the public docket at <https://data.nts.gov/Docket/Forms/searchdocket> and search for number RRD21LR012. Use the [CAROL Query](#) to search safety recommendations and investigations.

² (a) SEPTA is a regional public transportation authority that operates bus, rapid transit, commuter rail, light rail and electric trolleybus services in and around Philadelphia, Pennsylvania. (b) Market-Frankford Line (MFL) is a rapid transit line that runs from Upper Darby, Pennsylvania to the Frankford Transportation Center. (c) The Federal Transit Administration (FTA) and the Pennsylvania Department of Transportation State Safety Oversight have the federal and state oversight responsibilities of SEPTA's MFL.

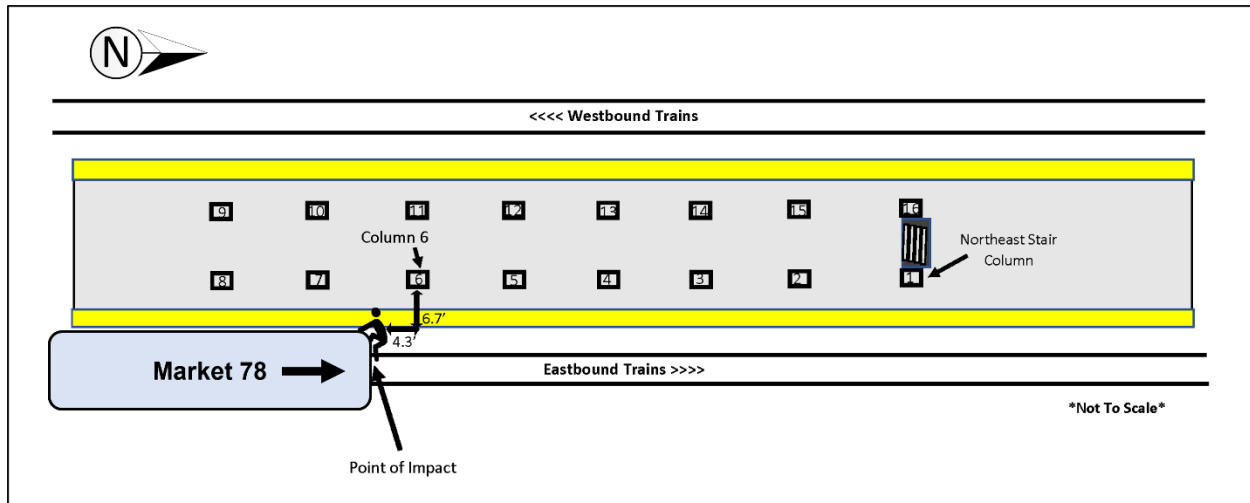


Figure 1. Sketch of the accident scene. (Source: SEPTA.)

National Transportation Safety Board (NTSB) investigators were able to obtain and review onboard image recorders and station surveillance video capturing the actions of the deceased and train operator up to and during the accident. The deceased was standing on the platform in Spring Garden Station for several minutes while eastbound and westbound trains boarded and offloaded passengers. The man began to walk towards the edge of the platform exhibiting an unsteady gait.

Simultaneously, MFL train 78 entered the station for a scheduled station stop. (See figure 2.) The train operator was using normal braking to slow the train and was looking forward and toward the man as the man approached the platform edge. At the platform edge, the man took an additional step, which landed his foot halfway off the edge, causing him to lose his balance and fall into the path of the train. The train struck the man as he fell, and he was killed.



Figure 2. Spring Garden Station. (Photo courtesy of Pennsylvania Department of Transportation.)

1.2 Before the Accident

The train operator arrived on duty about 12:04 p.m. at the 69th Street Transportation Center in Upper Darby, Pennsylvania. The NTSB's review of the onboard image recorders indicates the operator was attentive to his duties and operating the train normally.

According to the NTSB's review of surveillance video, the deceased entered the MFL Allegheny Station and rode a train to the Spring Garden Station, where he spent about 8 minutes on the platform.³ He spent about 5 of these 8 minutes interacting with another person. During the interaction, the deceased removed his right arm from his sweatshirt but left his head and left arm in the shirt. After some indistinguishable action in which the two people appeared to be conversing closely and possibly touching occasionally, the deceased stood up but continued talking with the person on the bench. At this time, he began to lean and rock back and forth. The deceased then walked away

³ There are 28 stations on the MFL. There are six station stops between Allegheny Station and Spring Garden Station.

from the bench and toward the platform. While walking, he appeared to lose muscular dexterity and develop an unsteady gait.

1.3 Postaccident Testing

Investigators inspected Spring Garden Station and found the area consisted of tangent track and platform areas with no physical obstructions. The platform provided adequate sight distance for approaching trains. Walking surfaces were dry, regular, even and free of debris and obstructions. The yellow tactile warning strip was present, dry, secure, clean and properly installed.

Braking performance tests were conducted on the train, and the brakes met or exceeded minimum braking criteria.

1.4 Train Operator

The 52-year-old operator was qualified as a SEPTA Subway-Elevated Train Operator. He received recertification training on July 11, 2019. A review of his most recent performance evaluation revealed no issues. The operator had 7 years of experience operating trains on the MFL.

1.5 Toxicology

The train operator underwent postaccident toxicology testing in compliance with Federal Transit Administration regulations (Title 49 *Code of Federal Regulations* Part 655).⁴ The results were negative for all tested substances. His preemployment toxicology testing was similarly negative.

The City of Philadelphia's Office of the Medical Examiner performed toxicology testing on the deceased man at its own request in its own laboratory. Testing of brain tissue identified psychoactive drugs: fluoxetine (a prescription antidepressant also known as Prozac), methamphetamine (a stimulant) but not its metabolite amphetamine, fentanyl (a potent opioid) and its metabolite despropionylfentanyl, diazepam (a sedating benzodiazepine commonly known as Valium) and its metabolites nordiazepam and oxazepam, xylazine (a veterinary tranquilizer and human drug of abuse), and the hydroxyzine metabolite desalkylhydroxyzine (but not the parent drug itself, which is a sedating antihistamine). No blood or serum was available for testing.

⁴ The following substances were tested for: amphetamine, methamphetamine, cocaine, codeine, morphine, heroin, phencyclidine (PCP), methylenedioxyamphetamine (MDMA), methylenedioxyamphetamine (MDA), methylenedioxyethylamphetamine (MDEA), tetrahydrocannabinol (THC), oxycodone, oxymorphone, hydrocodone, and hydromorphone.

1.6 Autopsy

According to the autopsy performed by the Office of the Medical Examiner, City of Philadelphia, the cause of death was blunt impact trauma, and the manner of death was accident.

1.7 Postaccident Actions

SEPTA announced in September 2021 that it is spending \$3.6 million as part of the Safety, Cleaning, Ownership, Partnership, and Engagement (SCOPE) Program. This program will increase from 7 to 57 the number of outreach workers available to assist vulnerable populations experiencing homelessness, addiction and mental illness that seek refuge on the transit system. The SCOPE Program will also create a virtual patrol center intended to monitor 28,000 cameras, and equip an expanded cleaning staff with cell phones to streamline communication of unsafe conduct to police.

2. Analysis

The NTSB investigators' review of onboard image recordings and surveillance video showed that the train operator was attentive to his duties while operating the train and used normal braking to slow the train entering the station. Investigators found no evidence of safety hazards at the station platform, and the train's brakes met or exceeded minimum requirements.

Surveillance video showed that the deceased exhibited a decrease in motor function before and during the accident. Results from toxicological testing performed on the deceased by the city's medical examiner identified the presence of multiple medications and controlled substances capable of impairing motor function.

Following this accident, SEPTA expanded the reach of its SCOPE program, dedicating additional resources to identifying fall risks, adding outreach workers and streamlining the communication of unsafe conduct to police.

3. Probable Cause

The National Transportation Safety Board determines that the probable cause of the fatality was the failure of the man on the station platform to maintain balance at the platform's edge, which caused him to fall from the platform into the path of the train, where he was struck mid-fall by the train and killed. Contributing to the cause of the accident was his impairment from a combination of psychoactive drugs.

The National Transportation Safety Board (NTSB) is an independent federal agency dedicated to promoting aviation, railroad, highway, marine, and pipeline safety. Established in 1967, the agency is mandated by Congress through the Independent Safety Board Act of 1974, to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

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For more detailed background information on this report, visit the NTSB investigations website and search for NTSB accident ID RRD21LR012. Recent publications are available in their entirety on the NTSB website. Other information about available publications also may be obtained from the website or by contacting—

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