

National Transportation Safety Board

Office of Railroad, Pipeline and Hazardous Materials

Washington, DC 20594



RRD24MR002

MEDICAL

Specialist's Factual Report

August 7, 2024

TABLE OF CONTENTS

A	ACCIDENT.....	3
B	MEDICAL SPECIALIST.....	3
C	DETAILS OF THE INVESTIGATION	3
1.0	PURPOSE	3
2.0	METHODS.....	3
D	FACTUAL INFORMATION.....	4
1.0	CTA YELLOW LINE TRAIN OPERATOR.....	4
1.1	Occupational Health Records	4
1.2	Post event medical records	4
1.3	Toxicology	4
1.3.1	Hospital Testing	4
1.3.2	DOT Post-accident Drug Testing.....	5
1.3.3	FAA Toxicology Results	5
1.3.4	Description of Detected Substance	5
2.0	SNOWPLOW OPERATOR.....	6
2.1	CTA Record	6
2.2	Post-event Medical Record.....	6
2.3	DOT Post-accident Drug and Alcohol Testing.....	6
E	SUMMARY OF MEDICAL FACTS.....	7
1.0	TRAIN OPERATOR.....	7
2.0	SNOWPLOW OPERATOR.....	7

A ACCIDENT

Location: Chicago, Illinois
Date: November 16, 2023
Time: About 10:40 AM local time

B MEDICAL SPECIALIST

Specialist JE Tuttle MD MHA FACS
National Transportation Safety Board
Washington, DC

C DETAILS OF THE INVESTIGATION

1.0 Purpose

This investigation was performed to evaluate the Chicago Transit Authority (CTA) Yellow line train operator and the CTA snowplow operator for potentially impairing medical conditions and substances.

2.0 Methods

The train operator's occupational health records including United States Department of Transportation (DOT) Federal Motor Carrier Safety Administration (FMCSA) commercial motor vehicle (CMV) driver medical certificate and most recent Medical Examination Report (MER) Form, and post-event medical records were reviewed. Pre-employment drug testing and post-event toxicology results were also reviewed. At the request of the National Transportation Safety Board (NTSB), the Federal Aviation Administration (FAA) Forensic Sciences Laboratory also performed toxicological testing of specimens from the train operator; these results were reviewed.

The snowplow operator's pre-event random drug and alcohol testing and post event DOT testing results were also reviewed. Post-event medical records pertaining to the snowplow operator were reviewed.

Selected NTSB investigator reports, and relevant regulation and medical literature were also reviewed.

D FACTUAL INFORMATION

1.0 CTA yellow line train operator

1.1 Occupational Health Records

According to the records from CTA's occupational health contractor, the 47-year-old male train operator underwent a DOT FMCSA medical examination August 23, 2021. According to his MER Form, the train operator reported no active medical issues and no medication use at the time of that exam and was issued a 2-year CMV driver medical certificate. He underwent another DOT FMCSA medical examination on August 8, 2023, and was issued a 2-year CMV driver medical certificate.¹

The train operator had been enrolled in in CTA's random drug and alcohol testing pool but had not been randomly selected for testing as of the crash.

1.2 Post event medical records

Shortly after the crash, the train operator was transported to the Emergency Department (ED) by emergency services. In the ED, the train operator did not report any medication use prior to the accident or other medical conditions. Blood tests were obtained upon the train operator's arrival to the ED, including blood specimens for toxicological testing. A medical workup including computed tomography (CT) scans of his head, cervical spine, chest, and abdomen as well as other radiographs of his extremities, was performed. No evidence of significant natural disease was identified.

1.3 Toxicology

1.3.1 Hospital Testing

Hospital testing detected ethanol at 0.06 g/dL in a blood specimen collected from the train operator at 11:20 AM on the accident date. The hospital ethanol test is an unconfirmed clinical test, and the results report contained a disclaimer that the results are not intended for legal purposes. Hospital testing of a urine specimen collected at 1:20 PM on the event date detected only substances that had been administered to the train operator after the crash, as verified by review of post-crash medical records.

¹ There are no Federal medical fitness requirements for transit train operators. According to CTA policy, prior to being employed as a train operator, an individual must obtain a CMV driver medical certificate with a duration of at least one year. CTA does not require train operators to maintain medical certification once employed.

1.3.2 DOT Post-accident Drug Testing

A urine specimen was obtained from the train operator on November 17, 2023, at 7:10 PM. DOT post-accident drug testing of this specimen did not identify any tested-for substances.² The train operator did not undergo DOT post-accident alcohol testing due to on-going medical treatment in the hospital; according to the DOT Alcohol testing form, the test was not performed as more than 8 hours had elapsed from the time of the accident.

1.3.3 FAA Toxicology Results

At the request of the NTSB, the FAA Forensic Sciences Laboratory performed toxicological testing of the train operator's hospital blood specimens. Ethanol was detected at 0.043 g/dL in a specimen collected at 11:20 AM on the event date, and at 0.048 g/dL in a specimen collected at 11:36 AM on the event date. No other tested-for substances were detected.³

1.3.4 Description of Detected Substance

Ethanol is a type of alcohol. It is the intoxicating alcohol in beer, wine, and liquor, and, if consumed, can impair judgment, psychomotor performance, cognition, and vigilance.⁴ While the acute effects of ethanol can vary depending on an individual's frequency of use, body weight, and tolerance, in general, at blood ethanol concentrations as low as 0.02 g/dL, there is relaxation and some loss of judgment. Ethanol levels of 0.05 g/dL have been found to further degrade judgment, psychomotor functioning, and alertness. At blood ethanol concentrations above 0.10 g/dL, there may be prolonged reaction time, altered perception of the environment, lack of coordination, slowed thinking, and mood and behavioral changes.⁵ One simulation study of rail engineers demonstrated that blood alcohol levels of 0.05-0.10 g/dL increased operational speed of the trains being driven, and hence, increased the risk of derailment and decreased rail safety.⁶

² Tested-for substances on DOT urine drug testing are marijuana metabolites, cocaine metabolites, amphetamines, opioids, and phencyclidine (PCP), in accordance with [49 Code of Federal Regulations § 40.82](#), as detailed at [49 Code of Federal Regulations § 40.85](#).

³ The FAA Forensic Sciences laboratory has the capability to test for around a thousand substances including toxins, prescription and over-the-counter medications, and illicit drugs.

⁴ Cook CCH. Alcohol and aviation. *Addiction*. 1997;92(5):539-555.

⁵ Centers for Disease Control and Prevention. Blood Alcohol Concentration (BAC). <https://www.cdc.gov/motorvehiclesafety/pdf/bac-a.pdf> February 29, 2024.

⁶ Roach GD, Dorrian J, Fletcher A, Dawson D. Comparing the effects of fatigue and alcohol consumption on locomotive engineers' performance in a rail simulator. *PubMed*. 2001;30(1-2):125-130.

Federal Transit Administration regulations state that each employer shall prohibit a covered employee, while having an alcohol concentration of 0.04 g/dL or greater, from performing or continuing to perform a safety-sensitive function.⁷ Additionally, no employer shall permit a covered employee who has a confirmed alcohol concentration of 0.02 g/dL or greater but less than 0.04 g/dL to perform safety-sensitive functions until the employee's alcohol concentration measures less than 0.02 g/dL; or the start of the employee's next regularly scheduled duty period, but not less than eight hours following administration of the test.⁸

2.0 Snowplow Operator

2.1 CTA Record

The 60-year-old male snowplow operator was not subject to any ongoing medical fitness requirements. The snowplow operator had been enrolled in CTA's random drug testing program and had had prior negative breath alcohol and urine drug tests on multiple occasions as far back as 2006.

2.2 Post-event Medical Record

The snowplow operator was transported to the ED by emergency services. He did not report any medication use prior to the accident or other medical conditions. A medical work up including CT scans of his head, cervical spine, as well as other radiographs was performed. No toxicology testing was performed in the ED. No significant natural disease was detected, and the snowplow operator was discharged from the ED.

2.3 DOT Post-accident Drug and Alcohol Testing

A urine specimen was obtained from the snowplow operator on the day of the event at 3:17 PM. DOT post-accident drug testing of this specimen did not identify any tested-for substances.² A DOT post-accident alcohol breath test at 3:11 PM on the day of the event was negative.

⁷ National Archives. Code of Federal Regulations. [49 CFR 655.31\(b\)](https://www.ecfr.gov/current/title-49/subtitle-B/chapter-VI/part-655/subpart-D/section-655.31). <https://www.ecfr.gov/current/title-49/subtitle-B/chapter-VI/part-655/subpart-D/section-655.31>. Updated August 2, 2023. Accessed August 6, 2024.

⁸ National Archives. Code of Federal Regulations. [49 CFR 655.35\(a\)](https://www.ecfr.gov/current/title-49/subtitle-B/chapter-VI/part-655/subpart-D/section-655.35#p-655.35(a)). [https://www.ecfr.gov/current/title-49/subtitle-B/chapter-VI/part-655/subpart-D/section-655.35#p-655.35\(a\)](https://www.ecfr.gov/current/title-49/subtitle-B/chapter-VI/part-655/subpart-D/section-655.35#p-655.35(a)). Updated August 2, 2024. Accessed August 6, 2024.

E SUMMARY OF MEDICAL FACTS

1.0 Train Operator

According to the records from CTA's occupational health contractor, the 47-year-old male train operator underwent a DOT FMCSA medical examination August 23, 2021. According to his MER Form, the train operator reported no active medical issues and no medication use at the time of that exam and was issued a 2-year CMV driver medical certificate. He underwent another DOT FMCSA medical examination August 8, 2023, and was issued a 2-year CMV driver medical certificate.

Shortly after the crash, the train operator was transported to the emergency department (ED) by emergency services. On arrival to the ED, the train operator did not report any medication use prior to the accident or other medical conditions. Blood tests were obtained upon the train operator's arrival to the ED, including blood specimens for toxicological testing. A medical workup including computed tomography (CT) scans of his head, cervical spine, chest, and abdomen as well as other radiographs of his extremities, was performed. No evidence of significant natural disease was identified.

Hospital testing detected ethanol at 0.06 g/dL in a blood specimen collected from the train operator at 11:20 AM on the event date. The hospital ethanol test is an unconfirmed clinical test, and the results report contained a disclaimer that the results are not intended for legal purposes. Hospital testing of a urine specimen collected at 1:20 PM detected only substances that had been administered to the train operator after the crash, as verified by review of post-crash medical records.

A urine specimen was obtained from the train operator on November 17, 2023, at 7:10 PM. DOT post-accident drug testing of this specimen did not identify any tested-for substances. The train operator did not undergo DOT post-accident alcohol testing due to on-going medical treatment in the hospital; according to the DOT Alcohol testing form, the test was not performed as more than 8 hours had elapsed from the time of the accident.

At the request of the NTSB, the FAA Forensic Sciences Laboratory performed toxicological testing of the train operator's hospital blood specimens. Ethanol was detected at 0.043 g/dL in a specimen collected at 11:20 AM on the event date, and at 0.048 g/dL in a specimen collected at 11:36 AM on the event date. No other tested-for substances were detected.

2.0 Snowplow Operator

After the accident, the 60-year-old male snowplow operator was transported to the ED by emergency services. He did not report any medication use prior to the

accident or other medical conditions. A medical work up including CT scans of his head, cervical spine, as well as other radiographs was performed. No toxicology testing was performed in the ED. No significant natural disease was detected, and the snowplow operator was discharged from the ED.

A urine specimen was obtained from the snowplow operator on the day of the event at 3:17 PM. DOT post-accident drug testing of this specimen did not identify any tested-for substances. A DOT post-accident alcohol breath test at 3:11 PM on the day of the event was negative.

Submitted by:

JE (Betsy) Tuttle MD MHA FACS
Medical Officer