

# National Transportation Safety Board

Office of Railroad, Pipeline and Hazardous Materials

Washington, DC 20594



RRD22LR012

## **SYSTEM SAFETY**

Group Chair's Factual Report

February 27, 2023

## Table of Contents

A. ACCIDENT.....	3
B. GROUP.....	3
C. SUMMARY .....	3
D. FACTUAL INFORMATION.....	4
1.0 CUSTOMER SERVICE ASSISTANT.....	6
1.1 Work History .....	6
1.2 Schedule .....	7
2.0 TRAIN OPERATOR.....	8
2.1 Work History .....	8
2.2 Schedule .....	9
3.0 REFRESHER TRAINING .....	10
3.1 Chicago Transit Authority Refresher Training Pre-Accident .....	10
3.2 Industry Refresher Training .....	11
3.3 Chicago Transit Authority Refresher Training Post-Accident.....	11
4.0 INTERVIEWS.....	12
4.1 Train Operator.....	12
4.2 Rail Supervisor.....	14
4.3 Exemplar Customer Service Assistant.....	15
5.0 CELL PHONE USAGE .....	16
E. CHIEF REVIEW .....	17

## **A. ACCIDENT**

Location: Chicago, IL  
Date: July 16, 2022  
Time: 1:52 a.m. (Local - CDT)  
6:52 a.m. (UTC)  
Train: Chicago Transit Authority (CTA) brown line passenger train 3285

## **B. GROUP**

A single working group was established that included the National Transportation Safety Board (NTSB) investigator-in-charge (IIC), who is an operations investigator, and an NTSB system safety investigator. The group also included party members. See the Operations Factual report in the docket for information on the party members.

## **C. SUMMARY**

Please see the Operations Factual report for a summary of the accident.

## D. FACTUAL INFORMATION



*Figure 1. Photograph of accident location at La Salle/Van Buren station. The yellow curved railing shown in the righthand side is located on the north (inner loop) platform. The yellow rectangular railing shown in the lefthand side is located on the south (outer loop) platform. Photograph taken by NTSB.*



*Figure 2. Photograph of yellow curved railing at west end of north (inner loop) platform of La Salle/Van Buren station. Red and white sign on the curved yellow railing states "DANGER NO ONE PERMITTED ON TRACKS EXCEPT EMPLOYEE ON DUTY." Photograph taken by NTSB.*

## **1.0 Customer Service Assistant**

### **1.1 Work History**

The customer service assistant (CSA) was hired by Chicago Transit Authority on 11/11/2013.<sup>1</sup> His "initial" training occurred between 11/12/2013 and 11/23/2013. Initial CSA training includes classroom training, a rail safety tour, and practical experience working alongside a qualified CSA.<sup>2</sup> On the rail safety tour, trainees are required to practice walking across the tracks in different environments, one of which is on elevated structures. Trainees are educated about the electrical hazard presented by the third rail.

He also received "return from leave" training between 5/30/2020 and 6/2/2020. CTA's return from leave training is tailored to the circumstances of the employee. Employees on leave between 60 and 89 days must complete at least one day of training and more if the instructor deems it necessary to make the employee operationally ready. Employees on leave longer than 90 days must complete at least two full days of training and more if the instructor deems it necessary to make the employee operationally ready. An important element of return from leave training is informing employees about what has changed while they were on leave. Return from leave training does not include a rail safety tour (CSAs do not practice walking on the tracks again).

Employment records for the CSA showed 10 instances of "missed assignment" and 11 instances of "excessive absenteeism" between 3/6/2013 and 5/5/2022.<sup>3</sup> Several administrative actions were taken as a result, including three 1-day suspensions (7/15/2017, 3/25/2022, & 5/5/2022) and a 3-day suspension (4/20/2022). There were no safety critical performance issues in the CSA's record.

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<sup>1</sup> Document: Employee Training Summary

<sup>2</sup> A CTA training subject matter expert provided general training information in an unrecorded discussion on 10/17/2022. CTA's concurrence with this factual report verifies that this information is accurate.

<sup>3</sup> Document: CSA Performance History

## 1.2 Schedule

The CSA worked the night shift, between 10:00 p.m. and 6:00 a.m. He reported for work the day before the accident (7/15/2022) at 10:00 p.m. and had been working for about 3 hours and 52 minutes when the accident occurred at 1:52 a.m. on 7/16/2022. Prior to that shift, he had been off duty for the preceding 16 hours. The CSA's work schedule preceding the accident is shown in the table below:<sup>4</sup>

Military	Local Clock Time	Local Date													
		7/3/2022	7/4/2022	7/5/2022	7/6/2022	7/7/2022	7/8/2022	7/9/2022	7/10/2022	7/11/2022	7/12/2022	7/13/2022	7/14/2022	7/15/2022	7/16/2022
0:00	12:00:00 AM														
1:00	1:00:00 AM														
2:00	2:00:00 AM														
3:00	3:00:00 AM														
4:00	4:00:00 AM														
5:00	5:00:00 AM														
6:00	6:00:00 AM			6:00 AM	6:00 AM	6:00 AM	6:00 AM	6:00 AM		6:00 AM	6:00 AM	6:00 AM	6:00 AM		
7:00	7:00:00 AM														
8:00	8:00:00 AM														
9:00	9:00:00 AM														
10:00	10:00:00 AM														
11:00	11:00:00 AM														
12:00	12:00:00 PM														
13:00	1:00:00 PM														
14:00	2:00:00 PM														
15:00	3:00:00 PM														
16:00	4:00:00 PM														
17:00	5:00:00 PM														
18:00	6:00:00 PM														
19:00	7:00:00 PM														
20:00	8:00:00 PM														
21:00	9:00:00 PM														
22:00	10:00:00 PM		10:00 PM	10:00 PM	10:15 PM	10:00 PM	10:00 PM			10:00 PM	10:00 PM	10:00 PM	10:00 PM	10:00 PM	
23:00	11:00:00 PM														
	Time (hh:mm)			8:00	8:00	7:45	8:00	8:00			8:00	8:00	8:00	8:00	3:52
	Time Away (hh:mm)			64:00	16:00	16:15	16:00	16:00			64:00	16:00	16:00	16:00	16:00

Table 1. CSA Work Schedule Preceding the Accident. Hours worked are generally shown in green/outlined blocks that correspond to the 24 hours of the day (y-axis). The specific shift start and end times are written at the top and bottom of the green/outlined blocks. The estimated accident time (1:52 a.m.) is shown in orange. At the bottom of the table, 'Time' indicates the total shift time, and 'Time Away' indicates the total time between shifts.

<sup>4</sup> Document: CSA Hours of Service. Note that CSA was allotted a 20-minute break in the middle of his shifts, which are not depicted in the table.

## 2.0 Train Operator

### 2.1 Work History

The train operator was hired by Chicago Transit Authority on 9/15/2014. His position is known within CTA as a Rail Transit Operator (RTO). His training records are shown in the table below.<sup>5</sup>

Classification	Training Type	Start Date	End Date
Flagger	Initial	9/16/2014	9/28/2014
RTO	Initial	7/20/2015	9/8/2015
Flagger	Return From Leave	1/6/2021	1/6/2021
Flagger	Recertification	1/15/2021	1/18/2021
RTO	Return From Leave	2/8/2021	2/9/2021
RTO	Recertification	3/3/2021	4/30/2021
RTO	CAG 1 <sup>st</sup> Referral	6/30/2021	7/1/2021

Table 2. Train Operator (RTO) training history.

New CTA employees cannot start working as a train operator but must first qualify as a flagger.<sup>6</sup> Initial RTO training entails classroom training, testing, observation, and qualification. Part of the curriculum includes responding to emergency situations. The train operator was required to complete Corrective Action Guidelines (CAG) training in 2021 because he committed a safety violation (improper berthing) while operating a train on 05/23/21.<sup>7</sup>

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<sup>5</sup> Document: Employee Training Summary

<sup>6</sup> A flagger is an employee position, the duties of which entail protecting workers on a railroad right of way and/or a train(s) that has stopped on a section of track.

<sup>7</sup> CTA administers CAG training to employees to improve their safety performance in response to adverse incidents.

## 2.2 Schedule

The train operator usually reported for work around 5:00 p.m. and departed from work around 3:00 a.m., though the specific start and end times varied. He reported for work the day before the accident (7/15/2022) at 5:20 p.m. and had been working for about 8 hours and 32 minutes when the accident occurred at 1:52 a.m. on 7/16/2022. Prior to reporting for that shift, he had been off duty for about 62 hours. The train operator's work schedule preceding the accident is indicated in the table below:<sup>8</sup>

Military	Local Clock Time	Local Date													
		7/3/2022	7/4/2022	7/5/2022	7/6/2022	7/7/2022	7/8/2022	7/9/2022	7/10/2022	7/11/2022	7/12/2022	7/13/2022	7/14/2022	7/15/2022	7/16/2022
0:00	12:00:00 AM														
1:00	1:00:00 AM														
2:00	2:00:00 AM		2:52 AM												1:52 AM
3:00	3:00:00 AM							3:12 AM							
4:00	4:00:00 AM														
5:00	5:00:00 AM														
6:00	6:00:00 AM														
7:00	7:00:00 AM														
8:00	8:00:00 AM														
9:00	9:00:00 AM														
10:00	10:00:00 AM														
11:00	11:00:00 AM														
12:00	12:00:00 PM														
13:00	1:00:00 PM														
14:00	2:00:00 PM														
15:00	3:00:00 PM														
16:00	4:00:00 PM														
17:00	5:00:00 PM	5:30 PM					5:20 PM	4:57 PM	5:30 PM	5:20 PM	5:20 PM			5:20 PM	
18:00	6:00:00 PM														
19:00	7:00:00 PM														
20:00	8:00:00 PM														
21:00	9:00:00 PM														
22:00	10:00:00 PM														
23:00	11:00:00 PM														
	Time (hh:mm)		9:22					9:52	9:50	9:02	9:32	9:32			8:32
	Time Away (hh:mm)		38:08					110:28	13:45	14:43	14:48	14:28			62:28

Table 3. Train Operator Work Schedule Preceding the Accident. Hours worked are shown in green/outlined blocks that correspond to the 24 hours of the day (y-axis). The specific shift start and end times are written at the top and bottom of the green/outlined blocks. The estimated accident time (1:52 am) is shown in orange. At the bottom of the table, 'Time' indicates the total shift time, and 'Time Away' indicates the total time between shifts.

<sup>8</sup> Document: Train Operator Hours of Service

### **3.0 Refresher Training**

#### **3.1 Chicago Transit Authority Refresher Training Pre-Accident**

The following excerpts are taken from CTA's Agency Safety Plan.<sup>9</sup>

##### 6.1.7 Customer Service Assistant

*A qualified Customer Service Assistant (CSA) may elect to remain a CSA rather than enter the mandatory progression of qualifications that begins with Flagger. CSA candidates receive eleven (11) days of training, which consists of classroom instruction and field instruction. Specific safety elements of the training include Rail Safety Training (detailed below), Incident Command modules and All-Hazard Awareness Training and the duties of the job with respect to ensuring their own safety and the safety of customers while in rail stations.*

*All CTA-non operating employees who are assigned to work on or adjacent to CTA's rail system Right-of-Way must have successfully completed the Rail System Safety Training and must carry a valid Rail System Safety Training Identification Card. Trainees must successfully complete a course exam evaluating their knowledge on information learned.*

##### 6.1.10 Rail Operations Refresher Training

*Ongoing refresher training for Rail Operations employees is provided by all Rail Instructors at rail terminals to groups of employees, as CTA operational and safety needs dictate. Refresher training consists of reviewing bulletins, SOPs and Train Lines (topical brochures on subjects such as seasonal procedures, two-way radios, etc.). The CTA uses refresher training as a means of informing employees about hazards and the appropriate methods of controlling hazards. Rail Instruction maintains the records of refresher training.*

*Training-for-Change also is conducted based on need. It takes place when the CTA introduces new equipment procedures or techniques and involves providing employees new training and reference material. SOP 8076 Standard Terms for Completing the Instructor's Time Report further describes the CTA's refresher training procedure.*

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<sup>9</sup> These excerpts from CTA's 2022 Agency Safety Plan: Safety Management System for Rail page 61 (Sections 6.1.8 - 6.1.9 omitted), which is not uploaded to the public docket.

In email correspondence, CTA indicated that at the time of the accident, their recertification program did not require CSAs to be retrained,<sup>10</sup> and they did not issue Rail Safety Tour ID Cards to CSAs.<sup>11</sup>

### **3.2 Industry Refresher Training**

The Federal Transit Administration party member contacted several transit agencies to determine the frequency in which the transit industry provides roadway worker protection refresher training. He contacted the Massachusetts Bay Transportation Authority (MBTA), the Washington Metropolitan Area Transit Authority (WMATA), and the Southeastern Pennsylvania Transportation Authority (SEPTA) to learn about their recertification programs.<sup>12</sup> MBTA and WMATA indicated that they require recertification every two years. SEPTA indicated that they require recertification every year.

### **3.3 Chicago Transit Authority Refresher Training Post-Accident**

CTA provided NTSB a memorandum regarding their post-incident activities.<sup>13</sup> CTA has instituted a new training requirement for CSAs such that they are now required to participate in rail safety refresher training every two years. CSAs are now being issued a physical certification card to assure that they are up to date with their safety training.

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<sup>10</sup> CTA provided this information in an email dated September 8, 2022. See document: Email Refresher Training

<sup>11</sup> CTA provided this information in an email dated August 22, 2022. See document: Email Rail Safety Tour ID Card.

<sup>12</sup> See document: Email RWP Transit Industry

<sup>13</sup> See document: CTA Post-Incident Activities

## 4.0 Interviews

### 4.1 Train Operator

The interview transcript for the train operator is available in the public docket.<sup>14</sup>

The train operator said that he had been an operator for about a year. He said that it took him “about maybe six months” to complete the necessary training to become an operator, which he described as “very tough.”

On the day of the accident, the train operator said that it was raining, and the wheels of the train were slipping and sliding. He indicated that he was cycling between coasting and using power, “concentrating” on controlling the train. He said that there was “a little bit of streaking” from the windshield wipers. He indicated that visibility could be improved with new wipers. He also indicated that brighter train headlights would improve visibility. Finally, he indicated that visibility “to the sides” of the train could be enhanced if the left side instrument control panel (“the partition”) was less obstructive and if the operator’s cab was “more open.”<sup>15</sup>

The train operator said that train speed was around 10 mph prior to stopping at the La Salle/Van Buren station. He indicated that as he arrived at the station, his attention was directed to a yellow mark on the platform that shows the location to stop the front of the train (referred to as the “eight-car mark”). He said that as he did not feel an impact, but “smelled something burning” when he “reached the eight-car mark.” He allowed the customers to alight. Then he contacted the control center and reported that he saw smoke and was going to investigate. He saw that the train had impacted a person and asked the control center to shut off the power to the third rail.

The train operator indicated the lighting at the La Salle/Van Buren station was “kind of dim,” and operations there would be easier if it was brighter.

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<sup>14</sup> Document: Interview Train Operator

<sup>15</sup> Investigators examined the view out of the cab while the train was out of service. A photograph of this is shown on the next page.



*Figure 3. Photograph of view looking out of accident train operator's cab. There is an instrument panel on the left side of the image, which contains a phone, several dials, lights, and an inward facing camera. The view out of the window on the right side of the image shows an employee and white brick wall. Photograph taken by NTSB.*

## 4.2 Rail Supervisor

The interview transcript for the rail supervisor is available in the public docket.<sup>16</sup>

The rail supervisor said that he had worked for CTA for about 17 years, holding several positions, one of which was a CSA. He said that he had been a supervisor for about four years and is currently working “the midnight” hours. His job duties include inspecting stations and observing CSAs to ensure that they are complying with CTA’s policies and procedures (e.g., have required safety equipment). He also ensures that if there are any station issues (e.g., malfunctioning machine) that the CSA has documented them in the station log. The rail supervisor indicated that in his tenure he had yet to observe a CSA enter the track area inappropriately.

The rail supervisor estimated that he oversees “over two dozen” stations, though he did not recall the exact number. He said that he typically visits about five stations per night, though it “depends on what we have going on for the night.” He said that a typical station inspection takes between 15 to 30 minutes.

The rail supervisor said, “every day” there were “multiple” unmanned station, which to his knowledge was the result of a “lack of manpower.” That is, these stations would normally be staffed with a CSA, but sometimes they were not because one was not available. The rail supervisor is tasked with attending to these unmanned stations, which involves locking them when service stops for the night and unlocking them when service restarts in the morning. However, he indicated that sometimes because of his workload, he is not always able to attend to all the unmanned stations, and they remain unlocked all night. He indicated that attending to unmanned stations sometimes left him with minimal time to observe the manned stations. He said CTA was “very shorthanded,” and additional supervisors were needed. He indicated that the coronavirus pandemic had “made things a little more difficult.”<sup>17</sup>

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<sup>16</sup> Document: Interview Rail Supervisor

<sup>17</sup> CTA provided a comment on the impact of the pandemic during the technical review process: “Like most other transit agencies, CTA did suffer resource challenges and other work-related issues as a result of the pandemic. These impacts included, but were not limited to, things like reductions in some in person activities, such as observations.”

### 4.3 Exemplar Customer Service Assistant

The CSA sustained fatal injuries in the accident and could not be interviewed. NTSB interviewed an exemplar CSA to learn more about the position. The interview transcript for the exemplar CSA is available in the public docket.<sup>18</sup>

The exemplar CSA said that the “midnight shift” is from 10:00 pm to 6:00 am. He indicated that when he arrives, he relieves the CSA whose shift runs from 2:00 – 10:00 pm. At this shift changeover, the CSAs typically will discuss any issues, such as malfunctioning machines. He indicated that passenger traffic was “fairly slow” at the La Salle/Van Buren station during the night hours. He indicated that his job duties include monitoring the station and preventing vandalism. He said that on the north (inner loop) platform, the last train for the evening arrives at the station around 1:45 – 1:50 a.m., and he closes that side of the station first. Shortly thereafter he closes the south (outer loop) platform after the last train on that side. He said that he spends most of his time on the south (outer loop) platform but does “walk the station and monitor and make sure everything's fine on both sides.” On a typical night, he makes about three trips to the north (inner loop) platform.

The exemplar CSA said that supervisors conduct inspections at “random” intervals. At these inspections, the supervisor will evaluate the CSAs uniform, “check IDs and badges,” and “things of that nature.” He said that he “had a couple” of these inspections “within the past three weeks.” He said he also receives phone calls from supervisors to “make sure everything's fine at the station,” and “make sure I don't need anything.”

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<sup>18</sup> Document: Interview Exemplar CSA

## **5.0 Cell Phone Usage**

Video evidence shows the actions of the train operator and CSA. Neither was using a cell phone when the accident occurred.

**E. CHIEF REVIEW**

Submitted by:

Mike Hoepf, Ph.D.  
System Safety Investigator

/s/ December 2, 2022

Approved by:

Bob Beaton, Ph.D., CPE  
Chief, System Safety Division

/s/ December 2, 2022