

RRD19FR009  
Accident  
Southeastern Pennsylvania Transportation Authority  
July 8, 2019  
Philadelphia, PA

## **National Transportation Safety Board**

### **Operations Group – Factual**

Feb. 3, 2020

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## **Synopsis**

At approximately 5:21 p.m. on July 8, 2019, a northbound Southeastern Pennsylvania Transit Authority (SEPTA) train struck two SEPTA track workers in Philadelphia, Pennsylvania. A southbound train, block number 41 (run number 38), was operating on track 2, north of the Erie interlocking and passed the track workers. Simultaneously, a northbound Ridge-Spur train, on track No. 3, block number 46 (run number 36) struck a track worker, and a watchman. The watchman was killed, and the track worker was injured (non-life threatening) and transported to a local hospital.

The formal synopsis for this report is a separate document. Please refer to the docket for this accident for a copy.

## **Accident Narrative**

### ***Preceding Train – Southbound Train Number 41 (track 2)***

SEPTA Train No. 41 on the afternoon of July 8, 2019, consisted of 2 cars and originated at the Fern Rock Yard, located in Philadelphia, PA, earlier on the day of the accident<sup>1</sup>. The train operator boarded the No. 41 train at the Fern Rock station for the accident trip. Car operators operate different sets of equipment, based on their work schedule. Trains normally transit the line from one end of the system to the other several times a day. In the minutes prior to the accident, train number 41 was traveling southbound on the Broad-Ridge Spur Line from the Olney Station towards 8<sup>th</sup> and Market, the last station stop on its southbound trip.

The train crew consisted of a single operator located in the control cab in the lead car. The train operator boarded the train approximately seven minutes before the accident, at Olney Station. The train operator had originally gone on-duty at 10:14 am, and had made multiple round trips, on several sets of equipment. He had previously not encountered any problems en route. He reported no problems with the operation of the train and the braking system of the train was reported to be fully functional.

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<sup>1</sup> SEPTA, refers to its train as “Blocks”

The train operator reported seeing the two track workers near Erie Station. He said that everything appeared normal. One of the track workers signaled him with what appeared to be a flashlight using a proceed indication. He said he acknowledged with two short horn signals. And passed the two workers with no know problems evident.

### ***Striking Train – Northbound Train Number 46 (track 3)***

The operator of Train No. 46 reported to his shift at Fern Rock District at 7:28 a.m. on July 8, 2019. The operator made several round trips throughout the morning and took his two hour “Swing” then made two and one half round trips prior to the accident.<sup>2</sup> Prior to the accident, the operator left 8<sup>th</sup> and Market Station at 5:10 p.m. heading northbound towards Olney Station. The train operator said that all train systems, including the braking system, radio, and headlights all operated as intended.

The train operator said that he made a normal stop at Erie Station. He said that that there were more passengers than usual on the train, and many were standing. He said he looked out the window and watched the passengers de-trained at Erie station onto the platform.

When he entered the tunnel, at the end of the platform, he said it was dark and saw the southbound train headlights. As he proceeded, he then saw two vests between two and three tracks and immediately heard a loud bang on the left side (non-operating side) of the train and immediately put the train into emergency braking. Shortly after, he heard a mayday call over the radio. He said that one of the roadway workers, made the mayday call on the radio.

### ***Southbound Train – Train Number 2 (Track 1).***

SEPTA Train No. 2 on the afternoon of July 8, 2019, consisted of five cars and originated at the Fern Rock yard, located in Philadelphia, PA.<sup>3</sup> The train was manned and operated by a single car operator. The car operator boarded the No. 2 train at Fern Rock at approximately 5:13 p.m.

The train made an uneventful trip from Fern Rock Station (Transportation Center). In the minutes prior to the accident, train number 2 was traveling southbound on track 1 as the train approached north of Erie Station, the car operator received the mayday radio transmission. The car operator then slowed the train preparing to stop on track 1. As he approached the accident location at Erie interlocking he saw a track worker in the fetal position and another worker walking around the interlocking.

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<sup>2</sup> On SEPTA, a “Swing”, is a two hour rest period. The train operator told investigators that he had gone to the local Gym to work out during his rest period.

<sup>3</sup> Operator went on duty @ Fern Rock @5:06 PM

The car operator then relayed additional information from the scene to the train dispatcher until released from the accident scene approximately 15 minutes later.

## **Method of Operation and Location**

SEPTA trains were governed and authorized by signals controlled from a centralized dispatching center located in Philadelphia, PA. The accident occurred north of the Erie Station within the tunnel at that location. The railroad at this location is controlled by Centralized Traffic Control with wayside signal indications. Trains can be operated in both directions on all tracks. Normal operation is the established direction of movement. The maximum authorized speed by rulebook for SEPTA trains operating through Erie on tracks No. 1 and 4, is 50 MPH. The maximum authorized speed on tracks No. 2 and 3 is 70 MPH.

## **Operating Rules**

Operating rules governing employees were the Rail Operations Division, Rules Manual 3<sup>rd</sup> Edition, effective Sunday, November 6, 2011.<sup>4</sup> In addition to Daily Operating Bulletin Orders in effect to the day of the accident.

## **Operating Crews**

### **SEPTA Train 41**

Train Operator:	Anwar Nance
Date of Birth:	10/16/1968
Hire:	02/08/2010
Last observational Ride:	01/02/2019

### **SEPTA Train 46**

Train Operator:	James Jenkins
Date of Birth:	12/04/1973
Hire:	08/28/2000
Last observational Ride:	01/02/2019

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<sup>4</sup> Rulebook is updated twice annually with General Orders.

## **SEPTA Train 2**

Train Operator: A. Andre Murphy  
Date of Birth: 10/16/1968  
Hire: 10/06/2003  
Last observational Ride: 02/21/2018

## **Train Consists**

Southbound SEPTA Train No. 41 consisted of 2 passenger cars. On the head of the train the lead car number was 562. The train was lined up as follows:

562  
657

Northbound SEPTA Train No. 46 consisted of 2 passenger cars. On the head of the train the lead car number was 692. The train was lined up as follows:

692  
517

Southbound SEPTA Train No. 2 consisted of 5 passenger cars. On the head of the train the lead car number was 543. The train was lined up as follows:

543  
514  
697  
653  
563

## **Employee Interviews**

The Operations (OPS) Group conducted 7 employee interviews related to the accident. Below are bullets from these interviews (a copy of the full interview will be placed into the accident docket:

Name : Anwar Nance  
Title : Train Operator – Train 41

Date / Time of Interview : 7/11/2019 10:00 a.m.

- Car operator of southbound train, track 2
- Walk through beginning of the day on 7/8/2019
  - Started shift at 10:14 at Fern Rock district
  - Started local train 10:20, one trip south and north
  - Two hour swing in district trainman room
  - 2<sup>nd</sup> half of shift was on the Ridge-Spur line
  - Accident was 4<sup>th</sup> or 5<sup>th</sup> trip
  - Train came 10 minutes late – performing signal work – not sure what time left
  - Head southbound, Allegheny, Erie
    - Saw track personnel – gave them proceed
    - Sounded two horns
    - Berthed into Erie, heard mayday transmission
- Where to report
  - Report to district building in Fern Rock
  - Reported 10:14 (AM) and left on local train at 10:20 (AM)
- Shift:
  - One round trip
  - Swing 11:58-1:58 (AM) and reported back to second half of shift
- After Swing shift
  - Took another 2 or 3 round trips
  - 8<sup>th</sup> and Market – to Olney
  - Kept same train equipment
- Equipment
  - No issues with mechanical equipment of car
- Anomalies
  - 10 minutes late, no equipment problems - train emergency signal, radio transmission may have it
- Train dispatcher
  - No communication with dispatcher
- Special instructions
  - Don't recall any instruction on personnel in track
- Normal day – number of trains in Erie
  - Up to 4 trains at one time in Erie
- Have not been on Ridge-Spur in a while – was first day on the run
- Only one person operating train
- Discussion with train dispatcher:
  - Don't recall discussion with dispatcher
- Entering Erie:

- Saw track inspectors with two short beeps acknowledging the proceed signal
- Proceeded southbound into station

Follow up questions:

Joe Wilson

- Saw the proceed signal
  - Given by one worker with flashlight
  - Easily able to see them

Rick Dolbin

- Did you see workers throughout the day?
  - Saw a work zone on local track on first trip
  - Regular communication with flashlight

Elizabeth Bonini

- Were they facing your direction?
  - The flagger was facing the operator on SB

Ronald Newman

- Do you recall hearing an announcement that people were at the interlocking?
  - Don't recall hearing a notification
- Is there any reason you wouldn't hear transmission?
  - Possible that he didn't hear an announcement
  - Did not know track people were in track area

George Good

- How close were they together?
  - Focused on hand signal and all he recalls
- Regular procedure for OCC to provide warnings
  - Dispatchers always make announcement – be careful – there are workers in the track area, don't require a feedback unless something special is going on
- Operating at Erie regularly?
  - Usually stop at the 2-3 car marker on platform
  - Yes
- General speed leaving station?
  - Give train full power
  - Reach 30-40 MPH once reaching interlocking

Dave Bucher

- Do you recall seeing the vest?
  - It was clear to see the workers' vests
- How many cars
  - Two-car consist
- Missing anything coming on duty?
  - Not missing anything

Anwar Nance - Announcements for track area may be hard to hear- a lot of noise in the tunnel

Ron Newman

- When they make announcement do they tell you what area the workers are?
  - Yes

Dave Bucher

- Is it common to see track workers without warning?
  - Common to see track workers all along the line
  - May not hear all announcements

George Good:

- Operator reliefs, would you relay to the operator relief if you heard warning
  - Communication comes through radio
  - Would relay if operator just came on to line, operator would advise if supervisors hadn't
- Mayday transmission
  - Train dispatcher told everyone to stop

Dave Bucher:

- Previous days
  - Off work 24 hours prior
  - Got off Saturday at 7:40 p.m.

Ron Newman:

- Are the operators allowed to wear ear protection?
  - Yes

Name : James Jenkins

Title : Train Operator

Date / Time of Interview : 7/11/2019 10:30 a.m.

Dave Bucher:

- Walkthrough day
  - Monday morning, woke up 5:45 a.m.
  - Started a swing shift
  - Work 3 hours, 2.5 days
  - Swing – went to gym and worked out, came home, short nap, showered
  - Started second half of shift
    - ½ trip from Olney until 8<sup>th</sup> and Market
    - Down time from initial trip
  - Started second half of shift at Olney



- Started 5:10 p.m. shift
  - Picking up more people than normal
    - Girard, Allegheny, Erie
  - Looked down and received clear signals
    - Normal speed
  - As soon as entering tunnel saw another train coming SB on track 2
    - Saw two workers
    - Track workers were located between track 2 and 3
  - Operator was standing up and saw them and the train
  - A split second after passing them and heard a boom on non-operating side of train.
    - Nothing was obstructing track area
  - One of two workers called into the radio with a mayday
- Follow-up
  - Start at Fern Rock for first swing shift
  - Relief at Olney
  - Catch a train at Fern Rock to get to Olney
  - 2.5 trips in the morning and 4 during the swing shift
  - Picked up train involved in accident at 8<sup>th</sup> and Market
- Were there any equipment issues
  - Everything functioned as designed
    - Headlights, radio, brakes
  - Did you hear anything from train dispatcher
    - There is always chatter, but don't recall hearing anything
  - No portable radio during swing shift
- How many cars
  - Two train consist
- No conductor on the train
- Distractions?
  - Nothing out of the ordinary – more people on this particular trip
  - A lot of people got off of Erie
- How long working on line?
  - 4 years in October, 2019

Joe Wilson

- Do you recall which way workers were facing
  - Facing track 2
- Did you see any hand signals?
  - No
- Approximate speed
  - Dumped the train before interlocking – maybe 30 MPH
- When you heard the noise did you put into emergency?
  - Yes, train didn't do it automatically

- Did you see vests that stood out
  - Saw the vests and that was the only thing that stood out
- As an operator and you see workers, how are you notified?
  - Through hand signals
  - Work zone set up

James Creedon

- When you pulled up to 2/3 car marker did you see people in the track?
  - Did not notice people in track

Dean Jones

- Do you recall first point seeing working?
  - Saw them in the tunnel – area was dark, just entered the tunnel after leaving Erie
  - Did not see them entering Erie

Rick Dolbin

- Had you seen workers during that day/ throughout the shift?
  - Do not recall seeing any workers

Elizabeth Bonini

- Were you wearing hearing protection?
  - No ear protection at the time

George Good

- Does SEPTA have rules for seeing track workers if you don't see a signal
  - Hit one long on the horn when you see a worker and waiting for a signal from them

Dave Bucher

- Is it common to see workers in Erie interlocking?
  - Not that often
  - Usually there are work zones set up
  - Depends on working being done
    - Operator will be notified if it is major work

End 12:58

Name : A. Andre Murphy

Title : Train Operator

Date / Time of Interview : 7/11/2019 1:30 p.m.

David Bucher:

- Run through the day of the accident overview leading up the accident scene

- Departed Fern Rock at 5:13 pm
  - Stationed at Hunting Park
  - Heard Mayday
  - Looking forward to check for the area
  - Saw the track worker in the track area adjacent
- First train of the day
- Rest before duty
  - Did not work 7/7/2019
- Operator since 2010
- Experience encountering track workers along the line
  - Frequently see track workers after 5:00 pm
- Work Zones
  - See often
  - Notified by in-gauge signs
  - Single worker
    - Call dispatcher
    - Dispatcher will notify through radio channel
    - Equipped with portable – take it with during the break

#### Follow up

#### Joe Wilson

- As leaving Fern Rock did you hear radio transmission of workers prior to arriving
  - To be aware of a cashier warning light it was only a test – no track worker warning
  - Did not see the warning light (it was near 8<sup>th</sup> and Market)
- As approaching Erie heard mayday – did you stop or continue?
  - Continued by coasting – glanced ahead to make sure it wasn't my track area
  - Approaching signal 12 and saw D. Monroe
    - Saw both workers in vest
    - Saw D. Monroe in fetal position, S. Nixon walking around frantically
- Where were they
  - Between tracks 2 and 3 at the crossover North of Erie

#### Ron Newman

- When you started – was there any way you would have known people were in the track?
  - Only if they repeated after he reported for duty
  - Nothing notifying that an announcement was made

#### George Good

- When you saw the event did you stop
  - Approached them and asked if they needed assistance

- Made radio communication for S. Nixon
- Stayed in area for 12 minutes
- Everyone on the same radio channel

Dave Bucher

- As you approached did you see vest
  - First thing seen
- Did you see flashlight
  - Saw S. Nixon's flashlight after seeing him
  - Flashlight functioning – used to see D. Monroe

Ron Newman

- How long working
  - 9 years
- How many times have you seen track workers in Erie and how often do they signal?
  - See them all the time, only half the time get the accurate signal
  - New workers may not have flashlights with them for flagging responsibilities

End 2:05

Name : Ayala Foreman

Title : Transportation Manager

Date / Time of Interview : 7/12/2019 9:00 a.m.

Dave Bucher:

- Stationed at Olney SB platform
- Conducted several rides along the line to advise on signals, speeds
- Went into swing shift
- Performed light checks at N Philadelphia – heard Mayday call
  - Got SEPTA officer to get from Allegheny to Erie
- Told Salimah to go to train
- Worked with SEPTA police, PFD, PPD
  - Ensure power was out
- Nixon was upset and tried to calm him down
- Fire Department came over after power was confirmed off
  - Checked for pulse on Monroe – pronounced deceased
- Detective, Police, Fire conducting investigation
- Track Foreman came to the scene
- Two trains in between stations
- Tried to get the trains to unload them

- Sharon – A.D.
- Q. Robinson got train evacuated at Wyoming
- Tried to get colliding train evacuated

#### Follow up

- Conducting ride checks?
  - Yes
- Did you ride with Operator of colliding train?
  - No only work with local and express trains that day
- Have you ridden with Mr. Jenkins in the past?
  - Yes – Operations have been fine, no issues or reinstruction
- In experience is accident area – how often do you encounter track workers in Erie interlocking?
  - Not many times
- Have you had an experience with them using flashlights
  - Usually they are in the middle area between 3 and 4 – never seen in actual interlocking - cleared out of the way. Never needed to stop because they were cleared

#### George Good

- How long was train sitting there
- Who took over operation?
  - Q. Robinson took over

#### James Creedon

- Fire department was there when you got there but were waiting for power confirmation – they did not have any boxes with them

#### Anthony Harris

- In TM position for over 3 years

#### Rick Dolbin

- Have you seen inspectors and do you see them regularly?
  - Yes
  - Had not seen those specific inspectors during the day

#### Joe Wilson

- What were hours working the day?
- 6-10 Swing 10-2 then 2
- Monitor radio – did you hear about any roadway workers
  - Don't recall hearing transmission on roadway workers

#### Dave Bucher

- How often do you hear requests for track workers in radio?
  - Frequently hear about them based on their location and advise they are in the area

#### George Good

- Have you ever heard an ops person say they had a near miss or workers too close to the track?
  - Yes – very few times

Dean Jones

- Have you ever done rules compliance on roadway workers – any failures?
  - Don't recall any failures

James Creedon

- RWP check are contractors
  - Yes contractors – not SEPTA employees

Dave Bucher

- How often do you run into roadway workers that you didn't realize they would be there?
  - Never experienced not hearing about roadway workers

George Good

- Is there a process for reporting near miss?
  - Do not know the process

Rick Dolbin

- Do you notice roadway workers frequently
  - Don't operate regularly
  - Between Olney and Fern Rock – don't regularly see them
  - Usually would be in bents and safe place

End at 9:28

Name : Salimah Gilbert

Title : Transportation Manager Trainee

Date / Time of Interview : 7/12/2019 9:45 a.m.

Dave Bucher:

- Performing emergency light checks at N. Philadelphia
- Heard Mayday
- Took a bus – SEPTA police assisted
- PFD was on the platform
- 224 called them into the track
- Went with police
- 224 stayed with the body – instructed Gilbert to go to the train
  - Asked him if he was ok
  - Explained what happened
  - Operating NB and saw the back of the people
  - Heard a loud noise and put train into emergency
  - Stayed with operator
  - Made announcement of delays
  - Kept passengers calm

Follow up

Dave Bucher

- How long in trainee position

- Since November 2018
- Who did you go with?
  - Went with another Transportation Manager
- Have you ever been on the tracks at Erie?
  - Yes
- Train operator previously
  - Yes
- In your experience, how often do you see track workers at Erie
  - Not often
  - Not operating anymore
  - See them when they call into the track area and go past them
- What line?
  - BSL
- Encountered inspectors/track workers in the past – what is the process when you acknowledge them in the track area
  - One long – one short
  - Receive stop or proceed and provide two short

George Good

- Do you have to attend RWP before going out?
  - Receive QPE training
- How long were you an operator?
  - 5 years
  - Frequently see working in track – off to the side
  - Need to acknowledge workers are there
  - Is done typically, per the rules

Dean Jones

- Have you seen watchperson give hand signal to stop?
  - They typically use flashlight
  - Receive stop signal without any stop signs outside of work zone

James Creedon

- After receiving a stop signal by a maintainer
  - Will stop if that's the indication or use a proceed

Rick Dolbin

- Did you see any workers that day?
  - No

Joe Wilson

- Did you have radio with and turned on – did you hear any transmission
  - Heard workers call into track area – don't recall exact locations

End 10:01

Name : Kevin Smith  
Title : SEPTA Train Dispatcher

Date / Time of Interview : 7/12/2019 a.m.

Dave Bucher:

- First thing recalling Mayday call – wasn't sure who was calling Mayday- assumed it was an operator
  - Person sounded really upset and told all trains to stop in order to find out where they were
  - Train operator called to say the person was laying between 2 and 3 track at interlocking
  - Asked if it is safe to move trains on 1 and 4 track
  - Shut off power
  - Called police, fire, supervision
  - Ensured no trains moved in that area
- SEPTA police also shutdown 1 and 4 track – did not want any trains in that area
  - Initiated emergency turnback to Fern Rock and NRG stations<sup>5</sup>
  - Put people in place and secure area
- IC called to say pronounced deceased

Follow-up

Dave Bucher

- How long controller
  - 10 years
- What lines
  - Always MFL and BSL
- On 7/8/2019 how many trains
  - 24 trains - load line (18-24 trains at any time between local, express, and Ridge-Spur)
- How many positions work Sub/El
  - Team of 2 for controlling either line at a time
- Review duties describe when track workers are in an area
  - Describe the areas they will be over radio or phone
  - Notify operators through radio
  - The track workers called in
    - Other train dispatcher may have initiated the contact and let operators know they were out in the track

George Good

- What does make it safe

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<sup>5</sup> Turnback – to shorten a scheduled run in order to address operational issues, by reversing direction



- Hold the interlocking
- What happens with Mayday
  - Try to figure out location and direction
  - May be hard for the caller to identify the direction
  - Ask if they made contact

Amelija Sorg-Taylor

- Describe the types of protection you can grant workers:
  - Foul time- 5 minutes – grab interlocking and make sure no other train goes in there and let the train out the track
  - Another protection – take track out of service QPE is in charge and would not let track back in service until ready
  - Work Zone – set up work zone and use a flagger

Dean Jones

- Did you assign someone as Incident Commander
  - First person was 224 – Ayala Foreman
  - Smith assigned her as incident commander

James Creedon

- When someone calls in for Foul Time/TAW
  - Document the request, document time/location
  - Document when they are out

Anthony Harris

- When putting information out on the radio is there any acknowledgement
  - No acknowledgement from Operators

Rick Dolbin

- Who made the Mayday call
  - Discovered that it was the track person
  - Initially assumed it was the operator

Joe Wilson

- Is log written or electronic
  - Written by hand
- Any other way to track where workers are
  - Strictly tracked from log
  - Only way to log is through verbal call-in

Dave Bucher

- Is it common to hear from RWP/track workers at Erie?
  - Workers are all over the area every day
- Do you hear from them all hours?
  - Try to make work zones after load line – that's when they will call in to do work

- Is it common for workers to call during rush hour?
  - Yes common

George Good

- Do you recall any contact with block 46?
  - Talked to operator to stay calm and tell passengers they will be sitting there for awhile

Dean Jones

- What is common request from track group
  - Request for TAW
  - Rarely ask for foul time
  - Only work zone or take out power in major work

Joe Wilson

- Do you hear about near misses ever
  - No, anything close to an accident is considered an accident initially
  - Would request more information about the near miss to dig deeper

George Good

- Are controllers trained on areas in the system that may require protection
  - No clearance areas, Spring garden MFL, City Hall BSL
  - Can't let track person in with trains running
  - If track person asks to hold a train controller will grant that

Dean Jones

- What is your definition of hot spot
  - Consider a no-clearance area
  - Place where train and person can't be at the same time

Rick Dolbin

- Is Erie interlocking considered a hot spot
  - Not considered no clearance

Joe Wilson

- Are these areas that are marked
  - Considered areas that are marked as non-clearance

End at 11:34

Name : Lawyer Taylor

Title : SEPTA Control Center Manager

Date / Time of Interview : 7/29/2019 a.m.

Mr. Taylor was interviewed by NTSB investigators at SEPTA headquarters. He first described had he became aware of the accident. When he heard the "Mayday" call on the

radio. He said that he and the train dispatcher attempted to determine the location of the accident. After the location was determined, he went about shutting power down to the area and making sure SEPTA management was en route.

Mr. Taylor then answered multiple questions from the group concerning appropriate protection for SEPTA track workers.

Mr. Taylor then answered questions concerning records kept by the control center. In particular, records for protections set up for track workers.

Mr. Taylor also answered questions concerning train dispatcher training and emergency procedures for the control center.

### **Sight - Distance Observational Test**

On July 10, 2019, the investigative team conducted a Sight Distance Observational visit to Erie Station and Erie interlocking. SEPTA qualified group members with proper safety gear located themselves in the approximate location of the SEPTA track workers involved in the accident.

Multiple sight observations were made for the benefit of the investigation team. Additional information for this activity can be found in the track group report.

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