

[FE-26-98](#) (document link)

SUMMARY FOR FE-26-98:
SELECTED AND POSSIBLE CONTRIBUTING FACTORS

SELECTED FACTORS

Railroad: Union Pacific Railroad Company

Location: Chicago, Illinois

Region: Region 4

Month: October

Date: 10/11/98

Time: 10:17 a.m., CST

Data for Fatally Injured Employee(s)

Track Surfacing Gang Foreman

44 years old

23 years of service

Last rules training: April 1998

Last safety training: March 1998

Last Roadway Worker Class: March 1998

Last physical: April 1997

Data for All Employees (Craft, Positions, Activity)

Craft: MOW

Positions:

Track Surfacing Gang

Foreman

Three Machine Operators (Mark III Tamper, Helper Tamper, Ballast Regulator)

Track Department Welders

Welder

Welder's Helper

Bridge Construction Group

Engineering Supervisor

Assistant Bridge Foreman

SUMMARY FOR FE-26-98 CONTINUED

SELECTED FACTORS CONTINUED

Gang 3655 (from Crystal Lake, Jefferson Park, Chicago)

included the Jefferson Park Bridge Foreman
Two Assistant Foremen

(Not indicated how many others or their titles)

Gang 3656 (Highland Park)

included the Highland Park Bridge Foreman
Assistant Foreman
Three Carpenters

(Not indicated how many others or their titles)

Bridge Department Crane Group

Burro Crane Operator
Ground Man
Ohio Crane Operator

Metra Commuter Train No. 330

Locomotive Engineer

Activities: Track panel replacement, and surfacing and lining track on bridge.

SUMMARY FOR FE-26-98 CONTINUED

POSSIBLE CONTRIBUTING FACTORS

EVENT

The Surfacing Gang Foreman was fatally injured when struck by a commuter train.

PCF No. 1

The incident occurred when the Surfacing Gang Foreman was fouling the adjacent track. He had not been informed about the approaching train and instructed to clear the tracks, as had other employees.

PCF No. 2

The Surfacing Gang and Bridge Foremen had overlapping Track and Time Authorities in non-compliance with 49 CFR Part 214's regulations concerning Roadway Worker Protection/On-Track Safety (RWP/OTS). This contributed to the confusion and poor communication which resulted in the fatality.

PCF No. 3

The Supervisor only briefed the Bridge Workers, with four Bridge Workers absent. (Two of the absentees were placing south red and red/yellow boards for the Form B at the time of the briefing. The two other absentees were unloading tools, preparing an air compressor, and placing hose for the track panel replacement.) His briefing was inadequate as it did not specify the RWP-OTS guidelines in place (which had been established the previous day when not all employees had worked), nor did it include designation of an Employee-in-Charge. The Track Gang, Surfacing Gang, and Crane Group failed to receive briefings. No employees challenged the lack of a proper OTS job briefing.

PCF No. 4

Improper radio procedures prevented the Surfacing Gang Foreman from receiving vital information about train movements. The Bridge Foremen used the train channel 3 for communication, while other crews used channel 2. The Employee-in-Charge had a responsibility to relay train movement information immediately so all workers could clear the tracks.

SUMMARY FOR FE-26-98 CONTINUED

POSSIBLE CONTRIBUTING FACTORS CONTINUED

PCF No. 5

Poor communication occurred while attempting to clear the track. After the Engineer of the Metra Commuter Train contacted the Highland Park Bridge Foreman to request permission to enter the "Form B" limits, the Foreman told him to stand by. The Assistant Foreman, using a handset radio, attempted to clear the workers from the tracks, then informed the Highland Park Bridge Foreman that everyone was in the clear. Statements from other employees, however, conflicted about whether the Highland Park Bridge Foreman had waited for the Assistant Foreman's message before clearing the train into the "Form B" area.

Neither the Surfacing Gang Foreman nor the Mark III Tamper Operator was notified about the approaching commuter train. It is likely that the Surfacing Gang Foreman was in the bridge area behind the Mark III tamper in a crouched position which was not visible, while he was checking the line and surface of the track.

PCF No. 6

Railroad operating rules state that in multiple track territory, when trains are cleared through a Form B area at greater than 40 mph, all work must stop and operators must exit their machines. Investigators determined that this did not happen. Nevertheless, Commuter Train No. 330 was cleared at the maximum authorized speed of 59 mph, and was operating at 37 mph at the time of the incident.

PCF No. 7

The commuter train Engineer stopped sounding his whistle a considerable distance from the Roadway Workers, in non-compliance with railroad operating rules.

PCF No. 8

Analysis of UP's internal monitoring of RWP/OTS compliance revealed a surprising lack of failures, calling into question the program's credibility. For Gangs Nos. 3655 and 3656 (and other gangs working with them) during the period Jan. 1, 1998 through Oct. 8, 1998, UP did 92 audits, 23 comprehensive audits, and made 264 specific observations of which 61 involved RWP/OTS and 25 included safety activities which involved job briefings. Only three exceptions were taken, all for vehicle condition.

REPORT: FE-26-98

RAILROAD: Union Pacific Railroad Company (UP)

LOCATION: Chicago, Illinois

DATE & TIME: Oct. 11, 1998, 10:17 a.m., CST

PROBABLE CAUSE: The Surfacing Gang Foreman was fatally injured when struck by a Metra Commuter train while fouling the adjacent track. (He had not been informed about the approaching train and instructed to clear the tracks, as had other employees.)

EMPLOYEE:

Occupation:	Track Surfacing Gang Foreman
Age:	44 Years
Length of Service:	23 Years
Last Rules Training:	April 15, 1998
Last Safety Training:	March 26, 1998
Last Physical:	April 1, 1997
Last Roadway Worker Class:	March 26, 1998

CIRCUMSTANCES PRIOR TO THE ACCIDENT

On Oct. 11, 1998, a Union Pacific Railroad (UP) Track Surfacing Gang reported for duty in Waukegan, Illinois at 6:00 a.m. The Track Surfacing Gang comprised a Foreman and three Machine Operators. They drove to Clybourne Tower, milepost 2.9, where their Mark III tamper, helper tamper, and ballast regulator were located. The machines were positioned south to north and facing south. They remained in that order and direction for the duration of the day.

A UP Bridge Construction Group had built a replacement track panel to be used on the Roscoe Street Bridge on Track No. 2 in the Kenosha Subdivision of UP's Suburban Division. Roscoe Street, located at milepost 4.75, passed under the double main track in Chicago, IL. The track panel was built on the "dead track" west of Track No. 1. From west to east, the structure was in the "dead track" area, Tracks Nos. 1 and 2. The track center line distance between Tracks Nos. 1 and 2 was 13 feet.

On Oct. 10, 1998, the Bridge Group, with assistance from UP Track Department Welders, removed the rail, ties, and ballast from the Roscoe Street Bridge on Track No. 2. The Bridge Group then prepared the bridge for the placement of the new track panel, which was planned for the next day. A Form B, with limits from milepost 4.5 to 5, was in effect on both main tracks during the work period.

The Bridge Group comprised UP Bridge Gangs from Crystal Lake, Jefferson Park, and Chicago, Illinois (Gang No. 3655), and Highland Park, Illinois (Gang No. 3656). A Supervisor was also present at the bridge. Additionally, a Bridge Department Burro Crane Operator, who assisted in removing the rails, ties, and ballast from Track No. 2 at Roscoe Street, was at the location.

On Oct. 11, 1998, the Bridge Group returned to Roscoe Street to install the new track panel. The same Bridge Gangs which worked on Oct. 10, 1998, started at their headquarters at 6 a.m. and arrived at the Roscoe Street job site prior to 7:30 a.m. The Supervisor conducted a job briefing for the three Bridge Gangs to explain the work to be performed. The Supervisor stated the On-Track-Safety (OTS) guidelines for the group would remain the same as the previous day.

A Form B was in effect on both main tracks from mileposts 4.5 to 5.0, and was issued under the name of the Highland Park (HP) Bridge Foreman. The HP Bridge Foreman also had a Track and Time Authority for the work area with the limits being Control Point Deering, milepost 3.3, to Control Point RP (Roscoe Street location), milepost 10.6 on Track No. 2.

Also present at the Roscoe Street job site was a Track Gang, who would help the Bridge Group connect the rail ends of the replacement track panel to the existing track. The Track Gang arrived after the Bridge Group had received its job briefing.

The Bridge Group had a back wall timber to install prior to the placing of the new panel. The group was installing the timber when a Bridge Department Crane Group entered the limits of the Form B from the south on Track No. 1. The Crane Group had contacted the HP Bridge Foreman on radio channel # 3 for permission to enter the Form B area. The Crane Group comprised a Burro Crane Operator and Ground Man to the north and an Ohio Crane Operator. The Crane Operators sat on Track No. 1 and lifted the replacement track panel from the dead track area to Track No. 2. The Bridge Gang finished installing the back wall timber and most of the Bridge Gang moved to the dead track area while the replacement track panel was moved to Track No. 2. After the panel was moved to Track No. 2, the Ohio Crane Operator departed the work site in a southward direction towards Control Point Clybourne and transferred to the Harvard Subdivision.

The Surfacing Group had a job briefing at Clybourne which consisted of the work to be done, and how they would proceed from their present location, on Yard Track No. 5 north to Track No. 2 north of Clybourne and toward the Roscoe Street job site up to the south red board of the Form B area. The Surfacing Gang Foreman had a Track and Time Authority on Track No. 2 with the limits being the same as the HP Bridge Foreman's Track and Time Authority. These Track and Time Authorities were issued jointly, not consistent with the Part 214 Roadway Workplace Safety Regulation in effect at the time of the incident.

After the replacement track panel was in place, the Track Gang and the Bridge Group connected the rail ends to the existing track. The Burro Crane Operator and the Ground Man hooked up the clam shell bucket to place new ballast on the Track No. 2 new track panel. While the above tasks were being accomplished, the Surfacing Gang Foreman walked toward the Roscoe Street job site from the south. His machines were at milepost 4.5 on Track No. 2. He had attempted to contact the HP Bridge Foreman on UP radio channel # 2, which the surfacing group normally monitored. However, the HP Bridge Foreman was on UP channel # 3, which was the radio channel trains on the Kenosha Subdivision used.

The Surfacing Gang Foreman had used a radio in the Mark III tamper in his initial attempts to contact the HP Bridge Foreman. He also had a handset radio. The HP Bridge Foreman saw the Surfacing Gang Foreman walking toward the site and went to meet him. The HP Bridge Foreman verbally gave the Surfacing Gang Foreman permission to have his machines enter the Form B limits. The two Foremen then walked towards the job site. When they arrived, the Burro Crane Operator asked the Surfacing Gang Foreman if he needed any more ballast placed on the new panel. The Foreman noted some locations where he felt more ballast was needed. When this was accomplished, the Burro Crane Operator left the job site and proceeded in a southward direction towards Control Point Clybourne. The HP Bridge Foreman went to the location of his company vehicle, under the bridge on Roscoe Street, as he had heard radio conversations concerning the movement of a south bound commuter train, and he preferred to use the higher powered truck radio to communicate with trains.

When the Surfacing Gang's machines arrived at the job site, the Surfacing Gang Foreman gave instructions to the Ballast Regulator Operator to regulate the piles of ballast placed on the new track panel. When this was accomplished, the Ballast Regulator Operator and the Helper Tamper Operator moved north to a location about 200 feet north of Roscoe Street. The Mark III Tamper Operator then made an initial run, north to south, through the bridge area to check the line of the track. The Mark III Tamper Operator returned north of the bridge and then made a run through the bridge just lining the track. After the lining run, the Operator started north of the bridge, surfacing and lining the track. After the Mark III Tamper Operator passed the north end of the bridge, the Supervisor took a measurement at the north end of the bridge and calculated the track still had to be moved one inch to the east. The Supervisor talked to the Surfacing Gang Foreman and told him of his calculations.

Sometime during this period, the Engineer of Metra Commuter Train No. 330, operating on Track No. 1, contacted the HP Bridge Foreman and asked for permission to enter the Form B limits. The HP Bridge Foreman was in his company truck with the Jefferson Park (JP) Bridge Foreman. The HP Bridge Foreman told the train to stand by.

The Supervisor and an Assistant Bridge Foreman, who were standing together, had seen a headlight approaching from the north. The Assistant Foreman walked to the dead track area above the location of the Bridge Foremen in the company vehicle on Roscoe Avenue. The JP Bridge Foreman had the only hand set radio among the Bridge Group and the Assistant Foreman wanted to use it to clear workers at the job site. The Assistant Foreman returned to the job site with the handset radio and informed the workers to clear. The Assistant Foreman called the HP Bridge Foreman and informed him everyone was in the clear. Sometime after the Assistant Foreman received the handset radio, the HP Bridge Foreman cleared Commuter Train No. 330 to enter his Form B limits at milepost 5.0 on Track No. 1, at maximum authorized speed.

The weather at the time of the incident was clear, and the temperature was approximately 70° F.

THE ACCIDENT

The Mark III Tamper Operator had surfaced and lined through the bridge area. When the Mark III Tamper Operator had cleared the south end of the bridge, the Surfacing Gang Foreman walked southward from behind the tamper to a location between Tracks Nos. 1 and 2. He was standing on the east tie end of Track No. 1 when he was struck by southbound Train No. 330. When struck, the Foreman was approximately 11 feet south of the bridge and adjacent to the Operator's compartment of the Mark III tamper.

Chicago Fire Department Paramedics responded to the scene. The Foreman was pronounced dead at the scene by the Cook County Medical Examiner's Office. Additionally, the Chicago Police Department and officers from the UP and Metra Railroad Police Departments responded to investigate.

POST-ACCIDENT INVESTIGATION

Radio tapes of the conversations between the HP Bridge Foreman and the commuter train were not recorded. The Kenosha Dispatcher also controls the UP Harvard and Milwaukee Subdivisions which have different radio channels.

All of the Roadway Workers present had received RWP/OTS annual training during 1998 and were qualified Roadway Workers. However, the investigation revealed that numerous job briefings were not performed, or that job briefings were incomplete, during the day of the accident. Details follow:

- The initial job briefing given by the Supervisor did not specify the OTS guidelines in place that day. The Supervisor stated the OTS would be the same as the previous day. There was at least one employee present who had not worked the previous day. This job briefing also did not designate the Employee in Charge (EIC).
- There were Bridge Employees who were not present at the job briefing given by the Supervisor. Two Bridge Employees were placing the south red and red/yellow boards for the Form B at the time of this job briefing. Two other Bridge Employees, who were unloading tools, preparing an air compressor, and placing hose for the track panel replacement, were not present at the job briefing. These employees were not offered a job briefing when they did enter the work area.
- The Track Gang, comprising a Foreman and two Trackmen, arrived after the Supervisor gave his briefing, and they were not briefed concerning the OTS in effect at the job site by anyone else.
- The Crane Group entered the Form B limits and was not briefed concerning OTS by the Bridge Foreman who held the Form B or by anyone else. The Surfacing Group also entered the Form B limits and was not briefed concerning OTS by the Bridge Foreman or anyone else.
- None of the members of the above groups challenged the lack of a proper OTS job briefing.

- Some of the members of the groups working at the bridge stated they were not told of the approach of the crane and/or surfacing group. They stated that the machines approached very close to the bridge location before they were notified of them.
- The HP Bridge Foreman, who held the Form B, appeared to be considered the EIC by most of the group, but he had not been so designated in a job briefing. In similar bridge jobs, the JP Bridge Foreman, who was in the company truck on Roscoe Street, had been the employee whose responsibility was to be at the job site notifying employees of the approach of a train and then notifying the Form B Foreman that all employees were notified and cleared. This designation was not mentioned in any of the job briefings the day of the incident.

The investigation also revealed the following events associated with the fatality:

- The locomotive event recorder showed a series of six whistles by the Engineer of Commuter Train No. 330 which ended approximately 22 seconds before the incident. The event recorder showed the bell was ringing up to the time of the incident. The Engineer stated in an interview that his last whistle was approximately 1/4 mile to 1/8 mile from the work site.
- Statements made after the incident conflicted regarding whether the Assistant Foreman had contacted the HP Bridge Foreman to notify him of all employees being in the clear before or after the HP Bridge Foreman had cleared the train into the Form B limits.
- The Mark III Tamper Operator stated he was not notified of the approaching commuter train.
- The Surfacing Gang Foreman was not notified about the approaching commuter train. It is likely that when the Assistant Foreman was notifying employees, the Surfacing Gang Foreman was in the bridge area, behind the Mark III tamper in a crouched position (not visible), checking the line and surface of the track. The girders were 3' 11" above the top of the tie.
- UP rules state that in multiple track territory, when trains are cleared through a Form B at greater than 40 mph, all work must stop and Operators must exit their machines. Commuter Train No. 330 was cleared at the maximum authorized speed. Maximum authorized speed on the Kenosha Subdivision for the commuter train was 59 mph. The event recorder indicated the train was operating at 37 mph at the time of the incident.

UP conducted a hearing to determine the facts concerning the incident. The Supervisor, the HP and JP Bridge Foremen, and the Assistant Bridge Foreman were charged and removed from service by UP prior to the hearing. The four charged Bridge Employees claimed they had attended a Foreman's overlap meeting with the Bridge Department Manager in September 1998, in which it had been determined that when other crafts entered their Form B limits to perform specific tasks, the other groups could supply their own OTS. The charged employees stated that is what they thought was in effect that day for groups other than the Bridge Group.

Interviews with other Bridge Employees who also attended the overlap meeting did not substantiate the claim of the charged employees. The other employees stated that the situation mentioned at the meeting was one where another gang entered a location within the Form B, but possibly not in sight of

the Foreman in charge of the Form B. They gave as an example that a Signal Maintainer checking an insulated joint a mile away could provide his own protection.

The Bridge Department Manager gave this explanation: UP's OTS rules required large groups, similar to the Surfacing Gang, to have Form B protection in multiple track territory. UP rules also prohibited overlapping Form Bs. This rule, which also applied to the Crane Group, would have required the HP Bridge Foreman to provide Form B protection to both the Surfacing and Crane Groups.

After the hearing, UP dismissed the Supervisor and the Bridge Foremen of Gangs Nos. 3655 and 3656. The Assistant Foreman was given a lesser discipline.

The remains of the Surfacing Gang Foreman were drug tested under FRA authority. FRA's toxicological results revealed the presence of cocaine and cocaine metabolites (benzoylecgonine) in his urine and blood. The concentration of the drug found indicated that it was not likely that he had used cocaine after he came on duty. Recent use of cocaine can result in residual effects that can degrade judgment, motor coordination, reaction time, and alertness. However, given the facts determined in this investigation, it is not clear whether the prior cocaine use played a role in the fatal injury. The Supervisor, the HP Bridge Foreman, and the Assistant Foreman were drug tested under UP's reasonable cause, and UP has elected not to reveal the results of these tests.

Analysis of UP's required internal monitoring of RWP/OTS compliance revealed a lack of failures, calling into question the credibility of UP's monitoring program. The internal monitoring records for Gangs Nos. 3655 and 3656 from Jan. 1, 1998 to Oct. 8, 1998 (including activities of other gangs at the same job sites with Gangs Nos. 3655 and 3656) were reviewed. The monitoring included 92 Audits, 23 Comprehensive Audits, and 264 Specific Observations of which 61 involved On-Track-Safety, and 25 Safety Activities which involved job briefings. During this 1998 monitoring activity, only three exceptions were taken, all for vehicle condition.

A 1997 audit of internal monitoring noted six UP Engineering Managers performing 141 separate monitoring functions with no exceptions taken.

APPLICABLE RULES

Excerpts of FRA regulations in CFR 49, Part 214 follow. UP's similar operating rules are also listed.

§ 214.313 Responsibility of Individual Roadway Workers.

- (a) Each roadway worker is responsible for following the on-track safety rules of the railroad upon which the roadway worker is located.
- (b) A roadway worker shall not foul a track except when necessary for the performance of duty.
- (c) Each roadway worker is responsible for ascertaining that on-track safety is being provided before fouling a track.
- (d) Each roadway worker may refuse any directive to violate an on-track safety rule, and shall inform the employer in accordance with § 214.311 when the roadway worker makes a good faith determination that on-track safety provisions to be applied at the job location do not comply with the rules of the operating railroad.

§ 214.315 Supervision and Communication.

- (a) When an employer assigns duties to a roadway worker that call for that employee to foul a track, the employer shall provide the employee with a job briefing that includes information on the means by which on-track safety is to be provided, and instruction on the on-track safety procedures to be followed.
- (b) A job briefing for on-track safety shall be deemed complete only after the roadway worker has acknowledged understanding of the on-track safety procedures and instructions presented.
- (c) Every roadway work group whose duties require fouling a track shall have one roadway worker designated by the employer to provide on-track safety for all members of the group.
- (d) Before any member of a roadway work group fouls a track, the designated person providing on-track safety for the group under paragraph (c) of this section shall inform each roadway worker of the on-track safety procedures of the work at that time and location. Each roadway worker shall again be so informed at any time the on-track safety procedures change during the work period.

§ 214.335 On-track Safety Procedures for Roadway Work Groups.

- (b) No roadway worker who is a member of a roadway work group shall foul a track without having been informed by the roadway worker responsible for the on-track safety of the roadway work group that on-track safety has been provided.

§ 214.339 Audible Warning from Trains.

Each railroad shall require that the locomotive whistle be sounded and the locomotive bell be rung, by trains approaching roadway workers on or about the track.

§ 214.303 Railroad On-track Safety Programs, Generally.

- (2) Each on-track safety program adopted to comply with this part shall include procedures to be used by each railroad for monitoring the effectiveness of and compliance with the program.

UP's Discipline

UP managers disciplined the discharged employees, citing the following UP rules:

- | | |
|-------------|--|
| 1.6(1) | Careless of the Safety of Themselves or Others |
| 121.2.1 (b) | Maximum Speed of Trains Passing Gangs |
| 121.5.3 | Small Gangs |
| 136.3- | Job Briefings |
| 136.3.1 | Job Briefing for Roadway Work Groups |