

FEDERAL RAILROAD ADMINISTRATION

1200 New Jersey Avenue SE, Washington, D.C. 20590



**New York & Atlantic Railway
Focused Safety Review
September 23, 2016**

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Executive Summary

On July 8, 2015, at approximately midnight an eastbound New York & Atlantic Railway (NYA) Train RS-30 struck a tractor-trailer at the Maspeth Avenue highway-rail grade crossing of the Lower Montauk Branch in Queens, New York. The collision caused the tractor-trailer to catch fire, destroying the tractor and severely damaging the trailer. The truck driver was treated on scene by New York Fire Department's Emergency Medical Services and taken to the hospital with minor injuries. The accident caused no injuries to the train crew and no railroad equipment derailed.

On July 21, 2015, the Federal Railroad Administration (FRA) announced it would conduct a comprehensive Focused Safety Review of NYA's operating and management practices to determine whether there were any systemic safety issues it should address to reduce the risk of additional accidents. FRA was especially concerned because:

- The train crew committed multiple failures, raising concerns of adequate training,
- The absence of properly issued engineer and conductor certification certificates raised concerns of adequate management oversight.

FRA, based on its investigation of the accident, concluded that the locomotive engineer failed to follow NYA's operating rules and special instructions for the grade-crossing. FRA found that the conductor's failure to take any action to bring the train under control contributed to the accident.

FRA identified several safety issues that could increase the risk of additional accidents and close calls that NYA needs to address, including:

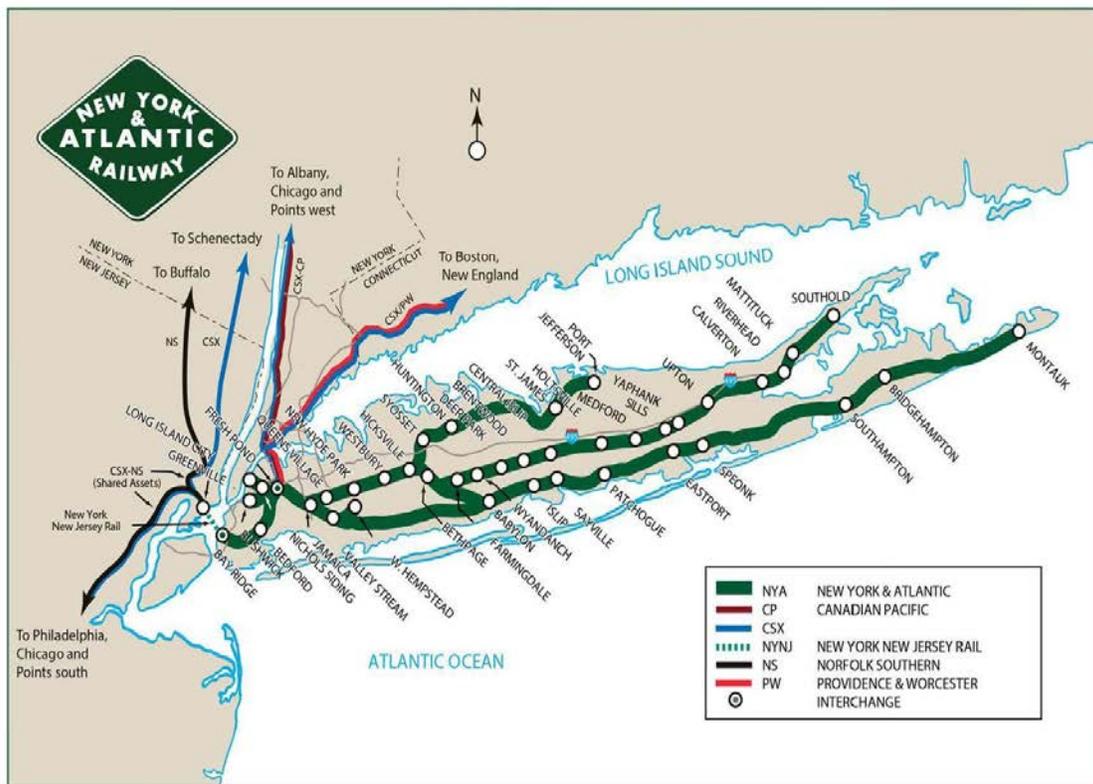
- Failure to provide and document adequate training and testing of locomotive engineers and conductors,
- Failure to issue certificates for the engineer and conductor,
- Faulty recordkeeping software,
- The need for several actions to improve grade crossing safety for motor vehicle users.

This report describes NYA's railway system, the 2015 accident, the Focused Safety Review process, and violations and safety concerns identified by FRA.

The New York and Atlantic Railway System

NYA began operating in May 1997 when the Long Island Rail Road (LIRR) privatized freight train operations on its lines. NYA is owned by Anacostia Rail Holdings and operates on the busiest commuter passenger system in the United States. NYA has its own equipment and crews, but operates over LIRR's rail infrastructure. NYA employs a staff of approximately 41 and operates over 269 miles of track on Long Island, New York. NYA transports municipal solid waste, construction and demolition material, lumber, paper, building materials, plastic, aggregates, food products, and recyclables with an average annual volume of approximately 28,000 carloads (See Figure 1 for NYA map).

Figure 1: New York & Atlantic Railway



Accident Description

NYA General Order No. 7, referred to as a special instruction, requires train crews to operate at restricted speed, with a maximum speed of 15 miles per hour (mph) in the area where the accident occurred, rather than the regular maximum speed of 20 mph. Train RS-30 was traveling at 22 mph, exceeding both the restricted speed and the regular maximum limit, when it impacted the tractor-trailer.

The highway-rail grade crossing warning devices at Maspeth Avenue include crossing gates and activate using an “island-only” track circuit. These warning devices are only activated when a train enters the island circuit.

NYA’s operating rule S6.2 requires trains to stop in the island circuit until 20 seconds after the crossing gates descend to the horizontal position before proceeding into the crossing. The train crew then confirms that all warning devices have activated. If the warning devices do not activate, the crew is required to deploy a crew member to provide on-ground flagging protection at the crossing. NYA requires this procedure at all crossings on the Lower Montauk Branch of its rail line.

As part of its investigation of the accident, FRA reviewed the locomotive event recorder and the crossing data recorder and determined the train crew failed to follow NYA’s operating rules for “island-only” grade crossing circuits on the Lower Montauk Branch. Specifically, the train entered the crossing before the crossing gates descended to the horizontal position and all warning devices activated. The train crew’s failure to follow NYA’s operating rules led to the collision with the tractor-trailer. Additionally, the train crew failed to follow the same operating rules at the two crossings prior to Maspeth Avenue – Washington Avenue and Debevoise Avenue – which created the same safety risk, but did not result in an accident.

In the aftermath of the accident, the locomotive engineer left the scene and did not return to the railway. NYA subsequently terminated his employment. FRA was able to interview the conductor, who was cooperative and raised safety concerns regarding whether he had been adequately trained. Unfortunately, FRA was unable to reach the engineer for a post-accident interview.

Findings from the accident investigation led FRA to initiate a Focused Safety Review.

Focused Safety Review

FRA's Office of Railroad Safety assigned 14 railroad safety experts, including chief inspectors, supervisory specialists, and inspectors, to conduct a Focused Safety Review. FRA divided its personnel into six teams, who reviewed the following respective areas:

- Motive Power and Equipment
 - Equipment and repair records.
 - Training records for NYA personnel trained to inspect and repair freight cars and locomotives.
- Hazardous Materials
 - Hazardous materials shipping papers.
- Track and Roadway Worker Protection
 - Tracks and switches' locations.
 - Mainline yards and sidings' locations.
- Signal and Train Control
 - Grade crossings, automatic train control system and signals, and signal maintainer hours of service records.
- Operating Practices
 - Operating departments.
 - Engineer and conductor certification records.
 - Locomotive engineer oversight records.
 - Operational testing records.
 - Operational testing sessions.
 - Train and engine hours of service records.
 - Accident/incident reporting records.
 - Drug and alcohol program records.
- Highway-Rail Grade Crossing
 - Grade crossing diagnostics' view.

The Motive Power and Equipment, Hazardous Materials, Track and Roadway Worker Protection teams did not identify any significant safety concerns or defects during their reviews.

The Signal and Train Control, Operating Practices, and Highway-Rail Grade Crossing teams identified significant safety concerns and alleged violations explained in the Findings and Recommendations section of this report.

Generally, there were two regulatory issues of concern.

First, FRA's investigation revealed both train crew members involved in the accident were not carrying NYA issued certification cards.

Code of Federal Regulations (CFR), Title 49 §§ 240.201(d) requires a railroad to issue an engineer's certificate before permitting a person to operate a locomotive or train, and 240.223(a) requires an engineer's certificate to identify the issuing railroad or parent company. NYA allowed the engineer to carry a certification card issued by a railroad other than NYA, which is not a permissible substitute.

As required by 49 CFR § 242.105(f), a railroad is to issue a conductor's certificate before permitting a person to serve as a conductor. NYA considered the conductor certified, even though it did not issue the conductor the certificate.

Second, despite repeated requests, NYA failed to produce all of the records requested by FRA. As required by 49 CFR §§ 240.215(j)(3) and 242.203(g)(6), these records should be "easily produced in a printed format which can be readily provided to FRA representatives in a timely manner and authenticated by a designated representative of the railroad as a true and accurate copy" upon FRA's request.

- On July 13, 2015, five days after the Maspeth crossing accident, FRA began issuing NYA requests for records related to the accident which are required to be kept in accordance with FRA regulations found in 49 CFR parts 217 (railroad operating rules), 240 (qualification and certification of locomotive engineers), and 242 (qualification and certification of conductors).
 - After NYA failed to produce the requested records, FRA, during the first week of the Focused Safety Review, verbally informed NYA that it would return the following week to initiate a full review of NYA's parts 240 and 242 records and a partial review of NYA's part 217 records.
 - NYA informed FRA that only one NYA employee could access the requested records and the employee was on leave beginning the day after the accident. One NYA employee who had access to the requested records returned to duty on July 20, 2015, and NYA began producing some of the requested records.
- On August 3, 2015, FRA made a written request for specific locomotive engineer and conductor records that NYA had not previously produced as required by FRA's regulations. However, NYA produced summaries alleging what was on the requested records, or produced copies of records it had already presented to FRA.
- On August 31, 2015, FRA held a meeting with NYA and agreed to give NYA another opportunity to provide records and other evidence for FRA to consider. Although not completely comprehensive, on September 11, 2015, NYA finally produced a substantial number of the missing records as well as other mitigating evidence —almost two months after FRA's first request.

FRA regulations require railroads to properly document engineers' and conductors' qualifications to ensure only qualified personnel are operating trains to reduce the risk to train crews and the public. Because NYA's record-keeping and documentation was so poor, FRA investigators could not determine whether the train crew was qualified to operate the train or if all of NYA's engineers and conductors (including contractors) were properly certified.

Findings and Recommendations

Part 240 – Qualification and Certification of Locomotive Engineers

The Operating Practices team reviewed NYA’s qualification and certification documentation for engineers to determine whether NYA complied with Federal regulations. In accordance with 49 CFR § 240.201(d), “no railroad shall permit or require any person to operate a locomotive . . . unless that person has been certified as a qualified locomotive engineer and issued a certificate that complies with [49 CFR] § 240.223.”

Finding: NYA allowed engineers to operate locomotives without proper documentation demonstrating they were qualified under 49 CFR § 240.201(d). For example, NYA failed to issue the engineer involved in the accident a student certificate before allowing him to operate a locomotive on three separate occasions prior to the accident. Although the locomotive engineer involved in the accident was issued certificates from more than one other railroad, NYA could not produce documentation proving it issued that particular engineer a certificate proving his qualification to operate trains on NYA’s system.

NYA is also required by FRA’s regulations to specifically conduct training and testing to ensure the person has the requisite knowledge of operating rules, territorial familiarity, and can demonstrate the necessary skills to operate locomotives and trains. This requirement is described in 49 CFR § 240.225, *Reliance on qualification determinations made by other railroads*.

Recommendation: NYA must develop a records system that ensures NYA complies with 49 CFR § 240.201(d) engineer certification requirements so it: (1) receives all proper documentation; (2) reviews and retains the documentation before certifying a person as a qualified locomotive engineer; and (3) issues a certificate that complies with 49 CFR § 240.223, *Criteria for the certificate*.

Part 242 – Qualification and Certification of Conductors

The Operating Practices team reviewed NYA’s qualification and certification documentation for conductors to determine whether NYA complied with 49 CFR § 242.105(f), which states “no person shall serve as a conductor in any type of service and no railroad shall require or permit any person to serve as a conductor in any type of service unless that person has been tested and evaluated in accordance with procedures that comply with subpart B of this part and issued a certificate that complies with § 242.207.”

Finding: NYA allowed a conductor to serve without proper documentation that he was qualified in accordance with 49 CFR § 242.105(f). FRA’s review of the records of the conductor involved in the Maspeth accident found that NYA failed to issue him a conductor certification certificate, failed to notify him that he was a qualified conductor, and failed to train and test him on the physical characteristics of the territory that he had been operating on (the Lower Montauk Branch). Furthermore, when interviewed, the conductor was vague about both his current status and his previous training. Had the conductor been properly trained he would have been able to prevent the improper and dangerous operation of the train through the grade crossings on the Lower Montauk Branch.

Recommendation: NYA must develop a records system that ensures NYA complies with 49 CFR § 242.105(f) conductor certification requirements so it: (1) receives all proper documentation; (2) reviews and retains the documentation before certifying a person as a qualified locomotive engineer; and (3) issues a certificate that complies with 49 CFR § 242.207, *Certificate components*.

Record Keeping Related to Engineer/Conductor Certification Programs

FRA repeatedly asked NYA to provide records that should be “easily produced in a printed format which can be readily provided to FRA representatives in a timely manner and authenticated by a designated representative of the railroad as a true and accurate copy” upon request. Despite repeated requests, NYA did not produce all of the records requested by FRA.

Finding: NYA could not produce documentation to support operational monitoring requirements for unannounced compliance tests for seven locomotive engineers for the years 2012 through 2014 in accordance with 49 CFR § 240.303(c). During that three-year period, 21 tests were required but NYA only had recorded one test.

Recommendation: Develop a records system that records, tracks, and produces accurate reports for training, operational tests, and compliance tests used for engineer and conductor certification.

Improvements Needed in Training of Operating Rules and Physical Characteristics

FRA was not able to interview the engineer involved in the accident as he went missing immediately after the accident. The conductor involved in the accident was interviewed and was confused about which operating rules and special instructions were necessary to follow. The confusion seemed to stem from the fact that multiple operating rules and special instructions were in effect, and the conductor was unsure what portions to apply from the various instructions. In addition, the conductor was not trained on the physical characteristics of the territory where the accident occurred.

Finding: FRA found that the engineer and conductor involved in the accident did not understand and comply with NYA operating rules and special instructions, which contributed to the accident.

Recommendation:

- Establish a single, definitive set of NYA Timetable Special Instructions and operating rules for operations on the Lower Montauk Branch.
- Ensure NYA properly trains all its employees (and any contract railroad employees) operating on this rail line on those instructions and that those employees carry those instructions at all times while on duty.
- Increase crew operational testing to validate compliance with the current operating rules and special instructions.
- Continue to review and improve the software program used to record operational tests and maintain records related to 49 CFR Parts 240 and 242 and to be prepared for implementing 49 CFR Part 243, Training, Qualification, and Oversight for Safety-Related Railroad Employees, regulations.

Improvements Needed at All Highway-Rail Grade Crossings on the Lower Montauk Line

FRA, NYA, LIRR, and the New York Department of Transportation completed a diagnostic review of all grade crossings on the Lower Montauk Branch line and identified changes that could be made to improve safety at each location.

Finding: Appendix A, Report of Grade Crossing Diagnostic on the Lower Montauk Branch, lists grade crossing improvements that will improve safety at grade crossings on the Lower Montauk Branch.

Recommendation: NYA and LIRR should work with the Grade Crossing Diagnostic Team to implement all recommended changes in Appendix A, Report of Grade Crossing Diagnostic on the Lower Montauk Branch, for a list of grade crossing improvements.

Post-Review Actions

As a result of FRA's Focused Safety Review, NYA has taken the following actions:

- **Revised Engineer Certification Program** – NYA submitted a revised program based on recommendations from FRA's Focused Safety Review and received FRA conditional approval of its program on July 29, 2015.
- **Improvements at Highway-Rail Grade Crossings** – To reduce the potential for a train crew to unsafely enter a grade crossing protected by “island-only” circuits, NYA installed LIRR-approved stop signs on each side of the crossings (tracks) to notify train crews that they must stop at the grade crossings. Additionally, NYA improved sight lines at the grade crossings by cutting brush along the railroad right-of-way which will provide highway-vehicle drivers approaching the crossings with better visibility of the signals at the crossings.
- **New York Operating Rules Association** – In partnership with LIRR and other railroads that operate in the New York City area, NYA is exploring the establishment of a New York Operating Rules Association similar to the Chicago Operating Rules Association to standardize train operating rules on shared-use track.
- **Improved Cooperation/Communication** – NYA and LIRR committed to work together to identify and improve areas for better cooperation and communication to enhance safety.
- **Confidential Close Call Reporting System (C³RS)** – NYA is considering immediately implementing a C³RS program, in cooperation with FRA and LIRR.

Separate from the recommendations in this Focused Safety Review, FRA noted several proactive steps that NYA initiated to improve safety:

- **Manager of Safety, Training & Systems** – Continue development and training of the manager hired in 2014 as the program manager for 49 CFR Parts 217, 240, and 242.
- **Expert Contractor Support for Safety** – Continue to use well-regarded industry experts to support safety processes, enhance the safety culture, and support compliance.
- **New Trainmaster Position** – NYA recently posted a new trainmaster position to provide additional support for train crews and further enhance the safety of the operation. This new position will provide additional time for manager development, improved coverage for NYA's 24/7 operation, and more time for operational testing and coaching.
- **Joint Derail Evaluation and Upgrade** – NYA and LIRR performed a joint assessment of existing derails at freight rail access points along the LIRR commuter line. This review resulted in upgrades to some derails and installations of new derails at several locations. In addition, NYA has taken the proactive step of applying skates to rail cars at selected locations at rail access points. Because a rail car wheel sits directly on the skate, the risk of an unintended car movement is reduced even if a trespasser releases the handbrakes from the cut of rail cars.

FRA will continue to meet regularly with NYA and help it implement recommendations to improve the safety of the railroad. FRA will also follow up to ensure compliance with Federal regulations.

Enforcement

FRA has initiated enforcement action by proposing five civil penalties against NYA for alleged violations. The following is a summary of the five alleged violations.

- The conductor involved in the accident described in this report was allegedly allowed to serve as a conductor without being issued a certificate or notified that he was certified, and also without the necessary physical characteristics of the territory training.
- The locomotive engineer involved in the accident described in this report was allegedly allowed to operate as a student engineer without being issued a certificate on several occasions prior to the accident.
- NYA allegedly allowed a second person to operate as a student engineer without being issued a certificate.
- NYA failed to conduct multiple unannounced operational compliance tests on seven locomotive engineers from 2012 through 2014.
- NYA allegedly failed to keep an hours of service record for an employee that required one.

The recommendations in this report provide a basis for NYA to improve the safety of its operations. FRA will continue to closely monitor NYA for improvements in the important safety areas identified in this report.

Appendix A

Report of Grade Crossing Diagnostic on the Lower Montauk

During the month of August 2015, a team consisting of representatives from FRA, NYDOT, NYA and LIRR conducted a diagnostic review on all nine highway-rail grade crossings on the Lower Montauk Branch, which included Maspeth Avenue.

Below are the findings and recommendations for each crossing.

Maspeth Avenue – Dot # 338015C

City Responsibility:

- Missing advance warning sign, pavement markings faded, stop bar missing. The Diagnostic team noted that where Maspeth Avenue crosses Rust Street there is a stop line, but since the vehicles on Maspeth Avenue have the right of way, this stop line should be removed.
- The Diagnostic Team recommends a traffic light, equipped with preemption to the grade crossing, be installed to control the intersection of Maspeth Avenue and Rust Street, and second traffic light equipped with preemption on the approach to the yard tracks on the south side of the grade crossing.
- This is Justified by the high volume of car and truck traffic in the area, and it will also better prevent the traffic from making illegal right and left hand turns at the grade crossing (currently “No Turn” signs are posted at the grade crossing).

Railroad Responsibility:

- Pave yard tracks in the crossing not paved in 2015.
- Remove the single crossing gate currently manually activated for yard switching moves and replace it with a cross buck with a yield and Emergency Notification Systems sign. This change will require the crossing be flagged by the train crew for yard moves over the crossing.
- Equip the Maspeth main line grade crossing with an extra pair of lights facing the yard road to warn truck drivers exiting the yard that the grade crossing is activated.
- Install stop boards at the island circuits.

73rd Street – DOT # 338016J

City Responsibility:

- Advanced warning sign missing, pavement markings faded, stop bars missing.
- Highway requires paving on north side.
- Remove stop sign on the north side of crossing. It should not be posted at a public grade crossing with active warning devices.

Railroad responsibility:

- Vegetation requires trimming to improve site distance.

- Move island circuitry back from the grade crossing 50 to 100 feet on track 2 (NYA and LIRR to determine distance).
- Install stop boards at the island circuits.
- Install an additional pair of warning lights on the north side aimed east to warn the garbage trucks exiting their parking lot when the grade crossing is activated.

88th street – DOT # 338017R

City Responsibility:

- Vegetation from private property growing over sidewalk blocking site distance to pedestrian crossing gate.

Railroad Responsibility:

- Install stop boards at the island circuits.
- Move island circuits back from the grade crossing (NY&A and LIRR to determine distance).
- If vegetation cannot be cut, install a railing and sign in front of the southwest pedestrian gate to warn pedestrians of the presence of the gate.

Greenpoint Avenue – DOT # 338010T

City Responsibility:

- Advance warning sign missing; pavement markings fading.
- Northbound highway may need paving soon.
- Westbound markings to Railroad Avenue poor.

Railroad Responsibility:

- Install stop boards at the island circuits.
- Southbound ramp of the grade crossing requires paving.
- Drainage problem on the north side of the track.
- Remove garbage on railroad property.

Waste Management (Private) – DOT # 967836S

Owner Responsibility:

- Install advance warning signs, pavement markings, stop bars and “Do Not Stop on Track” signs (not required by Manual on Uniform Traffic Control Devices (MUTCD) at private grade crossings, but will improve safety).
- Side street should be dead ended.
- Cut vegetation.

Railroad Responsibility:

- Discuss diagnostic team’s recommendations with owner.
- Install stop boards at the island circuits.

Commercial Avenue (Private) – DOT # 338011A

Owner Responsibility:

- Install advance warning signs, pavement markings, stop bars and “Do Not Stop on Track” signs (not required by MUTCD at private grade crossings, but will improve safety).
- Repair potholes in the grade crossing ramp (pay NYA or railroad contractor to perform the work).

Railroad Responsibility:

- Discuss diagnostic team’s recommendations with owner.
- Install stop boards at the island circuits.

Washington Avenue (43rd Street) – DOT # 338013N

City Responsibility:

- Review need for advance warning signs.
- Pavement markings and stop lines faded.
- Highway requires patching.
- Add no parking signs on west side to prevent trucks from blocking warning devices.
- Crossing surface should be extended to accommodate the sidewalk.

Railroad Responsibility:

- Trim vegetation.
- Rough crossing surface needs repairs.
- Install stop boards at the island circuit.

Debevoise Avenue (49th Street) – DOT # 338014V

City Responsibility:

- Replace advance warning signs; install pavement markings and stop lines.
- Highway needs repair.
- Lower advance warning sign on the west side.

Railroad Responsibility:

- Install additional “Do Not Stop on Track” sign.
- Northbound outside rail edge at crossing loose.
- Trim vegetation.
- Install stop boards at the island circuit.

Laurel Hill – DOT # 338012G

City Responsibility:

- Pavement markings and stop lines faded and should be renewed.

Railroad Responsibility:

- Install stop boards at the island circuit.

Note: The Grade Crossing Diagnostic Team agreed that the operation of the active warning systems at the grade crossings on the Lower Montauk line would continue to be activated by the train stopping on the island circuit. The NYA will install stop boards at the grade crossing island circuits on the NYA Lower Montauk Line and Bushwick Branch.