NATIONAL TRANSPORTATION SAFETY BOARD

OFFICE OF RAILROAD, PIPELINE &

HAZARDOUS MATERIALS INVESTIGATIONS

Washington, D.C. 20594

RRD21LR005

IIC FACTUAL REPORT

NTSB Accident Number:	RRD21LR005
Date of Accident:	November 17, 2020
Time of Accident:	2:26 pm (local)
Railroad Owner and Operator:	Alabama Export Railroad

Maintenance of Way Crew:	Continental Rail Incorporated
Train ID:	A-48871-16 South
Fatalities:	1
Injuries:	1
Location of Accident:	Prichard, Alabama

Contents

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ACCIDENT SUMMARY

On November 17, 2020, at 2:26 p.m. local time, a Continental Rail Incorporated (CR) maintenance-of-way contractor working for Alabama Export Railroad (ALE) near Prichard, Alabama, was killed, and a second contractor was injured while performing track maintenance. The contractors were installing railroad ties in a section of track near MP 3.7 on the Beauregard

track. The contractors were using a hi-rail boom truck and a backhoe to aid them with their work.[1] Preliminary information indicates that inaccessible track protection was not established when CN train A-48871-16 south entered the work zone and struck the hi-rail boom truck and the backhoe. At the time of the accident, the six contractor track laborers were working on or about the tracks.

ACCIDENT DETAILS

Alabama Export Railroad (ALE)

ALE was established on October 1, 2019 as a separate Class III railroad for purpose of providing freight rail service to customers in Mobile, Alabama. ALE is wholly owned by its parent company Mississippi Export Railroad (MSE) and are the only two railroads in the corporate family. MSE is a Class III railroad that owns and operates a 42-mile short line railroad between Evanston and Pascagoula, Mississippi. MSE is owned in part (one-third interest) by Illinois Central Railroad Company (IC) and in part (two-thirds interest) by various individual shareholders. ALE operates on approximately 12.1 miles of leased railroad line in downtown Mobile, Alabama and the 12.1 miles of leased track does not connect with the lines of MSE. The leased rail line is owned by Illinois Central Railroad (IC) and extends between Belt Junction (Jct.) at milepost 6.6 and the State Docks at milepost 0.0 on IC's Beaumont Subdivision, and between Belt Junction at milepost 6.6 and Frascati Junction at milepost 1.1 on IC's Frascati Lead.

Figure 1 Figure 1. Diagram of ALE trackage from the MSE/ALE website.

Continental Rails Incorporated (CR)

CR is a railroad contractor headquartered in Hattiesburg, Mississippi. It was incorporated on March 30, 2004. CR performs railroad track maintenance work for Class I and III railroads, including MSE and ALE. ALE had used CR for track maintenance and repair since October 1, 2019, when they took over operations.

Interviewees

Investigators from the NTSB and Federal Railroad Administration (FRA) interviewed the following employees:[1]

1. Continental Rail Incorporated On-Track Supervisor

2. Surviving Continental Rail Incorporated Contractors

Due to the COVID-19 pandemic and NTSB's remote investigation, NTSB was unable to conduct in-person interviews the following employees, however, NTSB did receive the interview transcripts and reports of interview from FRA:

1. ALE conductor

2. ALE Roadway Worker in Charge

3. ALE Trainmaster

4. ALE Vice President of Operations

1 Transcripts of the NTSB interviews are available in the public docket.

The Accident

On November 17, 2020, job assignment ALE401 went on duty at 7:00 am local time in the ALE Mobile yard. The crew consisted of a locomotive engineer, conductor, and a brakeman. Each crew member had been dual qualified as locomotive engineer and conductor. At approximately 7:11 am local time, the engineer verified Daily Operation Bulletin (DOB) 322 with the Nebraska Central Railroad Corporation (NCRC) Dispatcher. A review of the daily operating bulletins revealed that the track work being conducted was not listed on the bulletin. The conductor told investigators that there was no discussion of the track work being conducted within the Yard Limits between milepost 2 and milepost 6.7. The RWIC stated that at 9:58 a.m., he called the conductor/engineer and told him that the RWIC and contractor work group had completed the work on the switch ties and were going to work at the Blount curve where the accident occurred. After completing a job briefing, the crew began their daily duties switching cars and completing the interchange with the Alabama State Docks Railroad.

One of the normal work assignments for job assignment ALE401 is to operate manifest freight trains from the Belt Jct. (approximately 4.8 miles northwest of Mobile) to the ALE Mobile yard. On the day of the accident, the crew was to operate CN train A-48871-16 south, which consisted of two locomotives, 27 loads, 27 empties, 5,383 feet in length, and 4,133 trailing tons. CN train A-48871-16 south originated in Memphis, Tennessee and passed the required Class I brake inspection on November 16, 2020. The A-48871-16 south was operated by a CN train crew

from Memphis, Tennessee to Belt Jct. and the ALE401 train crew was tasked with operating the train upon arrival at Belt Junction.

At 1:30 pm local time the crew was notified that CN train A-48871-16 south arrived at Belt Jct. (MP 6.7). The Conductor from job assignment ALE401 volunteered to operate the train from Belt Junction to the ALE Mobile Yard and was transported to Bell Jct., while the other two crew members continued to switch in the ALE Mobile yard. At approximately 1:50 pm, the conductor arrived at Bell Jct. and released the handbrakes on the A-48871-16 south and at 2:10 pm departed Bell Jct.

Cellphone records and inward facing video footage indicate that the conductor was utilizing a personal electronic device when he entered the cab of the controlling locomotive of the A-48871-16 south (See Mobile Phone Usage section). The ALE conductor operated the A-48871-16 south approximately 3 miles and reached a top speed of 19 mph before impacting the CR material handling truck near MP 3.7. Cellphone records and inward facing video footage also indicate that the conductor was utilizing the mobile phone throughout the trip, to include the point of impact. At approximately 2:26 pm local time, while traveling at a recorded speed of 19 mph and in throttle position 2, on a 0.17 percent descending grade, and with a 9-degree, 45-minute right-hand curve, CN train A-48871-16 south struck the CR material handling truck shoving it into the CR backhoe and striking employees working at MP 3.7. In doing so, one CR employee was fatally injured, and one CR employee was injured. The conductor told FRA inspectors that there were no derails established or advanced warnings signs prior to the collision. After the collision,

the ALE conductor dismounted the locomotive and attempted to render aid to the employees on the ground.

Mobile Phone Usage

The mobile phone records for the ALE conductor that was operating the train were obtained and reviewed. The records contained mobile phone usage history between 7:00 am and 3:00 pm local time on November 17, 2020. The conductor started the train movement at around 2:13, and the accident occurred at around 2:30 local time.

Operator Phone Records

Phone Call Activity

The table below summarizes the phone call activity. Time stamps are provided in central standard time. The records between 14:00 to 14:59 are highlighted in yellow.

TIME (CST)	DURATION (mm:ss)	DIRECTION
8:12:37	0:23	Incoming
9:35:17	0:23	Incoming
9:38:13	0:19	Outgoing
9:38:43	0:20	Outgoing
9:38:45	0:22	Outgoing
9:40:04	0:06	Incoming
9:57:04	0:01	Outgoing
9:57:11	0:01	Outgoing
9:57:58	0:22	Outgoing
9:58:07	0:04	Incoming
9:59:37	0:05	Outgoing
10:19:26	0:21	Outgoing
10:31:37	0:07	Incoming
10:41:23	0:09	Incoming
11:05:54	0:06	Outgoing
11:21:39	0:10	Incoming
13:21:14	0:14	Incoming
13:50:43	0:27	Outgoing
14:00:58	0:07	Incoming
14:41:26	0:14	Outgoing
14:42:31	0:23	Outgoing
14:44:20	0:02	Incoming
15:01:31	0:22	Outgoing
15:01:48	0:10	Outgoing
15:09:06	0:05	Outgoing

Text and Picture/Video Message Activity

The table below summarizes the text message activity. Time stamps are provided in central standard time. The records between 14:00 to 14:59 are highlighted in yellow.

TIME (CST)	DIRECTION
9:17:57	Incoming
9:17:58	Incoming
9:56:08	Outgoing
9:56:08	Outgoing
9:56:08	Outgoing
9:56:08	Outgoing
9:56:08	Outgoing
9:56:08	Outgoing
9:57:23	Incoming
9:57:23	Incoming
9:57:25	Incoming
10:03:05	Incoming
10:09:14	Incoming
10:09:15	Incoming
10:30:35	Incoming
10:30:36	Incoming
11:12:10	Outgoing
12:19:30	Incoming
12:19:31	Incoming
12:19:32	Incoming
14:34:47	Incoming
14:34:49	Outgoing
14:40:59	Incoming

Internet Connection Activity

The table below summarizes the internet connection activity. Time stamps are provided in central standard time. The records between 14:00 to 14:59 are highlighted in yellow. However, it is not possible to distinguish between user-initiated data activity and automatic background data activity by the device's operating system or installed applications.

Below are the definitions/explanations from AT&T on the terms used in Table.

Bytes Up: The number of bytes sent from mobile station to the network.

Bytes Down: The number of bytes from the network to the mobile station.

Table 3: Internet Connection Activity.

TIME (CST)	DURATION	BYTES UP	BYTES DOWN
10:52:17	17:34	8783997	11217713
11:05:49	3:51	615129	797325
11:07:05	60:00	15800	15024
11:09:51	37:31	1306050	4392110
11:21:31	1:40	362121	234002
11:47:22	28:49	1964690	13987486
12:07:05	41:58	11724	6016
12:16:11	8:53	3401676	16609287
12:25:04	23:59	428677	567168
12:53:07	2:30	1513354	18587309
12:53:08	60:00	25074	21579
12:55:37	24:42	2241801	17855547
13:20:19	38:51	537741	4668087
13:21:03	3:15	540771	459522
13:50:16	0:27	0	520
13:53:08	34:20	14068	11812
13:59:10	9:34	8601081	11399944
14:00:52	1:28	146716	231734
14:08:44	1:03	10907414	9093298
14:09:47	1:15	13333176	6669882
14:11:02	1:07	12013664	7988457
14:12:09	14:38	4038748	7985895
14:26:47	0:42	68038	601058
14:40:26	3:00	2023343	6790785
14:40:27	2:59	32698	27936
14:41:13	0:48	160343	89984
14:42:08	0:25	4031	4764
14:59:25	9:26	587356	6842127
14:59:26	60:00	107462	98214
15:01:09	0:26	5222	9431
15:01:38	0:52	140605	95213
15:08:51	37:30	2617569	1066253
15:09:01	1:21	229121	207115

Track Maintenance Work

The following description of the incident is based on the interviews:

The roadway work group consisted of an Alabama Export Railroad (ALE) Roadway Worker in Charge (RWIC) and six railroad contractor employees from CR. The CR employees met with the ALE-RWIC near the ALE Mobile yard in Prichard at about 7:00 a.m. local time. A job briefing was conducted that consisted of the work that was planned for the day as well as the method of on-track safety that would be used. The first planned work was installing crossties in a switch in the ALE yard. The work group would then move by road to milepost 3.7 to install crossties in a section of curved track. The CR backhoe operator, who was also the lead man for CR, stated that the ALE RWIC relayed in the briefing that the protection for the two work locations of that day would be track authority and derails.

At the first work location in the ALE yard, the roadway work group installed four portable derails to control entry of trains, railcars, or other on track equipment. The switch ties were installed at this location using conventional hand tools, hydraulic powered hand tools, and a backhoe. According to interviews the work was completed at about 10:00 a.m. at which time the portable derails were removed, and the work group traveled by highway to the next work location at milepost 3.7.

The CR backhoe operator and material truck operator positioned their vehicles on the tracks at the Wilson Avenue highway-rail grade crossing (DOT 303631P) at MP 3.24 Wilson Avenue, approximately 0.5 miles south of the second work location at MP 3.7. Once the vehicles were

positioned on the rails with the equipped guide wheels, the backhoe operator proceeded north to begin the tie renewal work. The material handling truck operator proceed north to MP 5 to begin to load previously removed crossties on to the truck. The remaining CR employees (four track laborers) and the ALE- RWIC traveled to MP 3.7 by pickup truck along a section of road that was adjacent to the track. Once the backhoe arrived, members of the work group installed portable derails north and south of the work location. The employees stated that these derails were placed approximately 100-150 yards from the backhoe in each direction. The CR employees began removing the used crossties and installing the new crossties.

The CR material truck operator told investigators that he had worked in the area of MP 5 for two or three hours; he also stated that there were no derails used to protect him while working there. The operator told investigators that he was protected by track authority while working at MP 5. After completing the work at MP 5, he traveled by rail, returning to the MP 3.7 location. When he arrived at the derail on the north end of the working limits, he sounded the truck horn. The CR lead man instructed one of the laborers to remove the derail to allow the material truck into the working limits. At that time, the CR lead man instructed the laborer to remove both derails as the work was almost complete. During the interview he was asked when were they (sic derails) removed? He replied "Wayne came back through. We let Wayne—only a few ties to pick up. He picked up those ties. At this point, we had, what two ties left, two or three, somewhere up in there. And I just pick them up, put them up, you know, finish up and get out". When asked to clarify who had instructed the laborer to remove the derails, the lead man again confirmed that he had.

All members of the work group recalled having no knowledge of the approaching train until it struck the material handling truck.

Figure 2. Photo of equipment after impact at the accident location.

[**508 text:** The photo shows the backhoe, material truck, and train sitting after the accident]

ALE Track Designation

The ALE Beauregard Subdivision is approximately 12 miles long and is used to serve the Alabama Port Authority. The method of operation is under the General Code of Operating Rules (GCOR) Rule 6.13 – Yard Limits with maximum authorized speed governed by the restricted speed component requiring the ability to stop within one-half the range of vision short of a train, engine, rail car, men or equipment fouling the track, or derail/switch not properly lined and `a maximum speed of 20 mph between MP 6.7 – 2.0.

Railroad tracks in general are designated by rule as either controlled or non-controlled. FRA railroad workplace standards define them as follows:

1. Controlled Track- means track upon which the railroad's operating rules require that all movements of trains must be authorized by a train dispatcher or a control operator.

2. Non-controlled track means track upon which trains are permitted by railroad rule or special instruction to move without receiving authorization from a train dispatcher or control operator.

In their timetable, the ALE designates the Beauregard track between MP 6.7 and MP 2 as yard limits. According to ALE rules, yard limits where trains are required to operate at restricted speed are designated as non-controlled track.

On September 25, 2020, the ALE issued General Order No.10-20. General Order 10-20 states the following:

> Each crew and worker operating inside yard limits of the ALE yard, including the Frascatti Lead, must obtain movement authority from the dispatcher after verifying the DOB is valid with no additions or deletions. In addition to this, all jobs must attempt to contact the ALE Switcher on 050-050 before occupying the yard. And as a reminder, all movements are to be made at restricted speed inside the ALE yard limits.

ALE Roadway Worker-in-Charge and On-Track Safety Operating Rules

ALE engineering department employees are governed by the ALE Roadway Worker On-Track Safety Rules found in the ALE Employee Operating Manual. The introduction to the ALE On-Track Safety Rules states the following: The purpose of these rules is to define procedures to prevent roadway workers (both company and contractor employees) from being struck by railroad cars, locomotives, track units or other equipment while performing duties. The rules have been prepared in accordance with Federal Railroad Administration Regulations found in 49 CFR, Part 214.

The following methods of on-track safety are available to roadway workers:

1. Exclusive Track Occupancy

1. Track and Time or Equivalent
2. Track Warrant or Equivalent
3. Form B Bulletin or Equivalent
4. Track Removed from Service
5. Foul Time

1. Inaccessible Track
    1. Block Register Territory when no more than one occupant is signed in
    2. Individual Train Detection (ITD)
    3. Train Approach Warning (TAW)
    4. Train Coordination

The above methods are prescribed by ALE to provide on-track safety for their employees. According to interviews, the Roadway Worker in Charge (RWIC) for the subject roadway work group had contacted the train dispatcher and received permission to occupy the yard limits. After the Continental roadway work group occupied the main track at the accident location at MP 3.7; most of the workers were working between derails installed to the north and south of the work location. One Continental employee operating a boom equipped hi-rail vehicle (material handler), proceeded to MP 5 to pick up used crossties that had been removed from the track structure.

The RWIC stated that approximately 15 minutes before the accident he had departed the work location to travel to Semmes, AL. He relayed that his purpose was to retrieve tools that would be used to complete the next day's work. The RWIC recounted that when he departed the work group had about three ties remaining that needed to be installed. He told investigators that he was not planning to return to the work location and instructed one of the CR employees to contact him after they had completed the work, removed the derails, and were clear of the track.

The following is information from the FRA Track and Rail Infrastructure Integrity Compliance Manual regarding the need for the RWIC to remain at the work location:[2]

A RWIC is the person who establishes and directs the on-track safety for a roadway work group, and it is critical that each roadway worker in a roadway work group have access to the RWIC. Access is necessary when a member of the group invokes a good faith challenge, or when he or she has questions concerning the established on-track safety protection. Generally, a RWIC must be located in the immediate vicinity of the work activity, but it may be necessary for a RWIC to depart a work location for a short period to travel to another area encompassing the same work activity (e.g., to conduct on-track safety checks throughout a large mechanized production activity). When an RWIC is away from a work site for a short period, it is imperative the roadway work group have a readily available means to communicate with that person. When a RWIC departs a work site for an extended period and is not readily available to communicate with

2 Federal Railroad Administration Track and Rail and Infrastructure Integrity Compliance Manual- Volume III Railroad Workplace Safety Chapter 3 Roadway Worker Protection- Dated March 2018

members of the roadway work group, the roadway work group members effectively do not have a RWIC, as he or she is not at the work group's location and cannot communicate with the group.

FRA has received questions as to whether it is permissible for an RWIC to establish on-track safety for a roadway work group and then to leave the work group to perform some other function, e.g., track inspection, but still remain in contact (readily accessible) to the roadway work group. The intent of the above paragraph is to permit the RWIC to leave one location to perform some other function associated with the same task as the roadway work groups task for which he/she is providing on-track safety. Thus, it is not permissible for the RWIC to perform some other work function not related to the task for which he provides on-track safety – even if he is immediately accessible to members of the roadway work group.

FRA Railroad Workplace Safety Regulation

49 CFR 214.319 -Working limits, generally.

Working limits established on controlled track shall conform to the provisions of §214.321 Exclusive track occupancy, §214.323 Foul time, or §214.325 Train coordination. Working limits established on non-controlled track shall conform to the provision of §214.327 Inaccessible track.

(a) Working limits established under any procedure shall, in addition, conform to the following provisions:

(1) Only a roadway worker in charge who is qualified in accordance with §214.353 shall establish or have control over working limits for the purpose of establishing on-track safety.

(2) Only one roadway worker in charge who is qualified in accordance with §214.353 shall have control over working limits on any one segment of track.

49 CFR 214.327 -Inaccessible track.

(a) Working limits on non-controlled track shall be established by rendering the track within working limits physically inaccessible to trains at each possible point of entry by one of the following features:

(1) A flagman with instructions and capability to hold all trains and equipment clear of the working limits;

(2) A switch or derail aligned to prevent access to the working limits and secured with an effective securing device by the roadway worker in charge of the working limits;

(3) A discontinuity in the rail that precludes passage of trains or engines into the working limits;

(4) Working limits on controlled track that connects directly with the inaccessible track, established by the roadway worker in charge of the working limits on the inaccessible track; or

(5) A remotely controlled switch aligned to prevent access to the working limits and secured by the control operator of such remotely controlled switch by application of a locking or blocking device to the control of that switch, when:

(i) The control operator has secured the remotely controlled switch by applying a locking or blocking device to the control of the switch, and

(ii) The control operator has notified the roadway worker who has established the working limits that the requested protection has been provided, and

(iii) The control operator is not permitted to remove the locking or blocking device from the control of the switch until receiving permission to do so from the roadway worker who established the working limits.

(6) A locomotive with or without cars placed to prevent access to the working limits at one or more points of entry to the working limits, provided the following conditions are met:

(i) The roadway worker in charge who is responsible for establishing working limits communicates with a member of the crew assigned to the locomotive and determines that:

(A) The locomotive is visible to the roadway worker in charge that is establishing the working limits; and

(B) The locomotive is stopped.

(ii) Further movements of the locomotive shall be made only as permitted by the roadway worker in charge controlling the working limits;

(iii) The crew of the locomotive shall not leave the locomotive unattended or go off duty unless communication occurs with the roadway worker in charge and an alternate means of on-track safety protection has been established by the roadway worker in charge; and

(iv) Cars coupled to the locomotive on the same end and on the same track as the roadway workers shall be connected to the train line air brake system and such system shall be charged with compressed air to initiate an emergency brake application in case of unintended uncoupling. Cars coupled to the locomotive on the same track on the opposite end of the roadway workers shall have sufficient braking capability to control their movement.

(7) A railroad's procedure governing block register territory that prevents trains and other on-track equipment from occupying the track when the territory is under the control of a lone worker or roadway worker in charge. The roadway worker in charge or lone worker shall have the absolute right to render block register territory inaccessible under the other provisions of paragraph (a) of this section.

(8) Railroad operating rules that prohibit train or engine or other on-track equipment movements on a main track within yard limits or restricted limits until the train or engine or on-track equipment receives notification of any working limits in effect and prohibit the train or engine or on-track equipment from entering working limits until permission is received by the roadway worker in charge. Such working limits shall be delineated with stop signs (flags), and

where speeds are in excess of restricted speed and physical characteristics permit, also with advance signs (flags).

(b) Trains and roadway maintenance machines within working limits established by means of inaccessible track shall move only under the direction of the roadway worker in charge of the working limits, and shall move at restricted speed.

(c) No operable locomotives or other items of on-track equipment, except those present or moving under the direction of the roadway worker in charge of the working limits, shall be located within working limits established by means of inaccessible track.

(3) All affected roadway workers shall be notified before working limits are released for the operation of trains. Working limits shall not be released until all affected roadway workers have either left the track or have been afforded on-track safety through train approach warning in accordance with §214.329.

In response to this accident, FRA recommended civil penalties for the following seven defective conditions related to ALE's roadway worker protection procedures that were in place on the day of the accident:

1. Improper control of entry to inaccessible track
2. Failure to provide on-track safety for a member of a roadway work group
3. Incorrect information provided to roadway workers regarding on-track safety procedures in effect

4. Failure to designate roadway worker in charge of roadway work group
5. Partial failure of employer to provide on-track safety job briefing on the accessibility of the RWIC and alternative procedures if the RWIC is no longer accessible to the roadway work group.
6. Roadway worker failed to understand or comply with its rules and the requirements of 214.311.
7. On-track safety manual not provided to prescribed employees.

Continental Rail Work Equipment

The work crew was utilizing a backhoe with rail guide wheels and a hi-rail equipped material handling truck. FRA safety inspectors conducted a visual inspection of the equipment and noted no noncompliant conditions as defined by Title 49 CFR, Part 214 Subpart D- On-Track Roadway Maintenance Machines and Hi-Rail Vehicles.

FRA Requirements for Program of Instruction on Operating Rules

Railroad employees whose activities are governed by the railroad's operating rules are required to understand those operating rules. Each railroad to which section §217.11 applies are

required to periodically instruct each of these employees on the meaning and application of the railroad's operating rules in accordance with a written program.

This program must:

- Describe the means and procedures used for instruction of the various classes of affected employees.

- State the frequency of instruction and the basis for determining that frequency.

- Include a schedule for completing the initial instruction of employees who are already employed when the program begins.

- Provide for initial instruction of each employee hired after the program begins.

Investigators requested ALE's program of instruction on operating rules. ALE was unable to provide a written program on operating rules. During an FRA post-accident audit conducted the week of April 12, 2021, on the ALE railroad, FRA found that since beginning operation on October 1, 2019, as a separate company, ALE hired 5 employees. FRA reviewed the employee training records for all 5 employees (including the employee involved in the accident) and found that they received a GCOR exam on the first day of employment. FRA found that ALE failed to adequately instruct the new employees on the operating rules that were applicable on their property. As a result of the post-accident audit findings, FRA wrote five violations for failure to adequately instruct the new employees on the operating rules that were applicable on their property as required

by §217.11 (a) and one violation for failure to have a program for the periodic instruction of its employees as required by §217.11 (b).

§240.125 Knowledge testing.

(a) Each railroad shall adopt and comply with a program that meets the requirements of this section. When any person, including, but not limited to, each railroad, railroad officer, supervisor, and employee, violates any requirement of a program that complies with the requirements of this section, that person shall be considered to have violated the requirements of this section.

(b) A railroad shall have procedures for testing a person being evaluated for qualification as a locomotive engineer in either train or locomotive service to determine that the person has sufficient knowledge of the railroad's rules and practices for the safe operation of trains.

(c) The testing methods selected by the railroad shall be:

(1) Designed to examine a person's knowledge of the railroad's rules and practices for the safe operation of trains;

(2) Objective in nature;

(3) Administered in written form;

(4) Cover the following subjects:

(i) Personal safety practices;

(ii) Operating practices;

(iii) Equipment inspection practices;

(iv) Train handling practices including familiarity with the physical characteristics of the territory; and

(v) Compliance with Federal railroad safety laws, regulations, and orders;

(5) Sufficient to accurately measure the person's knowledge of the covered subjects; and

(6) Conducted without open reference books or other materials except to the degree the person is being tested on his or her ability to use such reference books or materials.

(d) The conduct of the test shall be documented in writing and the documentation shall contain sufficient information to identify the relevant facts relied on for evaluation purposes.

(e) For purposes of paragraph (c) of this section, the railroad must provide the person(s) being tested with an opportunity to consult with a supervisory employee, who possesses territorial qualifications for the territory, to explain a question.

(f) The documentation shall indicate whether the person passed or failed the test.

(g) If a person fails to pass the test, no railroad shall permit or require that person to function as a locomotive engineer prior to that person's achieving a passing score during a reexamination of the person's knowledge.

During the FRA post-accident audit conducted the week of April 12, 2021, on the ALE railroad, FRA found that the ALE hired three employees (including the employee involved in the accident), who were not previously qualified locomotive engineer and there were no training records for employees noting actual throttle time accrued during Locomotive Engineer training. ALE could not provide documentation of the conductors training as a locomotive engineer. As a result of the post-accident audit findings, FRA wrote three violations for failure to have adequate procedures for training new engineers.

§240.303 Operational monitoring requirements.

(a) Each railroad to which this part applies shall, prior to FRA approval of its program in accordance with §240.201, have a program to monitor the conduct of its certified locomotive engineers by performing both operational monitoring observations and by conducting unannounced operating rules compliance tests.

(b) The program shall be conducted so that each locomotive engineer, except as provided in §240.129(h), shall be given at least one operational monitoring observation by a qualified supervisor of locomotive engineers in each calendar year.

(c) The program shall be conducted so that each locomotive engineer, except as provided in §240.129(h), shall be given at least one unannounced, compliance test each calendar year.

(d) The unannounced test program shall:

(1) Test engineer compliance with:

(i) One or more provisions of the railroad's operating rules that require response to signals that display less than a "clear" aspect, if the railroad operates with a signal system that must comply with part 236 of this chapter;

(ii) One or more provisions of the railroad's operating rules, timetable or other mandatory directives that require affirmative response by the locomotive engineer to less favorable conditions than that which existed prior to initiation of the test; or

(iii) Provisions of the railroad's operating rules, timetable or other mandatory directives the violations of which by engineers were cited by the railroad as the cause of train accidents or train incidents in accident reports filed in compliance with part 225 of this chapter for the preceding year;

(2) Be conducted that so that the administration of these tests is effectively distributed throughout whatever portion of a 24-hour day that the railroad conducts its operations;

(3) Be conducted so that individual tests are administered without prior notice to the locomotive engineer being tested; and

(4) Be conducted so that the results of the test are recorded on the certificate and entered on the record established under §240.215 within 30 days of the day the test is administered.

During the FRA post-accident audit conducted the week of April 12, 2021, on the ALE railroad, FRA found that ALE was unable to provide a written program to monitor the conduct of its certified locomotive engineers by performing both operational monitoring observations and by conducting unannounced operating rules compliance tests. FRA found documentation that seven employees (including the employee involved in the accident) were showing a total of seven unannounced tests listed for calendar years 2019 and 2020, but the seven tests were not documented in the operational testing records. As a result of the post-accident audit findings, FRA wrote seven violations for failure to comply with the requirements of 240.303(a).

Internal Oversight- Operational Testing

Title 49 CFR Section 217.9 requires that every railroad have a written program of operational tests and inspections in effect. New railroads are required to have the program within 30 days of commencing rail operations. employees are tested on various aspects of their job to evaluate their ability to perform their jobs correctly and their knowledge of company rules and federal regulations. This testing not only evaluates the worker's skills and overall ability to perform a task safely and correctly, it also reinforces compliance with rules.

A railroad's operational testing program on file with FRA must, at a minimum:

1. *Provide for operational testing and inspection under the various operating conditions on the railroad, at various times, and at a variety of locations.*

2. *Address with particular emphasis those operating rules that cause or are likely to cause the most accidents or incidents, such as those accidents or incidents identified in the quarterly reviews, 6-month reviews, and annual summaries.*

3. *Require a minimum number of tests and inspections per year covering the requirements of 49 CFR Part 218, Subpart F.*

4. *Describe each type of operational test and inspection required, including the means and procedures used to carry them out.*

5. State the purpose of each type of operational test and inspection.

6. State, according to operating divisions where applicable, the frequency with which each type of operational test and inspection is to be conducted.

7. Identify by name, job title, and division or system, the railroad manager who is responsible for ensuring that the program of operational tests and inspections is properly implemented.

8. Require a record of the date, time, place, and result of each operational test and inspection that was performed in accordance with the railroad's program.

9. Require a record that specifies the railroad manager that performed the operational test or observation and each employee tested.

10. Mandate a review of operational testing results and require adjustments to the program of operational tests accordingly.

11. Mandate a quarterly review when regulations require.

12. Mandate a 6-month review when regulations require.

Investigators requested ALE's operational testing program and operational testing records from the railroads startup date (September 19, 2019) to the date of this accident (November 17, 2020). ALE was unable to provide a written program of operational tests and inspections. ALE did however provide MSE's testing program and testing records indicated that ALE had conducted operational tests utilizing the MSE's program. During the FRA post-accident audit conducted the

week of April 12, 2021, on the ALE railroad, FRA found that ALE started operation as a Class III on October 1, 2019, and failed to adopt a compliant program or develop, implement, and maintain a program of operational tests and inspections as required by §217.9 (c). During the post-accident audit, FRA also found that ALE failed to adopt an operational testing program that required a minimum number of operational tests on 220 sub part C (electronic devices) and did not perform any operational tests related to electronic devices during calendar years 2019 and 2020 (prior to November 17, 2020). As a result of the post-accident audit findings, FRA wrote one violation for failure to adopt a compliant program or develop, implement, and maintain a Program of operational tests and inspections as required by §217.9 (c), one violation for failure to require a minimum number of tests per year covering the requirements 218 sub part F, and one violation for not requiring a minimum number of operational tests and inspections of 220 sub part C.

External Oversight

In June of 2020, as part of an agency restructuring, FRA transitioned eight Regional leadership teams into nine Safety Management Teams to serve as the Office of Railroad Safety's main liaison with the senior leadership of the Nation's railroads. Each of the nine safety management teams is assigned to Class I railroads or a group of railroads and provides safety oversight of the respective railroad system(s). The nine safety management teams are:

SMT-1: Amtrak, commuter, and excursion railroads operating in the eastern section of the Nation

SMT-2: Short Line East

SMT-3: Norfolk Southern

SMT-4: CP/CN/CCD

SMT-5: BNSF

SMT-6: UP/KCS

SMT-7: Commuter and excursion railroads operating in the western section of the Nation

SMT-8: Short line railroads operating in the western section of the Nation

SMT-9: CSX

The Safety Management Teams represent FRA with the railroads, and they communicate and coordinate with FRA's Staff Directors, Accident Analysis Branch, Audit Management Program, and other Safety Management Teams. To carry out its mission, FRA staff includes about 400 Federal safety inspectors and specialists, as well as approximately 200 state inspectors who are spread throughout the US. Safety inspectors focus primarily on five safety disciplines when conducting inspections for compliance and enforcement; those disciplines are:

•Hazardous Materials

•Motive Power and Equipment

•Operating Practices

•Signal and Train Control

•Track

NTSB conducted a review of FRA inspection activities on the ALE railroad from startup in 2019 through the day of the accident. The review revealed that all FRA disciplines resulted in of 200 defects for non-compliance with FRA regulations and five recommendations for civil penalty to be assessed against the railroads.

NTSB conducted a review of FRA post-accident inspection activities. Below is a summary of the post-accident non-compliances documented by FRA on the ALE railroad:

1. An Individual Liability was issued on the Engineer

2. §218.35 – Yard Limits: Failure to operate at restricted speed

3. §220.305 – Use of railroad-supplied electronic devices.

4. §217.11 (a). One (1) violation (5 counts) for Program of instruction on operating rules; recordkeeping; electronic recordkeeping.

5. §217.11 (b). One (1) violation: On or after November 21, 1994, or 30 days before commencing operations, whichever is later, each railroad to which this part applies shall retain one copy of its current program for the periodic instruction of its employees as required by paragraph (a) of this section and one copy of each subsequent amendment to that program. The system headquarters of the railroad shall retain one copy of all these records; the division headquarters for each division where the employees are instructed shall retain one copy of all portions of these records that the division applies and enforces

6. §217.9 (c) One (1) violation: Written program of operational tests and inspections. Every railroad shall have a written program of operational tests and inspections in effect. New railroads shall have such a program within 30 days of commencing rail operations.

7. §217.9 (C) (2). One (1) violation: Require a minimum number of tests and inspections per year covering the requirements of part 218, subpart F of this chapter.

8. §220.315 (A). One (1) violation: Operational tests and inspections; further restrictions on use of electronic devices- (a) The railroad's program of operational tests and inspections under part 217 of this chapter shall be revised as necessary to include this subpart and shall specifically include a minimum number of operational tests and inspections, subject to adjustment as appropriate.

9. §240.303 One (1) violation (7 counts): Operational monitoring requirements.

10. §242.123 One (1) violation (10 counts): Monitoring operational performance.

11. § 217.9 (b)(1)(iv): Violation noted (30 counts): The audit revealed multiple ALE testing managers failed to meet testing requirements listed under MSE's program.

12. §217.9 (B) (2): Violation noted (3 counts): The audit revealed ALE to have one operational testing manager that was testing outside of qualification.

13. 240.127 (ii) (d). No designation of certification ride for 240.127

14. 240.123 (c). No training records for employees noting actual throttle time accrued during Locomotive Engineer training. As required in the current approved ALM/MSE Locomotive Engineer training program.

15. 240.303 (c). No stop tests 366 days prior to certification date.

Dispatching information

The NCRC Dispatching Center in Ft. Worth, TX handles ALE's dispatching functions. All DOB, emergency responses, and signal malfunction notification are issued through the NCRC facility. All transportation employees are required to notify NCRC dispatchers when going on and off duty in order for the dispatchers to maintain accurate crew records. All MOW and signal personnel are required to report any adjustments pertaining to the DOB to the NCRC.

At 7:11 a.m., the engineer on the ALE 401 contacted the NCRC dispatcher, told the dispatcher the engineer, conductor and brakeman where on duty and verified the DOB 322. The dispatcher verified the DOB with no additions or deletions. At 7:48 a.m., the RWIC contacted the NCRC dispatcher, verified the DOB 322 with no additions or deletions and obtained track authority to perform maintenance work.

Roadway Worker in Charge

FRA Railroad Workplace Safety regulation defines a RWIC a roadway worker who is qualified under §214.353 to establish on-track safety for roadway work groups, and lone workers qualified under §214.347 to establish on-track safety for themselves. The RWIC also responsible for providing the on-track safety briefing and securing acknowledgement of understanding from all roadway workers in the work group.

The RWIC stated that approximately 15 minutes before the accident he had departed the work location to travel to Semmes, AL. He relayed that his purpose was to retrieve tools that would be used to complete the next day's work. The RWIC recounted that when he departed the work group had about three ties remaining that needed to be installed. He told investigators that he was not planning to return to the work location and instructed one of the CR lead man to contact him after they had completed the work, removed the derails, and were clear of the track.

The following is information from the FRA Track and Rail Infrastructure Integrity Compliance Manual regarding the need for the RWIC to remain at the work location[3]:

A RWIC is the person who establishes and directs the on-track safety for a roadway work group, and it is critical that each roadway worker in a roadway work group have access to the RWIC. Access is necessary when a member of the group invokes a good faith challenge, or when

3 Federal Railroad Administration Track and Rail and Infrastructure Integrity Compliance Manual- Volume III Railroad Workplace Safety Chapter 3 Roadway Worker Protection- Dated March 2018

he or she has questions concerning the established on-track safety protection. Generally, a RWIC must be located in the immediate vicinity of the work activity, but it may be necessary for a RWIC to depart a work location for a short period to travel to another area encompassing the same work activity (e.g., to conduct on-track safety checks throughout a large mechanized production activity). When an RWIC is away from a work site for a short period, it is imperative the roadway work group have a readily available means to communicate with that person. When a RWIC departs a work site for an extended period and is not readily available to communicate with members of the roadway work group, the roadway work group members effectively do not have a RWIC, as he or she is not at the work group's location and cannot communicate with the group.

FRA has received questions as to whether it is permissible for an RWIC to establish on-track safety for a roadway work group and then to leave the work group to perform some other function, e.g., track inspection, but still remain in contact (readily accessible) to the roadway work group. The intent of the above paragraph is to permit the RWIC to leave one location to perform some other function associated with the same task as the roadway work groups task for which he/she is providing on-track safety. Thus, it is not permissible for the RWIC to perform some other work function not related to the task for which he provides on-track safety – even if he is immediately accessible to members of the roadway work group.

It was confirmed by the CR roadway workers that the ALE RWIC departed the work location before the work was completed.

Roadway Worker Protection Training

ALE RWIC & RWP Training

According to ALE records, the ALE RWIC had 25 years of railroad experience. He received RWP & RWIC training on 02/05/2020 and again on 11/20/2020. The records reflect that the training and test consist of the required aspects of roadway worker safety. Two test questions pertaining to ALE track designation and establishing roadway worker protection were noted from the 02/05/2020 test:

- Question 29. How may routine inspection and minor corrective work be made on a main track within yard limits and on yard running tracks, switching leads, and similar auxiliary tracks?
    a. Under the authority of the dispatcher
    b. Under the authority of the yardmaster
    c. Authority of the designated rail worker responsible for directing train and engine movements in the area
    d. Any one of thee is correct (selected by RWIC)

- Question 30. When may authority for routine inspection and minor corrective work on a main track within yard limits and on yard running tracks, switching leads, and similar auxiliary tracks be given?
    a. Authorization is not necessary within yard limits
    b. Immediately upon request

c. Protection must be established by withholding authority for the operation of conflicting movements (selected by RWIC)

d. None of these are correct

As previously noted, according to ALE rules, yard limits where trains are required to operate at restricted speed are designated as non-controlled track.

FRA regulations require that all roadway workers receive initial and recurrent training once every calendar year. In addition, FRA regulations require initial and periodic demonstration of proficiency by any RWIC.

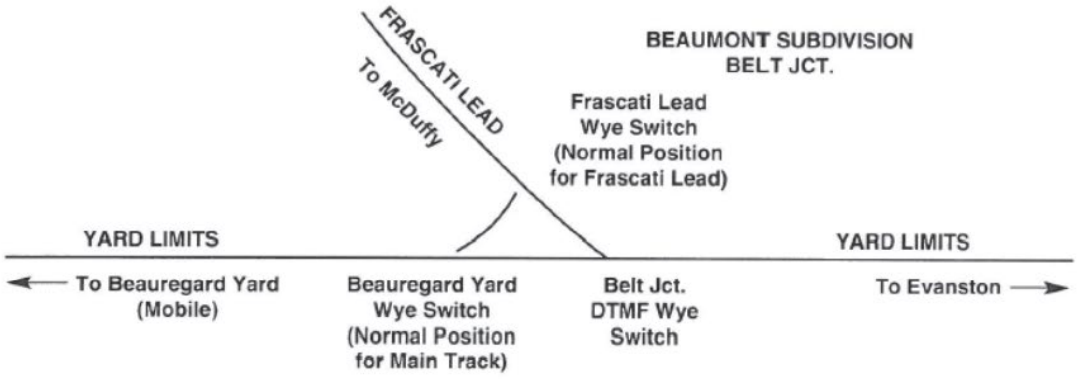
CR Employee Training

According to ALE records, only two of the six CR roadway workers had completed the required ALE training prior to the accident. Records show that two of the four CR track laborers completed ALE RWP training on October 29, 2019. The CR lead man who was also operating the backhoe on the day of the accident was not named on the training records. CR records indicate that the lead man/ backhoe operator had 13 years of railroad experience. The nature of railroad contracting require that CR roadway workers be trained on the RWP rules of all railroads on which they work. CR provided training records showing the members of the subject work group had received training on the RWP rules on ALE and three other railroads. In the

training records provided by CR it was confirmed that training documented as ALRR was intended to indicate ALE training.

Method of Operation

The Beauregard track is a segment of the ALE Beaumont subdivision and consists of 6.65 miles of single main track between milepost 0 and milepost 6.7. Train movements on the main tracks in this area are to be made a restricted speed and governed by operating rules, daily operating bulletins, and timetable instructions. The Beauregard Subdivision operates geographically in northward and southward directions. The subdivision at Belt Jct. branches off to two track segments: the Frascati Lead to McDuffie Island Terminal, and the main track to the ALE Yard in Mobile.



Operation Documents

The crews were governed by the following documents containing the operating rules and procedures:

1. GCOR – Seventh Edition
2. ALE Timetable Number 1 – Effective October 1, 2019
3. ALE Hazardous Materials Handling
4. ALE Airbrake Systems Manual (ABS)
5. ALE Safety Manual

Locomotive Safety Devices

The lead locomotive was equipped with a headlight, auxiliary lights, and the horn warning device required by Federal regulations. The lead locomotive was also equipped with a bell and positive train control, inward facing digital video recorder, outboard facing digital video recorder, locomotive event recorder, and an alerter.[4]

4 49 CFR Part 229 defines an *alerter* as a device or system installed in the locomotive cab to promote continuous, active locomotive engineer attentiveness by monitoring select locomotive engineer-induced control activities. If fluctuation of a monitored locomotive engineer-induced control activity is not detected within a predetermined time, a sequence of audible and visual alarms is activated so as to progressively prompt a response by the locomotive engineer. Failure by the locomotive engineer to institute a change of state in a monitored control, or acknowledge the alerter alarm activity through a manual reset provision, results in a penalty brake application that brings the locomotive or train to a stop.

Engineer Certification Information

Hire Date	01/3/2020
Certification Expiration Date	10/27/2021
Last Rules Exam Date	3/18/2020
Last Physical Exam Date	01/15/2020
Last Vision Exam Date	12/3/2019
Last Hearing Exam Date	12/3/2019
Last Efficiency Test	10/23/2020

Engineer 30 Day Work History

Employee: Jamie Elder — **Timezone : (GMT-06:00) Central Time (US & Mississippi) - America/Mississippi**

Start Date	Start Location	End Date	End Location	Service Type	Train ID	Service Code	Duration
11/16/2020 10:00	Mobile	11/16/2020 20:00	Mobile	Covered	L401	Conductor	10:00
							Prior Time Off: 80:00 Hours
11/12/2020 14:30	Mobile	11/13/2020 02:00	Mobile	Covered	L402	Conductor	11:30
							Prior Time Off: 15:10 Hours
11/11/2020 15:30	Mobile	11/11/2020 23:20	Mobile	Covered	L402	Conductor	07:50
							Prior Time Off: 17:30 Hours
11/10/2020 14:30	Mobile	11/10/2020 22:00	Mobile	Covered	402	Engineer	07:30
							Prior Time Off: 17:30 Hours
11/09/2020 09:00	Mobile	11/09/2020 21:00	Mobile	Covered	401	Conductor	12:00
							Prior Time Off: 12:45 Hours
11/08/2020 09:00	Mobile	11/08/2020 20:15	Mobile	Covered	401	Engineer	11:15
							Prior Time Off: 67:30 Hours
11/05/2020 07:00	Mobile	11/05/2020 13:30	Mobile	Covered	401	Conductor	06:30
							Prior Time Off: 15:30 Hours
11/04/2020 07:00	Mobile	11/04/2020 15:30	Mobile	Covered	401	Engineer	08:30
							Prior Time Off: 17:00 Hours
11/03/2020 07:00	Mobile	11/03/2020 14:00	Mobile	Covered	401	Conductor	07:00
							Prior Time Off: 34:00 Hours
11/01/2020 09:00	Mobile	11/01/2020 21:00	Mobile	Covered	401	Engineer	12:00
							Prior Time Off: 36:30 Hours
10/30/2020 09:00	Mobile	10/30/2020 20:30	Mobile	Covered	401	Conductor	11:30
							Prior Time Off: 14:30 Hours
10/29/2020 13:00	Mobile	10/29/2020 18:30	Mobile	Covered	401	Conductor	05:30
							Prior Time Off: 39:00 Hours
10/27/2020 14:30	Mobile	10/27/2020 22:00	Mobile	Covered	401	Conductor	07:30
							Prior Time Off: 68:30 Hours
10/24/2020 07:00	Mobile	10/24/2020 18:00	Mobile	Covered	401	Engineer	11:00
							Prior Time Off: 15:00 Hours
10/23/2020 07:00	Mobile	10/23/2020 16:00	Mobile	Covered	401	Engineer	09:00
							Prior Time Off: 16:00 Hours
10/22/2020 07:00	Mobile	10/22/2020 15:00	Mobile	Covered	401	Conductor	08:00
							Prior Time Off: 15:30 Hours
10/21/2020 07:00	Mobile	10/21/2020 15:30	Mobile	Covered	401	Conductor	08:30
							Prior Time Off: 15:30 Hours
10/20/2020 07:00	Mobile	10/20/2020 15:30	Mobile	Covered	401	Conductor	08:30
							Prior Time Off: 60:30 Hours
10/17/2020 07:00	Mobile	10/17/2020 18:30	Mobile	Covered	401	Engineer	11:30
							Prior Time Off: 12:45 Hours
10/16/2020 09:00	Mobile	10/16/2020 18:15	Mobile	Covered	401	Conductor	09:15

ALE Response to the Accident

Below are corrective action items ALE's team has implemented or is working towards:

- Decertified and terminated the locomotive engineer/trainman.
- Had safety meetings with all ALE locomotive engineers/trainmen and discussed train movements.
- Implemented greater presence in the field for efficiency testing and rules training. Also utilizing managers from other departments for cross functional test.
- Perform stop test in curve.
- Request RWP training documents from employer of contractors on site.
- Train on importance of communication between ALE? transportation and MOW crews/ contractors.
- Hired an additional Transportation Supervisor, who has experience as a field officer trainer and developer, and who will serve as the DSLE. ALE also hired a new Maintenance of Way Supervisor who has a history in Safety, Rules & Training.
- Implement radio over IP.
- Employee in charge requesting time night before. Any work to be performed that is more than a minor inspection now has to be requested on a Track Bulletin Form B.

- Institute policy that all bulletins will be reviewed by at least one other operations manager prior to posting and crews will be trained on.

- Maximum speed limit on ALE tracks in Mobile has been reduced to 10 mph.

- Manager on duty every day.

- Emphasize company safety culture, reward for issues presented with solution.

- Review 49 CFR 271 and communicate with the SLSI to determine if Risk Reduction Program needs to be developed and implemented.

End of Report

I have read and approve the report

Zachary Zagata

Investigator-in-Charge

National Transportation Safety Board

//s// Date: _____

Joe Gordon

Rail Accident Investigator

National Transportation Safety Board

//s// Date: _____

Federal Railroad Administration

//s// Date: _____

Alabama Export Railroad

//s// Date: _____