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NATIONAL TRANSPORTATION SAFETY BOARD

Office of Railroad, Pipeline and Hazardous Materials Investigations

WASHINGTON, D. C. 20594

**CSX Transportation
Train Derailment
Hyndman Pennsylvania**

August 2, 2017

NTSB Accident Number: DCA17FR011

Operations Group Factual Report
Tomas Torres, Group Chairman

1

2 **Party Members:**

<p>Tomas Torres</p> <p>NTSB-Operations Group Chairman</p> <p>tomas.torres@ntsb.gov</p>	<p>Larry Ross</p> <p>FRA Operating Practices Inspector</p> <p>larry.ross@dot.gov</p>
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<p>Steve Ammons</p> <p>CSXT Director of Train Handling Rules and Practices</p> <p>Steve_Ammons@csx.com</p>	<p>Jared Cassity</p> <p>SMART Investigator</p> <p>jaredcassity@gmail.com</p>

3

4 **ACCIDENT SUMMARY**

5 For a summary of the accident, refer to the *Accident Summary Report* in the docket for this
6 investigation.

7 **Events Prior to the Accident**

8 The first crew of train out of Connellsville Pennsylvania of the CSX Q38831 East included
9 a locomotive Engineer and a Conductor. They first went on duty at 1:45 p.m. EST, in Cumberland
10 Maryland. This was the home terminal for the crew members and received more than the statutory

1 off-duty period prior to reporting for duty. ¹ Both the Engineer and Conductor received 16 hours
2 and 48 minutes rest.

3 Their assigned freight train consisted of five locomotives, 128 loaded and 50 empty cars of several
4 varieties. It was 10,612 feet long and weighed 18,252 tons. The train was identified as a Hazardous
5 Material Key Train.² The train contained loaded cars of propane, isobutane, denatured alcohol,
6 ethanol, heptanes, molten sulfur, sodium chlorate, phosphate acid .³ The train was scheduled to
7 travel from Chicago, Illinois to Cumberland, Maryland with cars to be added at two locations en
8 route. The train received an initial terminal train air brake test, and departed Chicago, Illinois at
9 8:40 p.m. on July 31, 2017.

10 The train stopped to add cars at two locations while enroute. The train stopped at
11 Lordstown, Ohio and added 28 empty cars to the head-end of the train, the first car of the 28 cars
12 was the WCTX 227 and the 28th car was the FWTX 620015. The train departed with 138 cars. At
13 New Castle the train stopped to add 14 cars to headend of the train behind the 8th car, the first car
14 was the TCBX 261635 and the 14th car was the TTZX 855452. The fourteen cars consisted of 6
15 loads and 8 empties. The train departed New Castle with 128 loads, 50 empties, weight 18,252
16 tons, 10,612 feet in length.

17 **The Accident**

18 The first crew out of Connellsville, Pennsylvania was instructed to take train Q38831 from
19 Connellsville, Pennsylvania to Cumberland, Maryland. The crew said that after arriving to
20 Connellsville from Cumberland, Maryland on Job Q21701 they were instructed to take charge of

¹ Refer to 49 *Code of Federal Regulations* (CFR) Part 228 for additional information on Hours of Service requirements.

² Refer to Appendix A for definition of a Key Train at the end of the report.

³ Refer in the Train Listing and Hazardous Material Descriptions in the docket for additional information.

1 the Q38381 and take it to Cumberland, Maryland. When the train Q38831 arrived into
2 Connellsville, Pennsylvania the train crew had a job briefing with the inbound crew. The Engineer
3 said that the inbound Engineer that the train had a little bit of flow, but that everything else was
4 working well.⁴

5 As the train crew boarded the train the helper locomotive was being attached to the rear of
6 the train.⁵ Prior to departing Connellsville, Pennsylvania and after the helper locomotive was
7 attached, the train crew performed the helper air brake test."⁶

8
9 According to the Event Recorder of lead locomotive CSXT 3338 the train departed
10 Connellsville, Pennsylvania at about 8:28 p.m.⁷ The train crew contacted the train dispatcher and
11 requested permission to depart. The train crew received a signal indication to depart and proceeded
12 east on main track 2.

13 The Engineer said "The air on the train, it was -- it came up slow. Most of the trip it just
14 gradually kept climbing clear up to -- from Connellsville to BFJ2".

15 The train proceeded with Clear signal indications and according to the Engineer when the
16 train was about five to six thousand feet past the grade he made a minimum brake application.⁸
17 According to the event recorder data the Engineer made a minimum brake application at about
18 11:22:36 p.m. The air pressure on the EOT was 83 psi and then shortly thereafter the pressure at

⁴ Flow is in reference that brake pipe air pressure was constantly being charged.

⁵ Helper: Distributed power or manned helper added to a train to assist movement.

⁶ Refer to Appendix A CSX Airbrake Rule 5209 for additional information at the end of the report.

⁷ Refer to the Event Recorder Factual Report in the Docket for additional information.

⁸ Minimum Reduction (First Service): The first position of the automatic brake valve that initiates a service application of 6 to 8 PSI. Equalizing Reservoir: A small reservoir to hold compressed air. The air pressure in it is controlled by the setting of the regulating valve and is used to control brake pipe pressure.

1 the rear was 79 psi.⁹ The Engineer said that as the train approached Manila the helper locomotive
2 detached from the rear of the train. As the train approached Manila he noticed that the air pressure
3 on the EOT increased from 79 psi to 80 psi. The Conductor said the Engineer explained “He put it
4 on, and then he got down a little way, maybe a little way, and then he said the brakes released on
5 the train, so he put the air back -- put the air on. He said you're going to have to tie it down.”

6 According to the event recorder the pressure at the EOT increased from 79 psi to 80 psi at
7 about 11:24:47 p.m. The Engineer made an additional brake application, pressure went from 82 psi
8 to 79 psi. At about 11:27:16 p.m. the EOT pressure went to 77 psi as the Engineer describe during
9 the interview. The Engineer said that the pressure at the EOT dropped to 75 psi, and gradually the
10 pressure increased to 79 psi. The Engineer responded by making additional brake applications, until
11 he made a full-service application of 26 psi.¹⁰

12 At about 11:36:42 p.m. the train came to a stop. According to the Train Dispatcher voice
13 recording at about 11:37:27 p.m. the Engineer reported to the Train Dispatcher “we stopped here
14 at milepost BF 205.6. Got a problem with the train. The brakes released on it”. The Conductor got
15 off the locomotive and started to apply hand brakes to secure the train. The Conductor applied 58
16 hand brakes as required by the CSXT operating rule ,30% percent on the train must have hand
17 brakes applied.¹¹ The Conductor applied hand brakes on the first 25 cars from behind the

⁹ Telemetry: The combination of a head-of-train device (HTD) on the controlling locomotive and an end-of-train device (EOT) mounted on the rear car of a train. Telemetry communicates train-related information to and from the controlling locomotive.

¹⁰ Full Service Application: The term used to describe an application of the automatic brake to the point that the auxiliary reservoir and brake cylinder pressures are equalized.

¹¹ CSX Baltimore Timetable-Airbrake and Train Handling Rule Rule 5559- When the total brake pipe reduction exceeds 18lbs on any eastward freight train operating Sand Patch to Hyndman, the train will be stopped. 30% hand brakes will be applied to the head end of the train to hold it on the grade during the recharge procedure.

1 locomotive consist and skipped the 26th through the 33rd cars account the hand brakes were located
2 on top of the cars.¹² He applied the remaining hand brakes from the 34th through the 64th cars.

3 The Conductor proceeded to make a walking inspection of the train to determine the source
4 of the air leak. The Conductor found that the 159th was car leaking. The Engineer reported by radio
5 to the Train Dispatcher the defect found on car 159th.

6 During the interview the Conductor said, “he didn't like the loads on the rear, but, I mean,
7 it was still legal procedures, so it was still legal to take how it was”.¹³ During the interview the
8 engineer was asked about the train profile and he said “It was big. It was big. It was -- I believe
9 we had -- part of the train I didn't like was we had like, I believe it was, I counted 42 empties on
10 the head end of all that tonnage behind it. That's the only -- as an engineer, that really stinks because
11 it hits you a lot. It's just -- I don't like it”.

12 CSX Train Dispatcher reported the defect on 159th car to the mechanical department. The
13 mechanical department dispatched two Carman to address the problem.

14 **Second Crew on Train**

15 The second crew of train CSX Q38831 East included a Locomotive Engineer and a
16 Conductor. They first went on duty at 11:59 p.m. EST, at Cumberland Maryland and were assigned
17 the helper/ pusher job that is used for pushing and bringing in trains . This was the home terminal
18 for both crew members, and received more than the statutory off-duty period prior to reporting for
19 duty. The Engineer received 11 hours and 38 minutes and the Conductor received 99 hours rest.

¹² Locomotive Consist: A locomotive, or combination of locomotives properly coupled for multiple unit operation and operated from a single control.

¹³ Refer to Appendix B for CSX Equipment Handling Rule 4466 at the end of the report.

1 The Engineer stated during the interview, they went on duty on job B248, and that they
2 received instructions from the Train Dispatcher to relieve the crew on the Q38831 at mile post
3 205.6. When the crew arrived at BF 205.6, they had a job briefing on the status of the train. The
4 first crew explained to that they had experienced air brake problems and that 58 hand brakes were
5 applied to secure the train.

6 About 20 minutes after the relief crew took charge of the train the two mechanical Carman
7 arrived to address the air leak on car 159.

8 The two-mechanical Carman that were dispatched to respond to the air leak said in the
9 interview that they got notified at about 12:45 a.m. They arrived at the train at about 2:20 a.m. and
10 had a job briefing with the train crew. The Carman conducted an inspection of the train and found
11 an air leak on car 159. The Carman said that they replaced an intermediate hose on the car. The
12 Carman explained “it attaches from the angle -- back of the angle cock to the train line, and it was
13 right where it was kinked, it was leaking there. And the hose was basically falling apart. You
14 could see the internal threads. You know, I guess it was an older hose. And that was about it”.
15 After completing the repair on the car, they asked the train Conductor if they needed any other
16 assistance and the Conductor said that he had a whole bunch of hand brakes to release and that they
17 were going to be waiting there for a little while.

18 After the Carman completed the repair on car 159th, the crew called the Train Dispatcher
19 and informed him that they were ready to depart. The Conductor stated “Called our dispatcher, BB
20 dispatcher and told him we were ready to go, and we'd take the train the way it was to the bottom
21 of the hill, and release the handbrakes down there. Which is standard operating procedure if the
22 train was having problems on the hill, we would keep the brakes on in case anything was to happen
23 to the train”. The train dispatcher authorized the train crew to depart, the Engineer made a

1 minimum brake application and started to pull on the train but was not able to move. The Conductor
2 walked back and released 25 hand brakes from behind the locomotives, 13 empty and 20 loaded
3 cars remained with hand brakes applied.

4 After the Conductor released the head 25 of 58 hand brakes, the Engineer made another
5 attempt to pull on the train. The train was able to move and continue east towards Cumberland,
6 Maryland. According to the event recorder data from the lead locomotive CSXT 3338 the train
7 departed BF205 at about 4:17:45 a.m. The Engineer stated that he balanced the train speed with a
8 combination of train brakes, the remaining 33 hand brakes and by manipulating the throttle between
9 power and dynamic brakes.¹⁴

10 Data from the computer-aided dispatch system was downloaded following the accident.
11 In addition, field signal data recorders were downloaded at control point Hyndman, milepost BF
12 190.2 and at intermediate signal 1994, milepost 194.39. Signal data indicated eastbound freight
13 train Q38831 was operating on clear signals approaching the derailment site.

14 The eastbound Q38831 train traversed a grade ranging from 0.50 to 2.12 beginning at
15 milepost BF 210.8(top of grade) to milepost BF 192.3(train resting place). From milepost BF 195.2
16 to the point of derailment at BF 193.7, the train was on a descending grade of between 1.65 and
17 2.08. At the point of derailment, the train was traversing an 8.375-degree curve.

18 The train was being operated at 29 mph approaching the accident area. The Engineer stated
19 that he made an additional 10 lbs. train brake reduction as they were approaching to the bottom of
20 the hill. The Conductor said, “felt a little lunge, and it wasn't no more than a second or two after

¹⁴ Dynamic Brake: An electrical device that converts some of the energy developed by a moving locomotive into an effective retarding force.

1 that, the train went in emergency”.

2 After the train stopped, the Locomotive Engineer stayed on the locomotive to establish radio
3 communications with the Train Dispatcher. The train Conductor began walking the train to
4 determine if the undesired emergency brake application had caused the train to derail. The Engineer
5 reported to the Train Dispatcher that they experienced undesired emergency brake application “We
6 just went in emergency here on this Q38831 coming into -- where in Hyndman here”. The Engineer
7 said to the Train Dispatcher that the head-end of the train was about at mile post BF 191.2 and that
8 the rear of the train was near milepost 193, all the crossings blocked. The Train Dispatcher repeated
9 the milepost and transmitted back to the train crew that he had a track circuit on the adjacent track.

10 According to the Train Dispatcher voice recordings, the Engineer reported that cars had
11 derailed, and that one car exploded, and requesting emergency personnel. The first car derailed was
12 the FWTX620150 an asphalt car and it was the 34th from the headend of the train. Some of the
13 following cars contained molten sulfur.

14 Speeds were recorded by the event recorder of the controlling locomotive. The maximum
15 authorized speed for this train was 30 mph, as designated in the current CSX Baltimore Timetable.
16 The two-mechanical Carman that were dispatched to respond to the air leak said in the interview
17 that they got notified at about 12:45 a.m. They arrived at the train at about 2:20 a.m. and had a job
18 briefing with the train crew. The Carman conducted an inspection of the train and found an air leak
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8 the hill. The Conductor said, “felt a little lunge, and it wasn't no more than a second or two after
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20 the FWTX620150 an asphalt car and it was the 34th from the headend of the train. Some of the
21 following cars contained molten sulfur.

22 Speeds were recorded by the event recorder of the controlling locomotive. The maximum

1 authorized speed for this train was 30 mph, as designated in the current CSX Baltimore Timetable.

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6 *Figure 1Aerial view of the derailment*

7 The train crew received a toxicological test in accordance with 49 CFR Part 229.¹⁶

8 **Method of Operations**

9 The Keystone Subdivision of the CSX Transportation Baltimore Division extends from

¹⁶ Refer to 49 CFR Part 229 for additional information.

1 milepost BF 178.4 in Cumberland, Maryland to milepost BF 242.9 in Connellsville,
2 Pennsylvania in a timetable east-west direction. The maximum authorized timetable speed on
3 the subdivision is 50 mph for freight trains and 79 mph for passenger trains with
4 permanent speed restrictions between posted timetable mileposts. In the vicinity of the
5 accident area, train movements are governed by operating rules, special instructions,
6 timetable instructions, and the signal indications of a traffic control system. Train
7 movements are coordinated by the BB train dispatcher located Baltimore, Maryland.¹⁷

8 The maximum authorized speed between BF 205.6 and Hyndman, Pa was 35 mph.

10 **Railroad Operating Documents**

11 The *CSX Operating Rules*, the *CSX Special Instructions*, the *CSX Baltimore Timetable*,
12 and CSX specific rules governed the crews.

13 The CSX operating rules and supplements were as follows:

- 14 • *CSX Operating Manual*, effective April 1, 2017
- 15 • *CSX System Special Instructions*, effective April 1, 2017
- 16 • *CSX Baltimore Timetable No.2*, effective Friday, July 1, 2016
- 17 • *CSX Safety Rules*, effective April 1, 2017
- 18 • *CSX Airbrake and Train Handling Rules*, effective April 1, 2017
- 19 • *CSX Equipment Handling*, effective April 1, 2017

¹⁷ 49 CFR 236.828- System, traffic control A block signal system under which train movements are authorized by block signals whose indications supersede the superiority of trains for both opposing and following movements on the same track.

1.

- CSX System Bulletin 001, effective July 1, 2017

First Train Crew Work History

Table.1 Engineer Certification

Current Certification Date	12/31/2015
Current Certification Expiration Date	12/31/2018
Endorsement Types	Engineer / Conductor
Last Skills Evaluation Date	11/17/2016
Last Hearing and Vision Exam Date	05/13/2015
Last Knowledge Exam Date	05/11/2015
Last Territory Physical Characteristics Exam Date	05/11/2015

Table.2 Engineer 10 Day Work / Rest Cycle

Previous Time Off	On Duty- Date/Time	Off Duty- Date/Time	Total Time On Duty
21 hours ,26 minutes	07/20/17-11:445 p.m.	07/21/17-5:09 a.m.	5 hours, 24 minutes
14 hours, 6 minutes	07/21/17- 7:15 p.m.	07/22/17-7:37 a.m.	12 hours, 22 minutes
13 hours, 8 minutes	07/22/17- 8:45 p.m.	07/23/17- 6:49 a.m.	10 hours, 4 minutes
51 hours, 20 minutes	07/25/17- 10:09 a.m.	07/25/17- 6:17 a.m.	8 hours, 8 minutes

12 hours, 58 minutes	07/26/17- 7:15 a.m.	07/26/17- 1:55 p.m.	6 hours, 40 minutes
15 hours, 35 minutes	07/27/17- 5:30 a.m.	07/27/17- 10:47 a.m.	5 hours, 17 minutes
13 hours, 34 minutes	07/28/17- 12:21 a.m.	07/28/17- 7:57 a.m.	7 hours, 36 minutes
15 hours, 53 minutes	07/28/17- 11:50 p.m.	07/29/17 - 5:23 a.m.	5 hours, 22 minutes
55 hours, 37 minutes	07/ 31 /17-1:00 p.m.	07/31/17- 8:57 p.m.	7 hours, 57 minutes
16 hours, 48 minutes	08/01/17- 1:45 p.m.	08/02/17- 5:37 a.m.	15 hours, 52 minutes

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2 **Table.3 Conductor Certification**

Current Certification	12/31/2016
Current Certification Expiration Date	12/31/2019
Endorsement Type	Conductor
Skills Evaluation Date	N/A
Last Hearing and Vision Exam Date	04/14/2016
Last Knowledge Exam Date	03/23/2016
Last Territory Physical Characteristics Exam Date	03/23/2016

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4 **Table.4 Conductor on 10 Day Work/Rest Cycle**

Previous Time Off	On Duty- Date/Time	Off Duty- Date/ Time	Total Time On Duty
73 hours, 53 minutes	07/21/17- 7:15 p.m.	07/22/17- 7:36 a.m.	12 hours, 21 minutes
13 hours, 9 minutes	07/22/17- 8:45 p.m.	07/23/17- 6:53 a.m.	10 hours, 8 minutes

15 hours, 2 minutes	07/23/17- 9:55 p.m.	07/24/17- 7:06 a.m.	9 hours, 11 minutes
50 hours, 39 minutes	07/26/17- 9:45 a.m.	07/26/17- 8:32 p.m.	10 hours, 47 minutes
12 hours, 28 minutes	07/27/17- 9:00 a.m.	07/27/17- 5:52 a.m.	8 hours, 52 minutes
12 hours, 53 minutes	07/28/17- 6:45 a.m.	07/28/17- 8:11 p.m.	11 hours, 26 minutes
13 hours, 49 minutes	07/29/17- 10:00 a.m.	07/29/17- 7:00 p.m.	9 hours, 0 minutes
16 hours, 0 minutes	07/30/17- 11:00 a.m.	07/30/17- 4:53 p.m.	5 hours, 53 minutes
20 hours, 7 minutes	07/31/17/- 1:00 p.m.	07/31/17- 8:57 p.m.	7 hours, 57 minutes
16 hours, 48 minutes	08/01/17- 1:45 p.m.	08/02/17- 5:40 a.m.	15 hours, 55 minutes

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Second Train Crew Work History

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Table.5 Engineer Certification

Current Certification Issued Date	12/31/2016
Current Certification Expiration Date	12/31/2019
Endorsement Types	Engineer/Conductor
Last Skills Evaluation Date	12/14/2016
Last Hearing and Vision Exam Date	05/24/2016
Last Knowledge Exam	05/26/2016
Last Territory Physical Characteristics Exam	05/26/16

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Table.6 Engineer 10 Day Work /Rest Cycle

Previous Time Off	On Duty- Date/Time	Off Duty- Date/ Time	Total Time On Duty
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11 hours, 59 minutes	07/20/17- 11:59 p.m.	07/21/17- 11:54 a.m.	11 hours, 55 minutes
60 hours, 5 minutes	07/23/17- 11:59 p.m.	07/24/17- 12:05 p.m.	12 hours, 6 minutes
11 hours, 54 minutes	07/24/17- 11:59 p.m.	07/25/17- 12:05 p.m.	12 hours, 6 minutes
11 hours, 54 minutes	07/25/17- 11:59 p.m.	07/26/17- 12:15 p.m.	12 hours, 16 minutes
11 hours, 44 minutes	07/26/17- 11:59 p.m.	07/27/17- 12:18 p.m.	12 hours, 19 minutes
11 hours, 41 minutes	07/27/17- 11:59 p.m.	07/28/17- 12:00 p.m.	12 hours, 1 minute
11 hours, 59 minutes	07/28/17- 11:59 p.m.	07/29/17- 11:40 a.m.	11 hours, 41 minutes
60 hours, 19 minutes	07/31/17- 11:59 p.m.	08/01/17- 12:21 p.m.	12 hours, 22 minutes
11 hours, 38 minutes	08/01/17- 11:59 p.m.	08/02/17- 10:43 a.m.	10 hours, 44 minutes

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2 **Table.7 Conductor Certification**

Current Certification Issued Date	12/31/2015
Current Certification Expiration Date	12/31/2018
Endorsement Types	Engineer /Conductor
Last Skills Evaluation Date	11/17/2016
Last Hearing and Vision Exam Date	05/13/2015
Last Knowledge Exam	05/11/2015
Last Territory Physical Characteristics Exam	05/11/2015

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4 **Table.8 Conductor 10 Day Work/ Rest Cycle**

Previous Time Off	On Duty- Date/Time	Off Duty- Date/ Time	Total Time On Duty
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99 hours	07/25/17- 11:59 p.m.	07/26/17- 12:32 p.m.	12 hours, 33 minutes
12 hours, 53 minutes	07/27/17- 1:30 a.m.	07/27/17- 12:22 p.m.	10 hours, 52 minutes
18 hours, 38 minutes	07/28/17- 7:00 a.m.	07/28/17- 7:15 p.m.	12 hours, 15 minutes
99 hours	08/01/17- 11:59 p.m.	08/02/17- 10:41 a.m.	10 hours, 42 minutes

1

2 **CSXT Post Accident Actions**

3 The CSX Railroad issued a Baltimore Division Bulletin with the follow instructions, if
4 needed, hand brakes may be left on cars to supplement air brakes to descend the rest of the grade.
5 hand brakes must not be left on empty cars in mixed manifest train service but may be left
6 applied to empty cars of empty unit trains. Hand brakes must only be left applied on the head
7 end of the train.¹⁸

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Appendices

15 **Appendix A**

16 6402 Key Train Definition

17 A "Key Train" is any train as described in either a, b, or c below:

- 18 a. one (1) or more loads of spent nuclear fuel (SNF) or high level radioactive
- 19 waste (HLRW) moving under the following Hazardous Materials Response

¹⁸ Refer to Appendix C- Baltimore Bulletins for additional information

1 Codes - 4929142, 4929143, 4929144, or 4929147

2 or

- 3 b. one (1) or more loaded tank cars containing materials that require the phrase
4 "POISON/TOXIC- INHALATION HAZARD" on the shipping papers
5 (Hazard Zone A, B, C, or D), anhydrous ammonia (UN1005), or ammonia
6 solutions (UN3318)

7 or

- 8 c. twenty (20) or more loaded hazardous materials shipments or intermodal
9 portable tank loads having any combination of hazardous materials.

10 **Exception:** Do not count box cars, trailers, or containers carrying mixed loads
11 of hazardous materials when determining key train status.

12
13 **Appendix B**

14
15 Change To Equipment Handling Rule 4466

16 Effective: 0100hrs, April 25, 2017

Document Number:

014 Item 1 - Equipment

17
18 Handling Rule 4466

19 Equipment handling rule section 4466 'placing empty cars in trains' is replaced in its
20 entirety with the below.

21
22 For the purposes of these rules, the following 80 feet or longer cars must be considered
23 as empty:

- 24 A. Cars weighing less than 50 tons gross weight, or
25 B. Flat cars with a single loaded trailer/container, or
26 C. Flat cars with only empty trailers/containers, or
27 D. Multi-platform cars with either end or any adjoining platforms
28 unoccupied.
29

- 1 When placing empty cars in mixed freight trains:
- 2 1. When train tonnage exceeds 6000 tons, do not place one or more
 - 3 empty flat cars over 80 feet within the first
 - 4 10 cars, and
 - 5 2. Do not place solid blocks of six or more loaded cars directly behind
 - 6 solid blocks of 30 or more empty cars.

7

8 If operating in mixed freight service, the following equipment must be placed on the

9 rear of the train with any helper or dp unit(s) placed ahead of the equipment:

- 10 A. Empty TOFC/COFC, or
 - 11 B. Empty multi-platform, or
 - 12 C. Empty flat cars of type F126 or F226 with initials GTTX,
 - 13 TILX, NKCR, or TINX.
- 14

15 If operating in unit train service, empty 80 feet or longer cars that are not boxcars must

16 be placed on the rear of the train with any helper or dp unit(s) placed ahead of the

17 equipment.

18

19 **Appendix C**

20 CSX TRANSPORTATION

21 BALTIMORE DIVISION

22

23 August 14, 2017

24 BALTIMORE DIV BULLETINS DIVISION BULLETIN 117

25

26 To: T&E crews and all concerned

27 Subject: Keystone (Mh) - 5558 Steep Grade (1% Or More) Train Handling

28 Effective: 0159hrs, August 15, 2017

29

1 Item 1 - Current Baltimore Division Timetable Change Subdivision: Keystone
2 (Mh)

4	----- PAGE ITEM	
5	LOCATION	INSTRUCTION
6	----- ----- -----	
7		
8	62	5 <u>KEYSTO SD</u> Instructions Relating To Air Brake And Train Handling
9	----- ----- -----	

10 Item 2 - 5558 Steep Grade (1% Or More) Train Handling Subdivision: Keystone
11 (Mh)

12
13 The Instruction On Page 62 Under The Heading Brake Pipe Pressure Has Been Deleted In
14 Its Entirety And Replaced With:

15
16 Brake Pipe Pressure -

17 The Brake Pipe Pressure On The Rear Of Eastward Loaded
18 Trains Must Be 75 Psi. Or Higher Prior To Passing Over Summit At Sand
19 Patch.

20
21 A Running Release Of The Train Brake Must Not Be Made On Eastward Freight
22 Trains Operating Between Bf 211 - Bf 192.3 Mp. When The Total Brake Pipe
23 Reduction Exceeds 18 Psi On Any Eastward Freight Train Operating Sand Patch
24 To Hyndman, The Train Must Be Stopped. A Minimum Of 30% Hand Brakes
25 Must Be Applied To The Head End Of The Train To Hold It On The Grade
26 During The Recharge Procedure.

27 If Needed, Hand Brakes May Be Left On Cars To Supplement Air Brakes To Descend The
28 Rest Of The Grade. Hand Brakes Must Not Be Left On Empty Cars In Mixed Manifest Train
29 Service, But May Be Left Applied To Empty Cars Of Empty Unit Trains. Hand Brakes Must

1 Only Be Left Applied
2 On The Head End Of The Train.

3

4 Before Departing, Train Crews Must Notify The Train Dispatcher That Hand Brakes Are
5 Applied To Descend The Grade. Train Dispatchers Must Not Crossover Trains That Have
6 Hand Brakes Applied.

7

8 After Clearing The Control Point At Hyndman Trains Must Stop And Release Hand
9 Brakes. The Wheels Must Be Inspected For Tread Buildup On Cars That Had Handbrakes
10 Applied.

11

12 ISSUED BY DIVISION MANAGER HQ

13

14

15

16

17

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19

20

21

22 I have read and approve the details in the Factual Report

23

24

25

Tomas R Torres – NTSB

//s// 05/15/18

26

27

Date _____

28

29

Larry Ross- FRA

//s// 12/27/17

30

31

Date _____

32

33

Mike Bull- FRA

//s// No Reply

34

35

Date _____

36

37

Randy Fannon-BLET

//s// No Reply

1 _____ Date _____

2

3 Steve Ammons

4

5 CSXT Director of Train Handling Rules and
6 Practices

//s// 12/15/2017

7

8 _____ Date _____

9

10

11 Jared Cassidy

12 SMART Investigator

//s// 12/28/17

13 _____ Date _____

14

15

16

17

18

19

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21

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End of Report