CSX

Transportation

Air Brake Train Handling
&
Equipment Handling
Rule Book

Effective April 1, 2010

Air Brake Train Handling Rules

Effective April 1, 2010

5100 Air Brake Tests – General Requirements

5101 Complying with FRA Regulations

Air brake equipment on locomotives and cars must be inspected and tested in accordance with the rules of this section, which are based on Federal Railroad Administration (FRA) regulations.

5102 Employee Responsibility

Supervisors are jointly responsible with inspectors, engineers, hostlers, and trainmen for the condition of air brake and air signal equipment on locomotives and cars to the extent it is possible to detect defective equipment by the required air brake tests.

5103 Operating Air Brake Controls

Do not operate the air brake controls on a locomotive for the purpose of performing train air brake tests unless you have been instructed and qualified.

5104 Determining Rear Car Air Pressure

During air brake tests, use the most efficient of the following methods to determine the air pressure at the rear of the train or cut of cars:

- Telemetry that has been qualified in accordance with Rule 5751 (Qualifying Telemetry for Air Brake Tests).
- Air gauge on a locomotive coupled to the rear of train or cut of cars.
- Air gauge in the EOT or marker unit.
- Accurate hand-held air gauge.

5105 Determining Application and Release of Rear Car's Air Brake

When making air brake tests, determine that the air brakes at the rear of the train have applied and released by:

- Telemetry that has been qualified as accurate through Rule 5751 (Qualifying Telemetry for Air Brake Tests),
  - A 5-PSI brake pipe reduction indicates application.
  - A 5-PSI brake pipe increase after an application is made indicates release.
- Observing that the brake cylinder piston properly responds to air brake operation.
- Observing that a brake pipe gauge at the rear of the train responds to air brake operation.

5106 Restoring Brake Pipe Pressure

After an air brake test, make certain that brake pipe pressure is being restored at the rear of the train before proceeding.

5150 Making Locomotive Air Brake Tests

5151 Making a Locomotive Consist Air Brake Test

The requirements of this rule are in addition to Rule 5152 (Standing Locomotive Air Brake Test) and Rule 5153 (Running Locomotive Air Brake Test).

A. When Required

Perform this air brake test when a locomotive consist is made up or added to.

B. Procedure

To make a Locomotive Consist Air Brake Test, follow the steps below:

Making a Locomotive Consist Air Brake Test	
Step	**Action**
1	Secure locomotive consist against movement
Testing Independent Brake	
2	Place independent and automatic brakes in RELEASE position.
3	Confirm that the air brakes are released on all locomotives.
4	Place independent brake in FULL APPLICATION position.
5	Confirm that the air brakes are applied on all locomotives.
6	**Place independent brake in RELEASE position.**
Testing Automatic Brake	
7	Confirm that the air brakes are released on all locomotives.
8	Make certain air brake application and acceptable brake pipe leakage by: 1. Making a 10-PSI brake pipe reduction. 2. After brake pipe exhaust stops, cut out the automatic brake. 3. Measure brake pipe leakage to make certain that it does not exceed 5 PSI per minute.
Testing Air Brake Actuation	
9	Confirm that the air brakes are applied on all locomotives.
10	Actuate brake cylinder pressure.
11	Confirm that the air brakes are released on all locomotives.
12	Properly position air brake controls as required.

C. Re-testing the Locomotive Consist

If the air brakes do not respond properly, or if brake pipe leakage is more than 5 PSI per minute, stop the test and make corrections. After making corrections, re-test the locomotive consist.

D. Documenting the Locomotive Brake Test

Review or record pertinent information in Section 1 of the brake test certificate to verify that a qualified employee has performed a brake test on the locomotive consist that is to be 1) added to a train consist, or 2) a main track light locomotive(s) movement.

5152 Making a Standing Locomotive Air Brake Test

A. When Required

Make a Standing Locomotive Air Brake Test:

- When initially taking charge of a light locomotive, or
- After changing ends or controlling units on a light locomotive consist, or
- Before making an initial movement with a light locomotive when cutting away from a train.

B. Conducting A Standing Locomotive Air Brake Test

Make certain that the locomotive remains stationary with the:

1. Independent brake in the FULL APPLICATION position,
2. Reverse lever in the FORWARD or REVERSE position,
3. Generator field switch in the ON position, and
4. Throttle in position #1.

C. Failure of Air Brakes During Test

If the locomotive moves and the test reveals holding power ineffective:

1. Place throttle in the IDLE position.
2. If necessary, movement must be stopped by:
   a) Using hand brake (if conditions permit), or
   b) Placing the reverse lever in the position opposite the direction of movement and placing the throttle in position #1.

5153 Making a Running Locomotive Air Brake Test

A. When Required

Make a Running Locomotive Air Brake Test as soon as operating conditions permit when:

- Making initial movement of a light locomotive, or
- Making any change to a locomotive consist, or
- Changing ends.

B. Testing Procedure

To make a Running Locomotive Air Brake Test, follow the steps below:

Making a Running Locomotive Air Brake Test	
Step	**Action**
1	Begin moving the locomotive consist.
2	Place the independent brake to a point in the application zone that creates a retarding effect.
3	Verify brake cylinder pressure and retarding of the locomotive.
4	Place the independent brake in the RELEASE position.
5	Make certain that the brake cylinder pressure reduces to zero and the retarding effect is eliminated.
6	Make a 15-PSI brake pipe reduction.
7	Verify brake cylinder pressure and retarding of the locomotive.
8	Actuate the brake cylinder pressure
9	Make certain that the brake cylinder pressure reduces to zero, and the retarding effect is eliminated.
10	If at this point a heavy retarding effect develops, stop movement and make sure MU connections are made properly. If a retarding effect is not developed, test is complete. Position air brake controls as required.

5300 Locomotives

5301 Ensuring Locomotives are Inspected

Each locomotive in use must be inspected once each calendar day.

A. Engineer Responsibility

The engineer must make sure that the locomotive consist in his/her charge has received the required calendar day inspection.

B. Inspection Made by Mechanical Department

The engineer must accept the results of any inspection performed by the Mechanical Department.

5302 Determining if Inspection is Required

A. When the Locomotive will not be Used in Service

Do not inspect a locomotive that will not be used in service. If the locomotive is due a calendar day inspection, comply with Rule 5307A (Completing and Placing Non-Compliance Tag).

B. When the Locomotive will be Used in Service

Review the Calendar Day Inspection Report upon taking charge of a locomotive. When taking charge of run through power, check the lead locomotive's Calendar Day Inspection Report and look for Calendar Day Inspection Tags placed in accordance with Rule 5304 (Tagging a Locomotive due an Inspection at a Different Time). Be governed as follows:

1. When a Calendar Day Inspection is not Required

When the previous calendar day inspection was made on the current day, do not make another inspection.

2. Making a Calendar Day Inspection Before Using the Locomotive

Make a Calendar Day Inspection before using the locomotive if:

- The Calendar Day Inspection Report can not be found.
- The last calendar day inspection was not made on either the current day or on the previous day.

3. Making a Calendar Day Inspection Before 2359 Hours on the Current Day

If the last calendar day inspection was made on the previous day, the inspection must be made on the current day before 2359 hours.

5303 Securing Authorization to Perform Calendar Day Inspection

When a locomotive requires a calendar day inspection in accordance with Paragraph B3 above, secure authority to make the inspection in accordance with the following.

A. When Your Tour-of-Duty Began at 1200 Hours or Later

When a calendar day inspection will be required on the current day, secure instructions regarding where the calendar day inspection should be conducted.

Under no circumstances can a locomotive requiring a calendar day inspection be operated past 2359 hours.

B. When Your Tour-of-Duty Began before 1200 Hours

When a calendar day inspection will be required on the current day, make the inspection before leaving the train, unless:

- Doing so would cause a violation of the Hours-of-Service Act.
- Instructed by a proper authority that another employee will make the inspection before 2359 hours.

C. When Setting Out a Locomotive En Route

When a locomotive being set out en route requires a calendar day inspection on the current day, make the inspection unless instructed by a proper authority that another employee will make the inspection before 2359 hours.

5304 Tagging Locomotives due an Inspection at a Different Time

When any locomotive in the consist is due a calendar day inspection before the lead locomotive is due its inspection, complete a Calendar Day Inspection Tag and attach it to the isolation switch of the lead locomotive.

5305 Performing a Calendar Day Inspection

When a calendar day inspection is required, inspect the locomotive for “non-complying conditions”.

The locomotive must be considered as having a non-complying condition when any of the conditions listed below are not met, and the locomotive must be handled in accordance with Rule 5308 (Moving Locomotives with Non-Complying Conditions).

A. Inspecting the Operating Cab

- Floors and passageways must be free of slip and/or trip hazards.
- Fusees and torpedoes must be in the container provided.
- Cab seats must be secure.
- Traction motors on DC-powered locomotives must be cut in.
- Windows on the lead locomotive must permit a clear view.
- The following must be operational on, or from, the lead locomotive:
  - Front headlight (at least one bulb in the headlight to the front of the locomotive consist)
  - Rear headlight (at least one bulb in the headlight to the rear of the locomotive consist when the locomotive is used in yard service or in road service and is regularly required to run backward for any portion of its trip other than to pick up a portion of its train or to make terminal movements)
  - Horn
  - Crossing bell
  - Gauge lights (must permit accurate readings of gauges)
  - Engineer's cab light (must provide sufficient illumination for reading necessary documents)

B. Inspecting the Walkway and Engine Compartment

- Walkways must be free of slip and/or trip hazards.
- Handrails, hand holds, steps, ladders, and guards must be secured and ready for service.
- Guards for electrical and rotating equipment must be in place.
- Safety chains must:
  - Provide a continuous barrier between locomotives.
  - Provide a continuous barrier across the front and the rear of the locomotive consist.
  - Be connected high enough to permit safe passage.

C. Making a Ground Inspection

- Sanders must deposit sand on the rails in front of the consist's lead wheels (in the direction of movement) and the consist's rear wheels.
- Fuel tank must not have any leaks.
- Brake cylinder piston travel must be at a:
  - Minimum - sufficient to permit the brake shoes to clear the wheels when the brakes are released.
  - Maximum – not more than the total piston travel displayed in Block 10 of Form F6180-49A minus 1 1/2 inches.
- Brake shoes must be secured and aligned with the wheel.
- Brake rigging must not bind or foul.
- There must be no cracks, or broken or missing parts on any:
  - Locomotive truck
  - Wheel
  - Gear case
  - Draft gear
  - Coupler or coupler carrier

- Jumper cables must:
  - Not be frayed or damaged.
  - Be stowed if unused.
  - Have each end connected to a working receptacle or a dummy receptacle.

5306 Making a Report of the Calendar Day Inspection

Complete a Calendar Day Inspection Report and leave it on the locomotive inspected.

5307 Reporting Non-Complying Conditions

When a non-complying condition exists on a locomotive, the engineer must comply with the requirements of this rule.

A. Completing and Placing a Non-Compliance Tag

When a non-complying condition exists on a locomotive, complete a Non-Compliance Tag indicating the non-complying condition(s). Attach the appropriate part of the tag to the isolation switch of the non-complying locomotive and the other part to the isolation switch of the controlling locomotive. The Non-Compliance Tag must remain on the affected locomotive to provide notification for the next engineer.

Complete and attach a non-compliance tag as required by Rule 5302A (Locomotive that will not be Used in Service) even though the locomotive has no defect (s).

Both copies of the Non-Compliance Tag must be placed on the non-complying locomotive if it is set off.

B. Discovering the Condition during a Calendar Day Inspection

In addition to Paragraph A of this rule, record the details of the non-complying condition on the Calendar Day Inspection Report when the condition is discovered during the performance of a calendar day inspection.

C. Discovering the Condition While En Route

In addition to Paragraph A of this rule, record the details of the non-complying condition on the Locomotive Work Report when the condition is discovered en route.

D. Reporting a Non-Complying Condition

When a non-complying condition is discovered, promptly report the details of the condition, including any restrictions placed on the locomotive, to:

- Train dispatcher or yardmaster
- Mechanical Desk
- All other crew members

B. Checking and Reporting Fuel Levels

- When taking charge of locomotive(s), check the fuel levels on them.
- Report fuel levels of less than 1000 gallons promptly to the Mechanical Desk. You can contact the Mechanical Desk through mobile radio access or by telephone by:

Company phone at 8-388-5540 or 8-388-5555
Bell system at 1-800-624-8385

5402 Safety Control Devices

A. Prohibiting the Annulment of a Safety Control Device

This rule and federal regulations prohibit unauthorized annulment of a safety control device. Holding down a pneumatic foot (deadman) pedal with anything other than your foot will be considered unauthorized annulment.

B. Getting Authorization to Annul a Safety Control Device

The locomotive engineer must request permission from the train dispatcher to cut out a safety control device if it becomes defective and prohibits normal train movement. When a safety control device is cut out, report doing so on the Locomotive Work Report.

C. Resetting Air Brake Equipment Tripped by a Safety Control Device

To reset air brake equipment after a safety control device operates and train stops:

1. Place the throttle in the IDLE position or the dynamic brake lever in the OFF position.
2. Place the automatic brake in the SUPPRESSION position.
3. Make certain that the brake pipe exhaust has stopped for 20 seconds.
4. Place the automatic brake in the RELEASE position.

5403 Speed Indicators

A. Checking the Accuracy of the Speed Indicator

Check the accuracy of the speed indicator on the controlling locomotive at locations indicated in Special Instructions.

Report the results of a speed indicator accuracy check on the Locomotive Work Report.

B. Speed Indicator Requirements

1. A locomotive used as a controlling locomotive at speeds above 20 MPH must be equipped with an operative speed indicator, which must be accurate within:
   - 3 MPH at speeds of 10 to 30 MPH, or
   - 5 MPH at speeds above 30 MPH.

2. If a speed indicator on a controlling locomotive fails en route, the locomotive may continue as a controlling locomotive at normal track speed to the next repair facility.

Speed Table					
Time		Speed	Time		Speed
Min	Sec	MPH	Min	Sec	MPH
0	44	80	1	30	40
0	48	75	1	43	35
0	51	70	2	00	30
0	55	65	2	24	25
1	00	60	3	00	20
1	05	55	4	00	15
1	12	50	6	00	10
1	20	45	12	00	5

5404 Complying with Short-Time Ratings

The "short-time rating" for a locomotive is established by its manufacturer and is the maximum time the locomotive can operate at the given output in throttle 8 without risking heat damage to the traction motors. Short-time ratings do not apply to SD60, SD70, Dash 8, Dash 9, AC or AH locomotives.

A. Operating Locomotive Consist Below Minimum Continuous Speed

Avoid continuous operation at speeds lower than the minimum continuous speed for the locomotive consist.

The minimum continuous speed for the locomotive consist is the highest minimum continuous speed of any of the on-line locomotives in the consist.

B. Preventing Excessive Operation in Short-Time Rating Zone

Do not exceed the “available time” in short-time ratings.

Operation outside the short-time rating zone for 20 minutes or more restores maximum allowable time.

5411 Ditch Lights

When a locomotive is not equipped with ditch lights, do not exceed 20 MPH while the locomotive operates over a highway crossing at grade.

When a locomotive is equipped with ditch lights, make certain that the ditch lights are operational before the train leaves its initial terminal.

When a ditch light fails after departing the train's initial terminal, respond as follows:

- If one ditch light fails:
  - Proceed at normal speed
  - Do not proceed beyond the location where the next calendar day inspection is made unless the ditch light is repaired or the locomotive is switched to a trailing position.
- If both ditch lights fail:
  - Do not exceed 20 MPH while the locomotive operates over a highway crossing at grade.
  - If the locomotive remains in the lead, do not proceed beyond the next location where the necessary repairs can be made.
  - Comply with Rule 5308 (Moving Locomotives with Non-Complying Conditions)

5650 Special Train Handling Procedures

5651 Gathering Slack and Starting Trains on Grades

When on grades that prohibit gathering of slack without using train brakes, follow the steps below:

Gathering Slack And Starting Trains	
Step	**Action**
1	Make a brake pipe reduction sufficient to hold the train with the independent brake released and actuated.
2	Gently apply power to adjust the slack.
3	When the slack is adjusted on the whole train: 1. Stop movement by making brake pipe reductions of 2 to 3 PSI and actuate. 2. Make sure the throttle is in at least position #2. 3. Place the independent brake in FULL APPLICATION position when the movement stops. 4. Place the throttle in the IDLE position.
4	Increase brake pipe reduction until the brake pipe pressure is 10 PSI below the point of equalization and wait for the brake pipe exhaust to stop.
5	Start the train by releasing train brakes and using enough power to start the cars one at a time as the train brakes release.

5652 Loss of Dynamic Brakes

To prevent harsh slack action and rapid increase in train speed if the dynamic brake fails while in use, follow the steps below:

A. Apply independent brake immediately to avoid rapid run-out of slack.

B. If necessary, make brake pipe reduction (s) sufficient to control the speed and compensate for the loss of dynamic braking force.

5653 Emergency Brake Applications

Use emergency brake applications in situations when a stop must be made in the shortest possible distance, or when required by rule.

A. Initiating Emergency Air Brake Application

Immediately place the automatic brake in the EMERGENCY position and stop the train when:

- Operating conditions require.
- Brake pipe pressure at the rear of a moving train drops to 45 PSI or below.
- Brake pipe pressure is reduced 18 pounds or more from the standard brake pipe pressure while descending any grade and the train cannot be controlled at the authorized speed.

B. Automatic Brake Initiated

When an emergency application is initiated from the automatic brake on the controlling locomotive, leave the brake valve in the EMERGENCY position, and:

1. Promptly place the throttle in the IDLE position.

2. Control the locomotive brake cylinder pressure to provide the maximum retarding force without sliding the locomotive wheels or creating excessive buff forces.

C. Other than Automatic Brake Initiated

When an emergency application is initiated by other than the automatic brake, keep the train slack in the same condition as it was before the emergency happened, as follows:

Note:
1. Many Conrail locomotives are not equipped with the "Power Knockdown" feature that automatically reduces the locomotive to idle after 20 seconds due to a train line initiated emergency application of the brakes.

2. Locomotive engineers must take the appropriate action to reduce the throttle to idle when Conrail locomotives are used as the controlling unit of a consist.

1. Slack Stretched

a) Actuate locomotive brake cylinder pressure. (Continue to actuate locomotive brake cylinder pressure until the train stops.)
b) Maintain throttle position until the train speed begins to reduce.
c) Adjust the throttle to prevent an increase in locomotive output.

2. Slack Bunched

a) Maintain the dynamic brake position if available.
b) Actuate locomotive brake cylinder pressure (Continue to actuate locomotive brake cylinder pressure until the train stops.)
c) If required to use the independent brake, comply with Rule 5505A (Train Braking / Independent Brake – General).

Control locomotive brake cylinder pressure to provide retarding effect while preventing sliding the locomotive wheels or excessive buff forces.

3. While Operating an In-train or Rear-end Helper

When operating an in-train or rear-end helper, immediately place the throttle in the IDLE position.

D. Activating Two-Way Telemetry during Emergency

When an undesired emergency application occurs, or when an emergency situation arises and it becomes necessary to place the train air brakes in emergency, operate the two-way EOT emergency toggle switch as quickly as possible.

5654 Service Applications from an Unknown Cause

Undesired service applications are indicated by:

- An increase in the indication of the air flow indicator.
- The sound of excessive regulating valve operation.
- A drop in brake pipe pressure.
- A decrease in train speed or increase of locomotive output without a known cause.

When a service application occurs from an unknown cause, the train shall be stopped and inspected for leaks. When stopping, keep train slack in the same condition as it was before the air brake application occurred.

A. Slack Stretched

1) Place the automatic brake in the MINIMUM REDUCTION position.
2) Actuate locomotive brake cylinder pressure (Continue to actuate locomotive brake cylinder pressure until the train stops.)
3) Maintain throttle position until the train speed begins to slow.
4) As the train speed slows:
   - Make additional 2 to 3 PSI brake pipe reductions.
   - Adjust the throttle to prevent an increase of locomotive output.

B. Slack Bunched

1) Maintain or increase dynamic brake position if available. (If you must use the independent brake, comply with Rule 5505A (Train Braking / Independent Brake – General.)
2) Place the automatic brake in the MINIMUM REDUCTION position.
3) Make additional 2 to 3 PSI brake pipe reductions as the train speed slows.
4) Comply with Rule 5505A (Train Braking / Independent Brake – General) by substituting the independent brake for the dynamic brake.

5655 Inclement Weather Train Braking

During inclement weather conditions which may cause snow or ice build up to occur between brake shoes and wheels, follow the steps below to make sure the brake shoes are not frozen or iced over:

A. Using Train Brakes

When using train brakes in inclement weather, apply the train brakes sooner than you normally would for the given circumstance.

5700 Telemetry - Equipping Trains

All trains, except as noted in Rule 5701 (Freight Train Exceptions), Rule 5702 (Passenger Train Exceptions), Rule 5703 (Inspection Train Exceptions), and Rule 5950 (En Route Failures), must be equipped with properly armed, tested, and operable two-way telemetry.

NOTE: Where used in these rules:
- 2% grade means a grade designated as 2% in Special Instructions
- 1% grade means a grade designated as 1% in Special Instructions

5701 Freight Train Exceptions

Freight trains that meet any one of the conditions listed below do not require two-way telemetry.

- Trains able to initiate an emergency brake application from the rear third of its length.
- Light engines.
- Local trains and work trains not operating on 2% grades.
- Trains with 4,000 trailing tons or less and:
  - operating on less than 2% grade, and
  - not exceeding 30 MPH.
- Trains with more than 4,000 trailing tons and:
  - operating on less than 1% grade, and
  - not exceeding 30 MPH.

5702 Passenger Train Exceptions

Passenger trains that meet any one of the conditions listed below do not require two-way telemetry:

- Trains in which all cars are equipped with accessible emergency brake valves.
- Trains that have a rear car with an emergency brake valve accessible to a radio-equipped crewmember.
- Trains with 24 cars or less, equipped as described in the following chart and operated as required in Paragraph 1 (Requirements of Crew Members) of this rule.

Passenger Train Exception Matrix			
Emergency Brake Valve must be within the rear one-half of the train		**Emergency Brake Valve must be within the rear one-third of the train**	
Cars	Emergency Brake Valve In, or in a Car Behind, This Car	Cars	Emergency Brake Valve In, or in a Car Behind, This Car
4	2nd	13	9th
5 - 6	3rd	14 - 15	10th
7 - 8	4th	16	11th
9 - 10	5th	17 - 18	12th
11 - 12	6th	19	13th
		20 - 21	14th
		22	15th
		23 - 24	16th

1. Requirements of Crew Members

a) Prior to descending 2% grade, the engineer must confirm through the conductor that a radio-equipped crewmember is stationed in the rearmost emergency brake valve-equipped car, and

b) While descending 2% grades, the crewmember must maintain constant radio communication with the engineer, until the train has descended the grade.

5703 Inspection Train Exceptions

Inspection trains operating with passenger equipment do not require two-way telemetry.

5750 Telemetry Qualifications

When the following conditions are met, you can use telemetry to perform air brake tests and meet two-way telemetry requirements:

5751 Qualifying Telemetry for Air Brake Tests

To perform air brake tests using telemetry, the train must be equipped as follows:

- The controlling locomotive must have an operative HTD,
- The rear car must have an operative EOT, and
- Readouts from the EOT and the HTD must not differ by more than 3 PSI.

5752 Qualifying Telemetry for Two-Way Operation

To comply with the requirements to have two-way telemetry capability, the train must be equipped as follows:

- Except as noted in Rule 5753 (Coupling Helper Locomotive to Head End), the controlling locomotive must have an operative HTD capable of two-way operation,
- The rear car must have an operative EOT capable of two-way operation, and
- The readouts of the EOT and the HTD must not differ by more than 3 PSI.

5753 Coupling Helper Locomotive to Head End

When a helper locomotive is coupled to the train ahead of the “hauling” locomotive, the helper locomotive is not required to be equipped with an HTD capable of two-way telemetry or to be armed to the EOT, as long as:

- Two-way radio communication is established and maintained between the engineers of the helper locomotive and the hauling locomotive.
- Engineers confirm radio communication before:
  - Train resumes operation
  - Reaching the crest of the grade
- The train is stopped if and when radio communication is lost.

5800 Arming Telemetry for Two-Way Capability

To arm two-way telemetry, follow the steps below:

Arming Telemetry for Two-Way Operation	
Step	**Action**
1	Enter the ID Code of the EOT into the HTD.
2	Press the TEST button on the EOT
3	Press the appropriate "ARM NOW" button of the HTD.
4	Make certain that emergency capability is established as indicated by an “EMERG ENABLED” or “ARMED” message.

5850 Testing Two-Way Telemetry Emergency Capability

Make certain the emergency capability of two-way telemetry when either or both devices are installed.

5851 Bench Testing

Consider emergency capability successfully tested when informed so by the Mechanical Department.

5852 Performing Test

Follow the steps below after charging the brake pipe when testing emergency capability.

Testing Two-Way Telemetry Capability	
Step	**Action**
1	Arm the telemetry.
2	Close the angle cock between the rear car and the EOT.
3	Activate the emergency feature.
4	Make certain that the air pressure exhausts from the EOT and the readout on the EOT reduces to zero.
5	Open the angle cock and make certain that brake pipe pressure is restored.

5900 Disarming Emergency Capability

Disarm two-way telemetry when the locomotive is cut off and will no longer be the controlling locomotive on the train.

To disarm emergency capability:

1. Change the EOT ID code to “00000”.
2. Press the appropriate button to disarm.

Emergency Brake Application: A rapid, uncontrolled reduction of brake pipe pressure, which produces 15% to 20% more braking effort than a full service application.

Emergency Fuel Cut-Off Switch: An electrical switch that when activated causes the diesel engine to shut down and stops the fuel pump motor from operating.

Engine Protective Device: Any device that protects a diesel engine from the damage that would occur if the diesel engine was permitted to continue operation.

Engineers Reading File: A computer-based library (found in the CCBB screen on the CSXT mainframe and on the CSX Gateway via My Work/Division/Engineer Reading File) of important information relative to locomotive engineer responsibilities. Engineers must read and understand topics contained in their Division and System Engineer Reading Files.

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.

Event Recorder: A device on a locomotive that records pertinent information about the operation of the locomotive.

Fuel Sight Glass: A device in the fuel system of a diesel engine through which fuel can be seen as it flows from the diesel engine back to the fuel tank.

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.

Generator Field Switch: A switch on the engineer's control stand that must be turned on to permit the locomotive to develop output.

Ground Protective Relay: A device on a locomotive which causes the diesel engine to go to IDLE speed and prevents locomotive output when it detects an electrical ground.

Hand Brake: A mechanical device on a locomotive or car used to secure the locomotive or car against movement. A hand brake is also used to slow or stop the movement of a locomotive or car as necessary.

Independent Brake: A manually-operated device on the engineer's control stand used to apply and release the air brakes on the locomotive independently of the train's brakes.

Initial Brake Pipe Reduction: The first brake pipe reduction made when applying the train brakes. This brake pipe reduction must be at least 6 PSI.

Initial Terminal: The location where a train originates.

Glossary of Terms

Stretch Braking: The act of applying the train's brake while using the locomotive to pull the train.

Stringlining: Excessive lateral forces resulting in wheels lifting over the low rail or the rail rolling over.

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.

Tractive Effort: The force exerted by the locomotive wheels to the rail for the movement of a train.

Transfer Train: A train with an engine and one or more cars that may pickup or setoff at an intermediate location(s) between a point of origin and destination not exceeding 20 miles.

Two-Way Telemetry: Telemetry whereby the locomotive engineer has the capability to cause an emergency air brake application at the rear car of the train.

Work Train: (This definition applies to two-way telemetry requirements only) A non-revenue service train of 4,000 trailing tons or less used for the administration and upkeep of the railroad.

Yard Line: An air supply line used in yards and other areas to charge car air brake systems for testing purposes. A yard line may also be used to supply air to a train or block of cars that have already been tested.

4006. Setting out Defective Equipment for Repair

When setting out defective equipment, try to place it where it can be accessed by a vehicle for repair or inspection.

Car Inspection

4050. Making Certain that Cars Are Inspected

A. Conductor Responsibility

Conductors must know that the cars in their train have received a proper inspection.

B. Inspections Made by Mechanical Department

The conductor must accept the results of any inspection performed by the Mechanical Department.

4051. Performing Car Inspection

Do not accept for movement in a train any car that is not in full compliance with the provisions of this rule, unless authorized in accordance with Rule 4052 (Discovering a Car that is Unsafe for Movement).

A. Inspecting Cars

Inspect cars being placed into a train to make certain that the:

- Car body does not:
  - Lean or list to the side.
  - Sag downward.
  - Have any object hanging below it.
  - Have any object extending from its side.
  - Have a door insecurely attached.
  - Have any broken or missing appliance.
- Car body is properly positioned on the trucks.
- Couplers are not cracked or broken.
- Bearings are not overheated.
- Wheels are not overheated, broken, or cracked.
- Hand brake releases.
- Car does not have any apparent safety hazards likely to cause an accident.
- Cables, chains, straps, and bands are properly applied to loads, or secured if the car is empty.

B. Inspecting Cars with Friction Bearings

Do not accept equipment that has friction bearings in interchange or in a key train.

In addition to the other inspections required by this rule, check freight cars with friction bearings to make certain that the bearing components are free from defects.

To check the cars:

Step	Action
1	Open the friction bearing box lids and check for missing or displaced components.
2	Check friction bearing box for contamination.
3	Check for at least 1 inch of visible oil.

4052. Discovering a Car that is Unsafe for Movement

When a car is unsafe for movement, ask the train dispatcher or yardmaster for instructions.

4053. Inspecting Re-Railed Cars

A. Performing Inspection

Unless relieved from doing so by Rule 4050B (Inspections Made by Mechanical Department), inspect re-railed cars before moving them.

Do not move a re-railed car if any of the following conditions exist:

- Cracked or broken wheels.
- Bent axles.
- Car body not properly positioned on the trucks.
- Improperly positioned brake shoes.
- Displaced or missing bearing adapter on cars with roller bearings.
- Displaced or missing brasses and/or wedges on cars with friction bearings.

B. Ensuring Inspection by Mechanical Department

In addition to performing the inspection required in Paragraph A of this rule, the conductor must arrange for an inspection of the equipment by Mechanical Department personnel at the first location the inspection can be performed.

Hot Bearings

4100. Receiving a Report of a Hot Bearing or a Hot Wheel

Make a prompt inspection of any and all bearings or wheels reported hot. When the report is received from an equipment defect detector, comply with the rules and/or special instructions relating to defect detectors.

4101. Inspecting a Roller Bearing Reported Hot

When inspecting a roller bearing reported hot, comply with the following instructions.

A. Using a Tempilstik

When testing a bearing for excessive heat, make a visible mark at least three inches long with a Tempilstik. Make the mark at the location indicated in the following chart.