

TESTING AND INSPECTIONS OF POWER BRAKES

Because of the complexity of the power brake regulations, I will first summarize the rule and then reproduce the entire rule from the Code of Federal Regulations.

HIGHLIGHTS of the new rule include:

1. The four existing types of brake inspections have been given new identifications—

The initial terminal test will now be called a Class I brake test; the former 1,000 mile test is now Class IA; the intermediate terminal test is Class II; and the brake pipe continuity test is now Class III. In addition, there is a new fifth type test required for so called “extended haul trains”.

2. A Class I brake test-initial terminal inspection is required at the following locations:

- (1) The location where the train is originally assembled ("initial terminal");
- (2) A location where the train consist is changed other than by:
 - (i) Adding a single car or a solid block of cars;
 - (ii) Removing a single car or a solid block of cars;
 - (iii) Removing cars determined to be defective under this chapter; or
 - (iv) A combination of the changes listed above.
- (3) A location where the train is off air for a period of more than four hours;
- (4) A location where a unit or cycle train has traveled 3,000 miles since its last Class I brake test; and
- (5) A location where the train is received in interchange if the train consist is changed other than by:
 - (i) Removing a car or a solid block of cars from the train;
 - (ii) Adding a previously tested car or a previously tested solid block of cars to the train;

- (iii) Changing motive power;
- (iv) Removing or changing the caboose; or
- (v) Any combination of the changes listed in (5) of this section.

(A) If changes other than those contained in (5) are made to the train consist when it is received in interchange and the train will move 20 miles or less, then the railroad may conduct a Class II brake test.

3. Class IA brake tests-1,000-mile inspection requirements:

Except as provided for extended haul trains, each train shall receive a Class IA brake test performed by a qualified person at a location that is not more than 1,000 miles from the point where any car in the train last received a Class I or Class IA brake test. The most restrictive car or block of cars in the train shall determine the location of this test.

4. (a) A Class II-intermediate test- shall be conducted at a location, other than the initial terminal of a train, on the following equipment when added to a train:

- (1) Each car or solid block of cars that has not previously received a Class I brake test or that has been off air for more than four hours;
- (2) Each solid block of cars that is comprised of cars from more than one previous train; and
- (3) Each solid block of cars that is comprised of cars from only one previous train but the cars of which have not remained continuously and consecutively coupled together with the train line remaining connected, other than for removing defective equipment, since being removed from its previous train.

5. (a) A Class III brake test-trainline continuity inspection- shall be performed on a train to test the train brake system when the configuration of the train has changed as follows:

- (1) Where a locomotive or a caboose is changed;
- (2) Where a car or a block of cars is removed from the train with the consist otherwise remaining intact;
- (3) At a point other than the initial terminal for the train, where a car or a solid block of cars that is comprised of cars from only one previous

train the cars of which have remained continuously and consecutively coupled together with the trainline remaining connected, other than for removing defective equipment, since being removed from its previous train that has previously received a Class I brake test and that has not been off air for more than four hours is added to a train;

(4) At a point other than the initial terminal for the train, where a car or a solid block of cars that has received a Class I or Class II brake test at that location, prior to being added to the train, and that has not been off air for more than four hours is added to a train; or

(5) Whenever the continuity of the brake pipe is broken or interrupted.

6. Class III brake tests-trainline continuity inspection-is required when the configuration of the train has changed as follows:

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(2) Where a car or a block of cars is removed from the train with the consist otherwise remaining intact;

(3) At a point other than the initial terminal for the train, where a car or a solid block of cars that is comprised of cars from only one previous train the cars of which have remained continuously and consecutively coupled together with the trainline remaining connected, other than for removing defective equipment, since being removed from its previous train that has previously received a Class I brake test and that has not been off air for more than four hours is added to a train;

(4) At a point other than the initial terminal for the train, where a car or a solid block of cars that has received a Class I or Class II brake test at that location, prior to being added to the train, and that has not been off air for more than four hours is added to a train; or

(5) Whenever the continuity of the brake pipe is broken or interrupted.

7. Tests of extended haul trains:

The 1,000 mile inspection test was not extended to 1,500 miles as proposed by AAR. However, a railroad may designate in writing to the FRA certain trains as “extended haul” trains , in which case any such train will be permitted to move up to 1,500 miles between brake tests and inspections.

(a) A railroad may be permitted to move a train up to, but not exceeding, 1,500 miles between brake tests and inspections if the railroad designates a

train as an extended haul train. In order for a railroad to designate a train as an extended haul train, all of the following requirements must be met:

(1) The railroad must designate the train in writing to FRA's Associate Administrator for Safety. This designation must include the following:

(i) The train identification symbol or identification of the location where extended haul trains will originate and a description of the trains that will be operated as extended haul trains from those locations;

(ii) The origination and destination points for the train;

(iii) The type or types of equipment the train will haul; and

(iv) The locations where all train brake and mechanical inspections and tests will be performed.

(2) A Class I brake test shall be performed at the initial terminal for the train by a qualified mechanical inspector .

(3) A freight car inspection pursuant to part 215 shall be performed at the initial terminal for the train and shall be performed by an inspector designated under §215.11.

(4) All cars having conditions not in compliance with part 215 (freight car standards) at the initial terminal for the train shall be either repaired or removed from the train. Except for a car developing such a condition en route, no car shall be moved of this chapter in the train.

(5) The train shall have no more than one pick-up and one set-out en route, except for the set-out of defective equipment pursuant to the requirements of this chapter.

(i) Cars added to the train en route shall be inspected pursuant to the requirements contained in paragraphs (a)(2) through (a)(5) of this section at the location where they are added to the train.

(ii) Cars set out of the train en route shall be inspected pursuant to the requirements contained in paragraph (a)(6) of this section at the location where they are set out of the train.

(6) At the point of destination, if less than 1,500 miles from the train's initial terminal, or at the point designated by the railroad pursuant to paragraph (a)(1)(iv) of this section, not to exceed 1,500 miles, an inbound inspection of the train shall be conducted by a qualified mechanical inspector to identify any defective, inoperative, or ineffective brakes or any other condition not in compliance with this part as well as any conditions not in compliance with part 215 (freight car regulations) and part 231 (safety appliance standards) of this chapter.

(7) The railroad shall maintain a record of all defective, inoperative, or ineffective brakes as well as any conditions not in compliance with part 215 and part 231 of this chapter discovered at anytime during the movement of the train. These records shall be retained for a period of one year and made available to FRA upon request. The records required by this section may be maintained either electronically or in writing.

(8) In order for an extended haul train to proceed beyond 1,500 miles, the following requirements shall be met:

- (i) If the train will move 1,000 miles or less from that location before receiving a Class IA brake test or reaching destination, a Class I brake test shall be conducted to ensure 100 percent effective and operative brakes. The inbound inspection required by paragraph (a)(6) of this section may be used to meet this requirement provided it encompasses all the inspection elements contained in the Class I inspections.
- (ii) If the train will move greater than 1,000 miles from that location without another brake inspection, the train must be identified as an extended haul train for that movement and shall meet all the requirements contained in paragraphs (a)(1) through (a)(7) of this section. Such trains shall receive a Class I brake test by a qualified mechanical inspector to ensure 100 percent effective and operative brakes, a freight car inspection pursuant to part 215 by an inspector designated under §215.11, and all cars containing non-complying conditions under part 215 shall either be repaired or removed from the train. The inbound inspection required by paragraph (a)(6) of this section may be used to meet these inspection requirements provided it encompasses all the inspection elements contained paragraphs (a)(2) through (a)(4) of this section.

(9) FRA inspectors shall have physical access to visually observe all brake and freight car inspections and tests required by this section.

(b) Failure to comply with any of the requirements contained in paragraph (a) of this section will be considered an improper movement of a designated priority train for which appropriate civil penalties may be assessed as outlined in Appendix A to this part. Furthermore, FRA's Associate Administrator for Safety may revoke a railroad's ability to designate any or all trains as extended haul trains for repeated or willful noncompliance with any of the requirements contained in this section. Such a determination will be made in writing and will state the basis for such action.

8. When performing the initial terminal test (i.e., Class I), both sides of the car must be observed during the inspection process. Both sides of the equipment do not need to be inspected at the same time the brakes are applied, so long as proper inspection of the brake components was conducted on both sides sometime during the inspection process. Piston travel on each car must be inspected while the brakes are applied.

9. Cars that have been previously tested must be retested if the equipment is removed from a source of compressed air for longer than 4 hours.

10. In performing a brake test to determine if the brakes apply, any obvious defect may be corrected and the brakes retested. If there is a retest, the brakes must remain applied for at least 3 minutes.

11. A defective car may be moved to the nearest repair point where necessary repairs can be performed. At locations where a railroad uses repair trucks in the same manner as a fixed facility, this may be considered a location where necessary repairs can be made. The FRA will determine on a case by case basis what constitutes the nearest location where repairs can be made.

12. The railroads will be permitted to use an automated tracking system in lieu of required tagging of defective equipment, if the railroad's system is first approved by FRA.

13. The final rule retained existing requirements that a train have 100% operative brakes when departing an initial terminal. (This does not apply to transfer trains, unless such train originates at a location where repairs can be made). The only exception is for movement of defective cars for repair, but in such case there is an absolute prohibition on moving a train with more than 15% of the cars with brakes cut out, or have inoperative brakes.

14. The new rule does not mandate that dynamic brakes be placed on locomotives. However, where they exist, the locomotive engineer must be notified in writing as to the condition of the dynamic brakes on the controlling locomotive. An inoperative dynamic brake must be repaired within 30 days, at the locomotive's next periodic inspection,

whichever occurs first. When operating a locomotive with an inoperative dynamic brake, such locomotive must have the capability to control the dynamic brakes on trailing units. Also, the locomotive must have the capability to display to the engineer the deceleration rate of the train or the total train dynamic brake retarding force. The dynamic brake requirements must be incorporated into the engineer certification training program.

15. Railroads are required to include in their operating rules a requirement that a train must be immediately stopped if it exceeds maximum authorized speed more than 5 mph when descending a grade of 1% or greater.

16. The new regulations contain detailed training requirements for each person who will be required to perform any of the brakes tests and inspections. The training must provide the employee with the necessary skills and knowledge necessary to perform any required tasks. Refresher training is required every 3 years. The requirements of the FRA regulations must be spelled out so that the employees can distinguish federal requirements from individual railroad rules. Detailed records must be maintained by the railroads on the training which is provided. Prior training and testing received by an employee may be taken into consideration in determining whether an employee is qualified. Any previous training must be clearly documented, or it cannot be considered. Because some of the rules are new, all employees will need some additional training. The railroads are given 3 years to develop and complete the required training.

17. The use of chemicals in a train air brake system which are known to degrade or harm brake system components, such as alcohol, are prohibited. Yard air sources must be inspected at least twice annually and that two of the inspections be no less than 5 months apart.

18. Regarding single car and repair track tests, the FRA set out the requirements for when and how these tests are to be performed. Where fully equipped mobile repair trucks perform the same type of repairs that were previously performed in the shop or repair tracks, such will be considered shop or repair tracks. However, repair or shop tracks must be at locations that have fixed repair facilities and where all types of repairs are performed on a regular basis. In such case, this would require the car to have its brakes inspected and the car is required to receive a repair track air brake test. The final rule does not increase the frequency at which single car or repair track air brake tests are currently to be performed. A repair track test is required on cars that have inoperative or cut-out brakes when removed from a train, not when just minor repairs are made to the brake system. Cars are permitted to be moved from a location where necessary repairs can be made to a location where single car or repair track repairs are conducted. When being moved to such a location, the cars must be tagged.

19. The FRA will continue to permit roll-by inspections of the release of brakes on trains, and the train speed cannot exceed 10 mph.

20. If a railroad's collective bargaining agreement provides that carmen alone are to perform the initial terminal test and inspection, carmen will be considered the only

qualified employee to perform such work. The parties to such an agreement would first have to obtain a decision from the Railroad Adjustment Board interpreting the agreement giving the work exclusively to the carmen.

21. Where a railroad intends to put into service new brake system technologies or major upgrades, the railroad must petition FRA for approval.

22. Piston travel for standard 12-inch stroke brake cylinders continues to be 10 1/2 inches. For standard 8 1/2 inch and 10 inch diameter brake cylinders, piston travel found to be less than 7 inches or more than 9 inches must be adjusted to 7 1/2 inches. For non standard equipment, such as WABCOPAC or NYCOPAC truck mounted brake cylinders, the cylinders must have a badge plate, sticker, or marker indicating both the permissible piston travel range for Class 1 brake tests and the lengths at which the piston travel renders the brake ineffective. The railroads are given 3 years to implement the marking requirement. The railroads are allowed to use indicators for measuring piston travel and brake actuation in place of direct observation. All new equipment must be designed so that it will not be necessary for an inspector to place himself between, on, or under the car to observe brake application or release.

23. The new rules address the issue of “bottling air” on unattended equipment by requiring an emergency brake application be initiated on all equipment prior to its being left unattended.

24. The railroads are encouraged, but not required, to equip yard air sources with air dryers.

25. When a train crew takes charge of a train, the weight and length of the train must be provided to the crew.