

**Potential Draft Regulatory Language**  
**For PESS Mechanical Task Force Discussion**

- I.     Redundancy of Air Compressors – 238.303(e)(17)
- II.    Definitions – 238.5
- III.   New Equipment Design – 238.231(b)
- IV.    Additional Class I Brake Test Criteria for Certain Equipment – 238.313(j)
- V.     Main Reservoir Tests – 229.31

## I Redundancy of Air Compressors – 238.303(e)(17)

Insert at 238.303(e)(17):

(17) Each air compressor, on passenger equipment so equipped, shall be in effective and operative condition. MU passenger equipment found with an inoperative or ineffective air compressor at the time of its exterior calendar day mechanical inspection may remain in passenger service until the equipment's next exterior calendar day mechanical inspection where it must be repaired or removed from passenger service; provided, all of the following requirements are met:

(i) The equipment has an inherent redundancy of air compressors, due to either the make-up of the train consist or the design of the equipment;

(ii) The railroad demonstrates through verifiable data, analysis, or actual testing that the safety and integrity of a train is not compromised in any manner by the inoperative or ineffective air compressor. The data, analysis, or test shall establish the maximum number of air compressors that may be inoperative based on size of the train consist, the type of passenger equipment in the train, and the number of service and emergency brake applications typically expected in the run profile for the involved train;

(iii) The involved train does not exceed the maximum number of inoperative or ineffective air compressors established in accordance with paragraph (e)(17)(ii) of this section.

(iv) A qualified maintenance person determines and verifies that the inoperative or ineffective air compressor does not compromise the safety or integrity of the train and that it is safe to move the equipment in passenger service;

(v) The train crew is informed in writing of the number of units in the train consist with inoperative or ineffective air compressors at the location where the train crew first takes charge of the train;

(vi) A record is maintained of the inoperative or ineffective air compressor pursuant to the requirements contained in § 238.17(c)(4); and

(vii) Prior to operating equipment under the provisions contained in this paragraph, the railroad shall provide in writing FRA's Associate Administrator for Safety the maximum number of inoperative or ineffective air compressors identified in accordance with paragraph (e)(17)(ii) of this section.

(viii) The data, analysis, or testing developed and conducted under paragraph (e)(17)(ii) of this section shall be made available to FRA upon request. FRA's Associate Administrator for Safety may revoke a railroad's ability to utilize the flexibility provided in this paragraph if the railroad fails to comply with the maximum limits established under paragraph (e)(17)(ii) or if such maximum limits are not supported by credible data or do not provide adequate safety assurances.

**Note:** Need to revise 238.17(b) and (c) to recognize this exception.

## II. Definitions – 238.5

### Existing Definition

Actuator means a device directly actuated by the movement of the brake cylinder piston which provides an indication of the piston travel.

This definition would be modified in the regulation due to the potential for misunderstanding. Based on discussions of the task force and concerns raised by other parties it appears the term “actuator” used by FRA is a term many members of the industry associate and use to identify a specific brake system component. FRA was not intending to identify that component when using the word in § 238.313(g)(3) of the original regulation. Based on these concerns, the regulation would be amended to remove the term “actuator,” except were properly used (i.e., 238.5-piston travel definition), and replace it with a term that creates a lower potential for misunderstanding by the regulated community. The term “piston travel indicator” has been suggested by some task force members. It would read as follows:

### **New Definitions:**

Actuator means a self-contained brake system component that generates the force to apply the brake shoe or brake pad to the wheel or disc. An actuator typically consists of a cylinder, piston, and piston rod.

Piston Travel Indicator means a device directly activated by the movement of the brake cylinder piston, the disc brake actuator, or the tread brake unit cylinder piston that provides an indication of the piston travel.

\*\* § 238.313(g)(3) would be amended by inserting the term “piston travel indicator” in place of the term “actuator.” Similarly, the proposed changes in 238.231(b) would also use the term “piston travel indicator.” To read as follows:

§ 238.313(g)(3) --

“Piston travel is within prescribed limits, either by direct observation, observation of a piston travel indicator, or in the case of tread or disc brakes by determining that the brake shoe or pad provides pressure to the wheel...”

**Note:** The terms “piston travel indicator” and “brake indicator” describe and define two separate and distinct types of indicators.

### **III. New Equipment Design – 238.231 (b)**

Potential Modification of 238.231 (b):

(b) The design of passenger equipment ordered on or after Sept. 8, 2000 or placed in service for the first time on or after Sept. 9, 2002 shall not require an inspector to place himself or herself on, under, or between components of the equipment to observe brake actuation or release. This requirement will be met by any of the following if the passenger equipment:

(1) Is designed to permit actual visual observation of the brake actuation and release without the inspector going on, under, or between the equipment;

(2) Is equipped with piston travel indicators as defined in 238.5 or devices of similar design and the equipment is inspected pursuant to the requirements contained in 238.313 (j); or

(3) Is equipped with brake indicators as defined in 238.5, designed so that the pressure sensor is placed in a location so that nothing may interfere with the air flow to brake cylinder and the equipment is inspected pursuant to the requirements contained in 238.313 (j)

### **IV. Additional Inspection Requirement Criteria for Certain Equipment –**

Potential Insert at 238.313(j):

(j) In addition to complying with all the Class I inspection requirements performed by a qualified maintenance person as contained in paragraphs (a) through (i) of this section, railroads operating passenger equipment that does not comply with the design requirement of § 238.231(b)(1) shall perform an additional inspection. At a minimum, the additional inspection requirement for equipment so designed shall include all of the following:

(1) An additional inspection by a qualified maintenance person of all items and components contained in paragraph (g)(1-15) of this section;

(2) The additional inspection shall be conducted at an interval not to exceed 5 in-service days and shall be conducted while the equipment is over an inspection pit or on a raised inspection track.

(3) A record of the additional inspection shall be maintained pursuant to the requirements contained in paragraph (h) of this section. This requirement can be combined with the standard Class I brake test report.

## V. Main Reservoir Tests – 229.31

Potential Modification of 229.31 (modifications in ***bold-italics***)

(a) ***Before it is placed in service each main reservoir other than an aluminum reservoir shall be subjected to a pneumatic or hydrostatic pressure of at least 25 percent more than the maximum working pressure fixed by the chief mechanical officer. The test date, place, and pressure shall be recorded on Form FRA F 6180-49A, block eighteen.*** Except as provided in paragraph (c) of this section, at intervals that do not exceed 736 calendar days, each main reservoir other than an aluminum reservoir shall be subjected to a hydrostatic pressure of at least 25 percent more than the maximum working pressure fixed by the chief mechanical officer. The test date, place, and pressure shall be recorded on Form FRA F 6180-49A, and the person performing the test and that person's supervisor shall sign the form.

229.31(b)

(b) **(Unchanged)**

(c) Each welded main reservoir originally constructed to withstand at least five times the maximum working pressure fixed by the chief mechanical officer may be drilled over its entire surface with telltale holes that are three-sixteenths of an inch in diameter. The holes shall be spaced not more than 12 inches apart, measured both longitudinally and circumferentially, and drilled from the outer surface to an extreme depth determined by the formula-

**(formula placed here)**

One row of holes shall be drilled lengthwise of the reservoir on a line intersecting the drain opening. A reservoir so drilled does not have to meet the requirements of paragraphs (a) and (b) of this section, except the requirement for a ***pneumatic*** or hydrostatic test before it is placed in use. Whenever any such telltale hole shall have penetrated the interior of any reservoir, the reservoir shall be permanently withdrawn from service. A reservoir now in use may be drilled in lieu of the tests provided for by paragraphs (a) and (b) of this section, but shall receive a ***pneumatic*** or hydrostatic test before it is returned to use.

(d) **(Unchanged)**