

Chapter 4

Railroad Freight Car Safety Standards ***Part 215***

Introduction

In accordance with the provisions of the **Federal Railroad Safety Act of 1970**, the *Railroad Freight Car Safety Standards* 49 CFR, Part 215, became effective January 1, 1974. Since inception, there have been several amendments to Part 215.

The railroad industry is constantly changing and FRA recognizes additional amendments will be needed to stay current with the changes. Advances in new technology, high speed rail, the increasing number of articulated cars in service, new concepts in freight car construction and the changing railroad environment will demand changes. In addition to Federal Regulations, Inspectors should be familiar with the AAR Interchange Rules. However, AAR interchange rules and the AAR Recommended Standards and Practices are not subject to FRA regulatory authority, unless specifically cited in the regulation.

On the following pages you will find only the sections of the regulation that have interpretive guidance to aid the Inspector in the performance of freight car safety standards inspections. After each section of the regulation is an interpretation or policy as established by the agency.

Federal and State Inspectors must be able to assess an ever increasing variety of conditions and ascertain the necessity and type of corrective procedures to be initiated. Although §215.7, “Prohibited Acts”, provides for strict liability, Inspectors should always be governed by the seven factors listed in Part 209 Appendix A. (See General Manual Part III, Chapter 4.)

MP&E Inspectors must determine whether condition(s) observed acutely impact the safe operation of the freight equipment. When freight equipment is inspected and deficiencies exist, the Inspector must decide whether the defect:

- Is a Part 215 defect;
- Should be documented on the F6180.96 - Inspection Report;
- Warrants the issuance of a violation;
- Warrants the issuance of a Special Notice for Repair; and/or
- Should be reported to the railroad as an unsafe condition which is not encompassed in Federal regulations. *This could be the railroad's or AAR standards.*

Note: In many instances, AAR requirements are more restrictive than Federal requirements

The following discussion summarizes guidelines to be used by Federal and State Inspectors conducting field inspections for compliance or enforcement activity. Enforcement policies must be adhered to by each Inspector conducting inspections of freight cars. It is the

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Inspector's responsibility to determine whether each unit is inspected, tested, maintained, or operated by railroad personnel, complies with Federal safety requirements and is safe to operate over the general railroad system.

When an Inspection reveals a non-complying condition, the Inspector must examine and determine the particular details of the condition in order to assess whether it conforms with the current interpretations and guidelines issued by the FRA. Before recording the condition as a defect, the Inspector must weigh each essential factor to determine whether the condition meets, exceeds, or is in fact, a non-complying condition under Federal regulations. If the Inspector determines that a condition is unsafe or creates an imminent hazard, and is not covered by Federal regulations, he/she should inform a responsible railroad official for corrective action. This could be the railroad's standard or an AAR requirement.

When a measurement is required to determine compliance or non-compliance, and such measurement can not be accurately stated as meeting or exceeding those measurements contained in the applicable regulation, then that condition must not be reported as a defect.

When the Inspector ascertains and documents that a freight car is conclusively in non-compliance with Federal Regulations, he/she should contemplate (based on the situation) filing appropriate reports. To determine what enforcement action to employ, the Inspector should consider the compliance history at the location, and whether or not the railroad immediately initiates corrective action. If the Inspector concludes a violation is warranted, then only one written violation report can be issued per car. The violation report can contain multiple counts for defective conditions, **but do not issue multiple violation reports for an individual car**. If the non-complying condition for a violation can be proven to have existed for multiple days, then the one violation report should indicate how many days the car was in violation. Do not issue a separate violation report for each day the car is determined to be in non-compliance.

Additionally, if the Inspector makes the determination that a freight car is in non-compliance with Federal regulations, is unsafe and presents an imminent safety hazard, and the Inspector has reason to believe that the railroad will not take immediate corrective action, a **Special Notice For Repair** should be issued to the railroad. The Inspector should enumerate each serious condition(s) in the notice. ***NOTE: Except in rare circumstances, a violation report must be submitted with a Special Notice For Repair.***

Inspection of freight cars that have been **repaired and released** by car repair facilities should be done on a regular basis. These freight cars should be suitable for service and free of **all** defects. If defects are found, violations should be submitted. This inspection must take place after the car is moved from the shop or repair track area.

An individual who willfully authorizes movement or operation of non-complying or unsafe equipment, and has knowledge of the circumstances, can be held personally liable for such

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action. Inspectors should carefully weigh all pertinent facts before considering a willful violation of Federal regulations and/or individual liability. Prior to advising a railroad employee that he/she will be cited with an individual liability violation, the Inspector must first communicate with the Regional Office. (See General Manual, Part III, Chapter 3.)

Freight Car Safety Standards Inspection Procedures

Upon arrival at an inspection point, the Inspector should notify the local railroad representative of his/her presence and intentions, determine what equipment will be inspected, and ask the representative if they plan to accompany the inspection. However, it is not always advantageous to be accompanied on inspections or notify the railroad of FRA presence, especially if an inspection is related to a complaint or investigation.

Generally, Inspectors should focus Part 215 inspection activities on cars after the railroad's personnel or agents have had an opportunity to perform their inspection of the car(s). However, inspections on inbound trains can be advantageous to determine the quality of inspections at previous locations where cars are placed in trains. Also, inspections should be performed at any location where cars are routinely picked up and placed in trains.

The Inspector must be properly attired and comply with the railroad's safety requirements (e.g., safety glasses, hard hat, safety shoes, etc.). Inspectors should also have in their possession the necessary gauges, flashlight, ruler and/or tape measure, camera, and a current copy of the regulations. Do not use the railroad's gauges for enforcement activities.

It is not necessary for FRA/State Inspectors to establish "blue signal" protection in order to perform inspection activity. However, Inspectors should never place themselves in a position where the unexpected movement of equipment subjects them to the danger of personal injury. Railroad representative(s), accompanying the Inspector during the inspection, must obtain blue signal protection if that individual engages in activities that require them to work on, under, or between the equipment.

Regulation:

PART 215 - Railroad Freight Car Safety Standards

§215.3 Application

- (a) Except as provided in paragraphs (b) and (c) of this section, this part applies to each railroad freight car in service on:
 - (1) Standard gage track of a railroad; or
 - (2) Any other standard gage track while the car is being operated by, or is otherwise under the control of a railroad.
- (b) Sections 215.15 and 215.303 of this part do not apply to any car:
 - (1) Owned by a Canadian or Mexican Railroad; and
 - (2) Having a Canadian or Mexican reporting mark and car number.
- (c) This part does not apply to a railroad freight car that is:

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- (1) Operated solely on track inside an industrial or other non-railroad installation; or
- (2) Used exclusively in dedicated service as defined in §215.5(d) of this part; or
- (3) Maintenance-of-way equipment (including self-propelled maintenance-of-way equipment) if that equipment is not used in revenue service and is stenciled in accordance with §215.305 of this part.

§215.5 Definitions.

As used in this part:

- (a) *Break* means a fracture resulting in complete separation into parts;
- (b) *Cracked* means fractured without complete separation into parts, except that castings with shrinkage cracks or hot tears that do not significantly diminish the strength of the member are not considered to be "cracked";
- (c) *Railroad freight car* means a car designed to carry freight, or railroad personnel, by rail and includes a:
 - (1) Box car;
 - (2) Refrigerator car;
 - (3) Ventilator car;
 - (4) Stock car;
 - (5) Gondola car;
 - (6) Hopper car;
 - (7) Flat car;
 - (8) Special car;
 - (9) Caboose car;
 - (10) Tank car; and
 - (11) Yard car.

Guidance:

A ventilator car is a car that is arranged for ventilation and suitable for the transportation of produce or other food stuffs not requiring refrigeration. A special car includes articulated cars, scale cars, intermodal-carless equipment (RoadRailer™), and any car not listed in this section. A yard car is any car used exclusively in yard service. In intermodal-carless equipment operations, the highway trailer is treated as the car body for the purposes of Part 215 when it is attached to the bogie on the rail. Part 215 does not apply to any type of car operated in a passenger train that is inspected, tested, maintained, and operated pursuant to the requirements contained in the Passenger Equipment Safety Standards, Part 238.



Doublestack train cars in a port facility.

Regulation:

- (d) *Dedicated service* means the exclusive assignment of cars to the transportation of freight between specified points under the following conditions:
- (1) The cars are operated—
 - (i) Primarily on track that is inside an industrial or other non-railroad installation; and
 - (ii) Only occasionally over track of a railroad;
 - (2) The cars are not operated—
 - (i) At speeds of more than 15 miles per hour; and
 - (ii) Over track of a railroad—
 - (A) For more than 30 miles in one direction; or
 - (B) On a round trip of more than 60 miles;
 - (3) The cars are not freely interchanged among railroads;
 - (4) The words "Dedicated Service" are stenciled, or otherwise displayed, in clearly legible letters on each side of the car body;
 - (5) The cars have been examined and found safe to operate in dedicated service;
 - (6) The railroad must—
 - (i) Notify the FRA in writing that the cars are to be operated in dedicated service;
 - (ii) Identify in that notice—
 - (A) The railroad affected;
 - (B) The number and type of cars involved;
 - (C) The commodities being carried; and
 - (D) The territorial and speed limits within which the cars will be operated; and
 - (iii) File the notice required by this paragraph not less than 30 days before the cars operate in dedicated service;
- (e) *In service* when used in connection with a railroad freight car, means each railroad freight car subject to this part unless the car:
- (1) Has a "bad order" or "home shop for repairs" tag or card containing the

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prescribed information attached to each side of the car and is being handled in accordance with §215.9 of this part;

- (2) Is in a repair shop or on a repair track;
- (3) Is on a storage track and is empty; or
- (4) Has been delivered in interchange but has not been accepted by the receiving carrier.

Guidance:

The Federal Register Notice, dated April 21, 1980 (45 FR 26709) states that: “FRA has amended 215.5(e)(4) to provide that a car that has been delivered in interchange is not ‘in service’ until the receiving railroad accepts the car by moving it or otherwise exercising control over it. It should be noted, however, that the delivering railroad remains liable for each defective car it tenders in interchange.” (MP&&E 98-34)

Regulation:

(f) *Railroad* means all forms of non-highway ground transportation that run on rails or electromagnetic guide-ways, including (1) commuter or other short-haul rail passenger service in a metropolitan or suburban area, and (2) high speed ground transportation systems that connect metropolitan areas, without regard to whether they use new technologies not associated with traditional railroads. Such term does not include rapid transit operations within an urban area that are not connected to the general railroad system of transportation.

(g) *State Inspector* means an Inspector who is participating in investigative and surveillance activities under section 206 of the Federal Railroad Safety Act of 1970 (45 U.S.C. 435).

§215.9 Movement of defective cars for repair.

(a) A railroad freight car which has any component described as defective in this part may be moved to another location for repair only after the railroad has complied with the following:

(1) A person designated under §215.11 shall determine:

- (i) That it is safe to move the car; and
- (ii) The maximum speed and other restrictions necessary for safely conducting the movement;

(2)(i) The person in charge of the train in which the car is to be moved shall be notified in writing and inform all other crew members of the presence of the defective car and the maximum speed and other restrictions determined under paragraph (a)(1)(ii) of this section.

(ii) A copy of the tag or card described in paragraph (a)(3) of this section may be used to provide the notification required by paragraph (a)(2)(i) of this section.

(3) A tag or card bearing the words “bad order” or “home shop for repairs” and containing the following information, shall be securely attached to each side of the

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car-

- (i) The reporting mark and car number;
 - (ii) The name of the inspecting railroad;
 - (iii) The inspection location and date;
 - (iv) The nature of each defect;
 - (v) Movement restrictions;
 - (vi) The destination for shopping or repair; and
 - (vii) The signature of a person designated under §215.11.
- (b)(1) The tag or card required by paragraph (a)(3) of this section may only be removed from the car by a person designated under §215.11 of this part.
- (2) A record or copy of each tag or card attached to or removed from a car shall be retained for 90 days and, upon request, shall be made available within 15 calendar days for inspection by FRA or State Inspectors.
- (3) Each tag or card removed from a car shall contain a notification stating the date, location, reason for its removal, and the signature of the person who removed it from the car. These recordkeeping requirements have been approved by the Office of Management and Budget in accordance with the Federal Reports Act of 1942. (c) Movement of a freight car under paragraph (a) of this section may be made only for the purpose of effecting repairs. If the car is empty, it may not be placed for loading. If the car is loaded, it may not be placed for unloading unless unloading is consistent with determinations made and restrictions imposed under paragraph (a)(1) of this section and—
- (1) The car is consigned for a destination on the line of haul between the point where the car was found to be defective and the point where repairs are made; or
 - (2) Unloading is necessary for the safe repair of the car.
- (d) Nothing in this section authorizes the movement of a freight car subject to a Special Notice for Repairs unless the movement is made in accordance with the restrictions contained in the Special Notice.

Guidance:

If the car is prepared as outlined under § 215.9, it may be moved to any location designated by the railroad for the purpose of effecting repairs. This **does not** have to be the nearest or next repair location. The car may be moved to another railroad and can be moved past repair locations. The car must be inspected and cards applied to both sides by a designated Inspector, as defined in §215.11, before movement can take place. Movement authority by §215.9 applies only to Part 215 defects, **NOT** safety appliance or power brake defects. Failure to observe any condition for movement set forth in §215.9(a) and (c) deprives the railroad of the benefit of the “movement-for-repair” provision and makes the railroad and any responsible individual liable for penalty under the particular regulatory section(s) that applies to the defective condition. For example, a car with a defective roller bearing adapter travels beyond the repair location designated on the “bad order” card. Do not issue a violation for the movement of defective equipment, instead issue the violation for the defective condition - defective roller bearing adapter. The regulation does not prevent the railroad from changing

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the repair location, as long as all of the conditions of §215.9 are satisfied. The purpose of the defect tag is to notify the operating crews and mechanical department personnel of the defective condition, and that the car is safe to move, along with any movement restrictions. Inspectors should periodically check defect tags to verify that they are completely filled out by a person designated under §215.11.

Regulation:

§215.11 Designated Inspectors

- (a) Each railroad that operates railroad freight cars to which this part applies shall designate persons qualified to inspect railroad freight cars for compliance with this part and to make determinations required by §215.9 of this part.
- (b) Each person designated under this section shall have demonstrated to the railroad a knowledge and ability to inspect railroad freight cars for compliance with the requirements of this part and to make determinations required by §215.9 of this part.
- (c) With respect to designations under this section, each railroad shall maintain written records of:
 - (1) Each designation in effect; and
 - (2) The basis for each designation.

Guidance:

The railroad must maintain a record, which can be readily produced for FRA review, that contains the names of the Inspectors that are designated under §215.11. This includes contractors, train crew members, or any individual that has demonstrated to the railroad the knowledge and ability to perform all of the functions listed in Part 215. Only persons that are listed as designated Inspectors can make the determinations required by §215.9 of this part.

The railroad establishes the basis for each designation in effect. A person performing an Appendix D inspection cannot make the determination for movement under § 215.9. However, if a train crew member is listed as a designated Inspector, he/she can make the determination for movement under §215.9, but would be required to perform a full inspection for compliance with this Part, not an Appendix D inspection.

Regulation:

§215.13 Pre-departure inspection.

- (a) At each location where a freight car is placed in a train, the freight car shall be inspected before the train departs. This inspection may be made before or after the car is placed in the train.
- (b) At a location where an Inspector designated under §215.11 is on duty for the purpose of inspecting freight cars, the inspection required by paragraph (a) of this section shall be made by that Inspector to determine whether the car is in compliance with this part.
- (c) At a location where a person designated under §215.11 is not on duty for the purpose of inspecting freight cars, the inspection required by paragraph (a) shall

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as a minimum, be made for those conditions set forth in appendix D to this part.

(d) Performance of the inspection prescribed by this section does not relieve a railroad of its liability under §215.7 for failure to comply with any provision of this part.

Guidance:

The language of the above-cited section is very explicit. FRA has consistently interpreted this language to require a pre-departure inspection each time a car is placed in a train. Moreover, although the regulations do not specify the physical actions necessary to conduct a proper inspection, a railroad may fulfill the inspection requirements only when its Inspectors position themselves in a way that permits the required observations to be made. In order to conduct a proper Freight Car Safety Standards inspection, both sides of a car must be inspected.

A concern for the Inspector is an interpretation of “placed in a train” being used at some locations in the industry to allow new outgoing trains to be built from large blocks of cars from two or more incoming trains without performing a pre-departure inspection. Within the industry, this practice is called “block swapping.” This reading of the rule apparently assumes that a car that remains in a block of cars when removed from one train is not “placed in a train” when the block is added to a new train. ***That assumption is incorrect.*** Whether singly or in groups, cars that are taken from one train and placed in another are “placed in a train” and must be inspected at the location from which the new train departs. Of course, an inspection pursuant to §215.13 is not required when intact trains move from railroad to railroad.

However, as with any regulatory requirement, Inspectors should exercise discretion in how §215.13(a) is enforced, so that our limited resources can remain focused on matters likely to produce the greatest safety benefit. The general criteria for determining when enforcement action is appropriate, and which action to take, are set forth in 49 CFR Part 209, Appendix A. The railroad’s history of compliance with the relevant set of regulations, especially at the specific location involved, must be considered along with the kind and degree of potential safety hazard a condition poses in light of the immediate factual situation. Where compliance with the Freight Car Safety Standards is poor, and improper inspections or no inspections are being performed, the failure to inspect or improper inspection can be (along with the physical defects found on the cars) strong enforcement candidates. Conversely, if a railroad is generally doing a good job in terms of compliance with the Freight Car Safety Standards at a particular location, the one-time failure to conduct a proper inspection at that point, more likely is not a condition that poses a significant safety hazard. **(MP&E 98-57)**

§215.13(a) requires that an inspection is required at each location where a freight car is placed in a train. However, in some circumstances the inspection may be performed by a person not qualified or designated under §215.11. The law does not require that a “designated inspector” under §215.11 be assigned or employed at every location where cars are added to trains. Consequently, a train crewmember who is not a designated inspector under §215.11

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can perform an inspection of freight cars added to a train pursuant to Part 215, Appendix D, at a location where a person designated under §215.11 is not on duty for the purpose of inspecting freight cars. However, if a location does not have a person designated under §215.11 on duty for the purpose of inspecting freight cars and the railroad elects to conduct an inspection with a non-designated person pursuant to Part 215, Appendix D, and such inspection uncovers a condition not in compliance with Part 215 or Appendix D, then in order to move the car for repair under §215.9, a designated person under §215.11 must determine whether it is safe to move the car and, if so, under what conditions.

Part 215 does not dictate when and where railroads must have designated inspectors on duty for the purpose of inspecting freight cars. §215.13 merely requires that, where such a person is not on duty for that purpose, the railroad must conduct an Appendix D inspection. Where there is a dispute between a railroad and its employees as to which employee is on duty for what purpose, that issue must be resolved as a collective bargaining matter. Absent such a binding resolution from a body duly authorized to render such rulings, FRA is in no position (under current law) to conclude that an employee is on duty for the purpose of inspecting freight cars, if the railroad contends that the person is not on duty for that purpose. Once a final, binding determination is obtained, it would presumably be enforceable on its own terms by those who sought it. Although Part 215 was not intended to put FRA in the position of dictating where a railroad uses its designated inspectors, it is clear that the railroad must designate qualified inspectors, keep records of the designations, and, at the very least, use such inspectors to make the determinations required under §215.9 before a defective car can be moved.

At locations where cars are inspected by railroad personnel who are not *designated Inspectors*, the options for handling the defective cars are limited to : (1) Setting the car out (2) repairing the car; or (3) bringing in a *designated Inspector* to either repair the car or prepare the car for movement to a repair facility in accordance with §215.9.

The regulation states that the pre-departure inspection may be made **before or after** the car is placed in the train. Therefore, the requirements for this inspection can be met by performing an inbound inspection, before the cars are classified and placed into a new train.

Regulation:

§215.15 Periodic inspection. - *This part is no longer applicable.*

Suspension System

§215.103 Defective wheel.

A railroad may not place or continue in service a car, if-

- (a) A wheel flange on the car is worn to a thickness of $\frac{7}{8}$ of an inch, or less, at a point $\frac{3}{8}$ of an inch above the tread of the wheel;
- (b) The height of a wheel flange on the car, from the tread to the top of the flange,

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is 1½ inches, or more;

(c) The thickness of a rim of a wheel on the car is 11/16 of an inch, or less;

(d) A wheel rim, flange, plate, or hub area on the car has a crack or break;

(e) A wheel on the car has a chip or gouge in the flange that is 1½ inches in length and ½ inch in width, or more;

(f) A wheel on the car has——

(1) A slid flat or shelled spot that is more than 2½ inches in length; or

(2) Two adjoining flat or shelled spots each of which is more than two inches in length;

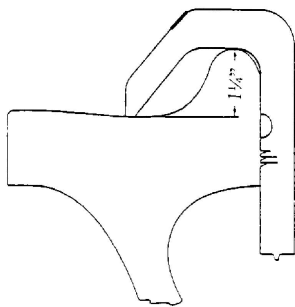
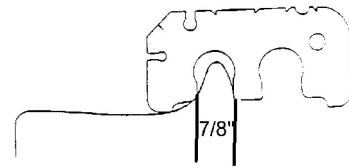
(g) A wheel on the car shows evidence of being loose such as oil seepage on the back hub or back plate;

(h) A wheel on the car shows signs of having been overheated as evidenced by a reddish brown discoloration, to a substantially equal extent on both the front and the back face of the rim, that extends on either face more than four inches into the plate area measured from the inner edge of the front or back face of the rim; or,

(i) A wheel on the car has been welded unless the car is being moved for repair in accordance with §215.9 of this part.

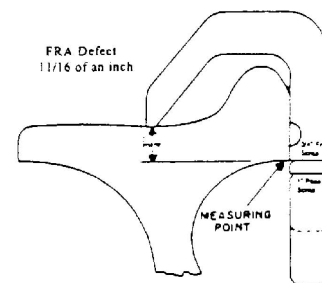
Guidance:

The specified wheel measurements are the minimum safety requirements and are designed to prevent wheel failures and train derailments. Wheel measurements must be carefully taken to assure accuracy. To determine if a locomotive or freight car wheel is in compliance, a standard application of wheel gages is equally as important as having standard gages.



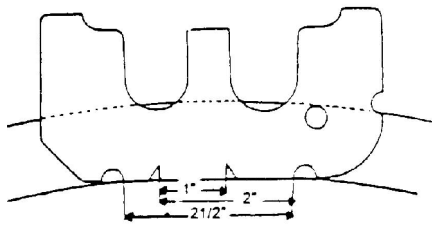
To gage a wheel for thin flange, the 7/8 - inch opening of the AAR 34401 gage should slip over the flange of the wheel when the gage is held with the flat surface at the top, perpendicular to the tread. The unused bulk of the gage must be suspended behind the back face of the rim. Gaging in a chipped area is not accepted.

A high flange wheel shall be gaged with a simplified steel wheel gage (hook gage). The shank, or long flat portion of the gage, must be held flat against the back face of the rim and parallel to the radius of the wheel. The defective flange will sit in the hook portion and will hold the tip or point of the gage clear of the tread. Gaging in a flat spot or shelled spot is not acceptable.



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A thin rim wheel can be properly gaged with a W804 gage. It is suggested that if the Inspector does not have a W804 gage, mark a simplified steel wheel gage $1/16$ of an inch above the $3/4$ -inch mark. This will allow you to make a close evaluation of an $11/16$ -inch rim. However, it is not recommended that a violation be submitted when using a non-calibrated gage. The gage is to be applied to the wheel in the same manner as that used for gaging a high flange, and the gaging point would be the abrupt angle at the inside of the back face of the rim. With the gage held firmly against the back face of the rim, parallel to the radius and the point resting on the tread of the wheel, the reading should be $11/16$ of an inch or less for a defective condition. Gaging with the tip or point of the gage in a flat spot or shelled spot is not acceptable.



A flat spot on a wheel may be gaged with AAR gage 34401. The flat portion of the gage is marked in such a way that a $2\frac{1}{2}$ inch flat spot can be easily measured. This portion of the gage must be applied to the flat spot on the wheel with absolutely no rocking motion allowable within the $2\frac{1}{2}$ inch area. Two adjoining flat spots, two or more inches in length, are measured using the same method.

The overheated wheel requires a higher degree of judgment because of the varying degrees of discoloration. A reddish-brown discoloration that extends into the wheel plate more than 4 inches on both sides of the wheel indicates an overheated condition. The discoloration should come toward the center of the wheel 4-inches inside the rim before exceptions are taken. The 4-inch measurement is to be made from the bottom of the back face of the rim. A rust condition of the wheel should not be considered as a reddish brown discoloration.

There is currently a waiver in place that exempts “heat treated - curved plate” (HT-CP) wheels from the requirements of §215.103(h), provided the HT-CP wheel is clearly identified by an **H** painted or stenciled on the outside plate of the wheel.

Welded wheels - Regulations allow welding of wheels only as an emergency measure to enable the car to be moved to a repair facility. A welded wheel is not a prohibited defect if the car is tagged and being moved in accordance with §215.9 for the purpose of replacing the wheel.

It is not acceptable to place a gage on a wheel in such a way that it takes a combination of two or more conditions to condemn it as defective (i.e., gaging for high flange in a flat spot.)
(MP&E 98-10)

Regions shall insure that their Inspectors have calibrated wheel gages and know how the gages are to be applied to the wheel for the purpose of determining if the wheel is in compliance with the regulations.



After finding a statistically elevated number of vertical split rim failures (as shown at left) on 36" Southern wheels of various ages the AAR has issued instructions that all 36" Southern Wheels are to be pulled from service when at a wheel shop. Also Southern CH-36 wheels made in 1995 are to be pulled from service when on a shop or repair track for any reason. Failure to follow these AAR instructions is not an FRA defect, but if observed, should be brought to the attention of the railroad.

Other Wheel Failures



Shattered rims like the one at left, occur due to subsurface defects in the wheel. They are often first observable as a crack on the side of the rim, running basically parallel to the tread, as shown in the right hand picture, between the chalk marks. Telltale rust streaks can help to identify them. The failure is not always as benign as the one shown here, with only a small portion of the tread missing. Often, major sections of the tread break away, similar to the vertical split rim shown above. Occasionally, the plate of the wheel also fails and there is not much left except the hub.

Regulation:

§215.105 Defective axle and journal

A railroad may not place or continue in service a car, if -

- (a) An axle on the car has a crack or is broken;
- (b) An axle on the car has a gouge in the surface that is -
 - (1) Between the wheel seats; and
 - (2) More than one-eighth inch in depth;
- (c) An axle on the car, used in conjunction with a plain bearing, has an end collar that is broken or cracked;
- (d) A journal on the car shows evidence of overheating, as evidenced by a pronounced blue-black discoloration; or
- (e) The surface of the plain bearing journal on the axle, or the fillet on the axle, has-
 - (1) A ridge;
 - (2) A depression;
 - (3) A circumferential score;
 - (4) Corrugation;
 - (5) A scratch;
 - (6) A continuous streak;
 - (7) Pitting;
 - (8) Rust; or

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(9) Etching.

§215.107 Defective plain bearing box: General.

A railroad may not place or continue in service a car, if the car has-

- (a) A plain bearing box that does not contain visible free oil;
- (b) A plain bearing box lid that is missing, broken, or open except to receive servicing; or
- (c) A plain bearing box containing foreign matter, such as dirt, sand, or coal dust, that can be reasonably be expected to-
 - (1) Damage the bearing; or
 - (2) Have a detrimental effect on the lubrication of the journal and the bearings.

Guidance:

A plain bearing box that contains a significant amount of water should be treated as foreign matter. The journal should be inspected with a wire feeler hook to determine if there is pitting.

Regulation:

§215.109 Defective plain bearing box: Journal lubricating system.

A railroad may not place or continue in service a car, if the car has a plain bearing box with a lubricating pad that-

- (a) Has a tear extending half the length or width of the pad, or more;
- (b) Shows evidence of having been scorched, burned, or glazed;
- (c) Contains decaying or deteriorated fabric that impairs proper lubrication of the pad;
- (d) Has-
 - (1) An exposed center core (except by design); or
 - (2) Metal parts contacting the journal; or
- (e) Is-
 - (1) Missing; or
 - (2) Not in contact with the journal.

Guidance:

Currently, AAR interchange rule 88 requires that all Hazardous Material tank cars in service must be equipped with roller bearings. Also, **all** freight cars offered for interchange service must be equipped with roller bearings. Although this is not a federal defect, the railroad should be made aware of the situation whenever it is detected.

Regulation:

§215.111 Defective Plain Bearing.

A railroad may not place in service or continue in service a car, if the car has a plain bearing-

- (a) That is missing, cracked or broken;

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- (b) On which the bearing liner-
 - (1) Is loose; or
 - (2) Has a broken-out piece; or
- (c) That shows signs of having been overheated, as evidenced by-
 - (1) Melted babbitt;
 - (2) Smoke from hot oil; or
 - (3) Journal surface damage.

§215.113 Defective Plain Bearing Wedge.

A railroad may not place or continue in service a car, if a plain bearing wedge on that car is-

- (a) Missing;
- (b) Cracked;
- (c) Broken; or
- (d) Not located in its design position.

§215.115 Defective Roller Bearing.

(a) A railroad may not place or continue in service a car, if the car has-

- (1) A roller bearing that shows signs of having been overheated as evidenced by-
 - (i) Discoloration; or
 - (ii) Other telltale signs of overheating such as damage to the seal or distortion of any bearing component;
 - (2) A roller bearing with a-
 - (i) Loose or missing cap screw; or
 - (ii) Broken, missing, or improperly applied cap screw lock; or
 - (3) A roller bearing with a seal that is loose or damaged, or permits leakage of lubricant in clearly formed droplets.
- (b)(1) A railroad may not continue in service a car that has a roller bearing whose truck was involved in a derailment unless the bearing has been inspected and tested by:
- (i) Visual examination to determine whether it shows any sign of damage; and
 - (ii) Spinning freely its wheel set or manually rotating the bearing to determine whether the bearing makes any unusual noise.
- (2) The roller bearing shall be disassembled from the axle and inspected internally if-
- (i) It shows any external sign of damage;
 - (ii) It makes any unusual noise when its wheel set is spun freely or the bearing is manually rotated;
 - (iii) Its truck was involved in a derailment at a speed of more than 10 miles per hour; or
 - (iv) Its truck was dragged on the ground for more than 200 feet.
- (3) Each defective roller bearing shall be repaired or replaced before the car is placed back in service.

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Guidance:

Some loss of lubricant through “seepage” of lubricant around a roller bearing seal may not be hazardous and should not be reported as a defect. A seal that “permits leakage of a significant amount of lubricant in clearly formed droplets” is defective. “Clearly formed droplets” means a **fresh** accumulation of grease/oil (not dirty or dried) which continually leaks out from the bearing and/or slowly forms into beads. A careful examination should be made of any roller bearing from which “fresh” or “new” lubricant is thrown onto wheels, truck components, or the car body. A seal that is “loose, damaged, or non-functioning” is considered to be defective.

A “loose “ backing ring is **not** to be reported as a defective bearing, but should be brought to the attention of the railroad, as the AAR identifies this condition as cause for removal in their Interchange Rules. Additionally, the Inspector should note this condition as a comment on the 96 report.

When a railroad opts to rotate the roller bearing manually, rather than rotating the wheel assembly to detect a defective condition due to a derailment, care must be exercised because the presence of lubricant and the fact that the bearing is not under load tend to reduce sounds made by small defects. When the wheel assembly is rotated, the weight on the bearing magnifies the sound.

It must be noted that during an inspection on a “Short Line Railroad”, it was discovered that some tank cars equipped with roller bearings were derailed and sustained damages. These cars were not repaired and the roller bearings were not examined as required, prior to delivery to a connecting railroad. Also, the short line railroad did not advise the receiving railroad of the derailment damage and associated damages. If a train crew performing an Appendix D inspection at the interchange point did not detect the defective condition of these cars, the cars would have continued in service in a defective condition. Many short line railroads operate over “Excepted Track” that often is the cause of derailments. Further, some short line railroads do not have qualified Inspectors or repair facilities to address defective conditions. Some short lines have agreements with the interchange railroads to effect repairs to defective cars which fall under their responsibility. Due to the seriousness of a car with a defective bearing condition continuing in service and/or the possible failure of a short line to notify the receiving railroad of a potential defective car, Inspectors should review the proper handling of derailed cars and defective cars with each short line railroad within their territory. **(MP&E 98-29)**

As recently as three years ago, overheated journal bearings (Reporting Code E53C) were the most common mechanical cause of derailments, in spite of the presence of many hot box detectors on the railroads. Within the last two years, the number of derailments caused by hot journal boxes has been significantly reduced, as shown in the table that follows.

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Year	2004	2005	2006	2007
E53C Overheated Journal Bearing	47	43	29	9 (Jan-May)
				22 (Projection for the year)

Railroad representatives to AAR's Wheels, Axles, Bearings and Lubrication (WABL) Committee attribute this to the increased effectiveness of wayside detector systems, including hot box detectors and wheel impact load detectors (WILD.) Although hot box detectors have been in use for many years, it is only recently that the railroads have been networking the detectors and analyzing the data in real time to identify dangerous temperature trends and set out "warm" bearings before they burn off. This technology remains unable to predict "quick burns," which the industry is still attempting to address. Although a relationship has not been proven, the WILD detectors are thought to be benefitting bearings because they identify high impact wheels so they can be removed from service before the pounding causes bearing damage.

Regulation:

§215.117 Defective Roller Bearing Adapter

A railroad may not place or continue in service a car, if the car has a roller bearing adapter that is-

- (a) Cracked or broken;
- (b) Not in its design position; or
- (c) Worn on the crown of the adapter to the extent that the frame bears on the relief portion of the adapter...

Guidance:

Appropriate enforcement action must be taken if a car has a roller bearing adapter that is out of place or has excessive wear on the crown of the adapter. Either condition can cause uneven load distribution on the bearing and result in bearing failure. If there is clearance (relief) at rear of adapter bearing surface, the adapter cannot be condemned. A 0.002 inch feeler gauge may be used to assist in making this determination.

Roller bearing adapter pads designed with a square surface depression of about 5 inches and about 3/16-inch deep, were at one time common on articulated equipment. They had a high failure rate and an effort was made to replace them with a specially designed adapter. The pad was designed to fit in the 5 inch square depression of the roller bearing adapter and act as the crown for proper contact with the truck side frame roof. There were at least three pad designs. The two with highest failure rate were made to look like a square plate about 3/8-inch thick, consisting of metal plates and a plastic material which was found to crush and deteriorate. The other pad design was a rounded plate about 3/8-inch thick with squared

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shoulders for retention in the adapter depression. Complete failure of the pad will leave a flat surface on the top side of the adapter where the crowned surface should be in contact with the truck side frame roof. Partial failure will tend to concentrate the off-center loading to the part of the pad that has not failed. This creates a potential roller bearing failure. Defective conditions can be easily detected by close inspection. There should be a void between the adapter and the side frame roof, except where the pad is the buffer between the two. The pad should provide enough thickness in the center to act as the crown of the adapter. If these pads are found defective they should be reported on the appropriate inspection report using code 215.117(E)(1) "Roller bearing adapter resilient wear plate (vertical isolation pad) defective or not in its designed position." (MP&E 98-21)

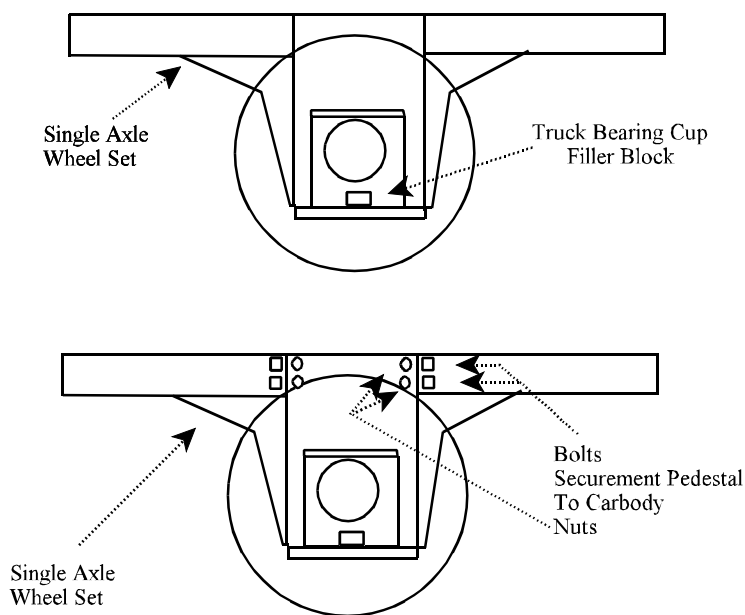
Adapter wear plates (roof liners) should be examined as to their condition and effectiveness. Since the regulation requires the roller bearing adapter to be in its designed position, if a problem exists, a defect should be taken.

There are cars in service that are designed to operate with a single axle wheel set at each end. The truck bearing cup filler blocks, commonly referred to as roller bearing adapter blocks, are located beneath the roller bearing rather than on top of the bearing, as found on conventional freight car equipment, and are secured in place by a single bolt or pin and cotter key. When the adapter block is missing the adapter may become unseated from its designed location, or be missing completely. When this condition is detected, take appropriate action, and report the condition as set forth in CFR 49 Part 215.117 (roller bearing adapters).

Another condition that has been discovered with this type of truck is loose and missing pedestal securement bolts. Each side of the pedestal is attached to carbody by four bolts measuring $4 \frac{7}{8}$ inch each. Bolts have been found loose, broken and missing. This non-complying condition can be reported on the appropriate inspection report using code 215.121(F)(1).

(MP&E 98-42)

The vertical isolation pads (adapter pads) that were primarily found on articulated 125 ton double stack cars are now prohibited in interchange by the AAR.



Regulation:

§215.119 Defective Freight Car Truck.

A railroad may not place or continue in service a car, if the car has-

(a) A side frame or bolster that-

(1) Is broken; or

(2) Has a crack of $\frac{1}{4}$ of an inch or more in the transverse direction on a tension member

(b) A truck equipped with a snubbing device that is ineffective, as evidenced by-

(1) A snubbing friction element that is worn beyond a wear indicator;

(2) A snubber wear plate that is loose, missing (except by design) or worn through;

(3) A broken or missing snubber activating spring; or

(4) Snubber unit that is broken, or in the case of hydraulic units, is leaking clearly formed droplets of oil or other fluid;

(c) A side bearing in any of the following conditions:

(1) Part of the side bearing assembly is missing or broken;

(2) The bearings at one end of the car, on both sides, are in contact with the body bolster (except by design);

(3) The bearings at one end of the car have a total clearance from the body bolster of more than $\frac{3}{4}$ of an inch; or

(4) At diagonal opposite sides of the car, the bearings have a total clearance from the body bolsters of more than $\frac{3}{4}$ of an inch;

(d) Truck springs-

(1) That do not maintain travel or load;

(2) That are compressed solid; or

(3) More than one outer spring of which is broken, missing, in any spring cluster;

(e) Interference between the truck bolster and the center plate that prevents proper truck rotations; or

(f) Brake beam shelf support worn so excessively that it does not support the brake beam.

Guidance:

Truck Side Frame or Bolster

Freight car trucks side frame or truck bolster “broken” means separated into parts.

Extensive cracking must be reported immediately as this condition can lead to rapid failure.

A tension member (the diagonal portion of the side frame extending from the pedestal to the base of the spring pocket) must be cracked more than $\frac{1}{4}$ - inch in a transverse direction (right angle) before it can be considered defective.

Snubbing Devices

The terms snubbing units, attachments, and wear plates, where used collectively, have been consolidated into one term, snubbing device. Friction style snubbing devices with activating

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springs broken are defective.

“Clearly formed droplets,” means a **fresh** accumulation of grease/oil (not dirty or dried) which **continually** leaks out and forms into beads. If it is just wet looking, it is not a defect.

A car that has ineffective snubbing, or broken snubbing devices, will respond more violently to track irregularities and may cause a derailment. This would include the condition of a loose, missing or worn through snubber wear plate. FRA has reviewed laboratory analysis on the subject of friction wedges, that have added friction material, which are used on ABC-NACO Swing Motion trucks. The lab reports provided adequate evidence to conclude that there is no safety issue with composition friction material that is cracked, degraded, or missing from the wedge. Wedges which have loose composition layers provide adequate damping forces. Although new wedges generate greater damping forces than used wedges that have polished wear surface, a composition wedge that has all of its composition material removed still retains the damping characteristics of an all metal wedge. Therefore, FRA will not take exception to degraded friction material condition on friction wedges used on ABC-NACO Swing Motion trucks. The wear indicator on the metal wedge is the qualifier.

Hydraulic snubbing devices equipped with a "sight gauge" or "inspection window," which visibly indicates the presence of oil or other fluid when in a normal vertical position, will not be considered as defective, regardless of presence of clearly formed droplets. The effectiveness of the device should be examined for tension, compression, movement, etc.

Side Bearings

A missing or broken side bearing generates an uneven load distribution in the suspension system that could shift the lading. This in turn would cause the car to sway and derail.

All side bearing measurements should be made when the car is placed on tangent and level track. All measurements must be made from the top of the truck side bearing roller or bearing surface in the cage, to the car body side bearing surface. This measurement is taken at opposite sides of the car or at one end of the car. The sum of either of the two measurements may not exceed 3/4 inch.

Although Federal regulations do not address specific measurement standards for constant contact side bearings, measurements have been established by the industry. The industry has developed special gages for qualifying constant contact side bearings. When Inspectors identify constant contact side bearings that are worn beyond the manufacturer's limits, then they are not in contact as designed and appropriate enforcement action should be taken. This is based on the language found in §215.119(c)(2) ...*except by design*. All measurements must be taken on tangent-level track.

Truck Springs

Inner coil springs are not to be taken as a defect regardless of the number broken. One broken outer truck spring in a cluster does not create enough of an uneven load distribution

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to remove the car from service. Appropriate enforcement action must be taken if a car has more than one missing or broken outer truck spring within any cluster, or if the remaining truck springs are fully compressed. If the Inspector detects evidence of springs oscillating in the spring nest, this is an indication that there is possible “truck hunting” problems and the Inspector should make a comprehensive inspection of all truck components.

Regulation:

Car Bodies

§215.121 Defective Car Body.

A railroad may not place or continue in service a car, if:

- (a) Any portion of the car body, truck, or their appurtenances (except wheels) has less than a 2½ inch clearance from the top of the rail;
- (b) The car center sill is:
 - (1) Broken;
 - (2) Cracked more than 6 inches; or
 - (3) Permanently bent or buckled more than 2½ inches in any six foot length;
- (c) The car has a coupler carrier that is:
 - (1) Broken;
 - (2) Missing;
 - (3) Non-resilient and the coupler has a type F head.
- (d) After December 1, 1983, the car is a box car and its side doors are not equipped with operative hangers, or the equivalent to prevent the doors from becoming disengaged.
- (e) The car has a center plate:
 - (1) That is not properly secured;
 - (2) Any portion of which is missing; or
 - (3) That is broken; or
 - (4) That has two or more cracks through its cross section (thickness) at the edge of the plate that extend to the portion of the plate that is obstructed from view while the truck is in place; or
- (f) The car has a broken sidesill, crossbearer, or body bolster.

Guidance:

The requirement for maintaining car body clearance of 2 ½ - inches is to ensure that car body items, including air hoses, are prevented from dragging on road crossings or track structures, which are a safety hazard. Heavy depressed flat cars used in hauling heavy loads should be carefully inspected.

Center Sills

A center sill is generally the central longitudinal member of the under-frame of a car, which forms the backbone of the under-frame and transmits most of the buffing shocks, from one

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end of the car to the other.

A center sill “broken” means a fracture resulting in complete separation into parts. A condition of this nature could result in train separation or derailment.

A center sill that is cracked more than a total of 6-inches through the center sill, or center sill cross sections immediately adjacent to each other, is hazardous because it may undermine the integrity of the sill or propagate rapidly and thus result in a break.

A center sill bent or buckled more than 2 ½ - inches in any 6-foot length may undermine the integrity of the sill and result in a center sill failure.

Similarly, in “sliding sill” designs, a single hydraulic unit is installed at the center of the car and acts to control longitudinal forces received at either end of an auxiliary center sill, which is free to travel longitudinally within a fixed center sill. This type of center sill should be inspected for defects such as, cracks more than 6- inches, bent or buckled more than 2 ½ - inches in any 6- foot length or broken.

Coupler Carrier

The design of an “F” type coupler head requires a spring loaded coupler carrier due to its locking characteristics.

Door safety hangers

FRA considers door safety hangers to be one of the most critical safety requirements. A number of personal injuries and fatalities have occurred which involved doors falling off box cars. Door safety hangers must be capable of restraining the side door when the side door is in an open position and the bottom rollers of the door are off the door tracks.

Regulation:

Draft System

§215.123 Defective Couplers

A railroad may not place or continue in service a car, if-

- (a) The car is equipped with a coupler shank that is bent out of alignment to the extent that the coupler will not couple automatically with the adjacent car;
- (b) The car has a coupler that has a crack in the highly stressed junction area of the shank and head as shown in the figure below (see figure 2).
- (c) The car has a coupler knuckle that is broken or cracked on the inside pulling face of the knuckle.
- (d) The car has a knuckle pin or knuckle thrower that is:
 - (1) Missing; or
 - (2) Inoperative; or
- (e) The coupler has a retainer pin lock that is-

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- (1) Missing; or
- (2) Broken; or
- (f) The car has a coupler with any of the following conditions:
 - (1) The locklift is inoperative;
 - (2) The coupler assembly does not have anti-creep protection to prevent unintentional unlocking of the coupler lock; or
 - (3) The coupler lock is-
 - (i) Missing;
 - (ii) Inoperative;
 - (iii) Bent;
 - (iv) Cracked; or
 - (v) Broken.

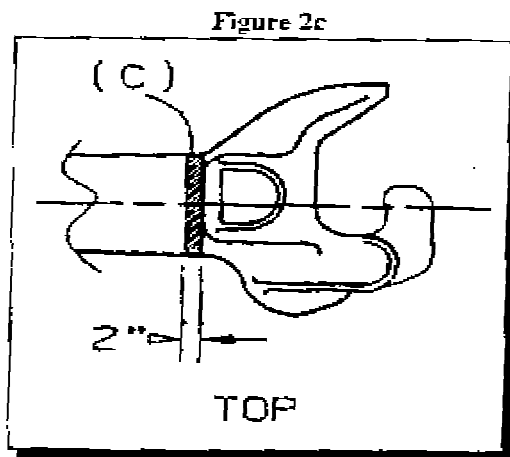
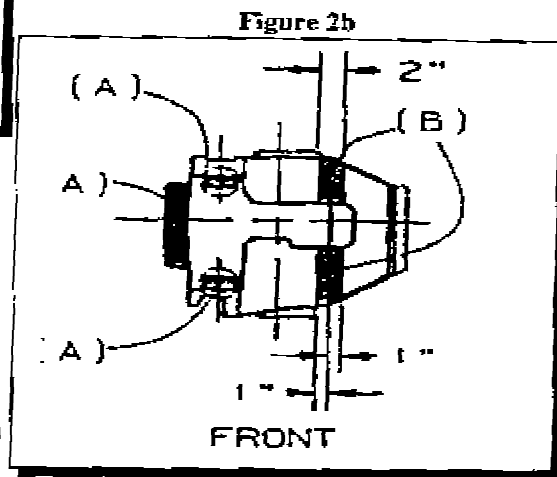
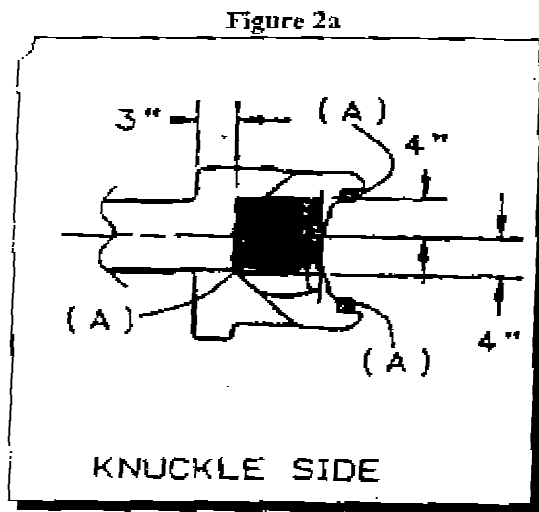
Guidance:

Based on laboratory test results, the following clarification is provided with respect to enforcement guidance for the removal of cracked couplers from service:

A railroad may not place or continue in service a car, that has a coupler that has a crack:

- which extends beyond the shaded areas labeled (A) in figure 2a; or
- which extends 2- inches in length, or in additive length if more than one crack is present, within a panel 2- inches wide as indicated by the shaded areas labeled (B) in Figure 2b; or
- which extends beyond the radius area between the horn and the shank as indicated by the shaded area labeled (C) in Figure 2c; or
- which extends 2- inches in length, or in additive length if more than one crack is present, within the radius area between the horn and shank as indicated by the shaded areas labeled (C) in Figure 2c; or
- in the unshaded areas of Figure 2a, 2b, and 2c.

Additionally, Inspectors who find couplers having a section broken out within the shaded areas labeled (B) or (C) in figures 2b and 2c, must be removed from service. If couplers have a section broken out within the other shaded areas, the Inspector should bring this condition to the attention of the railroad, as the AAR identifies this condition as cause for removal in their Interchange Rules. **(MP&E 98-43)**



The regulation is specific in that the coupler knuckle must be broken or cracked on the inside pulling face of the knuckle.

The anti-creep protection should be capable of preventing the unintentional unlocking of the coupler lock. A coupler lock lift slightly raised may raise the coupler lock and nullify the anti-creep protection of the coupler. When inspection is made for anti-creep, the car should not

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be in draft or buff and should be on level, tangent track. The lack of “rod-eye” clearance does not necessarily mean there is no anti-creep protection.

Regulation:

§215.125 Defective Uncoupling Device.

A railroad may not place or continue in service a car, if the car has an uncoupling device without sufficient vertical and lateral clearance to prevent-

- (a) Fouling on curves; or
- (b) Unintentional uncoupling.

Guidance:

Toggle clearance should be closely examined.

Regulation:

§215.127 Defective Draft Arrangement.

A railroad may not place or continue in service a car, if-

- (a) The car has a draft gear that is inoperative;
- (b) The car has a broken yoke;
- (c) An end of car cushioning unit is-
 - (1) Leaking clearly formed droplets; or
 - (2) Inoperative;
- (d) A vertical coupler pin retainer plate-
 - (1) Is missing (except by design); or
 - (2) Has a missing fastener;
- (e) The car has a draft key, or draft key retainer, that is-
 - (1) Inoperative; or
 - (2) Missing; or
- (f) The car has a missing or broken follower plate.

Guidance:

Whenever the draft gear unit is not performing its intended function of absorbing shocks and impact forces as designed, the unit is defective.

A striker casting that exhibits **fresh** “batter marks” is generally an indication of a defective draft system component.

An **end of car** cushioning unit is defective if it is inoperative and not performing its intended function of absorbing shocks and impacts, or is leaking clearly formed droplets. A cushioning unit should not be considered defective if it is losing only a minute amount of fluid through “seepage.” The primary concern is an excessive loss of fluid that could render the cushioning unit inoperative. Therefore, a cushioning unit is defective if it is leaking fluid in clearly formed droplets. “Clearly formed droplets” means a **fresh** accumulation of oil (not dirty or dried) which continually forms into beads.

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Based on technical data presented at an MP&E TRC, FRA has determined that cushioning unit pressure indicators are **not** sufficiently reliable for FRA Inspectors to determine the operating status of a cushioning unit based on the indication provided by these devices. The unreliability of the indicators is due to the variable buff and draft forces exerted on cushioning devices while freight cars are in use in train yards. Therefore, FRA Inspectors should not rely on cushioning unit pressure indicators to determine the operational status of a cushioning device. Thus, if clearly formed droplets are present the cushioning unit is defective and must be repaired, regardless of the indication provided by the pressure indicator. However, once a freight car is placed on a repair track, the railroad may use the pressure indicator to aid in determining the operating status of the cushioning unit.

(MP&E 00-03)

A unit is defective if the front or rear lugs are broken or missing.

Of the three return springs, more than one defective spring constitutes a defective condition.

Inspectors should be aware that some tank cars have sustained a failed stub sill assembly, resulting in the train parting and going into emergency. Investigations revealed that the head block, which normally is attached by welding to the tank head and stub sill, was not attached to the stub sill and was actually “floating” (only attached to the tank head). The top of the stub sill assembly showed signs of the head block rubbing. The stub sill failed at the rear of the draft gear, completely separated, including the end cross over platform. The broken stub sill remained attached to the adjacent car by the top and bottom shelf coupler, which prevented it from falling to the track structure.

There have been similar problems with fabricated stub sill dual diameter tank cars. Some cars built between 1962 and 1969 have exhibited minor crack indications in the weld connecting the cradle pad to the tank. Those cars with verified cracks, revealed that the cracks always initiated in the weld attachment to the top cover plate and did not propagate through the top cover plate to the sill.

Due to the described experiences, a close inspection is to be made to **all tank cars with stub sills**. The installation should be carefully examined at the stub sill securement for any signs of stress. If the inspection of any tank car equipped with stub sills reveals any defect of the stub sill, the Inspector is to notify the regional MP&E Specialist providing the following information:

Date: _____ Railroad _____ Shipper _____ Location _____
Initial & Car number _____ Built date _____ DOT Spec. _____
Waybill No. and Date, Commodity _____ Routing _____
Description of defect _____
Action taken by the railroad _____
Any other information _____

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The MP&E Specialist should forward this information to the MP&E Staff Director.
(MP&E 98-24)

Regulation:

§215.129 Defective cushioning device.

A railroad may not place or continue in service a car if it has a cushioning device that is-

- (a) Broken;
- (b) Inoperative; or
- (c) Missing a part-

unless its sliding components have been effectively immobilized.

Guidance:

A **center of car** cushioning unit should not be considered defective if it is losing only a minute amount of fluid through “seepage.” The primary concern is an excessive loss of fluid that could render the cushioning unit inoperative. A leaking cushioning unit is defective if it is leaking fluid in clearly formed droplets. Note: “clearly formed droplets” means a **fresh** accumulation of oil (not dirty or dried) which continually and/or slowly forms into beads. If the area is just wet in appearance, it should not be taken as a defective condition.

Regulation:

Subpart C-Restricted Equipment

§215.203 Restricted cars.

(a) This section restricts the operation of any railroad freight car that is-

- (1) More than 50 years old, measured from the date of original construction;
 - (2) Equipped with any design or type component listed in appendix A to this part;
- or

(3) Equipped with a Duryea under-frame constructed before April 1, 1950, except for a caboose which is operated as the last car in a train.

(b) A railroad may not place or continue in service a railroad freight car described in paragraph (a) of this section, except under conditions approved by the Federal Railroad Administrator.

(c) A railroad may petition the Administrator to continue in service a car described in paragraph (a) of this section. Each petition shall be:

- (1) submitted not less than 90 days before the car is to be operated;
- (2) Be submitted in triplicate; and
- (3) State or describe the following:
 - (i) The name and principal business address of the petitioning railroad.
 - (ii) The name and address of the entity that controls the operation and maintenance of the car involved.
 - (iii) The number, type, capacity, reporting marks, and car numbers of the cars, their condition, status and age measured from the date of original construction.

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- (iv) The design, type component, or other item that causes the car to be restricted.
- (v) The maximum load the cars would carry.
- (vi) The maximum speed at which the cars would be operated.
- (vii) That each car has been examined and found to be safe to operate under the conditions set forth in the petition.
- (vii) The territorial limits within which the cars are to be operated and the name of each railroad that will receive the cars in interchange.

Guidance:

The Inspector should be aware that there are many approvals (some mistakenly call these waivers) in place allowing the continued operation of 50-year-old cars only in approved territorial limits with unique operating conditions. Cars operating over the 50-year limit must be stenciled with the letter **R**, as required in the next subpart.

Regulation:

Subpart D-Stenciling

§215.301 General

The railroad or private car owner reporting mark, the car number, and built date shall be stenciled, or otherwise displayed, in clearly legible letters and numbers not less than seven inches high, except those of the built date which shall not be less than one inch high:

- (a) On each side of each railroad freight car body; and
- (b) In the case of a tank car, in any location that is visible to a person walking at track level beside the car.

§215.303 Stenciling of restricted cars.

(a) Each restricted railroad freight car that is described in §215.205(a) of this part shall be stenciled, or marked-

- (1) In clearly legible letters; and
- (2) In accordance with paragraphs (b) and (c) of this section.

(b) The letter "R" shall be-

- (1) Placed immediately below or to the right of the car number;
- (2) The same color as the reporting mark; and
- (3) The same size as the reporting mark.

(c) The following terms, to the extent needed to completely indicate the basis for the restricted operation of the car, shall be placed on the car following the symbol "R" in letters not less than one inch high:

- (1) Age
- (2) Coupler.
- (3) Draft.
- (4) Bearings.
- (5) Truck.
- (6) Under-frame.

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- (7) Wheels.
- (8) Yoke.

§215.305 Stenciling of maintenance-of-way equipment.

- (a) Maintenance-of-way equipment (including self-propelled maintenance-of-way equipment) described in §215.3(c)(3) shall be stenciled, or marked-
 - (1) In clearly legible letters; and
 - (2) In accordance with paragraph (b) of this section.
- (b) The letters "MW" must be-
 - (1) At least 2 inches high; and
 - (2) Placed on each side of the car.

Guidance:

Maintenance-of-way (MofW) equipment is a piece of equipment owned/operated for railroad maintenance purposes and must be stenciled with **MW**. It cannot be used to haul commodities which will generate revenue for the railroad. Canadian MofW cars are stenciled with **RSE** (Railway Service Equipment) in lieu of the **MW**. FRA has granted a waiver to allow **RSE** stencil instead of the **MW** stencil on MofW cars based out of Canada.

If vandals have painted graffiti on the car and obscured the identification marks, the Inspector should point the defect out to the railroad for corrective action, but not issue a violation, unless these actions become rampant.

Inspectors should ensure that maintenance-of-way equipment is used for maintenance-of-way activities, and not used for revenue service.

Regulation:

Appendix D to Part 215 - Predeparture Inspection Procedure

At each location where a freight car is placed in a train and a person designated under §215.11 is not on duty for the purpose of inspecting freight cars, the freight car shall, as a minimum, be inspected for the imminently hazardous conditions listed below that are likely to cause an accident or casualty before the train arrives at its destination. These conditions are readily discoverable by a train crew member in the course of a customary inspection.

- 1. Car body
 - (a) Leaning or listing to side.
 - (b) Sagging downward.
 - (c) Positioned improperly on truck.
 - (d) Object dragging below.
 - (e) Object extending from side.
 - (f) Door insecurely attached.
 - (g) Broken or missing safety appliance.

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- (h) Lading leaking from a placarded hazardous material car.
- 2. Insecure coupling.
- 3. Overheated wheel or journal.
- 4. Broken or extensively cracked wheel.
- 5. Brake that fails to release.
- 6. Any other apparent safety hazard likely to cause an accident or casualty before the train arrives at its destination.

Guidance:

There have been instances of pre-departure mechanical inspections being conducted in an improper manner. FRA is particularly concerned about the practice of conducting pre-departure inspections pursuant to Appendix D of Part 215, while the equipment is moving (i.e., a “roll by” inspection) or by conducting such inspections from locomotives on an adjacent track. While regulations do not specify the physical actions necessary to conduct a proper inspection, FRA believes such inspections require that Inspectors position themselves in such a manner that all of the required observations can be safely made.

Such observations can not be safely made while equipment is moving or when the Inspector is positioned on a locomotive on an adjacent track. While some of the individual conditions may be observable while a train is moving, others are not, and a person cannot reasonably be expected to see all of them as a train is rolling by.

FRA Inspectors should strongly consider issuing violations whenever they observe the above inspection practices being performed instead of a proper Appendix D inspection. In appropriate circumstances, the Inspector may assess a civil penalty for each car in a train that does not receive the proper pre-departure mechanical inspection. These violations should be treated as violations separate and distinct from, and in addition to, any substantive violation conditions found on individual cars. **(MP&E 98-58)**

The regulations allow for a car to go to destination on an Appendix D inspection.

A person performing an Appendix D inspection cannot make the determination for movement under §215.9. However, if a train crew member is listed as a designated Inspector, he/she can make the determination for movement under §215.9, but would be required to perform a full inspection for compliance with this Part, not an Appendix D inspection.