



U.S. Department  
of Transportation

**Federal Railroad  
Administration**

# Memorandum

Date: June 15, 1998

Reply to Att. of: MP&E 98-14

Subject: Safety Appliance Securement

From: Edward R. English  
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To: Regional Administrators, Deputy Regional Administrators,  
Motive Power & Equipment Specialists and Inspectors

The Railroad Safety Appliance Standards, 49 CFR, Part 231, requires that safety appliances and their brackets be secured by ½ inch bolts with nuts outside (when possible) and riveted over, or with not less than ½ inch rivets. Additionally, in order to comply with the Safety Appliance Regulations, there must be a deformation of the threads to prevent the fastener from becoming insecure. This can be accomplished by one of the following methods:

1. Rivet the fastener;
2. Check the threaded portion of the bolt nearest the fastener with a chisel to c inch depth at two locations; or
3. Apply weld to the threaded portion of the threads, so as to deform them.

Additional approved safety appliance securement are: one and two piece rivets, bolts, Huck bolts, and Unilock and Disclock fasteners when properly applied.

Part 231 is explicit in requiring that handholds be securely fastened. By definition, secure means free from danger or risk of loss; free from fear or doubt; and not likely to fail or give way.

The Federal Railroad Administration's (FRA) longstanding policy concerning the securement of all safety appliances requires that safety appliances or supports for safety appliances must be mechanically fastened. Brackets or supports that are applied to a car structure (other than a tank car tank) solely for the securement of safety appliances are to be mechanically fastened to the car structure.

Many years of railroading experience has shown that welds are not uniform and are subject to failure, despite improvements in welding procedures. Cracks and breaks in

welds are difficult to detect during inspections. Therefore, welding is not considered to meet the definition of secure. This is particularly evident at repair facilities, where quality of workmanship is not always assured.

Safety appliances for other than steam locomotives are not addressed in Part 231, with the exception of 231.29, "Road locomotives with corner stairways" and 231.30 "Locomotives used in switching service". This does not mean that non-steam locomotives are not required to have proper safety appliances. It is FRA's position that other than steam locomotives must have proper safety appliances and are covered as cars of special construction.

This requires that locomotives other than steam have as nearly as possible the same complement of safety appliances as contained in the categories governing steam locomotives.

However, the FRA has not enforced the deformation of threads of bolts used to secure safety appliances on locomotives. These appliances are usually secured by self locking nuts and or lock washers, and to our knowledge has not presented a safety problem.

Exception should only be taken when the safety appliances on other than steam locomotives are insecure or presenting a potential safety hazard to railroad employees. Out of service form F6180.8 should only be issued if the safety appliance is defective to the extent it creates an immediate unsafe condition.

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