

TECHNICAL MANUAL

**TRANSPORTABILITY GUIDANCE
GENERAL RULES AND SUGGESTED PROCEDURES FOR
LOADING AND SECURING MILITARY CARGO IN
CLOSED RAILCARS**

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MILITARY CARGO IN CLOSED RAILCARS

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1. Introduction

a. This manual provides basic rules and procedures for proper application of materials used in loading and securing military cargo in closed railcars.

b. Information contained in this manual is extracted from the Association of American Railroads (AAR) Circular 42-D, *General Rules Covering Loading of Carload Shipments of Commodities in Closed Cars*; AAR Pamphlet 14, *Rules Regulating the Safe Loading of Freight in Closed Cars and Protection of Equipment*; and other AAR pamphlets covering specific commodities (app A). These AAR rules provide general information with respect to materials and procedures to be used in loading, blocking, and bracing commodities to be shipped. The AAR rules apply only within CONUS while the suggested loading procedures are applicable worldwide. AAR loading pamphlets on specific commodities may be obtained from the Freight Loading and Container Section, Association of American Railroads, 59 East Van Buren Street, Chicago, Illinois 60605.

c. The reporting of errors, omissions, and recommendations for improving this manual by the user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications and Blank Forms) and forwarded to the Director, Military Traffic Management and Terminal Service Transportation Engineering Agency, ATTN: MTT-GDP, P.O. Box 6276, Newport News, Virginia 23606.

2. General.

a. General Information.

(1) Boxcars are primarily employed to transport valuable commodities and products requiring protection from the weather or against breakage. Besides the plain type of box car intended for ordinary freight traffic there are boxcars made to accommodate the products peculiar to certain industries such as automobile parts, lumber, grocery products, appliances, and some bulk materials. Nearly a third (512,000) of the 1,710,659 railcars in service in 1973 were classed as boxcars. Of these approximately 25 percent were so equipped that they were assigned to specific services.

(2) Boxcars of 40 and 50-foot lengths in either 40 or 50-ton capacities constituted practically all the models built in the 40 years ending about 1960. The AAR Mechanical Division, in cooperation with the American Railway Car Institute, even prepared highly standardized designs that were the basis for hundreds of thousands of single and double-sheathed cars built over the four decades. Starting in the

early 1960's, the increases in length, cubic capacity, and weight carrying ability, which were sought for all types of freight cars, produced a series of spectacular jumps in boxcar size and capacity. The 60 and 86-foot cars in 70 and 100-ton designs were introduced generally for automobile parts service. Other high-cube designs have also been developed for household appliances.

(3) Because of the fragile nature of many commodities transported in boxcars, a higher percentage of these cars are fitted with sliding sill and end-of-car cushioning than has been the case for any other type of car. Load-stowing and load-retaining devices are more generally applied in boxcars for the same reason.

(4) As the use of lift trucks and other materials handling equipment has grown, there has been increasing emphasis on door openings through which these machines can maneuver readily. Shippers have been seeking wider door openings. There are now several types of cars on which the entire side opens to facilitate materials handling operations. Another popular arrangement has been a combination of a single sliding door and a single plug door on each side of the car to give the opening normally produced by the double sliding door arrangement. The plug door single and double arrangements have been used exclusively on a growing number of cars.

(5) The insulated boxcar has been increasingly popular. This type of car now handles many of the shipments that formerly moved in heated refrigerator cars. Many shippers also specify them for shipments that could be damaged by condensation.

(6) Express boxcars equipped for passenger train operation are built essentially the same as those in freight service but are fitted with air, signal, and steam-heat pipes and have passenger-car brakes and high-speed trucks.

(7) Listed in appendix B are the AAR designating letters and definitions for boxcar types of railcars.

(8) The Association of American Railroads loading rules are formulated for the purpose of providing safe and economical methods of loading railcars. The materials and procedures specified in these rules are *minimum requirements* based on exacting studies and experiences over a period of many years. All of the general rules and requirements for blocking and securing loads outlined in AAR Pamphlet 14 and AAR Circular 42D are *mandatory*, unless otherwise provided.

(9) The general rules contained in AAR Circular 42-D govern the loading of various com