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LOADING RULES  
FREIGHT STATION SECTION

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Approved and Published  
By  
GENERAL COMMITTEE  
OPERATING-TRANSPORTATION  
DIVISION

# ASSOCIATION OF AMERICAN RAILROADS

OPERATIONS AND MAINTENANCE DEPARTMENT  
OPERATING-TRANSPORTATION DIVISION

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## RULES for LOADING AND UNLOADING TANK CARS USED FOR TRANSPORTING NON-DANGEROUS COMMODITIES

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ISSUED AUGUST, 1941

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OPERATING-TRANSPORTATION DIVISION  
59 EAST VAN BUREN STREET  
CHICAGO, ILLINOIS

Printed in U. S. A.

## PREFIX

The methods outlined herein for the selection of tank cars as well as the procedure for loading and unloading such cars are applicable only to tank cars used for the transportation of commodities not classed as dangerous by the Regulations of the Interstate Commerce Commission.

For methods to be followed in the selection, loading and unloading of tank cars for the transportation of Commodities classed as dangerous by the currently effective Interstate Commerce Commission Regulations see Topping's Freight Tariff No. 4 supplements re-issues, etc.—or Bureau of Explosives' Pamphlet No. 21.

## QUALIFICATIONS OF TANK CARS

A tank car that leaks, or that has any defect which would make leakage during transit probable, or that has not been properly tested and marked, must not be used.

Before a tank car may be used for the transportation of any commodity other than that commodity for which it is currently equipped and authorized as indicated by the name of the commodity stenciled on the tank in accordance with the marking requirements of the specification, the owner of the car, or party authorized by the owner, must secure approval for changes in the stenciled name, manhole closure, safety valve, induction and eduction valves and pipes, and such other changes as are necessary to make the car suitable for the new service. A certificate showing the changes which were approved and made and the date must be filed with the Secretary, Mechanical Division, Association of American Railroads.

## LOADING OF TANK CARS

Before tank cars are loaded, the shipper must examine the tanks and their appurtenances to see that the safety and outlet valves, the safety vents, the closures of all openings, and the protective covers of all appurtenances are in proper condition. Tanks with bottom discharge outlets must have their outlet caps off during entire time tanks are being loaded. After loading, tanks which show any dropping of liquid contents at the seams or rivets, or with bottom outlet valves which permit more than a dropping of the liquid with the outlet caps off, must not be offered for transportation until proper repairs have been made.

Tank cars equipped with interior heater coils must be loaded with heater coil inlet and outlet caps off during entire time tanks are being loaded and show no leakage with these caps off.

All closures of openings in tank cars and of their protective housings must be properly secured in place by the use of a bar, wrench, or other suitable tool. A wrench having a handle at least 48 inches long must be used to apply the outlet valve cap. Manhole covers and outlet valve caps must be made tight against leakage of vapor and liquid, by use of gaskets of suitable material, before cars are tendered to carrier for transportation. Luting materials must not be used in outlet cap or on threads of bottom outlet.

Combustible liquids, with flashpoint between 81 and 200 degrees, Fahrenheit, must not be loaded into tank cars on carriers' property from tank trucks, wagons or other portable containers.

Section 8 of Rule 35, Consolidated Freight Classification No. 14, effective December 31, 1940, provides in part as follows:

"... Combustible liquids having a flash point lower than 200 degrees Fahrenheit, except asphalt or tar, in tank cars, must not be shipped and will not be delivered unless consigned to parties accepting delivery

on private sidings equipped with facilities for piping the liquid from tank cars to permanent storage tanks, or consigned to parties accepting delivery from railroad sidings where facilities exist for piping liquid from tank cars to permanent storage tanks."

In determining the maximum weight of load permitted, the following shall govern except when load weight limit has been reduced by car owner:

Marked Capacity of Car, Pounds	Permissible Total Weight of Car and Load, Pounds	Permissible Load Weight, Pounds
40,000	66,000	66,000 less light weight of car
60,000	103,000	103,000 less light weight of car
80,000	136,000	136,000 less light weight of car
100,000	169,000	169,000 less light weight of car
140,000	210,000	210,000 less light weight of car
200,000	251,000	251,000 less light weight of car

After loading is completed car must be examined to ascertain if there is sufficient clearance between side bearings to permit free curvature of trucks. The average clearance per side bearing should not exceed ¼ inch.

## UNLOADING OF TANK CARS

In unloading tank cars the following rules must be observed:

Section 8 of Rule 35, Consolidated Freight Classification No. 14, effective December 31, 1940, provides in part as follows:

"... Combustible liquids having a flash point lower than 200 degrees Fahrenheit, except asphalt or tar, in tank cars, must not be shipped and will not be delivered unless consigned to parties accepting delivery on private sidings equipped with facilities for piping the liquid from tank cars to permanent storage tanks, or consigned to parties accepting delivery from railroad sidings where facilities exist for piping liquid from tank cars to permanent storage tanks."

Unloading operations should be performed only by reliable persons properly instructed and made responsible for careful compliance with these regulations.

Brakes must be set and wheels blocked on all cars being unloaded.

Caution signs must be so placed on the track or car as to give necessary warning to persons approaching car from open end or ends of siding and must be left up until after car is unloaded and disconnected from discharge connection. Signs must be of metal, at least 12 by 15 inches in size and bear the words, "STOP—Tank Car Connected," or "STOP—Men at Work," the word "STOP" being in letters at least 4 inches high and the other words in letters at least 2 inches high. The letters must be white on a blue background.

Before manhole cover or outlet valve cap is removed, tank car must be relieved of all interior pressure by cooling tank with water or venting tank by raising safety valve or opening vent on dome at short intervals. These precautions are not necessary when car is equipped with a manhole cover which hinges inward or with an inner manhole cover which does not have to be removed to unload the car, and when pressure is relieved by piping vapor into a condenser or storage tank.

After pressure, if any, is released, seal should be broken and manhole cover removed as follows:

**Screw type.**—Cover must be loosened by placing bar between manhole cover lug and knob. After two complete turns, so that vent openings are exposed, the operation must be stopped, and if there is any sound of escaping vapor, the cover must be again screwed down tightly and interior pressure relieved as prescribed above, before again attempting to remove the cover.

**Hinged and bolted type.**—All nuts must be unscrewed one complete turn, after which same precautions as prescribed for screw type cover must be observed.

**Interior type.**—All dirt and cinders must be carefully removed from around cover before yoke is unscrewed.

When car is unloaded through bottom outlet valve, manhole cover must be adjusted as follows:

**Screw type.**—Manhole cover must be put in place, but not entirely screwed down, in order that air may enter tank through vent holes in threaded flange of cover.

**Hinged and bolted type.**—A small wooden block should be placed under one edge of cover.

**Interior type.**—Screw must be tightened up in yoke so that cover will be brought up within one-half inch of closed position.

When unloading through bottom outlet of cars equipped with interior manhole type of covers, and in all cases where unloading is done through the manhole (unless special covers are used, provided with safety-vent opening and tight connection for discharge outlet), the manhole must be protected against entrance of dust, dirt, cinders or other foreign matter, that might cause contamination of the lading, by asbestos or metal covers or by being covered and surrounded with wet burlap. Burlap must be kept damp by replacement or the application of water as needed.

Seals or other substances must not be thrown into the tank. Also care must be taken to avoid spilling any of the contents over car or tank.

Valve rod handle or control in dome must be operated a few times to see that outlet valve in bottom of tank is on its seat before valve cap is removed.

Valve cap, or reducer when large outlet is to be used, must be removed with suitable wrench after set screws are loosened and a pail is placed in position to catch any liquid that may be in outlet chamber.

If valve cap or reducer does not unscrew easily, it must be tapped lightly with mallet or wooden block in an upward direction. If leakage shows upon starting the removal, cap or reducer must not be entirely unscrewed, but sufficient threads must be left engaged and sufficient time allowed to permit escape of any accumulation of liquid in the outlet chamber. If leakage stops or initial rate of leakage diminishes materially, cap or reducer may be entirely removed. If initial rate of leakage continues, further efforts must be made to seat the outlet valve. If this fails, the cap or reducer must be screwed up tight and tank must be unloaded through the dome.

If upon removal of the outlet cap the outlet chamber is found to be blocked with frozen liquid or any other matter, replace cap immediately and make careful examination to determine that outlet casting has not been cracked. If the obstruction is not frozen liquid, the car must be unloaded through the dome. If the obstruction is frozen liquid and no crack has been found in the outlet casting, the car may, if circumstances require it, be unloaded from the bottom as follows:

Remove cap and attach unloading connections immediately. Then, before opening the valve inside the tank car, apply steam to outside of outlet casting or wrap casting with burlap or other rags and apply hot water to melt the frozen liquid. In any event, top unloading is considered safer than bottom unloading.

Unloading connections must be securely attached to unloading pipes on dome or to bottom discharge outlets before discharge valves are opened.

Tank cars must not be allowed to stand with unloading connections attached after unloading is completed, and throughout the entire period of unloading, or while car is connected to unloading device, the car must be attended by the unloader.

If necessary to discontinue unloading a tank car for any reason, all unloading connections must be disconnected. All valves must first be tightly closed, and the closures of all other openings securely applied.

As soon as a tank car is completely unloaded, all valves must be made tight, the unloading connections must be removed and all other closures made tight, except that heater coil inlet and outlet pipes must be left open for drainage. The manhole cover must be applied by the use of a bar or wrench, the outlet valve reducer and outlet valve cap by the use of a wrench having a handle at least 48 inches long, and the outlet valve cap plug, end plug, and all other closures of openings and of their protective housings by the use of a suitable tool.

Railroad defect cards must not be removed.

Ground around connections must be covered with fresh, dry sand or dirt, if any materials have been spilled previously.

All tools and implements used in connection with unloading should be kept clean at all times.

