



Interoffice Communication

To John Friend ✓
From T. J. Gross
Date February 6, 1976
Subject Investigation - Department of Transportation

Mr. Collier H. Laws, U. S. Department of Transportation, called this morning reporting that he had found a couple of DOT violations and irregularities concerning our VCM cars. Mr. Law inspected the cars on Thursday, February 5, at the Southern Pacific yard. These cars were loaded with VCM destined for Oklahoma City.

Below are the violations and irregularities:

CONX 9037	Education Valve Closure Plug Finger Tight
ACFX 17495	Dangerous Placard Missing
ACFX 17481	Dangerous Placard Missing (Bracket also missing)

Law pointed out that he would not visit the plant this time because of the minimum violations found; however, he would continue to inspect our tank cars for violations. He pointed out the hazardous material regulation (attached) that were violated. He also stated we had made a tremendous improvement since the inspection in June and was pleased with our progress. I indicated to him that we had instigated a check procedure to solve these problems.

I believe the procedures developed on the pre and post loading check sheets presently in service, if used correctly, will solve these type problems. It is imperative that the Shift Supervisor instruct and review the procedures with each Loader and continue to spot check for these type of deficiencies.

Doyle Smith of Transportation group has been notified.

T. J. Gross

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PLACARDS ON CARS

§ 174.540 "Explosives" placards. (a) Explosives placards as prescribed in § 174.550 must be applied to certified cars containing explosives, class A, specified in §§ 173.53 to 173.87. Placards must show in the spaces provided station name and date.

NOTE 1: For cars requiring the poison gas placard see § 174.542.

§ 174.541 "Dangerous" placards; "Dangerous-Radioactive Material" placards; or "Caution-Residual phosphorus" placards. (a) "DANGEROUS" placard, as prescribed by § 174.552 must be applied to cars, and container cars, as follows:

(1) Cars containing one or more packages bearing a flammable liquid, flammable solid, flammable gas, oxidizer, organic peroxide, corrosive (liquid only), or poison label, as described in §§ 173.405 to 173.417 of this subchapter.

(2) Cars containing flammable solids, oxidizing materials or poisonous solids, class B, in bulk.

(3) Tank cars containing flammable liquids, flammable solids, oxidizing materials, corrosive liquids, poisonous liquids or solids, class B, flammable compressed gases, or nonflammable compressed gases.

(4) Cars containing shipments of explosives, class B.

NOTE 1: For cars also requiring the poison gas placard see § 174.542.

(b) When explosives, class A, are loaded in the same car with explosives, class B, or poisonous solids or liquids, class B, only the "Explosives" placard is required.

(c) "Dangerous-Radioactive Material" placards, as prescribed in § 174.553, must be applied to cars containing packages bearing a "radioactive yellow-III" label (three vertical red stripes) as described in § 173.416(e) of this subchapter, and to carload lots under §§ 173.392 and 173.393 (j) and (k) of this subchapter.

(d) "Caution-Residual phosphorus" placard, as prescribed in § 174.555, must be applied to tank cars which last contained shipments of white or yellow phosphorus and which are required to be filled with water or inert gas before tank car is offered for return movement as provided in § 173.190 (b) (3).

§ 174.542 "Poison gas" placards. (a) "Poison gas" placards as prescribed by § 174.551 of this part must be applied to cars as follows:

(1) Cars containing one or more packages or articles bearing the "Poison gas" label.

(2) Cars containing ammunition for cannon with toxic gas projectiles, or projectiles, bombs, or other containers loaded with toxic gas requiring the "Poison gas" label.

NOTE 1: The poison gas placard must be applied to cars in addition to any other placards required.

(b) "Flammable poison gas" placards. "Flammable poison gas" placards as prescribed in § 174.556 must be applied to Class 103A-W tank cars containing hydrocyanic acid.

(c) "Poison gas" placards. "Poison gas" placards, for tank cars, as prescribed in § 174.557 must be applied to tank cars containing class A poisons except hydrocyanic acid.

§ 174.543 Placarding cars; passenger trains. (a) When a freight, baggage, or express car containing freight shipments of explosives, class B, or freight shipments of hazardous materials other than explosives requiring labels as prescribed by Part 173 not including class A poison gases or liquids, is hauled in a passenger train and such car or cars are not occupied by an employee of the carrier, proper placards must be applied to the car as required by this part.

§ 174.544 Placards not required. (a) Placards are not required for:

- (1) Cars containing explosives, class C.
- (2) Cars, other than tank cars, containing nonflammable gas.
- (3) Cars containing irritating materials.
- (4) Cars loaded with electric storage batteries containing electrolyte or corrosive battery fluid in carload lots.
- (5) Cars carrying shipments of electrolyte acid or corrosive battery fluid together with self-propelled vehicles or mobile agricultural machinery in accordance with the provisions of 173.257 (e).
- (6) Cars containing packages of radioactive material which are exempted from labeling under § 173.391 of this subchapter, which carry only the labels described in § 173.416 (a) and (b) of this subchapter, or which are exempted from placarding under § 173.392 (c) of this subchapter.

§ 174.545 Commodity name on carloads. (a) Placards for carloads of Class B explosives and other hazardous materials must show in the space provided on the placard, the proper shipping name of the contents as shown in the list of hazardous materials in § 172.5 (a) of this chapter. Alternatively, the proper shipping name may be shown on tagboard cards measuring approximately 5 by 8 inches securely attached to each side of the car.

§ 174.546 Placards must be standard. (a) Placards must conform to standards as prescribed. Samples will be furnished by the Bureau of Explosives on request.

(b) Tag-board placards must be printed on strong tag-board of quality and strength not less than that designated commercially as 100 percent sulphate, weighing 125 pounds per ream, of sheets 24 x 36 inches, and having a resistance of not less than 60 pounds per square inch Mullen test.

(c) Paper placards must be printed on strong white paper.

(d) Placards or car cards which by their shape, coloring, or printing may be readily confused with the standard placards prescribed in this part must not be used.

(e) Carrier's or shipper's name and stationery form number may be printed on placards in type not larger than 10 point, but must be printed thereon separate from any placard wording.

(f) When the tag board placards bear wording prescribed in § 174.552 (a) of this part, and provided the wording prescribed by § 174.563 (e) of this part appears on the reverse side thereof, the words "removed or" may be omitted or the word "removed" changed to "reversed," as the case may be.

(g) Placards remaining on hand and in compliance with § 174.552 (a) or § 174.553 (a) in effect on June 19, 1960, may be used until present stocks are exhausted.

§ 174.547 Carriers supply of placards. (a) Carriers must keep on hand an adequate supply of all necessary placards for placarding cars loaded by them and for the replacement of missing placards on loaded cars while in transit.

§ 174.548 Placarded cars. (a) Shippers must have applied placards to cars loaded by them when cars are acceptable for transportation. (See § 174.549 of this part for method of application.)

§ 174.549 Application of placards. (a) Placards must be securely applied one to each end and each side of car, as follows:

(1) By tacking tag-board placards to each end and each side of cars, or to placard boards of suitable size provided for the purpose.

(2) Placards applied to the sides of closed or open top cars containing explosives or other dangerous articles must be attached to the fixed placard board or to the side of the wooden car between car initials and number and the car door.

(3) Tacks when used must have heads at least 1/4 inch across. At least 5 tacks must be used, one at each corner and one in the center of the placard, or when stapling devices are used the staples should be made of flat metal of not less than 19 gauge, and the space between the legs of the staples should be at least 3/8 inch and length of staples not less than 1/4 inch. At least 9 staples must be used, one at each corner, one along edge between each corner, and one in center. Tacks, nails, staples, or other devices used in previous application of placards must be removed when their presence interferes with proper application of placards.

(4) By insertion of tag-board placards in suitable placard holders affixed to cars.

(5) Paper placards must be securely pasted to metal or other smooth surfaces. Metal placard boards must be used when provided for the purpose. Grease or other substances which interfere with secure application must be removed from surfaces before pasting on placards.

(6) By application of adhesive tape, which shall be not more than 1 1/4 inches wide and which shall be applied around the entire perimeter of the placard so that approximately one-half the width of the tape adheres to the placard and one-half to the surface to which the placard is attached. Tape must be properly applied, weather-resistant, and capable of holding the placard securely in position under conditions normal to transportation. This method is authorized only when attachment of placards to metal surfaces is necessary and the metal surface is sufficiently smooth and of sufficient size to permit attachment of the placards in their proper position.

(b) Placards applied to cars must have the printing in horizontal position.

(c) "Explosives" placards and car certificates must be placed alongside of each other.

(d) [Reserved].

NOTE 1: Because of the present emergency and until further order of the Department, gondola cars used for the shipment of bombs or poison gas, may be placarded on both sides and both ends of car.

(c) word on surface side.

NOTE: Cars may be required to have placards on both sides.

(f) Placards must be seen on white or blue placards both sides require contain A explosive

(g) Placards must be seen on the prescribed holders ing on t legible.

(h) Placards must be seen on sides an contain: as requir: such car placards of the car

§174.5 placard and must ing must

11 inches

§ 174.55 other than 10 x 14 1/2 inch; the

10 inches

(e) Placard holders must be so constructed as not to obstruct the wording, change the shape of the placard, or reduce the exposed surface of the placard more than three-eighths of an inch on each side.

Note 1: Permanent metal holders designed to provide for secure attachment, easy application, removal, or reversal of placards prescribed in these regulations are required on all new tank cars, on new underframes to which tanks are applied, and on all tank cars receiving general repairs.

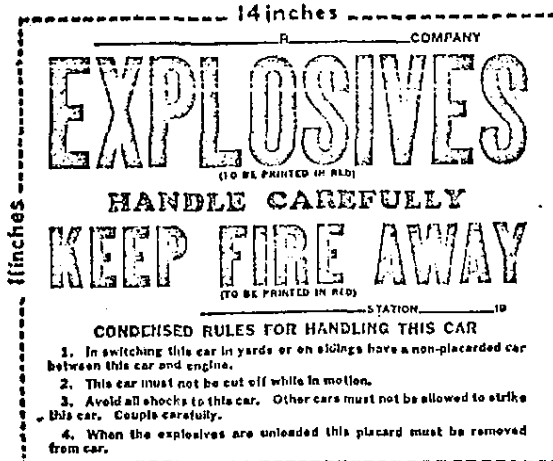
(f) Placards as required by §§174.540, 174.541, and 174.542 must be securely applied to both sides and both ends of a container car on which a container or containers loaded with explosives, class A or B, or with dangerous articles requiring labels, are placed; or placards must be securely applied to both ends of such a car and to both sides of a container loaded with such articles. Car certificates required by §174.525 must be securely applied to both sides of a container car on which a container or containers loaded with class A explosives are placed.

(g) Metal reversible placards, bearing on one side the "Dangerous" placard wording as prescribed in §174.552 of this part and on the reverse side the "Dangerous—Empty" placard wording as prescribed in §174.563 of this part may be used in lieu of placard holders prescribed in Note 1 to §174.549 (e) of this part. The wording on these placards must be kept distinct as to colors and clearly legible.

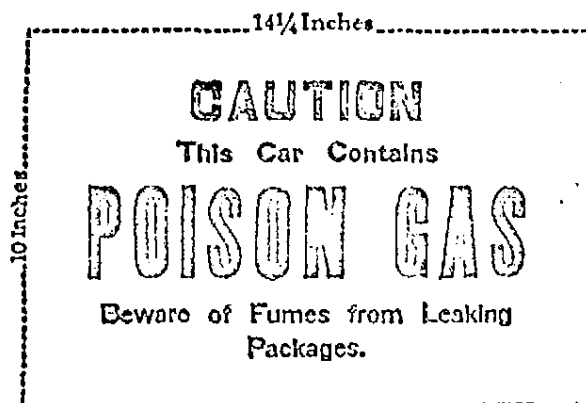
(h) Placards as required by §§174.540, 174.541 and 174.542 must be securely applied to both sides and both ends of car, or to both sides and both ends of truck body or trailer loaded on flat cars, containing explosives or other dangerous articles. Car certificates as required by §174.525 must be securely applied to both sides of such cars. When more than one trailer is loaded on a flat car, placards must be applied so as to be plainly visible from both ends of the car.

§174.550 Explosives, class A placard. (a) The "Explosives" placard must be of rectangular shape, measuring 11 by 14 inches, and must bear the wording as shown in the following cut; the printing must be in red and black as follows:

EXPLOSIVES PLACARD
(Reduced size)



§ 174.551 Poison gas placard. (a) The "Poison gas" placard for other than tank cars must be of rectangular shape, measuring 10 x 14½ inches, and must bear the wording as shown in the following cut; the printing must be in red as follows:



§174.552 Dangerous placard. (a) The "Dangerous" placard must be of diamond shape, measuring 10¾ inches on each side, and must bear the wording as shown in the following cut; the word "Dangerous" must be in red, and the lettering in black, as follows:

DANGEROUS PLACARD

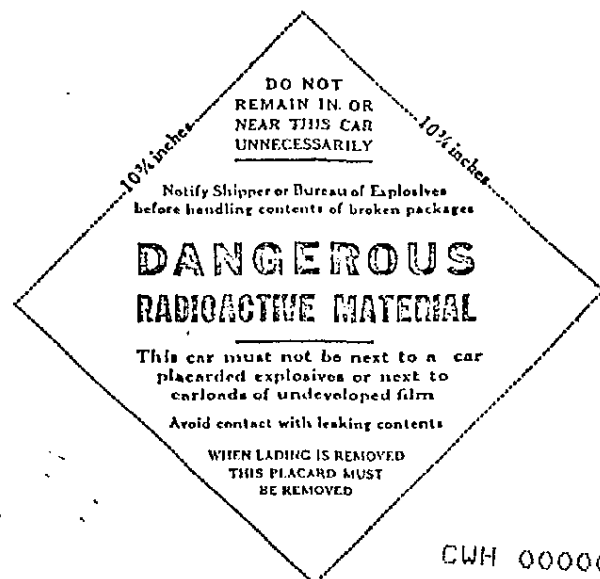
(Reduced Size)



§ 174.553 Dangerous-Radioactive Material placard. (a) The "Dangerous-Radioactive Material" placard for radioactive materials must be of diamond shape, measuring 10¾ inches on each side, and must bear the wording in red letters as shown in the following cut:

DANGEROUS PLACARD FOR RADIOACTIVE MATERIAL

(Reduced size)



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§174.554 Unauthorized use of placards. (a) Placards prescribed by this part must not be applied to cars containing articles not subject to Parts 170-189 or specifically exempted therefrom.

under construction on the effective dates thereof, are authorized for service as prescribed in the following table and notes, provided tanks and safety relief devices are retested as prescribed in paragraphs (c) and (d) of this section and equipped with approved valves, valve protection devices and safety relief devices.

Specifications prescribed in current regulations	Other specifications permitted (subject to the notes)	Notes
103.....	ARA-III, ARA-IV	2, 3, 4
103A.....	ARA-III	1, 2
103B or 103B-W.....	ARA-III Rubber Lined	2
101.....	ARA-IV	2, 4
105A200-W.....	105A100-W	6
105A200AL-W.....	105A100AL-W	6
105A300-W.....	ARA-V, DOT-105, 105A300	
105A400-W.....	105A400	
105A500-W.....	105A500	
105A600-W.....	105A600	
105A600-X.....	DOT-27 BIE-27, 105A500	
105A800-X.....	105A800	
107A****.....		0

Note 1: ARA tanks must have been originally designed or subsequently reconstructed for the transportation of acids.

Note 2: Tank cars equipped with safety vents must have the vent closure so chained or otherwise fastened as to prevent misplacement.

Note 3: These cars must not be used for shipments of smokeless powder in water unless equipped with positive closure type bottom outlet valves.

Note 4: Until January 1, 1965, on cars built prior to January 1, 1959, 25 psi. safety relief valves may be replaced with 35 psi. safety relief valves not having an official rated capacity.

Note 5: Tanks built as Spec. DOT-105A100-W or 105A100AL-W may be altered and reclassified as Spec. 105A200-W or 105A200AL-W, respectively, by installing safety relief valves, retesting and stenciling in accordance with the applicable specification.

Note 6: The test pressures of tanks built in the United States prior to January 1, 1959, may be increased to comply with current spec. DOT-107A, except that tanks built prior to 1941 are not so authorized. Original and revised test pressure must be indicated and may be shown on a plate attached to the bulkhead of the car.

(3) Unless otherwise specifically provided in Part 173, when class DOT-105AW, 105A-ALW, 106A, 109A-ALW, 110AW, 111A, 112AW, or 114AW tank car tanks are prescribed, the same class tanks having higher marked test pressures than those prescribed may also be used. When class DOT-111AW1 tank car tanks are prescribed, class 111AW3 tank car tanks may also be used.

(4) Tank cars and appurtenances may be used for the transportation of any commodity for which they are authorized. Tank cars proposed for a commodity service other than authorized, must be approved for such service by the Association of American Railroads' Committee on Tank Cars. Transfer of a tank car from one authorized service to another may be made only by the owner or owner's authorization. Classes DOT-105A-W, 109A-W, 111A100-W-4, 112A-W, 114A-W tank cars may be used for any commodity for which they are approved by the Committee on Tank Cars and may be stenciled accordingly. When a tank car is stenciled to indicate that it is authorized for one commodity only, it must not be used for any other service.

Note 1: For additional requirements for tank cars for compressed gases, see § 173.314.

(b) Loading and shipping.

(1) Examination before shipping. When tanks are loaded and prior to shipping, the shipper must determine to the extent practicable, that the tank, safety appurtenances and fittings are in proper condition for the safe transportation of the lading. Tanks with bottom discharge outlets must have their outlet caps off, or outlet cap plugs open, during the entire time tanks are being loaded. After loading, tanks with bottom outlet valves which permit more than a dropping of the liquid with the outlet caps off, or the outlet cap plugs open, must not be offered for transportation until proper repairs have been made. Tanks which show any dripping or leaking of liquid contents at seams or rivets, must not be offered for transportation until proper repairs have been made.

(2) Loading requirements for tanks with interior heater coils. Tank cars equipped with interior heater coils, except when coils are rendered inoperative by blocking off the inlet and outlet, must be loaded with heater coil inlet and outlet caps off during entire time tanks are being loaded and show no leakage with caps off.

(3) Securing closures. 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 20 inches long must be used to apply the outlet valve cap. Manway covers and outlet valve caps must be made tight against leakage of vapor and liquid, by use of gaskets of suitable materials, before cars are tendered to carrier for transportation. Luting materials must not be used in outlet cap or on threads of bottom outlet.

(4) Inspection of safety relief devices on class DOT-106A and 110A tanks. Safety relief devices of the frangible disc or fusible plug type used on tanks of classes DOT-106A or 110A must be inspected before each loaded trip of tank by removing at least one vent for visual inspection; if it shows signs of deterioration, all devices must be removed and inspected and those which do not meet the requirements must be renewed.

(c) Periodic retest and reinspection of single-unit tank car tanks

(1) Tanks, interior heater systems, and safety relief valves must

be retested periodically as specified in Retest Table 1 of this paragraph. Retests may be made at any time during the calendar year the retest falls due except as provided in the notes. Periodic retest of exterior heater systems is not a specification requirement.

(2) Each tank must be retested by completely filling the tank and manway nozzle or expansion dome with water or other liquid of similar viscosity except as otherwise provided for in Note (d) to Retest Table 1 and applying the specified pressure for 10 minutes if the tank is not insulated, or 20 minutes if the tank is insulated. There shall be no leakage or evidence of distress. The tank insulation and jacket need not be removed unless leakage is indicated by a drop in pressure. The liquid temperature must not exceed 100° F. during the test. Calking of welded joints to stop leaks developed during retests is prohibited.

(3) Unless longer retest interval is authorized, tanks in service 10 years or over must be internally inspected and interior heater systems inspected for defects which would make leakage or failure probable during transit.

(4) Anchor rivet housings, if used, must not be removed during retest. They shall be retested by applying an air pressure of 100 psi. through openings in the tank shell and must show no leakage.

(5) Interior heater systems must be retested hydrostatically at 200 psi. and must show no leakage.

(6) Safety relief valves must be retested with air or gas and must start to discharge at the pressure prescribed within plus or minus 3 percent except that if the start-to-discharge pressure is under 100 psi., the valve must start to discharge at the pressure prescribed within plus or minus 3 psi. Valves must be vapor tight at the prescribed pressure.

(7) A DOT tank car built to one specification and authorized to be stenciled to another specification must be retested in accordance with the higher specification and the test pressure stenciled accordingly on the tank or jacket. An existing pressure tank car tank which is permanently converted to a lower pressure specification must have the new specification and conversion date permanently stamped in letters and figures at least $\frac{3}{8}$ -inch high on the outside of the manway nozzle or the edge of the manway nozzle flange on the left side of the car. Each car must be tested as designated in Retests Table 1 for the new specification. On a Class DOT-111A tank car, the last numeral of the specification number may be omitted from the stamping.

(8) Retests of tanks and safety relief devices must be reported by party making tests to car owner. Reports must show initials and number of cars, pressure to which tested, date and place of test, and by whom tested. Reports of latest retest must be retained by owner until the next retest has been accomplished and recorded.

(9) After repairs requiring welding, riveting, caulking of rivets, or hot or cold forming to restore tank contour, tanks must be retested as specified in Retest Table 1 of this paragraph before return to service. Glass, lead, or rubber-lined tanks must be retested before lining is renewed. Interior heater systems must be retested before return to service after repairs or renewals of any part of the system.

(10) The year of the test of any tank, tank safety relief valve, and heater system, and the pressure to which it was tested must be stenciled on the tank or on the jacket if insulated, except that if a retest is required specifically by the regulations during the calendar month the retest falls due, the month and year must be so stenciled. Any safety relief valve from a stock which has been tested within six months of installation may be considered as having been tested or retested in the month in which installed, providing the valve has been protected from deterioration during this period.

(11) Any glass, rubber, or lead-lined tank need not be periodically retested, but the interior heater systems and safety valves must be retested at the prescribed interval. See also subparagraph (9) of this paragraph.

(12) Any tank lined with an elastomeric polyvinyl chloride at least $\frac{3}{32}$ inch thick or an elastomeric polyurethane at least $\frac{1}{16}$ inch thick need not be periodically retested, but the heater system and safety relief valves must be retested at the prescribed intervals. The tank must be retested before lining is renewed.

(d) Periodic retest and reinspection of tanks other than single-unit tank car tanks.

(1) Tanks designed to be removed from cars for filling and emptying and tanks to spec. DOT-107A**** and their safety relief devices must be retested periodically as specified in Retest Table 2 of this paragraph. Retest may be made at any time during the calendar year the retest falls due.

(2) Each tank, except as provided in subparagraph (d) (9) of this section must be subjected to the specified hydrostatic pressure and its permanent expansion determined. Pressure must be maintained for 30 seconds and as much longer as may be necessary to secure complete expansion of the tank. Pressure gauge must permit reading to an accuracy of one percent. Expansion gauge must permit reading of total expansion to an accuracy of one percent. Expansion must be recorded in cubic centimeters. Permanent volumetric expansion must not exceed 10 percent of total volumetric

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