

2. How should the existing level of head and thermal protection be determined for the various sub-groups of 105 tank cars? For example, should a point value be given for each type and thickness of material?

3. What process should be employed to identify and mark each car in the fleet according to its level of head and thermal protection?

4. Is a different level of head and thermal protection needed for hazardous commodities other than those carried in 112 and 114 tank cars? If so, what level and why for the particular commodity? How should these selected cars be identified and marked?

5. Please comment on the degree to which the table is an accurate summary of the existing DOT 105 fleet in terms of the characteristics selected for grouping the cars, the number of cars in the sub-groups, and the protection level indicated.

6. Please provide a breakdown of 105 cars owned by you according to appropriate sub-groupings and characteristics as in the table. Please provide similar information for 105 cars used but not owned by you. Please identify the cars by reporting mark and car number.

Based on surveys and subsequent assessments, the Bureau and FRA believe that at least 8000 existing 105 tank cars that carry the same hazardous commodities as the 112 and 114 tank cars would have to be retrofitted to bring them up to level of protection reasonably equivalent to that prescribed in HM-144.

7. How many 105 tank cars owned by you would be (a) retired (b) displaced to other service or (c) retrofitted if HM-144 performance levels for head and thermal protection were mandated?

8. What would be the reasons and economic consequences or retirement of certain cars in lieu of retrofitting? What consequences from changing the usage rather than retrofitting? Please provide specific information on the age and size of the cars which would be strong candidates for retirement or a change in usage.

9. What effect would your decisions to retire or change the usage of certain 105 tank cars have on new car procurements?

10. What is your assessment of the technical feasibility or retrofitting the various sub-groups of 105 cars and other DOT Specification cars that carry the same commodities as the 105 cars?

11. What is your estimate of the cost of retrofitting a given 105 car? Please specify the sub-group and relevant car characteristics (e.g., capacity) that you base your overall estimate upon and

identify the specific cost elements. Also, identify the type of protection system employed for purposes of the estimate, e.g., spray on insulation or jacketed insulation. Finally, included a cost estimate for the out of service time and other cost factors not included above.

12. What should be the retrofit priorities and what time frames would be reasonable? Please specify the basis for your priorities and time periods.

13. Which of the current relief valves are adequate? To what degree can relief valves or discs be modified?

14. Are there any peculiar problems or impacts unique to your situation or due to the fact that you may be a small business?

Finally, there are several issues of more general applicability for which the Bureau and FRA are soliciting information.

15. What methods or processes should be utilized to determine that a given tank head or thermal protection system meets or exceeds a specific performance level?

16. What requirements, procedures, and methods should be utilized for car stencilling?

17. What should be the reporting requirements for monitoring the progress of any mandated retrofit program?

18. What operational changes might be considered in lieu of retrofitting (humping restrictions, train make-up requirements, dedicated train service, special routing, special inspection procedures, on-board detection systems, speed restrictions)?

(49 U.S.C. 1803, 1804; 49 CFR 1.53, App. A to Part I, and paragraph (a)(4) of App. A, Part 106)

Note.—The Materials Transportation Bureau has determined that this ANPRM will not have a major economic impact under the terms of Executive Order 12044 and DOT implementing procedures (44 FR 11034) nor an environmental impact which would require the preparation of an environmental impact statement under the National Environmental Policy Act (49 U.S.C. 4321 *et seq.*) A regulatory evaluation and an environmental assessment have been placed in the docket and are available for review. A copy of the regulatory evaluation may be obtained from the person listed as the contract person for further information.

Issued in Washington, D.C. on July 17, 1980.

Alan L. Roberts,

Associate Director for Hazardous Materials Regulation, Materials Transportation Bureau.

[FR Doc. 80-21901 Filed 7-18-80; 8:45 am]

BILLING CODE 4910-99-M

49 CFR Parts 173 and 179

[Docket No. HM-174; Notice No. 80-6]

Shippers: Specifications for Tank Cars

AGENCY: Materials Transportation Bureau, Research and Special Programs Administration (the Bureau), Department of Transportation (DOT).

ACTION: Notice of proposed rulemaking.

SUMMARY: This Notice proposes changes in the construction and maintenance standards for railroad tank cars used to transport hazardous materials so as to improve safety. The proposed changes are as follows:

(1) After December 31, 1980, newly built specification 105, 112 and 114 tank cars would have to be equipped with tank head protection (such as a head shield) that protects the entire surface of each tank head;

(2) After December 31, 1980, newly built specification 105 tank cars would have to be equipped with the same shelf couplers, thermal protection and safety valves that are now required for specification 112 and 114 tank cars;

(3) Existing specification 105 tank cars (those built before January 1, 1981) would have to be retrofitted with these shelf couplers over a one-year period ending on December 31, 1981; and

(4) All other DOT Specification tank cars would have to be equipped with the shelf couplers over a four-year period ending on December 31, 1984.

DATE: Comments must be received on or before September 18, 1980.

ADDRESS: Comments should be addressed to the Dockets Branch, Materials Transportation Bureau, U.S. Department of Transportation, Washington, D.C. 20590. Comments should identify the docket number and notice number and be submitted, if possible, in five copies. The Dockets Branch is located in Room 8426 of the Nassif Building, 400 Seventh Street, S.W., Washington, D.C. Public dockets may be reviewed between the hours of 8:30 a.m. and 5:00 p.m., Monday through Friday.

FOR FURTHER INFORMATION CONTACT: Leavitt A. Peterson, Office of Safety, Federal Railroad Administration, Washington, D.C. 20590, (202) 426-0887.

SUPPLEMENTARY INFORMATION:

Accidents Experience

At the time the Department of Transportation commenced its review of specifications for pressure tank cars, there had been a series of disastrous railroad accidents involving rail transportation of flammable compressed gases, toxic compressed gases and other

hazardous materials. Most of these accidents involved uninsulated pressure tank cars built to the DOT Specifications 112 and 114.

The Federal Railroad Administration (FRA) accident data accumulated during the period of January 1, 1969, through December 31, 1974, had indicated:

	DOT specification	
	112/114	105
Number of accidents reported to FRA.....	193	101
Number of cars derailed and/or damaged.....	434	213
Number of cars sustaining a head puncture.....	68	13
Number of cars sustaining a shell puncture without a head puncture.....	13	5
Number of cars ruptured without puncture.....	59	8
Number of tanks sustaining partial or total loss of hazardous lading.....	156	39
Number of persons killed as a result of tanks being punctured or rupturing.....	23	0
Number of persons injured as a result of tanks being punctured or rupturing.....	936	151

On the basis of this accident data, the Department determined that non-retrofitted 112/114 tank cars presented a greater threat to the public safety than the 105 tank cars. However, 105 tank cars have been involved in a number of train accidents over the past 25 years which dramatize the importance of assuring that these tank cars are also equipped with the best safety protection that is feasible. For accidents prior to 1972, a comprehensive analysis was made by the Railway Progress Institute and the Association of American Railroads (AAR) as part of the Railroad Tank Car Safety Research and Test Project (RA-01-2-7), Phase 01, Report on Summary of Ruptured Tank Cars Involved in Past Accidents, a copy of which has been placed in the docket. The report identified a significant number of accidents in which 105 tank cars were punctured or ruptured due to thermal input. Among the accidents described were the following:

On April 23, 1963, at Bradtsville, Pennsylvania, a derailment resulted in the overturning of a 105A300W car carrying LPG causing an LPG leak and fire. This fire caused the violent rupture of an overturned 112A400W car also carrying LPG. Ten minutes later, the 105 car also violently ruptured, hurling sixty percent of the tank 900 feet.

On December 13, 1964, at West Columbus, Ohio, a 105A100W car carrying ethylene oxide punctured and a fire ensued. Another 105A100W car carrying ethylene oxide subsequently ruptured.

On August 22, 1967, at Texarkana, Texas, a 105A300W tank car carrying butadiene was engulfed in a fire and subsequently ruptured.

On May 27, 1968, at Cotulla, Texas, an intense fire resulted from the puncture of two 105A300W cars carrying vinyl chloride. Two 105A100W tank cars carrying ethylene oxide ruptured after about one hour's exposure to this fire. An end of one of the cars was hurled 300 feet.

On September 11, 1969, a derailment at Glendora, Mississippi, resulted in the head puncture of a 105A200W car carrying vinyl chloride and the shell puncture of a 105A200W car also carrying vinyl chloride. The car with the head puncture "torched" a 105A300W car carrying vinyl chloride. This latter car subsequently ruptured, hurling one half of the tank 600 feet and the other half 200 feet.

Two recent accidents demonstrate the potential consequences of release of product from these cars. On February 26, 1978, near Youngstown, Florida, an Atlanta and Saint Andrews Bay train derailed when joint bars were intentionally removed from the rail. During the derailment, a 105 tank car containing chlorine was punctured in the bottom of the tank shell. Eight persons died and 138 were injured as a result of contact with chlorine gas that settled in the area near the derailment.

On April 8, 1979, near Crestview, Florida, a Louisville and Nashville train derailed 25 cars containing hazardous materials. At least five 105 tank cars released some product during that derailment, including a 105A500W tank car that released chlorine from a puncture in the tank shell and a 105A300W tank car containing anhydrous ammonia that split into several pieces and rocketed. Due to the release of several types of hazardous materials, over 4,000 people were evacuated from the surrounding area.

For the reasons discussed in the section by section analysis of sections 179.100-23 and 179.106-5, the systems proposed in this proceeding are not directed at the prevention of damage to tank shells (as distinguished from tank heads) such as occurred at Youngstown and Crestview. However, these accidents illustrate that 105 tank cars are vulnerable to loss of lading through mechanical damage. The human and economic consequences that result from such instances may be substantial.

Other recent accidents further illustrate that the safety systems mandated for 112/114 tank cars are also relevant to the design of 105 tank cars. On June 16, 1977, two Missouri Pacific trains collided at Neelyville, Missouri, causing the lower tank head of a 105A300W tank car containing vinyl chloride to be punctured by the coupler of the adjoining car. On March 16, 1977,

a 105A300W tank car transporting butane was punctured in the tank head by a freight car wheel when in Atchinson, Topeka & Santa Fe train derailed at Love, Arizona. In neither of the foregoing accidents was the damaged car equipped with shelf couplers or HM-144 head protection.

On September 8, 1979, a Southern Pacific train derailed near Paxton, Texas. Two 105A300W cars lost their lading in that accident. One of those cars contained isobutylene and was apparently breeched by fire, although it may have sustained damage to a tank head during the derailment. The other car, containing ethylene oxide, ruptured violently as a result of exposure to a "pool fire" fueled by flammable liquids also released during the accident. Neither 105 car was equipped with shelf couplers, HM-144 head protection, or HM-144 thermal protection.

Priority Action for 112 and 114 Tank Cars

Since the Specification 112 and 114 tank cars were determined to present a more serious threat to public safety, the Bureau and the FRA decided to assign first priority to improving the construction and maintenance standards applicable to those cars. It was further decided that after these 112 and 114 cars had been structurally upgraded, the Bureau and FRA would then consider a revision of the standards applicable to the 105 tank car to provide a level of safety comparable to that of the improved 112/114 tank cars.

Accordingly, on September 15, 1977, the Bureau issued amendments Nos. 173-108 and 179-19 (42 FR 46306). In summary, these amendments required:

1. Existing and newly built specification 112 and 114 tank cars used to transport flammable gases such as propane, vinyl chloride and butane to have both thermal and tank head protection.

2. Existing and newly built specification 112 and 114 tank cars used to transport anhydrous ammonia to have tank head protection (such as a head shield).

3. All specification 112 and 114 tank cars to be equipped with special couplers designed to resist coupler vertical disengagements (shelf couplers).

The retrofitting of couplers and of head shields on tank cars that transport anhydrous ammonia has been completed. Approximately ninety percent of the 112 and 114 tank cars used to transport propane and other liquefied flammable gases have been retrofitted with tank head puncture and thermal protection. The remaining ten percent (approximately 1,700) of these

tank cars will have their retrofit completed by the end of this year.

Now that the 112 and 114 tank car retrofit program is in its final stage, the Bureau and FRA believe that the 105 tank car should now be addressed. This Notice of Proposed Rulemaking proposes to do so in a manner consistent with amendment Nos. 173-108 and 179-19.

Additionally, in developing this Notice, the Bureau and the FRA have determined that two related safety items should be addressed:

1. The need for full tank head puncture resistance; and
2. Application of shelf couplers to all existing and newly built DOT specification tank cars.

National Transportation Safety Board Recommendations

On November 22, 1978, the National Transportation Safety Board (NTSB) issued "Recommendation R-78-58." It stated: "Require that top and bottom shelf couplers be installed on all DOT 105 tank cars as soon as possible (Class I, Urgent Action)." On March 12, 1980, the NTSB expanded this "recommendation" to suggest that the DOT extend Federal requirements for top and bottom shelf couplers to all tank cars which carry hazardous materials and extend requirements for shelf couplers, head shields and thermal protection to type 105 cars when they are newly manufactured or rebuilt.

FRA Safety Inquiry

On April 13, 1978, the Federal Railroad Administration conducted a Special Safety Inquiry into Improved Safety Standards for Insulated Pressure Tank Cars. Testimony was heard from representatives of the NTSB, the AAR, shipping industries, tank car builders and leasing companies, and railroad operating unions. There was general agreement on the concept of completing the retrofit of the 112 and 114 tank cars before beginning any retrofit of 105 tank cars. Also, there was general agreement that shelf couplers should be retrofitted on 105 tank cars after the coupler retrofit on 112 and 114 tank cars was completed. Differing opinions were expressed as to the need for the further retrofitting of 105 tank cars.

Subsequent to that hearing, the Bureau and FRA determined that all new tank cars are being equipped with shelf couplers and that most existing 105 tank cars are also being so equipped when coupler repairs or replacements become necessary. Also, as a result of that hearing and information received

subsequently from car builders, FRA believes that most of the 6,000 newly built 105 tank cars that are utilized in flammable gas service have been equipped with ½-inch jacket heads and high temperature insulation

Characteristics and Use of 105 Tank Cars

There are approximately 27,000 U.S. and Canadian owned Specification 105 tank cars, of which approximately 24,000 are built to DOT specifications and 3,000 are built to Canadian Transport Commission (CTC) specifications. The U.S. fleet consists of approximately 1,400 aluminum 105 tank cars and 22,600 steel tank cars. Until 1973, most 105 tank car tanks had capacities ranging from 10,000 gallons to 20,000 gallons. Since 1973, FRA estimates that more than 6,000 DOT specification 105 tank cars have been manufactured that have capacities ranging from 25,000 to 34,000 gallons.

Report FRA/ORD-80/60, entitled "105A Tank Car Fleet Characterization Study," is included in the docket and contains additional information on the variations in age, structural designs, capacities, thermal insulations, and other characteristics of 105 tank cars.

Many DOT Specification 105 tank cars are used to transport the same hazardous commodities as are transported in the 112 and 114 specification tank cars. In addition, the 105's are used to carry other hazardous materials such as chlorine, ethylene oxide, butadiene, hydrocyanic acid, motor fuel anti-knock compounds, poisons and combustible/flammable liquids and solids.

All 105 specification tank cars have some amount of thermal insulation and all have steel jacket coverings of varying thicknesses. Most tank heads and shell thicknesses on the 105 cars are greater than those on the 112 cars. However, it is estimated that at least 8,000 of the existing 105 cars that carry the same commodities as 112 and 114 tank cars do not have the equivalent level of puncture and thermal protection mandated for the 112 and 114 tank cars.

Retrofit of Tank Head and Thermal Protection

Elsewhere in this issue of the Federal Register, the Bureau and the FRA are issuing an Advance Notice of Proposed Rulemaking soliciting comments concerning the retrofit application of tank head and thermal protection systems to existing 105 tank cars and other DOT Specification tank cars that are used to transport the same hazardous materials as 105 cars.

Section-by-Section Analysis

§ 179.31 Qualification, maintenance, and use of tank cars

The proposed amendment of paragraph (a)(3) of Section 179.31 would authorize the use of class DOT-105J cars that have equal or higher marked test pressure than the test pressure for the prescribed 105A tank car. This is proposed in order to provide authorization to use the 105J tank car under current provisions of Part 173.

Paragraph (a)(6) would require shelf couplers to be installed on all 105 tank cars by December 31, 1981. Since there are approximately 24,000 specification tank cars in the United States fleet, the total number of shelf couplers required to be installed would be approximately 48,000 (two per tank car). However, the Bureau and the FRA believe that approximately 6,000 of these cars already are equipped with shelf couplers and that shelf couplers can be applied on the remaining 18,000 tank cars within the proposed time period without disrupting the flow of vital commodities transported by these 105 tank cars. Shelf couplers are easily installed. Moreover, the Bureau and the FRA believe that the retrofit installation of shelf couplers on the 105 tank cars can quickly improve the safety performance of these cars at minimal cost. At the FRA Special Safety Inquiry, industry representatives agreed that these special couplers assist in keeping cars in line and preventing tank punctures.

Paragraph (a)(7) would require shelf couplers to be retrofit installed on all other DOT specification tank cars by not later than December 31, 1984. The Bureau and FRA estimate that there are approximately 135,000 DOT Specification tank cars. Of this number, approximately 24,000 have been built to specification 105 and approximately 18,000 to specifications 112 and 114. These tank cars are covered by proposed paragraph (a)(6) and existing paragraph (a)(5). Thus, paragraph (a)(7) would apply to approximately 93,000 cars. However, the Bureau and FRA estimate that approximately 20,000 of these tank cars are already equipped with shelf couplers retrofit installed within four years based upon industry's experience with the HM-144 shelf coupler retrofit programs.

§ 179.14 Tank car couplers

The proposed deletion of existing paragraphs (a)(1)(2) and (4) would remove the authority to apply non-shelf F-Style couplers to new tank cars. The remaining couplers specified in paragraphs (3) and (5) are top and bottom shelf E-style and top shelf F-

style couplers. Thus, the effect of this proposed change would be to require shelf couplers on all 105 tank cars built after December 31, 1980. The Bureau and the FRA understand that current practice is to install shelf couplers on all new tank cars.

§§ 179.100-23 and 179.106-5 *Head shields*

The proposed change in Section 179.100-23 would require that all new DOT Specification 105, 112 and 114 tank cars built after December 31, 1980, be equipped with a tank head puncture resistance system providing protection for the entire tank head, rather than only the lower half of the tank head. The purpose of this requirement is to assure that new tank cars will be designed to provide the maximum feasible protection against tank head mechanical damage in a derailment environment. The proposed addition of paragraph (c) in Section 179.100-23 would authorize continued use of 112 and 114 tank cars equipped to present HM-144 requirements.

The rule issued in Docket No. HM-144 governing the application of safety systems to DOT Specification 112/114 uninsulated pressure tank cars (Section 179.105-5) required only the lower half of the tank head to receive protection. This requirement was based on analysis, research and testing conducted in the early 1970's, and represented the best judgment of what was prudent and feasible at the time the requirements of Docket No. HM-109, the predecessor to Docket No. HM-144, were promulgated (39 FR 27572; July 30, 1974). Docket No. HM-144 added coupler restraint systems and thermal protection to the requirements for retrofit of 112/114 tank cars, producing an overall system of safety protection that renders these tank cars highly resistant to product loss in a derailment environment.

The HM-144 requirements, then, represented a very satisfactory approach to the protection of pressure tank cars. Nevertheless, recent accidents have illustrated that human and economic losses resulting from individual accidents may dramatically exceed the levels previously anticipated. In addition, at least three tank car companies have incorporated full tank head protection into their designs for the retrofit of 112/114 tank cars and the construction of some 105, 112 and 114 tank cars. This voluntary initiative by private industry has demonstrated both the economic and technical feasibility of providing full tank head protection.

These developments have caused the Bureau and the FRA to reconsider the issue of new pressure tank car

construction with respect to protection against mechanically-caused failure of the pressure tank. Puncture, tearing, or critical scoring of a pressure tank equipped to HM-144 specifications can occur in at least three modes;

First, the tank shell may be damaged in a derailment involving significant forces. Roughly one out of ten instances of major product loss involves shell penetration. The application of material (such as insulation or jacketing) on the exterior of the shell may provide limited protection. However, it appears not to be currently feasible to provide impact resistance on the tank shell comparable to that required for tank heads. The additional weight associated with shell shielding materials and support structure, coupled with the gross weight on rail limits, would reduce the product-carrying capacity of these cars. The reduction in capacity, in turn, would increase the cost of transporting these products by rail.

The second tank failure mode is penetration of the required head protection. An extreme derailment or a high force impact between groups of cars could result in failure of the tank head protection system. However, extensive testing and recent rail accident experience have demonstrated that the likelihood of such failure is very small; and any further effort to strengthen the system would face the same limits of practicability discussed above.

The third failure mode is penetration of the tank above the level protected by the required head shield. Prior to application of shelf couplers on 112/114 cars, roughly one out of ten mechanically-caused failures of those cars occurred in that manner. The derailment at Pensacola, Florida, November 9, 1977, for instance, involved a puncture just above the area that would likely have been protected by a shield covering the lower half of the tank head. Failures of 105 cars, while less frequent, have followed the same basic pattern as 112/114 cars with respect to mechanical damage resulting in product loss.

While application of shelf couplers will tend to reduce the likelihood that objects will strike the top half of pressure tank car heads, it is certain that some such instances will occur. Indeed, a retrofitted 112 tank car was punctured in the top portion of the tank head when on January 14, 1980, at Ridgefield, Washington, a Burlington Northern train derailed. The release of anhydrous ammonia through the puncture resulted in two deaths. While derailment forces in that accident may have been sufficient to overcome the protection

that would have been provided by a full head shield, the accident illustrates that the top portion of the tank head is also a target for couplers, wheels, and other potential puncture causing components that may strike pressure tank cars during derailments.

As noted above, the tank car industry has already demonstrated the feasibility of full tank head protection for new car construction. The additional cost of the further protection is not significant in relation to the overall cost of the car. By contrast, a single accident producing loss of product through the upper tank head could result in loss of life and tens of millions of dollars in property damage. Therefore, the Bureau and the FRA proposed to take this additional step forward in mandating safety improvements for all new pressure tank cars built after then end of this year.

§ 179.105 *Special requirements for specifications 112 and 114 tank cars*

In Section 179.105-4, an editorial change is proposed in paragraph (c) to show the new name and address of the Bureau's Dockets Branch.

In Section 179.105-5, it is proposed in paragraph (b) to delete wording referring to " * * * full tank head jackets that are at least ½ inch-thick." With the tank head puncture resistance system requirements specified in Section 179.100-23 proposed to be changed so as to require the entire tank head to be protected, reference to full tank head jackets would become superfluous.

§ 179.106 *Special requirements for specification 105 tank cars*

A new Section 179.106 entitled, "Special Requirements for Specification 105 Tank Cars" is proposed to be added in Part 179 of the regulations. This section would provide new specifications for improving the safety of these tank cars. As of January 1, 1981, all new specification 105 tank cars would be required to be built equipped with "shelf couplers," tank head puncture resistance systems, thermal protection systems and safety relief valves that have an adequate capacity to protect the tank.

Tank Car Approval

The changes in the specification of 105 tank cars proposed in this notice would not have to be approved by the AAR Committee on Tank Cars. The Bureau believes the addition of thermal protection and tank head puncture protection can be properly achieved by compliance with the proposed standards without the imposition of "AAR approval" requirements. This action is

in accord with that taken under the 112 and 114 tank car safety program.

Canadian Tank Cars

In proposed Section 179.106-1, paragraph (c) would require that 105 tank cars built to specifications promulgated by the CTC transporting hazardous materials in the United States must also be equipped in accordance with the same special requirements and time constraints as United States built and owned specification 105 cars. Because of the potential catastrophic consequences of accidents involving 105 tank cars, the Bureau and FRA believe that all such cars used to transport hazardous materials in the United States must be so equipped.

Specifically, existing CTC specification 105 tank cars would be required to be equipped with shelf couplers by not later than December 31, 1981, if used to transport hazardous materials in the United States. Likewise, each new CTC specification tank car built after December 31, 1980, would be required to be equipped with shelf couplers, a tank head puncture resistance system, a thermal protection system, and a large capacity safety relief valve in the same manner as new DOT specification 105 tank cars if it is used to transport hazardous materials in the United States.

New Tank Car Requirements

Proposed Section 179.106-2 contains four new safety requirements applicable to new 105 tank cars constructed after December 31, 1980. These four safety features are identical to those now required on newly constructed 112 and 114 tank cars.

Coupler Vertical Restraint System

Each new 105 tank car would be required to be equipped with a coupler vertical restraint system (shelf couplers). These couplers have demonstrated an ability to reduce tank and running gear damage under certain rail accident conditions. Further, AAR Interchange Rules have required such couplers on all new tank cars since January 1, 1978.

Tank Head Puncture Resistance System

Each new 105 tank car would be required to have a tank head puncture resistance system (head shields) similar to that proposed for new 112 and 114 tank cars. A review of recent accidents involving 112 and 114 tank cars equipped with tank head protection confirms that this protection is effective in preventing tank head punctures. According to FRA accident records, no 112 nor 114 tank car has sustained a tank head puncture in the area protected

by the head shield. There have been three reported tank head punctures in areas not protected by the head shield. The Bureau and FRA believe that applying full tank head protection to 105 pressure tank cars will materially improve the rail transportation safety of liquefied compressed gases and other highly hazardous liquids being carried in these cars.

Thermal Protection

Although 105 tank cars are required to be insulated with a material capable of controlling product temperature in the transportation environment, there is no current requirement that this insulation protect the tank from overheating in a fire environment. All specification 112 and 114 tank cars transporting flammable liquefied compressed gases are now required to have high temperature thermal protection to protect tank in a fire environment. The Bureau and the FRA believe that addition of a high temperature thermal requirement to the current insulation requirement on 105 tank cars is necessary to assure the use of the best available materials for new construction. The Bureau and FRA are aware that such insulating materials have been installing on many 105 tank cars.

Safety Relief Valves

Tests conducted by the FRA in conjunction with the rulemaking contained in MTB Docket HM-144 indicate that the safety relief valves installed on uninsulated 112 and 114 tank cars might not provide sufficient relief capacity under extreme fire accident conditions. However, these tests also demonstrated that if thermal protection were added to tanks, the capacity demands on these valves would be reduced. Accordingly, Section 179.105-7 was issued to require that newly built and retrofitted 112 to 114 cars that have thermal protection be equipped with the same capacity safety relief valves that were required on non-insulated 112 and 114 tank cars.

For these reasons, it is being proposed that newly built 105 tank cars that have thermal protection also be equipped with the larger capacity safety relief valve which was initially developed for uninsulated pressure tank cars.

Previously Built Cars

Proposed Section 179.106-3 would require the retrofit of shelf couplers on all existing 105 tank cars. As has been stated previously under the discussion of Section 179.31, the Bureau and FRA believe that rapid retrofit installation of shelf couplers on all 105

tank cars not already so equipped is essential from the standpoint of safety. The supply of shelf couplers is sufficient to permit the retrofit of the approximately 18,000 DOT 105 tank cars not so equipped within twelve months.

Stencilling

In order that shippers, carriers and others may easily identify tank cars having the various described safety features, proposed Section 179.106-4 would require 105 tank cars newly built in accordance with Section 179.106 to be stencilled 105J. This stencilling will provide for easy identification of the tank car's safety features and facilitate compliance with the loading and handling regulations.

In consideration of the foregoing, Parts 173 and 179 of Title 49 Code of Federal Regulations are proposed to be amended as follows:

1. In Section 173.31 paragraph (a)(3) would be amended by adding a new subparagraph (vii) and new paragraphs (a)(6) and (7) would be added to read as follows:

§ 173.31 Qualification, maintenance and use of tank cars.

(a) * * *

(3) * * *

(vii) When class DOT-105A tank car tanks are prescribed, class DOT-105J tank cars having equal or higher marked test pressures than those prescribed may also be used.

* * * * *

(6) After December 31, 1981, each specification 105 tank car shall be equipped with shelf couplers in accordance with Section 179.105-6 of this subchapter.

(7) After December 31, 1984, each DOT specification tank car shall be equipped with shelf couplers in accordance with Section 179.105-6 of this subchapter.

2. In Section 179.14(a) paragraphs (1), (2) and (4) would be canceled; current paragraph (3) would be renumbered (1) and current paragraph (5) would be renumbered (2).

3. Section 179.100-23 would be revised to read as follows:

§ 179.100-23 Head shields.

(a) Each end of a DOT specification 105, 112 and 114 tank car built after December 31, 1980, must be equipped with a protective head shield. The shield must:

(1) be at least ½-inch thick, and made from steel produced in accordance with specifications ATSM A242, A572-GR50, A515-70, A516-GR70, or AAR TC-128B;

(2) be at least the size of the entire tank head of the tank car;

(3) be shaped to the general contour of the tank head; and

(4) meet the impact test requirements of paragraph AAR 24-5 in the "Specifications for Tank Cars" Standard, effective October 1, 1972. The impact test acceptance criterion is that the device and its supporting structure does not sustain visible permanent damage or deformation such as fractures, cracks, bends and dents. The object of this requirement is to assure that the head shield has adequate strength to remain attached and functionally unimpaired during normal operations.

(b) The head protection device must meet all of the workmanship requirements of the "AAR Specification for Design, Fabrication and Construction of Freight Cars," dated September 1, 1964.

(c) Any tank head puncture protection system that meets the puncture resistance performance requirements of 179.105-5 over the full area of the tank head is deemed to meet the requirements of this section.

(d) DOT specification 112 and 114 tank cars built before January 1, 1981, must be equipped with tank head protection as required by §§ 179.105-5 and 179.100-23 in effect on October 1, 1979.

4. In Section 179.105-4, the last sentence of paragraph (c) would be amended to show the new name and address of the Dockets Branch as follows:

§ 179.105-4 Thermal protection.

* * * * *

(c) * * *

Information necessary to equip tank cars with one of these systems is available in the Dockets Branch, Room 8426 of the Nassif Building, 400 Seventh Street, S.W., Washington, D.C. 20590, between the hours of 8:30 a.m. and 5:00 p.m., Monday through Friday.

* * * * *

5. In Section 179.105-5 paragraph (b) would be revised to read as follows:

§ 179.105-5 Tank head puncture resistance.

* * * * *

(b) *Test verification.* Compliance with the requirements of paragraph (a) of this section shall be verified by full scale testing or by the alternate test procedures prescribed in paragraph (c) of this section. However, protective head shields that meet the requirements of 179.100-23 and that are made from

steels specified in 179.100-23(a)(1) need not be verified by testing.

* * * * *
6. A new Section 179.106 would be added to read as follows:

§ 179.106 Special requirements for specification 105 tank cars.

§ 179.106-1 General.

(a) In addition to the requirements of this section, each tank car built under specification 105 shall meet the applicable requirements of Sections 179.100, 179.101, 179.102 and 179.104.

(b) Notwithstanding the provisions of Sections 179.3; 179.4, and 179.6, AAR approval is not required for changes in or additions to specification 105 tank cars necessary to comply with this section.

(c) Notwithstanding the provisions of Section 173.8 of this subchapter, no 105 tank car manufactured to specifications promulgated by the Canadian Transport Commission may be used after December 31, 1981, to transport hazardous materials in the United States unless it is equipped with a coupler vertical restraint system that meets the requirements of Section 179.105-6.

(d) Notwithstanding the provisions of Section 173.8 of this subchapter, no 105 tank car manufactured after December 31, 1980, to specifications promulgated by the Canadian Transport Commission, may be used to transport hazardous materials in the United States unless it is equipped in accordance with Section 179.106-2.

§ 179.106-2 New Cars.

(a) Each specification 105 tank car built after December 31, 1980, shall be equipped with:

(1) A coupler restraint system that meets the requirements of Section 179.105-6;

(2) A tank head puncture resistance system that meets the requirements of Section 179.105-5;

(3) A thermal protection system that meets the requirements of Section 179.105-4; and

(4) A safety relief valve that meets the requirements of Section 179.105-7.

§ 179.106-3 Previously built cars.

After December 31, 1981, each specification 105 tank car built before January 1, 1981, shall be equipped with a coupler restraint system that meets the requirements of Section 179.105-6.

§ 179.106-4 Stenciling.

Each 105 tank car that is equipped with a coupler restraint system that meets the requirements of Section 179.105-6, a tank head puncture

resistance system that meets the requirements of 105-5, a thermal protection system that meets the requirements of Section 179.105-4, and a safety relief valve that meets the requirements of Section 179.105-7, shall be stenciled by having the letter "J" substituted for the letter "A" in the specification marking.

(49 U.S.C. 1803, 1804; 49 CFR 1.53, App. A to Part I, and paragraph (a)(4) of App. A, Part 106)

Note.—The Materials Transportation Bureau has determined that this proposed regulation will not have a major economic impact under the terms of Executive Order 12044 and DOT implementing procedures (44 FR 11034) nor an environmental impact which would require the preparation of an environmental impact statement under the National Environmental Policy Act (49 U.S.C. 4321 et seq.). A regulatory evaluation analyzing the costs and benefits of this proposal is available for review in the Docket. A copy may be obtained from the person listed as the contact person for further information. An environmental assessment is also available for review in the Docket. The Materials Transportation Bureau also has determined that this proposed regulation does not have any significant or special impact on small business.

Issued in Washington, D.C. on July 17, 1980.
Alan I. Roberts,

Associate Director for Hazardous Materials Regulation, Materials Transportation Bureau.

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INTERSTATE COMMERCE COMMISSION

49 CFR Chapter X

[Ex Parte No. 355]

Cost Standards for Railroad Rates; Republication

AGENCY: Interstate Commerce Commission.

ACTION: Revised notice of proposed interpretation of statutory provisions.

SUMMARY: This is a republication, with corrected dates, of a notice that appeared July 1, 1980 (45 CFR 44351). A revised interpretation of statutory minimum rate provisions is proposed for public comment. Interpretation of statutory rate increase provisions is deferred. The Commission has concluded that a new proposed interpretation of the pertinent statutory minimum rate provisions should be published for comment, and that the scope of the proceeding should be revised accordingly. The focus of the