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49 CFR Part 224

Reflectorization of Rail Freight Rolling Stock; Final Rule

DEPARTMENT OF TRANSPORTATION

Federal Railroad Administration

49 CFR Part 224

[Docket No. FRA–1999–6689, Notice No. 6]

RIN 2130–AB68

Reflectorization of Rail Freight Rolling Stock

AGENCY: Federal Railroad Administration (FRA), Department of Transportation (DOT).

ACTION: Final rule; response to petitions for reconsideration; lift of stay of effectiveness.

SUMMARY: This document responds to petitions for reconsideration of FRA's January 3, 2005 rule mandating the reflectorization of freight rolling stock (freight cars and locomotives). This document amends and clarifies the final rule and also lifts the stay of the rule's effectiveness published on May 26, 2005 (70 FR 30378).

DATES: *Effective Date:* The stay of effectiveness for 49 CFR part 224 is lifted and the amendments in this rule are effective as of November 28, 2005. The incorporation by reference of a certain publication listed in the rule is approved by the Director of the Federal Register as of November 28, 2005.

FOR FURTHER INFORMATION CONTACT: Dr. Tom Blankenship, Mechanical Engineer, Office of Safety, FRA, 1120 Vermont Ave., NW., Mailstop 25, Washington, DC 20590 (telephone: 202–493–6446); or Lucinda Henriksen, Trial Attorney, Office of Chief Counsel, FRA, 1120 Vermont Ave., NW., Mailstop 10, Washington, DC 20590 (telephone: 202–493–6038).

SUPPLEMENTARY INFORMATION:

Background

On November 6, 2003, the Federal Railroad Administration (FRA) published a notice of proposed rulemaking (NPRM) proposing to require retroreflective material on the sides of freight rolling stock (freight cars and locomotives) to enhance the visibility of trains. *See* 68 FR 62942. The proposals set forth in the NPRM were based on several years of research and public involvement in the reflectorization issue. The NPRM provided detailed background information on the need for the reflectorization of rail equipment as well as a description of FRA's research and public outreach efforts aimed at identifying the most effective method for implementing a nationwide reflectorization program. Following consideration of written comments received in response to the NPRM and oral comments presented at a public hearing held in Washington, DC, on January 27, 2004, FRA published a final rule on January 3, 2005. *See* 70 FR 144.

Following publication of the final rule, three parties (the Association of American Railroads (AAR), TTX Company (TTX), and 3M) filed petitions seeking FRA's reconsideration and clarification of certain provisions of the rule. *See* document numbers 123 and 125–130 in the docket of this proceeding. In order to ensure that the regulated community would not be faced with possible changes to the rule soon after beginning compliance, and to provide FRA adequate time to respond to the petitions, on May 26, 2005, FRA stayed the effectiveness of the final rule until further notice could be published in the **Federal Register**. *See* 70 FR 30378.[1]

The specific issues raised by these petitioners and FRA's responses to their petitions, are discussed in detail below in the ''Section-by-Section Analysis'' portion of the preamble. The Section-by-Section analysis also contains a detailed discussion of each provision of the final rule which FRA has amended or clarified. The amendments contained in this document generally clarify requirements currently contained in the final rule or allow for greater flexibility in complying with the rule, and are within the scope of the issues and options discussed, considered, or raised in the NPRM.

Statutory Authority and Congressional Mandate

FRA has broad statutory authority to regulate all areas of railroad safety. The Federal Railroad Safety Act of 1970 (Safety Act) (formerly 45 U.S.C. 421, 431 *et seq.*, now found primarily in chapter 201 of Title 49) grants the Secretary of Transportation (''Secretary'') rulemaking authority over all areas of railroad safety (49 U.S.C. 20103(a)) and confers all powers necessary to detect and penalize violations of any rail safety law. This authority was subsequently delegated to the FRA Administrator (49 CFR 1.49). (Until July 5, 1994, the Federal railroad safety statutes existed as separate acts found primarily in Title 45 of the United States Code. On that date, all of the acts were repealed, and their provisions were recodified into Title 49.)

[1] FRA notes that the May 26, 2005 **Federal Register** publication inadvertently included the original RIN number for this proceeding (RIN 2130–AB41).

The term ''railroad'' is defined in the Safety Act to include any form of nonhighway ground transportation that runs on rails or electromagnetic guideways, * * * [other than] rapid transit operations in an urban area that are not connected to the general railroad system of transportation.

49 U.S.C. 20102. This definition makes clear that FRA has jurisdiction over (1) rapid transit operations within an urban area that are connected to the general railroad system of transportation, and (2) all freight, intercity, passenger, and commuter rail passenger operations regardless of their connection to the general railroad system of transportation or their status as a common carrier engaged in interstate commerce. FRA has issued a policy statement describing how it determines whether particular rail passenger operations are subject to FRA's jurisdiction (65 FR 42529 (July 2, 2000)); the policy statement can be found in Appendix A to parts 209 and 211.

Pursuant to its statutory authority, FRA promulgates and enforces a comprehensive regulatory program to address railroad track, signal systems, railroad communications, rolling stock, rear-end marking devices, safety glazing, railroad accident/incident reporting, locational requirements for dispatching of U.S. rail operations, safety integration plans governing railroad consolidations, merger and acquisitions of control, operating practices, passenger train emergency preparedness, alcohol and drug testing, locomotive engineer certification, and workplace safety.

In 1994 Congress passed the Federal Railroad Safety Authorization Act of 1994, Pub. L. 103–440 (Act). The Act added § 20148 to title 49 of the United States Code. Section 20148 required the Secretary, and by delegation, FRA, to conduct a review of the Department of Transportation's (Department) rules with respect to the visibility of railroad cars and mandated that if the review established that enhanced railroad car visibility would likely improve safety in a cost-effective manner, the Secretary initiate a rulemaking proceeding to ''prescribe regulations requiring enhanced visibility standards for newly manufactured and remanufactured railroad cars.'' Section 20148 specifically directed the Secretary to examine the use of reflectors. Section 20148 reads as follows:

(a) *Review of Rules.*—The Secretary of Transportation shall conduct a review of the Department of Transportation's rules with respect to railroad car visibility. As part of this review, the Secretary shall collect relevant data from operational experience by railroads having enhanced visibility measures in service.

(b) *Regulations.*—If the review conducted under subsection (a) establishes that enhanced railroad car visibility would likely improve safety in a cost-effective manner, the Secretary shall initiate a rulemaking proceeding to prescribe regulations requiring enhanced visibility standards for newly manufactured and remanufactured railroad cars. In such proceeding the Secretary shall consider, at a minimum—

(1) visibility of railroad cars from the perspective of nonrailroad traffic;

(2) whether certain railroad car paint colors should be prohibited or required;

(3) the use of reflective materials;

(4) the visibility of lettering on railroad cars;

(5) the effect of any enhanced visibility measures on the health and safety of train crew members; and

(6) the cost/benefit ratio of any new regulations.

(c) *Exclusions.*—In prescribing regulations under subsection (b), the Secretary may exclude from any specific visibility requirement any category of trains or railroad operations if the Secretary determines that such an exclusion is in the public interest and is consistent with railroad safety.

FRA has carried out this rulemaking in accordance with § 20148 of the Act.

Section-by-Section Analysis

Amendments to 49 CFR Part 224

Subpart A—General

Section 224.3 Applicability

This section establishes that the rule applies, with certain exceptions, to all freight cars and locomotives that operate over a public or private highway-rail grade crossing and are used for revenue or work train service. This section specifically excludes certain operations and equipment from the rule. The exclusions include: (1) Freight railroads that operate only on track inside an installation that is not part of the general railroad system of transportation, (2) rapid transit operations within an urban area that are not connected to the general system of transportation, and (3) locomotives or passenger cars used exclusively in passenger service.

AAR petitioned FRA for reconsideration of this section, noting that some equipment moving on the rails (e.g., RoadRailer® equipment) is subject to other government reflectorization requirements which may conflict with FRA's requirements. Accordingly, AAR requested that § 224.3 be revised to provide that freight rolling stock subject to the reflectorization requirements of a government agency other than FRA, be excluded from the rule.

FRA agrees with AAR's concern regarding this section. FRA notes that some railroad equipment is capable of operating on both highways and railroad tracks. For example, RoadRailers®, RailRunners®, Railmates® and other rail-compatible vehicles are capable of being hauled by trucks on the nation's roads, and are also capable of being hauled on railroad tracks. When the equipment is operated on roadways, it is subject to the National Highway Transportation Safety Administration's (NHTSA) reflectorization requirement (49 CFR part 571). NHTSA requires that large highway trailers be equipped with red and white retroreflective material along both the sides and rear. *See* 49 CFR 571.108. Although rail-compatible vehicles such as RoadRailers®, RailRunners®, and Railmates®, effectively become freight cars for purposes of FRA regulation when the equipment is operating on railroad track, because rail compatible vehicles are equipped with retroreflective material pursuant to NHTSA's rule, FRA does not see any safety justification for also subjecting this equipment to FRA's reflectorization requirement. FRA believes doing so would create confusion and an unnecessary burden on the equipment owners in requiring them to comply with two different reflectorization standards.

Accordingly, FRA has added paragraph (d) to § 224.3 which specifically excludes freight rolling stock subject to reflectorization requirements of other Federal agencies from this rule's applicability.

Section 224.5 Definitions

This section defines various terms which for purposes of this rulemaking have very specific meanings. FRA intends the definitions in this section to clarify the meaning of these terms as they are used in the text of the final rule. In response to the final rule, AAR petitioned FRA for reconsideration of the definitions of two terms used in the rule, the terms ''damaged'' and ''freight rolling stock.''

In response to commenters' concerns regarding the term ''damaged'' used in § 224.109 of the proposed rule, in the final rule FRA defined the term to mean ''scratched, broken, chipped, peeled, or delaminated.'' As noted in the preamble to the final rule, FRA intended this definition to be consistent with the term ''obscured.'' [2] The definition, however, was also designed to recognize the physical reality that retroreflective sheeting could be damaged to the extent that it is no longer effective, but still not be ''obscured'' as defined in the rule (i.e., if material is scratched, broken, chipped, peeled, or delaminated, the material cannot effectively reflect light).

AAR petitioned FRA for reconsideration of this definition, expressing the view that as defined, the term is ''ambiguous and can be interpreted as requiring replacement of an entire strip of sheeting if there is any marring, even a single minute scratch, regardless of whether the retroreflectivity of the sheeting is meaningfully affected.'' FRA does not agree with AAR's concern. The definition and use of the term ''damaged'' in the final rule is an objective measure, only requiring maintenance when more than 20 percent of the minimum required amount of material on each rail car or locomotive side is ''damaged'' (i.e., when more than 20% of the material is scratched, broken, chipped, peeled or delaminated). Specifically, § 224.109 of the final rule provides that if more than 20 percent of the required amount of sheeting on either side of a freight car or locomotive is ''damaged, obscured, or missing, that damaged, obscured, or missing sheeting must be repaired or replaced.'' If there is a ''single minute scratch'' on the retroreflective sheeting covering only a tiny area of the sheeting, that material is ''damaged'' as defined in the rule, but that material, by itself, does not require repair or replacement as it has not been damaged beyond the 20% threshold. If, however, 25% of the retroreflective material on one side of a freight car or locomotive is ''scratched, broken, chipped, or peeled,'' that material would need to be repaired or replaced in accordance with § 224.109.[3]

AAR also petitioned FRA for reconsideration of the definition of the term ''freight rolling stock'' in the final rule. The final rule defined ''freight rolling stock'' as ''(1) [a]ny locomotive subject to part 229 of this chapter used to haul or switch freight cars (whether in revenue or work train service); and (2) [a]ny railroad freight car subject to part 215 of this chapter (including a car stenciled MW pursuant to § 215.305).'' Noting that the stenciling requirement of § 215.305 applies to self-propelled maintenance-of-way equipment, AAR expressed the view that FRA's definition included ''specialized maintenance-of-way equipment''

[2] The term ''obscured'' was defined in the final rule to mean ''concealed or hidden (i.e., covered up, as where a layer of paint or dense chemical residue blocks all incoming light).'' 49 CFR 224.5. The definition specifically excluded ''ordinary accumulations of dirt, grime, or ice resulting from the normal railroad operating environment.''

[3] Note that as discussed in the analysis of § 224.109 below, this ''more than 20%'' maintenance threshold has been revised to clarify FRA's intent as to what amount of material needs to be ''damaged, obscured, or missing'' thereby requiring maintenance.

contrary to FRA's stated intent. AAR specifically noted that in the preamble to the final rule, FRA expressed agreement with AAR's view that reflectorizing specialized maintenance-of-way equipment (e.g., burro cranes, hi-rail equipment) would not help achieve the rule's stated goals (i.e., reducing the number and severity of grade crossing accidents where motor vehicles run into trains after the first two units of the consist).

FRA agrees with AAR's concern that the definition of ''freight rolling stock'' in the final rule does not reflect FRA's true intent. Specifically, FRA intends the definition to include any locomotive subject to 49 CFR part 229 used to haul or switch freight cars and all railroad freight cars, whether those cars are used in revenue or work train service. FRA does not intend the term ''freight rolling stock'' to include on-track roadway maintenance equipment subject to subpart D of 49 CFR part 214 or similar specialized maintenance-of-way equipment (such as burro cranes or hi-rail inspection vehicles). Accordingly, FRA has revised the definition of ''freight rolling stock'' to mean ''(1) [a]ny locomotive subject to Part 229 of this chapter used to haul or switch freight cars (whether in revenue or work train service); and (2) [a]ny railroad freight car (whether used in revenue or work train service).'' [4]

As discussed in the analysis of § 24.109 below, FRA has also revised the final rule to include a definition of the term ''Universal Machine Language Equipment Register'' in order to clarify the notification requirements of § 224.109.

Section 224.103 Characteristics of retroreflective sheeting

This section sets forth the construction, color, and performance standards for the retroreflective sheeting required by § 224.101. Paragraphs (b) and (c) of this section of the final rule required that retroreflective sheeting meet specific minimum photometric performance requirements as initially applied (i.e., minimum coefficient of retroreflection values) and the color and durability requirements of ASTM International's (ASTM) standard D 4956–01a, *Standard Specification for Retroreflective Sheeting for Traffic Control* for Type V sheeting. AAR and 3M, respectively, petitioned for reconsideration of each of these paragraphs.

AAR petitioned for reconsideration of paragraph (b), noting that ASTM standard D 4956–01a incorporated into the final rule has been superseded by a newer version of the standard, ASTM D 4956–04. AAR expressed the view that FRA should incorporate this revised standard into the rule.

FRA notes that Standard D 4956–01a was revised in late 2004, just prior to the final rule's publication. FRA also notes that the revised Standard (D 4956–04) is substantially the same as the previous version, except that it provides specifications for certain types of fluorescent retroreflective sheeting and adds a new type of retroreflective material, Type X. The construction and performance requirements related to Type V retroreflective material in ASTM D 4956–04 remain unchanged from the requirements in ASTM D 4956–01a. For the more specific reasons discussed below, FRA believes that this newer, revised version of the standard should be incorporated into the final rule. Thus, paragraph (b) has been revised to incorporate by reference ASTM D–4956–04, not ASTM D 4956–01a.[5]

3M petitioned for reconsideration of paragraph (c) expressing the view that the requirement that retroreflective sheeting meet the performance requirements of ASTM Type V sheeting was adopted in the final rule without an opportunity for notice and comment and that this requirement effectively excludes materials that the proposed rule would have allowed, i.e., some types of ordinary-colored (not fluorescent) non-metalized yellow retroreflective material and fluorescent yellow retroreflective material. Specifically, 3M noted that ASTM D 4956 allows a daytime luminance factor (Y%) of up to 45 for ordinary-colored yellow non-metalized material,[6] but that any Y% over 30 would not satisfy the requirements of the final rule (non-metalized materials with Y% values over 30 would presumably have been allowable under the proposed rule since the NPRM did not specify any limits on Y%). 3M further explained that the final rule's ''reference to Type V requirements prohibits the use of fluorescent yellow sheeting because fluorescent pigments raise the Y% value of fluorescent materials above 30.'' 3M also noted that in both the NPRM and the preamble to the final rule, FRA recognized the effectiveness of fluorescent material and the potential additional daytime benefits of the material, as compared to ordinary-colored material. 3M pointed out that in both the NPRM and the preamble to the final rule, FRA specifically stated that fluorescent material was acceptable under the rule, provided it met all the requirements of the rule, and that nothing either in the NPRM or the final rule document indicated that FRA intended to exclude fluorescent retroreflective material from suitability under the rule. 3M further asserted that the ''root cause'' of this inconsistency between the proposed rule and the final rule is ''the application of a specification intended for metalized products [Type V retroreflective material] to non-metalized products.'' To rectify this apparent inconsistency between the NPRM and final rule, 3M recommended revising paragraph (c) to require conformance to ASTM D 4956–04 Type V requirements for metalized retroreflective material and conformance to ASTM D 4956–04 Type IV requirements for non-metalized material.

As originally proposed, paragraph (c) of this section required that retroreflective sheeting applied in accordance with the rule meet all the performance requirements, except for the minimum photometric performance requirements, of the then current ASTM Standard D 4956. The initial minimum values for the coefficient of retroreflection (i.e., initial minimum photometric performance requirements) of the FRA standard were set forth in Table 1 of the proposed rule. In other words, the proposed rule would have allowed the use of any ASTM D 4956 ''Type'' of material provided the material met the color requirements for yellow or white specified in the ASTM standard and FRA's specific photometric performance requirements. As such, the proposed rule contemplated the use of both metalized and unmetalized microprismatic retroreflective material.

Although the final rule retained the initial minimum coefficient of retroreflection values (i.e., minimum photometric performance requirements) of the proposed rule, paragraph (c) of this section was revised with the intent to clarify an ambiguity in the proposed rule's color requirement. Specifically, in response to the NPRM, Avery Dennison, a manufacturer of retroreflective material, pointed out that ASTM standard D 4956 contains three yellow color standards, all referencing the same chromaticity coordinates, but with three different daytime luminance factors (Y%). *See* document no. 98 in the

[4] The final rule defined ''railroad freight car'' in accordance with 49 CFR 215.5.

[5] Just prior to issuance of this current notice, FRA became aware that ASTM Standard D 4956–04 had been revised and replaced with a newer version of the standard, D 4956–05. Because, Standard D 4956–05 remains substantially the same as the previous version, D 4956–04, FRA does not believe it is necessary to incorporate into the final rule this revised version of the standard.

[6] *See* ASTM D 4956–04, Table 10.

docket of this proceeding. Avery Dennison further explained that if FRA did not specify a minimum Y% for the yellow retroreflective sheeting contemplated by the rule, retroreflective sheeting that appeared brown could meet the stated color requirement. Accordingly, Avery Dennison recommended that FRA adopt a minimum Y% of 12 for yellow sheeting. This Y% of 12 is the minimum Y% specified in both ASTM D 4956–01a and ASTM D 4956–04 for yellow, Type V sheeting.

In response to Avery Dennison's comments and in an attempt to clarify this ambiguity, as well as to ensure that only high-contrast colored sheeting would meet the performance requirements of the rule, in the final rule FRA modified the performance requirements contained in paragraph (c) to specify that retroreflective sheeting applied pursuant to the rule must meet the performance requirements (except for the minimum photometric performance requirements) of Type V sheeting as defined in ASTM Standard D 4956–01a. The intent of this revision was merely to clarify the retroreflective material performance requirements contemplated by the proposed rule, not to change the requirements or limit the number of materials that would meet these requirements. However, when FRA revised paragraph (c) to require compliance with ''Type V'' performance requirements, FRA unintentionally did more than clarify the requirements of the proposed rule by indicating a minimum Y% as recommended by Avery Dennison; FRA not only incorporated Type V's minimum Y%, but by the nature of specifying ''Type V,'' incorporated Type V's maximum Y% as well. The maximum Y% for yellow, Type V sheeting is 30. *See* Table 12 of ASTM D 4956–04. As 3M noted in its petition, this maximum Y% of 30 is well below the maximum Y% specified for ordinary-colored yellow non-metalized material in ASTM D 4956–01a and –04 and the maximum Y% of 30 is also well below the minimum Y% specified in ASTM D 4956–04 for fluorescent yellow non-metalized material. *See* Tables 6, 10 and 14 of ASTM D 4956–04. Thus, by incorporating both the minimum and maximum Y% of Type V retroreflective materials (the only metalized retroreflective material included in the ASTM specification), FRA effectively precluded the use of some ordinary-colored non-metalized materials and the use of fluorescent yellow retroreflective material.

As explained in section 4 of the ASTM standard, ''[t]ypes are determined by conformance to the retroreflectance, color, and durability requirements listed'' in the standard. Because the final rule specifies initial minimum coefficient of retroreflectance values, the applicable ASTM requirements relate to the color and durability of the retroreflective material. Specifically, by requiring that retroreflective sheeting meet the color and durability requirements of ASTM Type V sheeting, the final rule effectively requires that retroreflective material (1) have a minimum Y% of 12 and maximum Y% of 30; (2) conform to specific chromaticity coordinates; (3) after an outdoor weathering period of 36 months, maintain its color within the specified color box (determined by the chromaticity coordinates) and within the specified Y% range; and (4) after the specified outdoor weathering period have a coefficient of retroreflection equal to at least 80% of that specified in Table 1 of the final rule. *See* §§ 6.1.5, 6.3, 6.4 and 6.5 of ASTM D 4956–04.

In comments submitted to the docket in support of its petition, 3M noted that excluding materials with lower durability requirements (i.e., ASTM Types I and II materials), the durability requirements for the remaining Types of sheeting specified in ASTM D 4956 (e.g., Types III, IV, V, VII, VIII and IX) are identical.[7] *See* document no. 133 in the docket of this proceeding. Given that the final rule itself specifies the required initial minimum coefficient of retroreflectance values for the retroreflective material, 3M further noted that the only remaining difference among the five types of sheeting having the same durability requirements as Type V is the Y%. 3M explained that ''the minimum-maximum daytime luminance ranges for Type V and III sheeting are lower than that of non-metallized prismatic Types IV, VII, VIII and IX because Type V and Type III were established for sheetings with metallic coatings, which tend to appear greyer in daylight than do non-metallized construction.'' 3M further explained that metalizing lowers the daytime luminance of retroreflective sheeting. Accordingly, 3M indicated that non-metalized yellow sheeting can have substantially higher Y% values without losing colorfastness. This fact is evidenced by ASTM's inclusion of multiple Y% requirements for different types of sheeting in the D 4956 Standard. *See* Tables 6, 10, 12 and 14 in ASTM Standard D 4956–04. As explained above, however, despite these differing Y% requirements for metalized and non-metalized retroreflective sheeting, the sheeting must meet the same durability (i.e., weathering and colorfastness) requirements as metalized sheeting.

With regard to fluorescent yellow sheeting, the second point raised in 3M's petition, FRA notes that fluorescence is a daytime phenomenon, i.e., fluorescence increases daytime conspicuity, but has virtually no effect at night. Accordingly, in both the NPRM and in the preamble to the final rule, although FRA acknowledged the potential benefit of fluorescent retroreflective material, FRA did not require the use of such material. Instead, FRA specifically stated that although fluorescent material is not required under the rule, it may be used if it meets all of the requirements of the rule. *See* 68 FR 62954 and 70 FR 155.

As explained above, however, an inconsistency exists between FRA's stated intent to allow, but not require, fluorescent material and the final rule's requirement that retroreflective sheeting meet the performance requirements (except for the initial minimum photometric performance requirements) of ASTM D 4956 Type V sheeting. Specifically, fluorescent retroreflective materials are characterized by high Y% values (i.e., high daytime luminance factors) and, according to 3M, ''there is no way to supply a high visibility fluorescent yellow material with daytime luminance values as low as the range set for Type V sheeting.''

As noted above, the most recent ASTM D 4956 standard (D 4956–04) provides specifications for certain types of non-metalized fluorescent retroreflective sheeting (i.e., Types IV, VI, VII, VIII, IX and X). *See* Table 14 of ASTM D 4956–04 (requiring a minimum Y% of 45 for fluorescent yellow material). ASTM D 4956–04 specifically provides that the Y% values for fluorescent material equal ''the sum of the reflectance luminance factor [Y_r] and fluorescence luminance factor [Y_f].'' *See* § 7.4 and Table 14 of ASTM D 4956–04. In other words, $Y_r + Y_f = Y_t$. Because fluorescence is only present during the day, the Y_f component of the Y% value of fluorescent material is irrelevant to nighttime conspicuity. Accordingly, fluorescent yellow material with a minimum Y% value of 45 (above the maximum allowable for

[7] Type VI material is a unique material typically used for temporary roll-up warning signs, traffic cone collars and post bands, and would not be suitable for use on rail equipment; accordingly, even though the durability requirements of Type VI sheeting are identical to Type V's requirements, it is irrelevant for purposes of this rule. In addition, FRA notes that the new Type X sheeting's durability requirements are identical to Type V's requirements, but, at this time, FRA can make no recommendation as to its suitability for use on rail cars.

Type V material), may appear brighter than required by the final rule during the day but at night the fluorescent luminance (Y_f) will be virtually lost and the material will have the same reflectance luminance (Y_r) as an ordinary-colored (non-fluorescent) yellow material.

Because both materials (ordinary-colored yellow metalized materials and fluorescent yellow non-metalized material) would have the same nighttime effectiveness and would have to meet the same durability requirements of the ASTM specification, FRA does not believe that it is reasonable to exclude fluorescent yellow non-metalized material from the rule. Accordingly, the requirements of paragraph (c) of § 224.103 have been revised to allow the use of white, yellow, or fluorescent yellow, metalized or non-metalized retroreflective sheeting, that meets the durability requirements of Type V sheeting and the initial minimum coefficient of retroreflection values (i.e., initial minimum photometric performance requirements) specified in Table 1 of the final rule. Specifically, paragraph (c) has been revised to require that retroreflective sheeting ''meet the requirements of ASTM D 4956–04, for Type V Sheeting if metalized or Type VII Sheeting if non-metallized, except for the initial minimum values of the coefficient of retroreflection, and shall, as initially applied, meet the minimum values for the coefficient of retroreflection specified in Table 1 of the rule. FRA notes that 3M recommended requiring conformance to ASTM Type IV requirements for non-metalized material. FRA has chosen not to follow 3M's specific recommendation in this instance because Type IV material may not meet the initial minimum photometric performance requirements specified in the rule. *See* Table 9 of ASTM D 4956–04. FRA notes, however, because the ASTM D 4956–04 color and durability requirements for Type IV material are exactly the same as Type VII material, if a Type IV material meets the initial minimum coefficient of retroreflection values specified in the rule, its use would be acceptable.[8]

As explained in the NPRM and the preamble to the final rule, the construction, color, and performance standards set forth in this rule are designed to ensure that retroreflective material applied pursuant to this rule is durable enough to withstand the harsh railroad operating environment and maintain sufficient levels of reflectivity throughout the useful life of the material. FRA notes, however, that it is the responsibility of the retroreflective material manufacturer and the customer to determine the suitability of particular materials for use on freight rolling stock. FRA recognizes that many freight rolling stock owners already have extensive experience using various types of reflective materials on their equipment in specific service environments. FRA recognizes that these owners understand the harsh conditions associated with railroad operations that may affect the performance of the retroreflective material, particularly the power washing of equipment, the extensive exposure of the equipment to various harsh chemicals and thawing sheds. Accordingly, freight rolling stock owners are encouraged to exercise their knowledge based on past experience with particular products and the particular operating environment parameters when choosing a retroreflective material to apply to their equipment.

As noted in the NPRM and the preamble to the final rule, the responsibility for compliance with the construction, color, and performance requirements of the retroreflective sheeting used to comply with this rule rests upon the manufacturers of the sheeting. In accordance with § 224.103(d), the manufacturers who are providing retroreflective sheeting to the railroad industry must certify their products' compliance with § 224.103 by indelibly marking the material with the characters ''FRA–224'' constituting the manufacturer's certification that the retroreflective sheeting conforms to the construction, color, and performance requirements of the rule and meets or exceeds the requirements of the ASTM specification incorporated into the rule. Sheeting which does not contain the ''FRA–224'' mark as specified in § 224.103(d) does not comply with the rule, should not be sold to customers in the rail industry for purposes of compliance with this rule, and cannot be validly certified as compliant with the rule. In addition, if a manufacturer supplies retroreflective sheeting to a customer for the purpose of compliance with this rule, FRA expects that the material being supplied meets the color, construction, and performance requirements of this rule and that the particular type of material has been successfully tested in accordance with the ASTM standard incorporated into the rule. FRA also expects that a manufacturer of retroreflective sheeting would make available to customers all test verification data demonstrating that the sheeting complies with the rule and the ASTM specification incorporated into the rule. FRA encourages freight rolling stock owners to request such data from manufacturers when making the decision to purchase a particular type of retroreflective material.

Section 224.105 Sheeting dimensions and quantity

This section of the final rule described the general standards for the pattern of retroreflective material application for freight rolling stock, dimensions of individual pieces of retroreflective sheeting, and the minimum quantity of retroreflective sheeting required on each side of a freight car or locomotive. Specifically, this section of the final rule required that with certain exceptions, retroreflective sheeting applied pursuant to this part be 4 inches wide and 18 or 36 inches long. This section of the final rule also provided that retroreflective sheeting must be applied along the length of freight car and locomotive sides and that the amount of retroreflective sheeting required to be applied, is dependent on the length of the car or locomotive and the color of the sheeting. Table 2 of this section specified the minimum square footage of sheeting required on each car or locomotive side.

As explained in the preamble to the final rule, FRA chose to require relatively large-sized reflectors in order to minimize the degradation rate of individual strips of retroreflective sheeting. Requiring retroreflective sheeting of certain dimensions, along with a specific pattern of application as provided in § 224.106, also ensures that to the extent possible a uniform pattern of reflectorization will be present throughout the entire freight rolling stock fleet subject to this rule. The importance of achieving a relatively uniform pattern of reflectorization is discussed in detail in the preambles to both the NPRM and the final rule. *See* 68 FR 62948 and 70 FR 159.

Although in its petition AAR specifically recognizes FRA's rationale for establishing minimum dimensions for retroreflective sheeting strips, AAR asked FRA to reconsider § 224.105, expressing the view that ''there is no logic to establishing a maximum size'' for the strips and noting that several railroads would like to use continuous strips of retroreflective sheeting on locomotives. Accordingly, AAR recommended that this section be revised to require that retroreflective

[8] Consistent with the revised performance requirements of paragraph (c), paragraph (b) of this section which sets forth the color requirements, has been revised to allow for the use of fluorescent yellow retroreflective material, as well as ordinary-colored yellow material and white material.

sheeting be applied in strips ''no less than 4 inches wide and 18 inches long.''

Because FRA continues to believe that it is necessary to specify the dimensions of retroreflective sheeting to be applied in most instances under the rule, FRA has not adopted AAR's specific suggested revisions to § 224.105. Nonetheless, FRA does recognize that due to the physical configuration of various car types, application of 4x18 inch or 4x36 inch strips of retroreflective material may not always be the best pattern of application (e.g., if a car has an eight-inch wide side sill, it may make more sense to apply retroreflective material in eight inch wide strips, as opposed to two four-inch wide strips stacked horizontally above each other). Accordingly, FRA has revised § 224.105 to provide, in part, that ''[u]nless otherwise specified, retroreflective sheeting applied under this part shall be applied in strips 4 inches wide and 18 or 36 inches long, *as practicable*.'' (Emphasis added). With this revision, FRA intends that in most instances, retroreflective material will be applied to freight car sides in 4x18 inch or 4x36 inch strips; however, the phrase ''as practicable'' has been added to provide freight car owners and railroads with some amount of flexibility in the size of individual pieces of retroreflective sheeting applied to freight rolling stock. FRA encourages freight rolling stock owners and railroads who intend to apply retroreflective material to their equipment in sizes other than 4x18 inch or 4x36 inches to contact FRA's, Office of Safety, Motive, Power, and Equipment Division for advice on the material's application.

FRA continues to recognize, as noted in the NPRM and the preamble to the final rule, that the conspicuity issues surrounding locomotives differ from the issues surrounding freight cars. Accordingly, as discussed in the analysis of § 224.106 below, FRA has revised the retroreflective sheeting application requirements applicable to locomotives to make it clear that application of a continuous strip of retroreflective sheeting along the length of locomotive sides (as opposed to separate 4x18 inch or 4x36 inch strips of retroreflective sheeting) will meet the requirements of the rule.

At least one manufacturer of retroreflective material has expressed concern regarding certifying retroreflective material as compliant with this rule if that material is other than four inches wide (e.g., 8 inches wide). *See* document no. 136 in the docket of this proceeding. As discussed above in the analysis of § 224.103, in accordance with paragraph (d) of that section, manufacturers are required to certify their products' compliance with the construction, color, and performance requirements of the rule. Manufacturers are not required to certify compliance with the specific size standards of the rule.[9] In other words, a manufacturer could certify 8 inch wide retroreflective material as compliant with part 224, provided the material meets the requirements of §§ 224.103(a)–(c). FRA cautions, however, that paragraph (d) of § 224.103 also requires that the certification mark appear ''at least once on the exposed surface of each piece of sheeting in the final application.'' In other words, if retroreflective sheeting is other than four inches wide, the ''FRA–224'' certification mark must still appear at least once on that piece of sheeting as it is applied on the sides of freight rolling stock.

Section 224.106 Location of retroreflective sheeting

This section sets forth specific patterns for the application of retroreflective material to various types of freight cars, as well as locomotives. Specifically, paragraph (a) of this section provides that retroreflective sheeting must be located clear of appurtenances and devices such as ladders and other safety appliances or attachments that may obscure its visibility. Paragraph (a) also provides that retroreflective sheeting need not be applied over existing or required car stencils or markings, nor must the sheeting be applied to discontinuous surfaces such as bolts, rivets, door hinges, or other irregularly shaped areas that may prevent the sheeting from adhering to the car sides. TTX petitioned for reconsideration of this provision, noting that although the section provided that retroreflective sheeting ''need not be applied over existing or required car stencils and markings,'' § 224.106(a)(1)(i), (ii), (2), and (3) mandate that retroreflective strips be applied no more than 12 feet apart along the length of car sides. TTX then noted that ''in the event there are stencils, appurtenances, and discontinuous surfaces for a continuous space of 12 feet or more on the only available car side, it is not clear whether the car owner must move stencils to affix the reflectors or whether the presence of those obstructions vitiates the 12-foot requirement.'' FRA does not intend that a car owner or railroad would ever have to move existing stencils to accommodate the retroreflective material required under this part; such a requirement would not be cost-effective. Accordingly, FRA has revised paragraph (a) to make it clear that if it is not practicable to apply retroreflective material every 12 feet along the length of car sides ''because of existing stencils, appurtenances, or discontinuous surfaces, the sheeting shall be applied at the next smallest interval practicable.'' For example, if a car has a continuous space of 13 feet occupied by stencils, appurtenances, and/or other discontinuous surfaces, then FRA would expect retroreflective material to be applied on either side of such space, as close as practicable to 12 feet, without interfering with the occupied surfaces. Paragraphs (a)(1)(i), (a)(1)(ii), (2) and (3) have also been revised to be consistent with this revision to paragraph (a). Freight rolling stock owners with cars that are unable to meet the 12-foot spacing requirement are encouraged to request guidance on sheeting application from FRA's Office of Safety, Motive Power and Equipment Division.

To accommodate cars with limited unoccupied surface space suitable for attaching reflectors, paragraph (a) of this section of the final rule specifically provided that if necessary to avoid appurtenances, discontinuous surfaces, or existing or required car markings or stencils, 4x18 inch strips could be separated into two 4x9 inch strips and likewise 4x36 inch strips could be separated into four 4x9 inch strips. The 4x9 inch strips could then be applied on either side of the interfering appurtenance, discontinuous surface, or car making or stencil. Although FRA has not changed the substance of this provision of the final rule, FRA has revised the sixth sentence of the introductory text in paragraph (a) to provide that if it is ''necessary to avoid appurtenances, discontinuous surfaces or existing or required car markings or stencils, 4x18 or 4x36 inch strips of retroreflective material may be divided into 4x9 inch strips and applied on either side of the appurtenance, discontinuous surface, or car markings or stencils, as practicable.'' FRA believes that this revised wording is both consistent with the final rule and clearer than FRA's original wording.

Paragraph (a) also sets forth the specific pattern of application for railroad freight cars generally (e.g., box

[9] Paragraph (d) of § 224.103 provides, in part, that ''[t]he characters ''FRA–224'', constituting the manufacturer's certification that the retroreflective sheeting conforms to the requirements of paragraphs (a) through (c) of this section.'' Paragraph (a) contains the construction requirements; paragraph (b) contains the color requirements; and paragraph (c) contains the performance requirements.

cars, gondola cars, and other similarly configured cars), tank cars, flat cars, and ''cars of special construction''. As applied to freight cars, other than flat cars and tank cars, paragraph (a)(1) provides for either a vertical or horizontal pattern of retroreflective sheeting along the length of the car sides, with the bottom edge of the sheeting as close as practicable to 42 inches from the top of the rail, but not below the side sill. In its petition, AAR noted an inconsistency in paragraph (a)(1)(ii) of this section setting forth the general rule for horizontal placement of retroreflective sheeting on freight cars. Specifically, AAR pointed out that paragraph (a)(1)(ii) required at least two 4x18 inch strips to be placed ''one above the other'' at each car end. Figures 4, 5, and 6 depicting the horizontal placement pattern on a typical box car, covered hopper car, and gondola car, however, show the end strips next to each other, not above each other. Accordingly, AAR recommended that paragraph (a)(1)(ii) be revised to allow two 4x18 inch strips to be applied either one above the other or next to each other. FRA notes this was an inadvertent inconsistency in the final rule and FRA's intent was to allow the placement of one 4x36 inch strip, or two 4x18 inch strips either above each other, or next to each other, as close to each end of the car as practicable. Accordingly, paragraph (a)(1)(ii) has been revised to allow ''two 4x18 inch strips, one above or next to the other * * * as close to each end of the car as practicable.''

Paragraph (a)(2) addresses tank cars and provides two options for applying retroreflective sheeting to such cars. First, sheeting may be applied vertically along the car sides and centered on the horizontal centerline of the tank, or as near as practicable. Second, the final rule provided that if it was not practicable to safely apply the sheeting centered on the horizontal centerline of the tank, the sheeting could be applied vertically with its top edge ''no higher'' than the horizontal centerline of the tank. FRA notes, however, that this second option was worded inconsistently with FRA's intent as explained in the preamble to the final rule. Specifically, FRA intended that as an alternative to centering the sheeting on the horizontal centerline of the tank, the sheeting could be applied with its top edge ''no lower'' than the horizontal centerline of the tank. *See* 70 FR 161. Accordingly, paragraph (a)(2) of this section has been revised to correct this error.

Paragraph (a)(3) addresses flat cars (defined to include spine cars, articulated and multi-unit articulated cars) and provides for a horizontal pattern of retroreflective material along the length of flat cars' side sills, with the bottom edge of the sheeting no lower than the bottom of the side sill and the top edge of the sheeting no higher than the top of the car deck or floor. Both TTX and AAR petitioned for reconsideration of this requirement, noting that cars such as spine cars and skeleton log flat cars do not have side sills running the entire length of the cars. According to AAR and TTX, these cars have ''very short side sills at the ends of the car'' and the only part of the car between the end side sills to which retroreflective sheeting could be applied is the center sill. Accordingly, both TTX and AAR recommended that if a flat car does not have a continuous side sill, the rule should permit retroreflective sheeting to be applied to the center sill, provided that the sheeting is not obscured by other components. FRA agrees with the concerns of AAR and TTX regarding flat cars without continuous side sills, and accordingly, paragraph (a)(3) of the final rule has been revised to allow for placement of retroreflective sheeting to ''other surfaces inboard of the sides, such as the center sill,'' so long as the sheeting is not obscured by other parts of the car. For additional advice concerning the application of material to flat cars that do not have continuous side sills, freight rolling stock owners are encouraged to contact FRA's Office of Safety, Motive Power & Equipment Division for guidance.

Paragraph (b) of § 224.106 of the final rule addresses the reflectorization pattern of locomotives. As explained in the NPRM and the preamble to the final rule, FRA recognizes that the conspicuity issues surrounding locomotives differ from the issues surrounding freight cars. Accordingly, in the final rule FRA provided a more flexible approach to the reflectorization of locomotives, requiring only that retroreflective material be spaced as uniformly as practicable along the length of locomotive sides and applied as close as practicable to 42 inches above the top of the rail. As indicated in the discussion of § 224.105 above, AAR petitioned for reconsideration of this requirement, noting the desire of several railroads to use continuous strips of retroreflective material on locomotives, as opposed to individual strips of 4x18 or 4x36 inches of material. AAR also pointed out that in the preamble to the final rule, FRA contemplated the use of continuous striping on locomotives.[10] AAR is correct in this regard. In the final rule, FRA intended to allow the use of continuous retroreflective sheeting strips along the entire length of locomotive sides. Accordingly paragraph (b) has been revised to clarify this intent and now explicitly provides two alternatives for reflectorizing locomotives. Specifically, paragraph (b) requires that locomotives be equipped with the specified minimum amounts of retroreflective material on each side, as close as practicable to 42 inches from the top of the rail, ''either (1) in strips four inches wide and 18 or 36 inches long and spaced as uniformly as practicable along the length of the locomotive sides, or (2) in one continuous strip, at least four inches wide, along the length of the locomotive.''

Section 224.107 Implementation Schedule

This section of the final rule generally required that all freight cars subject to this part be equipped with retroreflective sheeting conforming to this part within approximately ten years of the effective date of the final rule (i.e., by May 31, 2015), and similarly that all locomotives subject to this part be equipped within approximately five years (i.e., by May 31, 2010). FRA has retained these general time frames, but the exact compliance dates have been revised consistent with the rule's effective date.

The final rule provided two options for the timing of applying the required retroreflective material to existing freight cars and locomotives not already equipped with reflective material. First, freight rolling stock owners could follow the ''default'' schedules of § 224.107(a)(2)(i) (for freight cars) or § 224.107(b)(2)(i) (for locomotives). The default schedule of paragraph (a)(2)(i) of the final rule required that retroreflective sheeting be applied to an existing non-reflectorized freight car, at the earliest of two events: (1) when the car is repainted or rebuilt, or (2) within nine months after the car first undergoes a single car air brake test (SCABT). This default schedule for reflectorizing freight cars was designed to allow car owners and railroads the ability to apply retroreflective material while a car is out of service for other maintenance or repair reasons, thereby eliminating the

[10] In the preamble to the final rule, FRA stated that ''most locomotives already reflectorized in the course of voluntary reflectorization programs are equipped with * * * reflective material applied along the length of the locomotive sides at platform height, exactly the pattern contemplated by this final rule.'' 70 FR 162.

need to take a car out of service for the specific purpose of applying retroreflective material.

The default schedule of paragraph (b)(2)(i) of the final rule required that retroreflective sheeting be applied to existing non-reflectorized locomotives no later than the first biennial (182 day) inspection performed pursuant to 49 CFR 229.29 occurring after the effective date of the final rule. Again, FRA intended this default schedule to prevent locomotives being taken out of service for the express purpose of applying retroreflective material and instead to allow for the application of retroreflective material while a locomotive is out of service for routine maintenance purposes. AAR petitioned for reconsideration of paragraph (b)(2)(i), noting that although locomotives are normally inspected indoors, cold weather may still prevent the application of retroreflective material during even an indoor inspection. For example, in its petition, AAR explained that in January 2005, the Canadian Pacific Railroad brought a locomotive indoors when the outside temperature was –7.6 °F. After one hour, the locomotive's temperature was 33.2 °F and after seven hours, the locomotive's temperature was 43 °F, below 3M's recommended 45 °F threshold for applying sheeting to rail cars referenced in the preamble to the final rule. *See* 70 FR 163. Although FRA notes that prior to publication of the final rule, 3M submitted information to the docket noting that due to ''recent technological developments'' the recommended minimum application temperature for certain types of retroreflective sheeting had decreased to 35 °F (see document 120 in the docket), FRA agrees with AAR's concern regarding tape application on cold surfaces and believes that it is reasonable to take weather conditions into account when applying retroreflective material, not only to freight cars, but to locomotives as well. Accordingly, consistent with the freight car provision of paragraph (a)(2)(i), paragraph (b)(2)(i) has been revised to require that retroreflective sheeting be applied to existing locomotives not equipped with conforming retroreflective sheeting ''not later than nine months after the first biennial inspection performed pursuant to 49 CFR 229.29'' occurring after the effective date of the rule.

As alternatives to the default schedules of paragraphs (a)(2)(i) and (b)(2)(i), paragraphs (a)(2)(ii) and (b)(2)(ii) of this section of the final rule provided a more flexible option of allowing freight rolling stock owners to effectively ''opt-out'' of the default schedules and implement their own schedule for reflectorization, provided certain milestones are met. Specifically, paragraphs (a)(2)(ii) and (b)(2)(ii) of this section of the final rule provided that a freight rolling stock owner may elect not to follow the default schedules of paragraphs (a)(2)(i) and (b)(2)(i) if, by July 1, 2005, the owner submitted to FRA an initial Reflectorization Implementation Compliance Report (Compliance Report).[11] As part of the Compliance Report, freight rolling stock owners must certify that all freight rolling stock subject to part 224 in their fleet will be equipped with the appropriate retroreflective sheeting in conformance with the schedules set forth in Table 3 of the rule (for freight cars) and Table 4 of the rule (for locomotives). Although FRA has retained the same general filing requirements and time periods for compliance as those in the final rule, FRA has revised the specific compliance dates to reflect the delay in beginning the implementation of the rule caused by the stay of effectiveness published on May 26, 2005. As noted in the preamble to the final rule (70 FR 164) in keeping with the requirements of the Paperwork Reduction Act and the Government Paperwork Elimination Act, FRA is providing freight rolling stock owners the option of submitting Compliance Reports to FRA electronically. Appendix C contains guidelines for submitting Compliance Reports to FRA, both electronically and in paper format. FRA intends to revise these guidelines as the system for electronic reporting under this rule is developed more fully. FRA notes, however, that if a freight rolling stock owner has already filed an initial Compliance Report with FRA prior to publication of these guidelines, there is no need for that owner to submit to FRA another initial Compliance Report.

FRA notes that to date it appears that there has been some confusion among freight rolling stock owners as to who is required to file Compliance Reports with FRA. First, in accordance with the final rule only freight rolling stock owners who elect to follow the implementation schedules of §§ 224.107(a)(2)(i) or (b)(2)(i) or who are seeking grandfathered status for existing freight rolling stock already equipped with certain types of reflective material under §§ 224.107(a)(3) or (b)(3) are required to file Compliance Reports. FRA also notes that by completing the certification section of the report (Part IV of FRA Form F6180.113) the freight rolling stock owner is affirmatively representing to the FRA that freight rolling stock in its fleet will be reflectorized in accordance with the alternative schedules of §§ 224.107(a)(2)(i) or (b)(2)(i). FRA encourages freight rolling stock owners who choose to file an initial Compliance Report with FRA, but who do not manage the maintenance or use of their fleet (because of lease arrangements or otherwise), to take efforts to ensure that the party the owner holds responsible for the maintenance or use of the equipment is properly adhering to the requirements of the alternative schedule.

Paragraph (b)(4) of this section in the final rule provided that certain small railroads could take an additional five years to bring their locomotive fleets into compliance with the rule. Specifically, paragraph (b)(4) provided that railroads with fewer than 400,000 annual employee work hours that do not share locomotive power with a railroad with 400,000 or more annual employee work hours may take up to ten years to bring their locomotive fleets into compliance with the rule. Because a railroad's level of annual employee work hours may change over time, FRA has revised this paragraph to make it clear that for purposes of this rule, a railroad's size will be determined based on its size as of December 31, 2004.

Section 224.109 Inspection, repair, and replacement

This section of the final rule sets forth the requirements for the periodic inspection and maintenance of retroreflective material on freight rolling stock. Paragraph (a) of § 224.109 of the final rule required that retroreflective sheeting on freight cars subject to this part be visually inspected for presence and condition whenever a car undergoes a single car air brake test (SCABT) required under 49 CFR 232.305. Similarly, paragraph (b) required that retroreflective sheeting on locomotives subject to this part be visually inspected for presence and condition whenever the locomotive undergoes an annual inspection required under 49 CFR 229.27. Both paragraphs (a) and (b) required that if, upon inspection, more than 20 percent of the amount of sheeting required on either side of a car or locomotive under § 224.105 is found to be ''damaged, obscured, or missing,'' that sheeting must be repaired or replaced. Specifically, paragraph (a) required the railroad or contractor performing the SCABT to inspect the car for presence and condition of the

[11] The form Reflectorization Implementation Compliance Report is contained in Appendix B to the final rule.

required retroreflective material. If the inspecting railroad or contractor determines that maintenance is necessary, the railroad or contractor is required to promptly notify the car owner of the missing, damaged, or obscured sheeting, and car owners are afforded nine months from the date they are notified of the defective condition of the material to properly repair or replace the material. Paragraph (b) required that ''damaged, obscured, or missing'' sheeting on locomotives be repaired or replaced at the time of inspection, or if conditions at the time of the inspection were such that adequate repairs cannot be made, the material could be repaired or replaced ''at the next forward location where conditions permit.'' AAR petitioned FRA for reconsideration of several aspects of this section.

First, AAR expressed the view that the 20% maintenance threshold for both freight cars and locomotives is ambiguous. AAR explained that § 224.109's provision requiring maintenance if ''more than 20 percent of the amount of sheeting required under § 224.105 on either side of a car is damaged, obscured, or missing'' does not account for the amount of sheeting put on a rail car in the first place. In other words, AAR noted that as written, § 224.109 could require the repair or replacement of sheeting even if the amount of sheeting in good condition on a rail car or locomotive were more than what is required by § 224.105. For example, AAR explained that ''a locomotive might have twice the amount of sheeting required by section 224.105. If 25 percent of the amount of sheeting required under section 224.105 became defective, the locomotive would still have sheeting in good condition amounting to 175 percent of what is required by section 224.105. Yet, subsection 224.109(b) arguably requires the repair or replacement of the defective sheeting.'' This result was not FRA's intent. As explained in the preamble to the final rule, FRA required approximately 30% more material on each side of most typically-sized freight rolling stock than research demonstrated was necessary to provide adequate reflectorization. *See* 70 FR 168. By requiring 30% more retroreflective material than necessary, if 20% or less of that amount of required material is damaged, obscured, or missing, the remaining reflective material could still provide sufficient reflectivity, even if further damage occurred before maintenance was performed on the material (assuming the material is relatively evenly spread the length of the rail car or locomotive sides). Accordingly, FRA agrees with AAR's concern and § 224.109 has been revised to require the repair or replacement of retroreflective material on both freight cars and locomotives, when at the time of inspection, ''less than 80 percent'' of the minimum amount of sheeting required by § 224.105 on each car or locomotive side is present, not damaged, and not obscured.

Second, AAR noted that the maintenance threshold in § 224.109 is based on the amount of sheeting required by § 224.105 (i.e., the minimum amount of retroreflective sheeting required on existing cars reflectorized pursuant to the rule), but the section does not address grandfathered equipment. As AAR noted in its petition, § 224.107 of the final rule—not § 224.105—addresses the amount of sheeting required for grandfathered equipment. Because FRA agrees with AAR's point that the maintenance threshold for grandfathered equipment needs to be clarified in the rule, FRA has revised § 224.109 to require the repair or replacement of retroreflective material on both freight cars and locomotives grandfathered under the rule when, at the time of inspection, ''less than 80%'' of the minimum amount of sheeting required by § 224.107 on each car or locomotive side is present, not damaged, and not obscured. owners

Next, AAR expressed the view that § 224.109's requirement that the inspecting railroad or contractor notify the ''car owner'' of damaged, obscured, or missing sheeting is ambiguous. In support of this view, AAR noted that § 224.5 defines ''freight rolling stock owner'' to potentially include many entities other than the actual owner of the freight rolling stock (e.g., lessee of freight rolling stock, person who manages the maintenance or use of the freight rolling stock on behalf of an owner or one or more lessors or lessees) and that the rule is unclear which entity the inspecting railroad or contractor should notify in the event the retroreflective material on a car requires maintenance. AAR noted that the entity conducting the inspection of a freight car would have ''no way of knowing, with certainty, all the entities that could be considered freight rolling stock owners'' and that ''there is no need to require the inspecting entity to notify multiple companies of the need for maintenance.'' As a solution to this ambiguity, citing the *Office Manual of the A.A.R. Interchange rules* (Rule 112.G.7 (Jan. 1, 2005 edition)), AAR noted that industry rules provide that the entity responsible for the reporting mark of a rail car is responsible for maintenance of that car. Accordingly, AAR recommended that § 224.109 be revised to require the inspecting railroad or contractor to report the need for reflector maintenance to the owner of a car's reporting mark as indicated in AAR's Universal Machine Language Equipment Register (UMLER). FRA agrees with AAR's suggested revision and accordingly § 224.109(a) has been revised to require the inspecting railroad or contractor to notify ''the entity responsible for the reporting mark, as indicated in the Universal Machine Language Equipment Register'' of the damaged, missing or obscured material.[12]

Finally, AAR expressed the view that requiring the repair or replacement of retroreflective sheeting on locomotives at the time of the annual inspection, or ''the next forward location where conditions permit,'' is ''inadequate'' because there is ''no assurance that the next forward location where 'conditions permit' would be equipped to maintain (or install) retroreflective sheeting.'' Accordingly, AAR expressed the view that railroads should be afforded the same nine-month window freight car owners have to repair or replace retroreflective sheeting needing maintenance. FRA agrees with AAR's concern and, accordingly, § 224.109(b) has been revised to provide a nine-month maintenance window for locomotives, similar to that for freight cars.

Section 224.111 Renewal

This section of the final rule requires that all retroreflective sheeting required under this part, regardless of its condition, be replaced with new conforming sheeting, no later than ten years after the date of initial installation. As explained in the NPRM and the preamble to the final rule, this 10-year renewal period is based on most manufacturers' stated useful life of retroreflective material. AAR petitioned for reconsideration of this section expressing the view that this section would require the removal of existing sheeting in order to replace it at the end of ten years. As stated elsewhere in the rule, FRA does not intend to require the removal of existing sheeting at the end of ten years, if that sheeting does not interfere with the application of new sheeting. *See* §§ 224.107(a) and (b). Accordingly, this section has been

[12] As noted in the discussion of § 224.5 above, FRA has also reviewed the final rule to include a definition of ''Universal Machine Language Equipment Register.''

revised to make it clear that at the time of replacement, it is not necessary to remove the old sheeting unless it interferes with the placement of the new sheeting, but at the end of a 10-year period, the old sheeting shall not be considered in calculating the amount of retroreflective material required under this part.

Regulatory Impact and Notices

A. Executive Order 12866 and DOT Regulatory Policies and Procedures

Prior to issuing the January 3, 2005 final rule, FRA prepared and placed in the docket a regulatory analysis addressing the economic impact of the final rule. The rule was evaluated in accordance with existing policies and procedures and was considered to be non-significant under both Executive Order 12866 and DOT policies and procedures. For a more detailed discussion see 70 FR 168. This response to the petitions for reconsideration of the final rule is likewise considered to be non-significant under both Executive Order 12866 and DOT policies and procedures. This regulatory action generally clarifies the requirements contained in the rule or allows for greater flexibility in complying with the rule.

B. Regulatory Flexibility Act of 1980 and Executive Order 13272

The Regulatory Flexibility Act of 1980 (5 U.S.C. 601–612) requires a review of final rules to assess their impact on small entities. Prior to issuing the January 3, 2005 final rule, FRA prepared and placed in the docket a regulatory flexibility analysis which assessed the small entity impact by the rule. FRA certified that the final rule is not expected to have a ''significant'' economic impact on a ''substantial'' number of small entities under the Regulatory Flexibility Act and Executive Order 13272. For a more detailed discussion, see 70 FR 169. This response to the petitions for reconsideration of the final rule generally clarifies the requirements contained in the rule or allows for greater flexibility in complying with the rule. Consequently, FRA certifies that this regulatory action is not expected to have a ''significant'' economic impact on a ''substantial'' number of small entities under the Regulatory Flexibility Act and Executive Order 13272.

C. Paperwork Reduction Act of 1995

This response to the petitions for reconsideration of the final rule does not change the information collection requirements contained in the original final rule.

D. Federalism Implications

Executive Order 13132, entitled ''Federalism,'' provides in part that, to the extent practicable, no agency shall promulgate any regulation that has federalism implications, that imposes substantial direct compliance costs on State and local governments, and that is not required by statute, unless the Federal Government provides the funds necessary to pay the direct compliance costs incurred by State and local governments, or the agency consults with State and local officials early in the process of developing the proposed regulation. As stated in the preamble to the final rule, FRA believes that this final rule will not have federalism implications that impose substantial direct compliance costs on State and local governments, and that this action is in compliance with Executive Order 13132. *See* 70 FR 170. The amendments contained in this response to the petitions for reconsideration to the final rule generally clarify requirements currently contained in the rule or allow for greater flexibility in complying with the rule.

E. Environmental Impact

FRA has evaluated this action in accordance with its ''Procedures for Considering Environmental Impacts'' (FRA's Procedures) (64 FR 28545; May 26, 1999) as required by the National Environmental Policy Act (42 U.S.C. 4321 *et seq.*), other environmental statutes, Executive Orders, and related regulatory requirements. FRA has determined that this action is not a major FRA action requiring the preparation of an environmental impact statement or environmental assessment because it is categorically excluded from detailed environmental review pursuant to section 4(c) of FRA's procedures. 64 FR 28547, May 26, 1999. FRA has further considered this final rule in accordance with sections 4(c) and (e) of FRA's Procedures to determine if extraordinary circumstances exist with respect to this final rule that might trigger the need for a more detailed environmental review. After conducting this review, FRA has determined that extraordinary circumstances do not exist that might trigger the need for a more detailed environmental review. As a result, FRA finds that this regulation is not a major Federal action significantly affecting the quality of the human environment.

F. Unfunded Mandates Reform Act of 1995

Pursuant to the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4) each Federal agency ''shall, unless otherwise prohibited by law, assess the effects of Federal Regulatory actions on State, local, and tribal governments, and the private sector (other than to the extent that such regulations incorporate requirements specifically set forth in law).'' Sec. 201. Section 202 of the Act further requires that ''before promulgating any general notice of proposed rulemaking that is likely to result in promulgation of any rule that includes any Federal mandate that may result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of $120,700,000 or more (as adjusted for inflation) in any 1 year, and before promulgating any final rule for which a general notice of proposed rulemaking was published, the agency shall prepare a written statement'' detailing the effect on State, local, and tribal governments and the private sector. This proposed rule will not result in the expenditure, in the aggregate, of $120,700,000 or more in any one year, and thus preparation of such a statement is not required.

G. Energy Impact

Executive Order 13211 requires Federal agencies to prepare a Statement of Energy Effects for any ''significant energy action.'' 66 FR 28355, May 22, 2001. Under the Executive Order, a ''significant energy action'' is defined as any action by an agency (normally published in the **Federal Register**) that promulgates or is expected to lead to the promulgation of a final rule or regulation, including notices of inquiry, advance notices of proposed rulemaking, and notices of proposed rulemaking: (1)(i) That is a significant regulatory action under Executive Order 12866 or any successor order, and (ii) that is likely to have a significant adverse effect on the supply, distribution, or use of energy; or (2) that is designated by the Administrator of the Office of Information and Regulatory Affairs as a significant energy action. FRA has evaluated this response to petitions for reconsideration of the final rule in accordance with Executive Order 13211, and has determined that this regulatory action is not a ''significant energy action'' within the meaning of the Executive Order.

H. Privacy Act

Anyone is able to search the electronic form of all comments received into any of our dockets by the

name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association or business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (Volume 65, Number 70; Pages 19477–78) or you may visit *http://dms.dot.gov.*

List of Subjects in 49 CFR Part 224

Incorporation by reference, Penalties, Railroad locomotive safety, Railroad safety, and Reporting and recordkeeping requirements.

The Rule

■ In consideration of the foregoing, effective November 28, 2005, the stay of effectiveness of 49 CFR part 224 is lifted and chapter II, subtitle B, of title 49, Code of Federal Regulations is revised to read as follows:

PART 224—REFLECTORIZATION OF RAIL FREIGHT ROLLING STOCK

Subpart A—General

Subpart B—Application, Inspection, and Maintenance of Retroreflective Material

Authority: 49 U.S.C. 20103, 20107, 20148 and 21301; 28 U.S.C. 2461; and 49 CFR 1.49.

Subpart A—General

§ 224.1 Purpose and scope.

(a) The purpose of this part is to reduce highway-rail grade crossing accidents and deaths, injuries, and property damage resulting from those accidents, by enhancing the conspicuity of rail freight rolling stock so as to increase its detectability by motor vehicle operators at night and under conditions of poor visibility.

(b) In order to achieve cost-effective mitigation of collision risk at highway-rail grade crossings, this part establishes the duties of freight rolling stock owners (including those who manage maintenance of freight rolling stock, supply freight rolling stock for transportation, or offer freight rolling stock in transportation) and railroads to progressively apply retroreflective material to freight rolling stock, and to periodically inspect and maintain that material. Freight rolling stock owners, however, are under no duty to install, clean or otherwise maintain, or repair reflective material except as specified in this part.

(c) This part establishes a schedule for the application of retroreflective material to rail freight rolling stock and prescribes standards for the application, inspection, and maintenance of retroreflective material to rail freight rolling stock for the purpose of enhancing its detectability at highway-rail grade crossings. This part does not restrict a freight rolling stock owner or railroad from applying retroreflective material to freight rolling stock for other purposes if not inconsistent with the recognizable pattern required by this part.

§ 224.3 Applicability.

This part applies to all railroad freight cars and locomotives that operate over a public or private highway-rail grade crossing and are used for revenue or work train service, except:

(a) Freight rolling stock that operates only on track inside an installation that is not part of the general railroad system of transportation;

(b) Rapid transit operations in an urban area that are not connected to the general railroad system of transportation;

(c) Locomotives and passenger cars used exclusively in passenger service; or

(d) Freight rolling stock that is subject to a reflectorization requirement promulgated by another Federal agency.

§ 224.5 Definitions.

Administrator means the Administrator of the Federal Railroad Administration or the Administrator's delegate.

Associate Administrator means the Associate Administrator for Safety, Federal Railroad Administration, or the Associate Administrator's delegate.

Damaged means scratched, broken, chipped, peeled, or delaminated.

Flat car means a car having a flat floor or deck on the underframe with no sides, ends or roof (including spine cars, articulated and mult-unit intermodal cars).

Freight rolling stock means:

(1) Any locomotive subject to Part 229 of this chapter used to haul or switch freight cars (whether in revenue or work train service); and

(2) Any railroad freight car (whether used in revenue or work train service).

Freight rolling stock owner means any person who owns freight rolling stock, is a lessee of freight rolling stock, manages the maintenance or use of freight rolling stock on behalf of an owner or one or more lessors or lessees, or otherwise controls the maintenance or use of freight rolling stock.

Locomotive has the meaning assigned by § 229.5 of this chapter, but for purposes of this part applies only to a locomotive used in the transportation of freight or the operation of a work train.

Obscured means concealed or hidden (i.e., covered up, as where a layer of paint or dense chemical residue blocks all incoming light); this term does not refer to ordinary accumulations of dirt, grime, or ice resulting from the normal railroad operating environment.

Person means an entity of any type covered under 1 U.S.C. 1, including but not limited to the following: A railroad; a manager, supervisor, official, or other employee or agent of a railroad; any owner, manufacturer, lessor, or lessee of railroad equipment, track or facilities; any independent contractor providing goods or services to a railroad; and any employee of such an owner, manufacturer, lessor, lessee, or independent contractor.

Railroad means all forms of non-highway ground transportation that run on rails or electromagnetic guideways, including high speed ground transportation systems that connect metropolitan areas, without regard to whether they use new technologies not associated with traditional railroads.

Railroad freight car has the meaning assigned by § 215.5 of this chapter.

Tank car means a rail car, the body of which consists of a tank for transporting liquids.

Universal Machine Language Equipment Register means the database containing information on rail equipment maintained by the Association of American Railroads.

Unqualified Retroreflective Sheeting means engineering grade sheeting, super engineering grade sheeting (enclosed lens) or high-intensity type sheeting (ASTM Type I, II, III, or IV Sheeting) as described in ASTM International Standard D–4956–04, ''Standard Specification for Retroreflective Sheeting for Traffic Control.''

Work train means a non-revenue service train used for the maintenance and upkeep service of the railroad.

§ 224.7 Waivers.

(a) Any person subject to a requirement of this part may petition the Administrator for a waiver of compliance with such requirement. The filing of such a petition does not affect that person's responsibility for compliance with that requirement while the petition is being considered.

(b) Each petition for waiver under this section shall be filed in the manner and contain the information required by part 211 of this chapter.

(c) If the Administrator finds that a waiver of compliance is in the public interest and is consistent with railroad safety, the Administrator may grant the waiver subject to any conditions that the Administrator deems necessary.

§ 224.9 Responsibility for compliance.

(a) Freight rolling stock owners, railroads, and (with respect to certification of material) manufacturers of retroreflective material, are primarily responsible for compliance with this part. However, any person that performs any function or task required by this part (including any employee, agent, or contractor of the aforementioned), must perform that function in accordance with this part.

(b) Any person performing any function or task required by this part shall be deemed to have consented to FRA inspection of the person's facilities and records to the extent necessary to determine whether the function or task is being performed in accordance with the requirements of this part.

§ 224.11 Penalties.

(a) Any person (including but not limited to a railroad; any manager, supervisor, official, or other employee or agent of a railroad; any owner, manufacturer, lessor, or lessee of railroad equipment, track, or facilities; any employee of such owner, manufacturer, lessor, lessee, or independent contractor) who violates any requirement of this part or causes the violation of any such requirement is subject to a civil penalty of at least $550, but not more than $11,000 per violation, except that: Penalties may be assessed against individuals only for willful violations, and, where a grossly negligent violation or a pattern of repeated violations has created an imminent hazard of death or injury to persons, or has caused death or injury, a penalty not to exceed $27,000 per violation may be assessed. Each day a violation continues shall constitute a separate offense. Appendix A to this part contains a schedule of civil penalty amounts used in connection with this part.

(b) Any person who knowingly and willfully falsifies a record or report required by this part is subject to criminal penalties under 49 U.S.C. 21311.

§ 224.13 Preemptive effect.

Under 49 U.S.C. 20106, issuance of this part preempts any State law, rule, regulation, or order covering the same subject matter, except an additional or more stringent law, rule, regulation, or order that is necessary to eliminate or reduce an essentially local safety hazard; that is not incompatible with a law, rule, regulation, or order of the United States Government; and that does not unreasonably burden interstate commerce.

§ 224.15 Special approval procedures.

(a) *General.* The following procedures govern consideration and action upon requests for special approval of alternative standards under § 224.103(e).

(b) *Petitions.* (1) Each petition for special approval of an alternative standard shall contain—

(i) The name, title, address, and telephone number of the primary person to be contacted with regard to the petition;

(ii) The alternative proposed, in detail, to be substituted for the particular requirements of this part; and

(iii) Appropriate data and analysis establishing that the alternative will provide at least an equivalent level of safety and meet the requirements of § 224.103(e).

(2) Three copies of each petition for special approval of an alternative standard shall be submitted to the Docket Clerk, Office of Chief Counsel, Federal Railroad Administration, RCC–10, Mail Stop 10, 1120 Vermont Ave., NW., Washington, DC 20590.

(c) *Notice.* FRA will publish a notice in the **Federal Register** concerning each petition under paragraph (b) of this section.

(d) *Public comment.* FRA will provide a period of not less than 30 days from the date of publication of the notice in the **Federal Register** during which any person may comment on the petition.

(1) Each comment shall set forth specifically the basis upon which it is made, and contain a concise statement of the interest of the commenter in the proceeding.

(2) Each comment shall be submitted to the DOT Central Docket Management System, Nassif Building, Room PL–401, 400 Seventh Street, SW., Washington, DC 20590, and shall contain the assigned docket number which appears in the **Federal Register** for that proceeding. The form of such submission may be in written or electronic form consistent with the standards and requirements established by the Central Docket Management System and posted on its Web site at *http://dms.dot.gov.*

(3) In the event FRA determines that it requires additional information to appropriately consider the petition, FRA will conduct a hearing on the petition in accordance with the procedures provided in § 211.25 of this chapter.

(e) *Disposition of petitions.* (1) If FRA finds that the petition complies with the requirements of this section and that the proposed alternative standard is acceptable or changes are justified, or both, the petition will be granted, normally within 90 days of its receipt. The Associate Administrator may determine the applicability of other technical requirements of this part when rendering a decision on the petition. If the petition is neither granted nor denied within 90 days, the petition remains pending for decision. FRA may attach special conditions to the approval of the petition. Following the approval of a petition, FRA may reopen consideration of the petition for cause stated.

(2) If FRA finds that the petition does not comply with the requirements of this section, or that the proposed alternative standard is not acceptable or that the proposed changes are not justified, or both, the petition will be denied, normally within 90 days of its receipt.

(3) When FRA grants or denies a petition, or reopens consideration of a petition, written notice is sent to the petitioner and other interested parties and a copy of the notice is placed in the electronic docket of the proceeding.

Subpart B—Application, Inspection, and Maintenance of Retroreflective Material

§ 224.101 General requirements.

All rail freight rolling stock subject to this part shall be equipped with retroreflective sheeting that conforms to the requirements of this part. Notwithstanding any other provision of this chapter, the application, inspection, and maintenance of that sheeting shall be conducted in accordance with this subpart or in accordance with an alternative standard providing at least an equivalent level of safety after special approval of FRA under § 224.15.

§ 224.103 Characteristics of retroreflective sheeting.

(a) *Construction.* Retroreflective sheeting applied pursuant to this part shall consist of a smooth, flat,

transparent exterior film with microprismatic retroreflective elements embedded in or suspended beneath the film so as to form a non-exposed retroreflective optical system.

(b) *Color.* Retroreflective sheeting applied pursuant to this part shall be yellow, fluorescent yellow, or white as specified by the chromaticity coordinates of ASTM International's Standard D 4956–04, ''Standard Specification for Retroreflective Sheeting for Traffic Control.'' The Director of the Federal Register approves the incorporation by reference of this standard in this section in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. You may obtain a copy of the incorporated standard from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428–2959 or at *http://www.astm.org.* You may inspect a copy of the incorporated standard at the Federal Railroad Administration, Docket Clerk, 1120 Vermont Ave., NW., Suite 7000, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.*

(c) *Performance.* Retroreflective sheeting applied pursuant to this part shall meet the requirements of ASTM D 4956–04, for Type V Sheeting if metalized or Type VII Sheeting if non-metalized, except for the initial minimum values of the coefficient of retroreflection, and shall, as initially applied, meet the minimum values for the coefficient of retroreflection specified in Table 1 of this subpart.

TABLE 1 OF SUBPART B.—MINIMUM COEFFICIENT OF RETROREFLECTION (R_A) (IN CANDELA/LUX/METER^2) REQUIREMENT FOR RETROREFLECTIVE SHEETING (MINIMUM PHOTOMETRIC PERFORMANCE REQUIREMENTS)

Entrance angle	Observation angle			
	0.2 Degree		0.5 Degree	
	Yellow or fluorescent yellow	White	Yellow or fluorescent yellow	White
−4°	400	600	100	160
30°	220	350	45	75

(d) *Certification.* The characters ''FRA–224'', constituting the manufacturer's certification that the retroreflective sheeting conforms to the requirements of paragraphs (a) through (c) of this section, shall appear at least once on the exposed surface of each piece of sheeting in the final application. The characters shall be a minimum of three millimeters high, and shall be permanently stamped, etched, molded, or printed within the product and each certification shall be spaced no more than four inches apart.

(e) *Alternative standards.* Upon petition by a freight rolling stock owner or railroad under § 224.15, the Associate Administrator may approve an alternative technology as providing equivalent safety. Any such petition shall provide data and analysis sufficient to establish that the technology will result in conspicuity and durability at least equal to sheeting described in paragraphs (a) through (c) applied in accordance with this part and will present a recognizable visual target that is suitably consistent with freight rolling stock equipped with retroreflective sheeting meeting the technical requirements of this part to provide the intended warning to motorists.

§ 224.105 Sheeting dimensions and quantity.

Retroreflective sheeting shall be applied along the length of each railroad freight car and locomotive side as described in § 224.106. Unless otherwise specified, retroreflective sheeting applied under this part shall be applied in strips 4 inches wide and 18 or 36 inches long, as practicable. The amount of retroreflective sheeting to be applied to each car or locomotive subject to this part is dependent on the length of the car or locomotive and the color of the sheeting. For purposes of this part, the length of a railroad freight car or locomotive is measured from endsill to endsill, exclusive of the coupler and draft gear. Each side of a railroad freight car subject to this part, including each unit of multi-unit cars, and each side of a locomotive subject to this part must be equipped with at least the minimum amount of retroreflective sheeting specified in Table 2 of this subpart.

TABLE 2 OF SUBPART B.—MINIMUM QUANTITY REQUIREMENT FOR RETROREFLECTIVE SHEETING ON FREIGHT ROLLING STOCK

Freight car or locomotive length	Minimum area of retroreflective sheeting required (per car/locomotive side)—yellow sheeting (ft^2)	Minimum area of retroreflective sheeting required (per car/locomotive side)—white sheeting (ft^2)
Less than 50 ft.	3.5	4.0
Over 50 ft. to 60 ft.	4.0	5.0
Over 60 ft. to 70 ft.	4.5	5.5
Over 70 ft. to 80 ft.	5.0	6.0
Over 80 ft. to 90 ft.	5.5	7.0
Over 90 ft. to 100 ft.[1]	6.0	7.5

[1] Freight cars or locomotives over 100 ft. in length must be equipped with an additional one-half a square foot of sheeting on each side for every additional 10 feet of length.

§ 224.106 Location of retroreflective sheeting.

(a) *Railroad freight cars.* The retroreflective sheeting shall be applied along the length of each railroad freight car side in the manner provided by a uniform industry standard accepted by the Associate Administrator that provides for distribution of material along the length of each car and as close as practicable to 42 inches above the top of rail. In the event such a standard is not proffered by industry or accepted by the Associate Administrator, the criteria set forth in this subpart shall apply. Retroreflective sheeting applied under this part must be located clear of appurtenances and devices such as ladders and other safety appliances, pipes, or other attachments that may obscure its visibility. Retroreflective sheeting need not be applied to discontinuous surfaces such as bolts, rivets, door hinges, or other irregularly shaped areas that may prevent the sheeting from adhering to the car sides. In addition, retroreflective sheeting need not be applied over existing or required car stencils and markings. If necessary to avoid appurtenances, discontinuous surfaces, or existing or required car markings or stencils, 4x18 and 4x36 inch strips of retroreflective material may be divided into 4x9 inch strips and applied on either side of the appurtenance, discontinuous surface, or car markings or stencils, as practicable. Unless otherwise specified, retroreflective sheeting shall be applied along the sides of freight rolling stock at intervals not to exceed every 12 feet, as practicable. If it is not practicable to apply retroreflective sheeting every 12 feet because of existing stencils, appurtenances, or discontinuous surfaces, the sheeting shall be applied at the next smallest interval practicable.

(1) *General rule.* On railroad freight cars other than flat cars and tank cars, retroreflective sheeting shall be applied in either a vertical or horizontal pattern along the length of the car sides, with the bottom edge of the sheeting as close as practicable to 42 inches above the top of rail. Retroreflective sheeting shall not be applied below the side sill.

(i) *Vertical application.* If retroreflective sheeting is applied in a vertical pattern, at least one 4x36 inch strip or two 4x18 inch strips, one above the other, shall be applied as close to each end of the car as practicable. Between these two vertical end strips, a minimum of one 4x18 inch strip shall be applied at least every 12 feet, as practicable. *See* Figures 1, 2 and 3.

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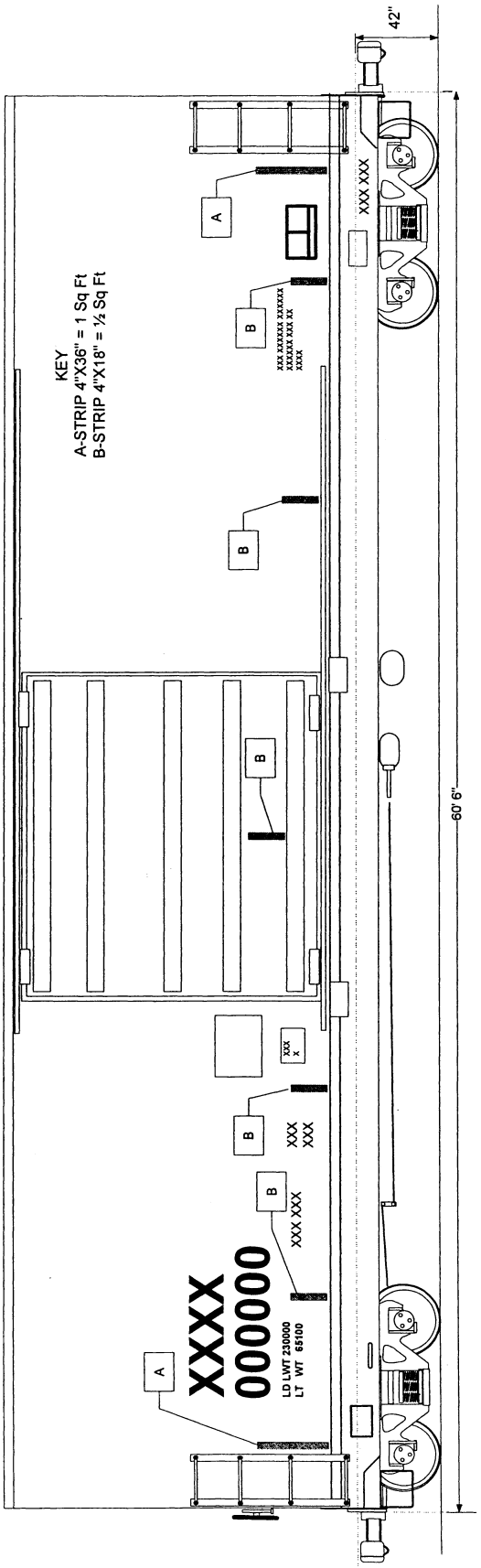

Figure 1
Yellow vertical reflective sheeting (4.5 sq. ft.) pattern applied to a typical 60' 6" Box Car (additional sheeting required per 49 CFR 224.105 if white sheeting is applied in lieu of yellow)

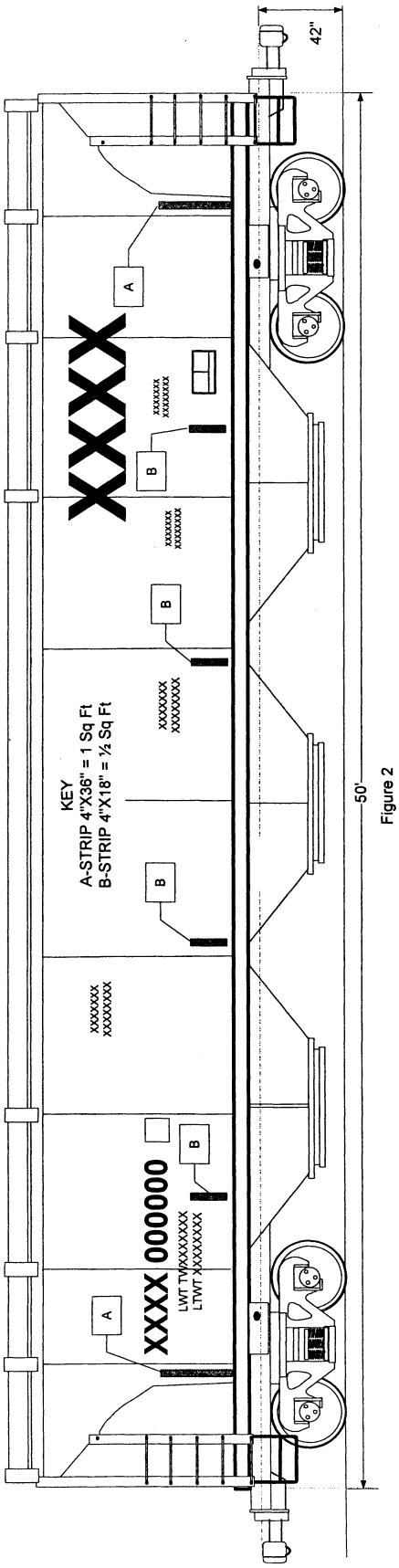

Figure 2
Yellow vertical reflective sheeting (4.0 sq. ft.) pattern applied to a typical 50 feet Covered Hopper Car (additional sheeting required per 49 CFR 224.105 if white sheeting is applied in lieu of yellow)

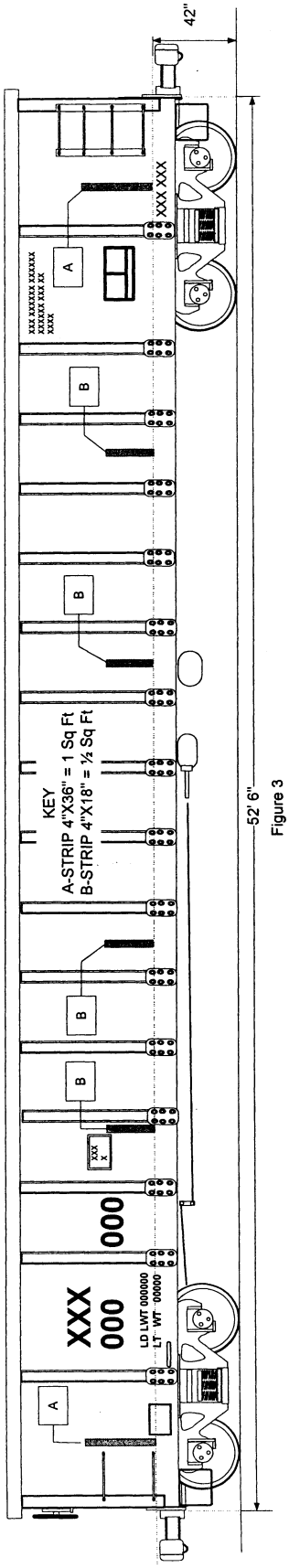

Figure 3
Yellow vertical reflective sheeting (4.0 sq. ft.) pattern applied to a typical 52' 6" Gondola Car (additional sheeting required per 49 CFR 224.105 if white sheeting is applied in lieu of yellow

(ii) *Horizontal application.* If retroreflective sheeting is applied in a horizontal pattern, at least one 4x36 inch strip, or two 4x18 inch strips, one above or next to the other, shall be applied as close to each end of the car

as practicable. Between these end strips, a minimum of one 4x18 inch strip shall be applied at least every 12 feet, as practicable. *See* Figures 4, 5, and 6.

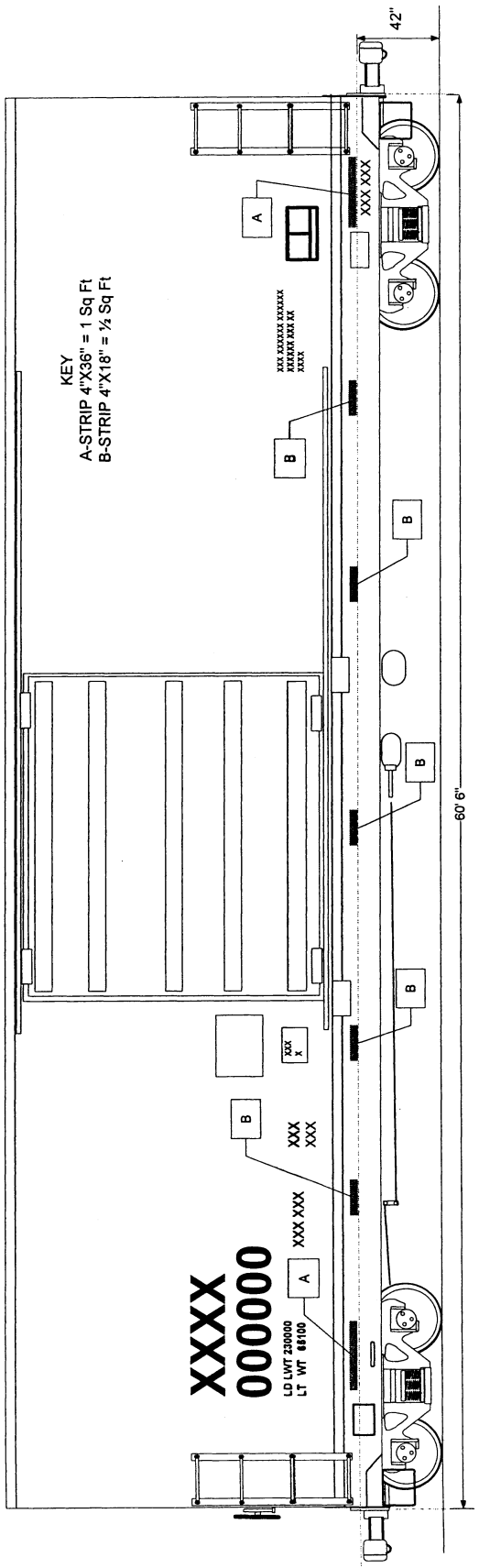

Figure 4
Alternate Pattern
Yellow horizontal reflective sheeting (4.5 sq. ft.) pattern applied to a typical 60' 6" Box Car (additional sheeting required per 49 CFR 224.105 if white sheeting is applied in lieu of yellow)

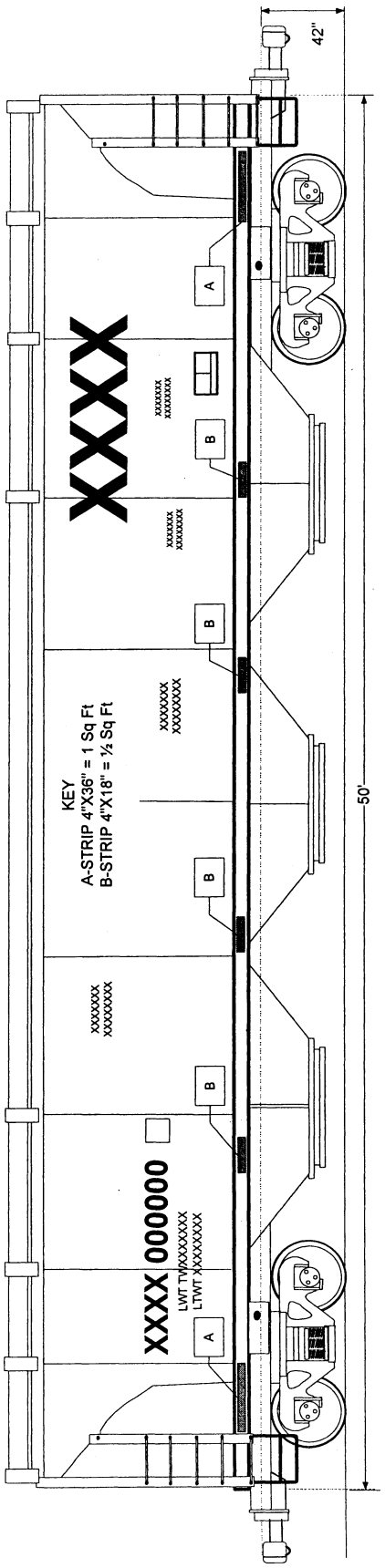

Figure 5
Alternate Pattern
Yellow horizontal reflective sheeting (4.0 sq. ft.) pattern applied to a typical 50 feet Covered Hopper Car (additional sheeting required per 49 CFR 224.105 if white sheeting is applied in lieu of yellow)

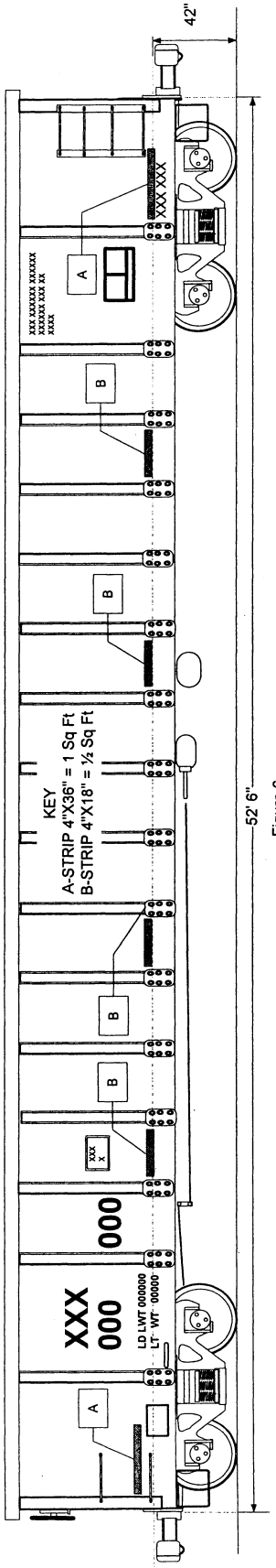

Figure 6
Alternate Pattern
Yellow horizontal reflective sheeting (4.0 sq. ft.) pattern applied to a typical 52' 6" Gondola Car (additional sheeting required per 49 CFR 224.105 if white sheeting is applied in lieu of yellow)

(2) *Tank cars.* On tank cars, retroreflective sheeting shall be applied vertically to each car side and centered on the horizontal centerline of the tank, or as near as practicable. If it is not practicable to safely apply the sheeting

centered vertically about the horizontal centerline of the tank, the sheeting may be applied vertically with its top edge no lower than the horizontal centerline of the tank. A minimum of either one 4x36 inch strip or two 4x18 inch strips, one above the other, shall be applied as close to each end of the car as practicable. Between these two end strips, a minimum of one 4x18 inch strip shall be applied at least every 12 feet, as practicable. Retroreflective sheeting applied under this part shall not be located in the spillage area directly beneath the manway used to load and unload the tank. *See* Figures 7 and 8.

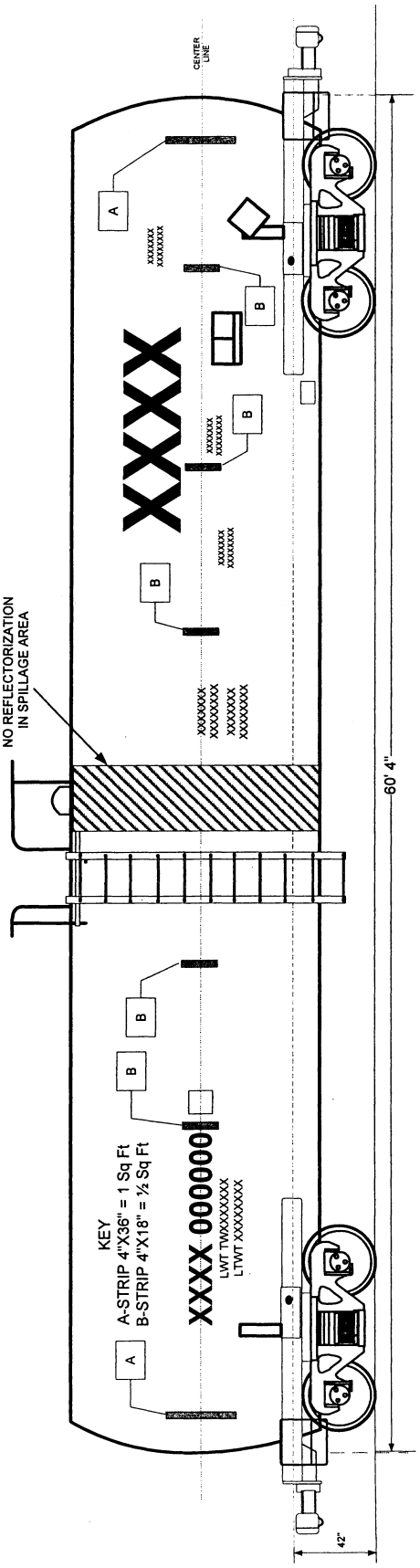

Figure 7
Yellow vertical reflective sheeting (4.5 sq. ft.) pattern applied to a typical Tank Car between 60' and 70' (additional sheeting required per 49 CFR 224.105 if white sheeting is applied in lieu of yellow)

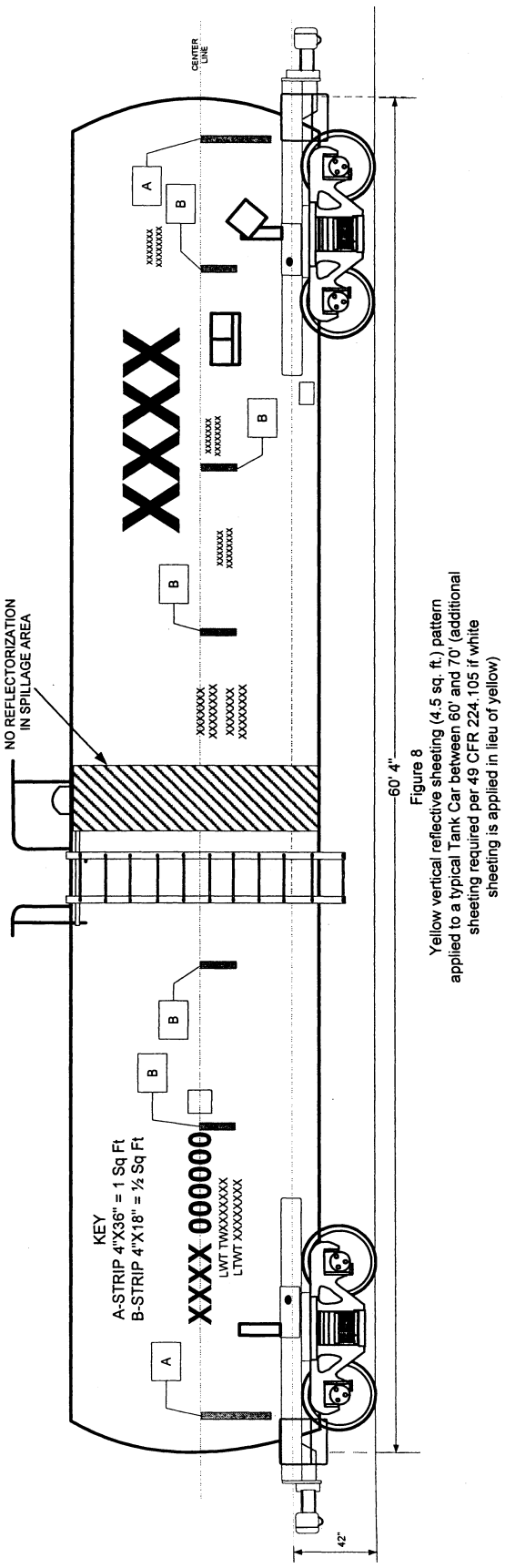

Figure 8
Yellow vertical reflective sheeting (4.5 sq. ft.) pattern applied to a typical Tank Car between 60' and 70' (additional sheeting required per 49 CFR 224.105 if white sheeting is applied in lieu of yellow)

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(3) *Flat cars.* On flat cars, retroreflective sheeting shall be applied in a horizontal pattern along the length of the side sill with the bottom edge of

the sheeting no lower than the bottom of the side sill and the top edge of the sheeting no higher than the top of the car deck or floor. At least two 4x18 inch strips, one above the other, shall be applied as close to each end of the car as practicable. If the side sill is less than 8 inches wide, one 4x36 inch strip, or two 4x18 inch strips may be applied one next to the other, dividing the strips into nine inch segments as necessary in accordance with paragraph (a) of this section. Between the two end strips, a minimum of one 4x18 inch strip shall be applied at least every 12 feet, as practicable. *See* Figure 9. If a car has a separate rack structure, retroreflective sheeting may be applied to the flat car portion only in accordance with the requirements of this section. For cars without continuous side sills, retroreflective sheeting may be applied to other surfaces inboard of the sides, such as the center sill, provided that the sheeting is not obscured by other components.

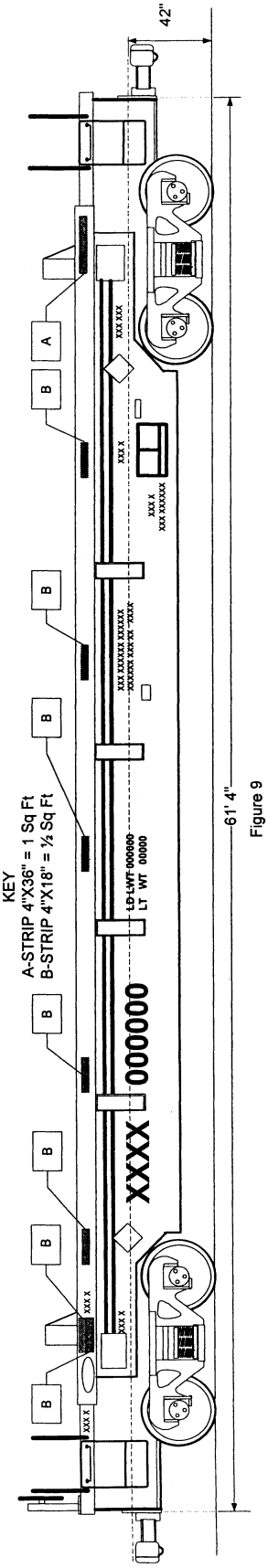

Figure 9
Yellow horizontal reflective sheeting (4.5 sq. ft.) pattern applied to a typical Flat Car (additional sheeting required per 49 CFR 224.105 if white sheeting is applied in lieu of yellow)

(4) *Cars of special construction.* This paragraph applies to any car the design of which is not compatible with the patterns of application otherwise provided in this section. Retroreflective sheeting shall conform as closely as

practicable to the requirements of paragraphs (a)(1) through (a)(3) of this section and shall have the minimum amount of sheeting described in § 224.105 distributed along the length of each car side.

(b) *Locomotives.* Locomotives subject to this part shall be equipped with at least the minimum amounts of retroreflective sheeting required by § 224.105 either in strips four inches wide and 18 or 36 inches long and spaced as uniformly as practicable along the length of the locomotive sides, or in one continuous strip, at least four inches wide, along the length of the locomotive. Retroreflective sheeting applied to locomotive sides shall be applied as close as practicable to 42 inches from the top of the rail.

§ 224.107 Implementation schedule.

(a) *Railroad freight cars.* All railroad freight cars subject to this part must be equipped with retroreflective sheeting conforming to this part by November 28, 2015. If a car already has reflective material applied that does not meet the standards of this part, it is not necessary to remove the material unless its placement interferes with the placement of the sheeting required by this part.

(1) *New cars.* Retroreflective sheeting conforming to this part must be applied to all cars constructed after January 26, 2006, before the cars are placed in service.

(2) *Existing cars without retroreflective sheeting.* (i) If, as of October 28, 2005, a car subject to this part is not equipped on each side with at least one square foot of retroreflective sheeting as specified in paragraph (a)(3) of this section, retroreflective sheeting conforming to this part must be applied to the car at the earliest of the following two occasions occurring after November 28, 2005 or in accordance with paragraph (a)(2)(ii) of this section:

(A) When the car is repainted or rebuilt; or

(B) Within nine months (270 calendar days) after the car first undergoes a single car air brake test as prescribed by 49 CFR 232.305.

(ii) A freight rolling stock owner may elect not to follow the schedule in paragraph (a)(2)(i) of this section if, not later than January 26, 2006 the freight rolling stock owner submits to FRA a completed Reflectorization Implementation Compliance Report certifying that the cars in the owner's fleet subject to this part will be equipped with retroreflective sheeting as required by this part in accordance with the schedule specified in Table 3 of this section. *See* Appendix B of this part for Reflectorization Implementation Compliance Report form.

TABLE 3 OF SUBPART B.—ALTERNATIVE SCHEDULE FOR APPLICATION OF RETROREFLECTIVE MATERIAL TO FREIGHT CARS PER § 224.107(A)(2)(II)

(A) [1]	(B) (percent)
November 28, 2007	20
November 28, 2008	30
November 28, 2009	40
November 28, 2010	50
November 28, 2011	60
November 28, 2012	70
November 28, 2013	80
November 28, 2014	90
November 28, 2015	100

[1] Column (A) indicates the date by which the minimum percentage of an owner's freight cars specified in column (B) must be equipped with retroreflective sheeting conforming to this part.

Thereafter,

(A) The designated fleet shall be equipped with retroreflective sheeting according to the schedule specified in Table 3 of this section;

(B) No later than January 28, 2008, the freight rolling stock owner shall submit to FRA an updated Reflectorization Implementation Compliance Report showing which cars of the fleet subject to this part were equipped with retroreflective sheeting as required by this part during the initial 24-month implementation period. Thereafter, updated Reflectorization Implementation Compliance Reports shall be submitted annually, no later than December 31 of each year for the duration of the 10-year implementation period. *See* Appendix B of this part.

(C) If, following the conclusion of the initial 24-month period or any 12-month period thereafter, the percentage requirements of this section have not been met—

(*1*) The freight rolling stock owner shall be considered in violation of this part;

(*2*) The freight rolling stock owner shall, within 60 days after the close of the period, report the failure to the Associate Administrator;

(*3*) The requirements of paragraph (a)(2)(i) shall apply to all railroad freight cars subject to this part in the freight rolling stock owner's fleet; and

(*4*) The fleet owner shall take such additional action as may be necessary to achieve future compliance.

(D) Cars to be retired shall be included in the fleet total until they are retired.

(3) *Existing cars with retroreflective sheeting.* If as of October 28, 2005, a car is equipped on each side with at least one square foot of retroreflective sheeting, uniformly distributed over the length of each side, that car shall be considered in compliance with this part through November 28, 2015, provided the sheeting is not unqualified retroreflective sheeting, and provided the freight rolling stock owner files a completed Reflectorization Implementation Compliance Report with FRA no later than January 26, 2006 identifying the cars already so equipped. *See* Appendix B of this part for Reflectorization Implementation Compliance form.

(b) *Locomotives.* Except as provided in paragraph (b)(4) of this section, all locomotives subject to this part must be equipped with conforming retroreflective sheeting by November 28, 2010. If a locomotive already has reflective material applied that does not meet the standards of this part, it is not necessary to remove the material unless its placement interferes with the placement of the sheeting required by this part.

(1) *New locomotives.* Retroreflective sheeting conforming to this part must be applied to all locomotives constructed after January 26, 2006, before they are placed in service.

(2) *Existing locomotives without retroreflective sheeting.*

(i) If as of October 28, 2005 a locomotive subject to this part is not equipped with the minimum amount of retroreflective sheeting specified in paragraph (b)(3) of this section, retroreflective sheeting conforming to this part must be applied to the locomotive not later than nine months after the first biennial inspection performed pursuant to 49 CFR 229.29 occurring after November 28, 2005.

(ii) A freight rolling stock owner may elect not to follow the schedule in paragraph (b)(2)(i) of this section, if not later than January 26, 2006, the freight rolling stock owner submits to FRA a Reflectorization Implementation Compliance Report certifying that the locomotives in the owner's fleet subject to this part will be equipped with retroreflective sheeting as required by this part in accordance with the schedule specified in Table 4 of this section. *See* Appendix B of this part.

TABLE 4 OF SUBPART B.—ALTERNATIVE SCHEDULE FOR APPLICATION OF RETROREFLECTIVE MATERIAL TO LOCOMOTIVES PER § 224.107(B)(2)(II)

(A) [1]	(B) (percent)
November 28, 2007	40
November 28, 2008	60
November 28, 2009	80
November 28, 2010	100

[1] Column (A) indicates the date by which the minimum percentage of an owner's locomotives specified in column (B) must be equipped with retroreflective sheeting conforming to this part.

Thereafter,

(A) The designated locomotive fleet shall be equipped with retroreflective sheeting according to the requirements of this paragraph (b)(2)(ii);

(B) No later than January 28, 2008, the freight rolling stock owner shall submit to FRA an updated Reflectorization Implementation Compliance Report showing which locomotives of the fleet subject to this part were equipped with retroreflective sheeting as required by this part during the initial 24 month implementation period. Updated Reflectorization Implementation Compliance Reports shall be submitted annually, no later than December 31 of each year, for the duration of the 5-year implementation period. *See* Appendix B of this part.

(C) If, following the conclusion of the initial 24-month period or any 12-month period thereafter, the percentage requirements of this section have not been met—

(*1*) The freight rolling stock owner shall be considered in violation of this part;

(*2*) The freight rolling stock owner shall, within 60 days after the close of the period, report the failure to the Associate Administrator;

(*3*) The requirements of paragraph (b)(2)(i) shall apply to all locomotives subject to this part in the freight rolling stock owner's fleet; and

(*4*) The fleet owner shall take such additional action as may be necessary to achieve future compliance.

(D) Locomotives to be retired shall be included in the fleet total until they are retired.

(3) *Existing locomotives with retroreflective sheeting.* If as of October 28, 2005, a locomotive is equipped on each side with at least one square foot of retroreflective sheeting, that locomotive shall be considered in compliance with this part for through November 28, 2015, provided the existing material is not unqualified retroreflective sheeting, and provided the freight rolling stock owner files a Reflectorization Implementation Compliance Report with FRA no later than January 26, 2006, identifying the cars already so equipped. *See* Appendix B of this part. If, as of October 28, 2005, a locomotive is equipped with unqualified retroreflective sheeting, the locomotive will be considered in compliance with this part through November 28, 2015, provided the locomotive is equipped with a minimum of 3 square feet of retroreflective material on each side and provided the freight rolling stock owner files a Reflectorization Implementation Compliance Report with FRA no later than January 26, 2006, identifying the locomotives already so equipped. *See* Appendix B of this part.

(4) Each railroad that has fewer than 400,000 annual employee work hours as of the end of calendar year 2004, and does not share locomotive power with another railroad with 400,000 or more annual employee work hours, may bring its locomotive fleet into compliance according to the following schedule: fifty percent of the railroad's locomotives must be retrofitted pursuant to § 224.106(b) by October 28, 2010, and one hundred percent must be retrofitted pursuant to § 224.106(b) by October 28, 2015. If a railroad with fewer than 400,000 annual employee work hours shares locomotive power with a railroad with 400,000 or more annual employee work hours, the smaller railroad must comply with the requirements of paragraphs (b)(2) and (3) of this section.

§ 224.109 Inspection, repair, and replacement.

(a) *Railroad freight cars.* Retroreflective sheeting on railroad freight cars subject to this part must be visually inspected for presence and condition whenever a car undergoes a single car air brake test required under 49 CFR 232.305. If at the time of inspection less than 80 percent of the amount of sheeting required under § 224.105 (§ 224.107 in the case of freight cars subject to § 224.107(a)(3)) on either side of a car is present, not damaged, and not obscured, the inspecting railroad or contractor shall promptly notify the person responsible for the reporting mark, as indicated in the Universal Machine Language Equipment Register, of the damaged, obscured, or missing sheeting (unless the inspecting railroad or contractor is the person responsible for the reporting mark). The inspecting railroad or contractor shall retain a written or electronic copy of each such notification made for at least two years from the date of the notice and shall make these records available for inspection and copying by the FRA upon request. Any person notified of a defect under this section shall have nine months (270 calendar days) from the date of notification to repair or replace the damaged, obscured, or missing sheeting. Where the inspecting railroad or contractor is the person responsible for the reporting mark, the person shall have nine months (270 calendar days) from the date of the inspection to repair or replace the damaged, obscured, or missing sheeting.

(b) *Locomotives.* Retroreflective sheeting must be visually inspected for presence and condition when the locomotive receives the annual inspection required under 49 CFR 229.27. If at the time of inspection less than 80 percent of the amount of sheeting required under § 224.105 (§ 224.107 in the case of locomotives subject to § 224.107(b)(3)) on either side of a locomotive is present, not damaged, and not obscured, the damaged, obscured, or missing sheeting must be repaired or replaced within nine months (270 calendar days) from the date of inspection, provided a record of the defect is maintained in the locomotive cab or in a secure and accessible electronic database to which FRA is provided access on request.

§ 224.111 Renewal.

Regardless of condition, retroreflective sheeting required under this part must be replaced with new sheeting no later than ten years after the date of initial installation. At the time of replacement, it is not necessary to remove the old sheeting unless it interferes with the placement of the new sheeting, but the old sheeting shall not be considered in calculating the amount of retroreflective material required under this part. For purposes of this section, November 28, 2005, shall be considered the initial date of installation for freight cars and locomotives covered by § 224.107(a)(3) or 224.107(b)(3). [1]

Appendix A to Part 224—Schedule of Civil Penalties

Subpart B—Application, Inspection, and Maintenance of Retroreflective Material

[1] A penalty may be assessed against an individual only for a willful violation. The Administrator reserves the right to assess a penalty of up to $27,000 for any violation where circumstances warrant. *See* 49 CFR Part 209, Appendix A.

Section	Violation	Willful violation
§ 224.103 Characteristics of retroreflective sheeting:		
(a)–(d) Retroreflective sheeting applied does not meet the requirements of § 224.103	$2,500	$5,000
§ 224.105 Sheeting dimensions and quantity:		
Failure to apply minimum amount of retroreflective sheeting in accordance with Table 2	2,500	5,000
Applying retroreflective sheeting of wrong dimensions	2,500	5,000
§ 224.106 Location of retroreflective sheeting:		
(a), (b)Applying retroreflective sheeting in nonconforming pattern	2,000	4,000
§ 224.107 Implementation schedule:		
(a)(1), (b)(1) Failure to apply retroreflective sheeting to new freight car or locomotive before equipment placed in service	5,000	7,500
(a)(2), (b)(2), (b)(4) Failure to apply retroreflective sheeting to existing freight car or locomotive in accordance with minimum schedule of paragraphs (a)(2), (b)(2), or (b)(4)	5,000	7,500
§ 224.109 Inspection, repair, and replacement:		
(a) Failure to perform inspection	5,000	7,500
Failure to properly notify car owner of defect	2,500	5,000
Failure to retain written notification of defect for two years	1,500	2,500
Failure to repair defect after notification	5,000	7,500
(b) Failure to perform inspection	5,000	7,500
Failure to repair defect	5,000	7,500

Appendix B to Part 224—Reflectorization Implementation Compliance Report

BILLING CODE 4910–06–P

OMB No. 2130-0566

REFLECTORIZATION IMPLEMENTATION COMPLIANCE REPORT

Instructions for completing form:

If submitting this form to FRA as an initial Reflectorization Implementation Compliance Report in accordance with 49 CFR 224.107(a)(2)(ii) and/or (b)(2)(ii), complete Parts I, II, III and IV. If submitting this form in accordance with 49 CFR 224.107(a)(3) and/or (b)(3), complete Parts I, II, III, IV, and V.

If this form is being submitted to FRA as an updated Reflectorization Implementation Compliance Report required by 49 CFR 224.107(a)(2)(ii)(B) or (b)(2)(ii)(B), complete Parts I, II, III, and V. In Part V, report the car/locomotive number(s) identifying each freight car and locomotive equipped with retroreflective sheeting conforming to 49 CFR Part 224 during this reporting period

Part I: Identification
Railroad or Car Owner:
Railroad or Car Owner Reporting Code:

Preparer Information:	
Name:	Title:
Address:	Phone:
	Fax:
	Email:

Part II: Type of Submission
☐ Initial Submission
☐ Updated Compliance Report

Part III: Identification of freight rolling stock fleet subject to 49 CFR Part 224
A. How many freight cars in your fleet are subject to 49 CFR part 224? _____
B. How many locomotives in your fleet are subject to 49 CFR part 224? _____

Part IV: Certification (Complete only if Part II: Type of Submission is Initial Submission)	
By filing this Reflectorization Implementation Compliance Report and any accompanying documents or electronic files with FRA, the undersigned Freight Rolling Stock Owner is electing to follow the alternative schedules for equipping its freight rolling stock with reflective material as set forth in 49 CFR §§224.107(a)(2)(ii) and/or (b)(2)(ii). By completing, executing, and filing this Compliance Report with FRA, the undersigned Freight Rolling Stock Owner is certifying that its entire fleet of freight rolling stock subject to 49 CFR Part 224 (Part 224) will be equipped with retroreflective sheeting conforming to the requirements of Part 224 in accordance with the schedules set forth in 49 CFR §224.107(a)(2)(ii) and/or (b)(2)(ii). Failure to meet the minimum requirements of Part 224 may result in the assessment of civil penalties or other enforcement action by FRA.	
Signature of Corporate Officer/Car owner:	Date:
Name:	
Title:	

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Part V: Identification of rail freight rolling stock conforming to 49 CFR Part 224

Reapplied[a]	Type (check one): Locomotive	Type (check one): Freight Car	Identification Number:	Reapplied[a]	Type (check one): Locomotive	Type (check one): Freight Car	Identification Number:
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a. Check if freight car/locomotive was reported in Part V of a previous Reflectorization Implementation Compliance Report as conforming to 49 CFR Part 224, but 100% of the retroreflective sheeting on the car/locomotive was replaced with sheeting conforming to Part 224 in this reporting period.

Public reporting burden for this information collection is estimated to average eight hours per response. This estimate included time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this collection of information is 2130-0566.

Form FRA F6180.113 11/03

Appendix C to Part 224—Guidelines for Electronic Submission of Reflectorization Implementation Compliance Reports

Appendix C

Guidelines for Submitting Reflectorization Implementation Compliance Reports 49 C.F.R. Part 224

The guidelines below are intended to provide freight rolling stock owners specific guidance and directions for the submission of "Reflectorization Implementation Compliance Reports" (Form FRA F 6180.113) when required by 49 CFR Part 224. A freight rolling stock owner may also contact the FRA's Office of Safety, Motive, Power, & Equipment Division, for further guidance on the submission of such reports.

Who must file a Reflectorization Implementation Compliance Report with FRA?

(1) A freight rolling stock owner (as defined at 49 CFR § 224.5) electing to follow the implementation schedule of 49 CFR §§ 224.107(a)(2)(ii) or (b)(2)(ii); or
(2) A freight rolling stock owner seeking to have existing freight rolling stock grandfathered pursuant to 49 CFR §§ 224.107(a)(3) or (b)(3).

What are the deadlines for submission of Reflectorization Implementation Compliance Reports?

In order to take advantage of the flexible implementation schedules provided in 49 CFR § 224.107(a)(2)(ii) or (b)(2)(ii) or to have freight rolling stock grandfathered pursuant to 49 CFR §§ 224.107(a)(3) or (b)(3), a freight rolling stock owner must submit initial and updated Compliance Reports with the Federal Railroad Administration (FRA) as follows:

(1) An initial Compliance Report no later [INSERT DATE 90 DAYS AFTER PUBLICATION DATE OF FINAL RULE],
(2) An updated Compliance Report no later than [INSERT DATE 26 MONTHS AFTER EFFECTIVE DATE OF FINAL RULE], and
(3) An updated Compliance Report no later than December 31 of each year for the duration of the implementation period.

See 49 CFR §§ 224.107(a)(2)(ii), (a)(3), (b)(2)(ii), (b)(3).

How do I submit a Compliance Report to FRA?

A Compliance Report may be submitted electronically or by filing a paper copy of completed Form FRA F6180.113 (found in Appendix B to 49 CFR Part 224) by following the directions below. If the electronic media or paper copy does not meet the requirements of 49 CFR Part 224, the entire submission will be returned.

(1) Paper Submission: Complete Parts I, II, III, IV and/or V of Form FRA F 6180.113 as instructed on the Form and send the completed Form to the following address:

Creative Information Technology, Incorporated (CITI)
4601 North Fairfax Drive
Suite 1100
Arlington, VA 22203
703-548-3313 Extension 223
POC: Angelica Mamani

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(2) Electronic Submission:

(a) Acceptable Disc Media: CD-R storage media only with 700 MB possible range, 1x-48x speed compatible, 4 ½" diameter (Note: CD-RW storage media cannot be accepted)

(b) Specific Directions:

(i) Complete Parts I, II, III, and IV on Form F 6180.113 as instructed on the Form and scan the completed Form FRA F6180.113 onto the disk media into either an Adobe Acrobat format or .jpg format (Note: Forms submitted on CD-RW storage media cannot be accepted and will not be returned); and

(ii) Following the format below, enter the information required by Part V of Form FRA F6180.113 into a spreadsheet in any one of the following formats: MS Excel, Quattro Pro, RTF, or CVS and save that spreadsheet onto the same CD-R disk media as (i) above.

Spreadsheet Format:

Columns on the spreadsheet	Field Name	Size of the Field	Content/Description
A	Car Owner Reporting Code	4 Character	1. The Car Owner Reporting Code found in **Part I** (*Identification)* of the OMB F6180.113. 2. Enter this code in Column A of the spreadsheet. 3. Enter all Capital Letters
B	Identification Number	6 Numbers	1. This is the identification number on **Part V**, (*Identification of rail freight rolling stock confirming to 49 CFR Part 224*). 2. This is the numeric unit identification (use leading zeros) 3. Enter this number in Column B of the spreadsheet.
C	Reapplied	1 Character	1. Has this equipment been reported? 2. Enter 'R' (*replacing the check mark required on the form*), if the car/locomotive was reported in Part V of a previous Reflectorization Implementation Compliance Report. 3. Enter 'I', if the car/locomotive has not been reported previously. 4. Entry must be a capital letter 5. Enter this information in Column C of the spreadsheet.
D	Type	1 character	1. Is this a car/locomotive? 2. Enter 'C' (*replacing the check mark required on the form*), if a rail freight rolling stock car. 3. Enter 'L' (*replacing the check mark required on the form*), if a locomotive. 4. Entry must be a capital letter. 5. Enter this information in Column D of the spreadsheet.

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Guidelines for Submitting Reflectorization Implementation Compliance Reports 49 C.F.R. Part 224

(ii) Send the CD-R disk media with the relevant information to FRA at the following address:

Creative Information Technology, Incorporated (CITI)
4601 North Fairfax Drive
Suite 1100
Arlington, VA 22203
703-548-3313 Extension 223
POC: Angelica Mamani

Issued in Washington, DC on October 19, 2005.

Joseph H. Boardman,

Administrator, Federal Railroad Administration.

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