



*Association of American Railroads*

# **REFLECTORIZAZION of FREIGHT TRAINS: PROPOSED FEDERAL RULE**

**Mechanical Association Railcar  
Technical Services  
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# Discussion Topics

- Regulatory Background
- AAR Comments on Regulatory Evaluation
- Technical Comments
- Sample Drawings

## Regulatory Background

- 1994: Federal Railroad Safety Authorization Act of 1994
- 1999: Volpe Report released
- 7/28/99: FRA Workshop
- 1/14/00: FRA Public Docket opened
- 2001: Volpe Report: *Recognition of Rail Car Retroreflective Patterns for Improving Nighttime Conspicuity*

# Regulatory Background

- 10/26/01: FRA invites public comments on its Cost/Benefit Analysis
- 11/30/01: AAR files comments
- 11/6/03: NPRM Published
- 1/27/04: FRA Public Hearing
- 3/5/04: Written Comments Filed

# FRA's Regulatory Evaluation

- Overstates Benefits & Understates Costs
  - Changes FRA's positive NPV of \$19 - 53M to a *Negative* \$93M.
- Assumes reflectorization is equally effective at both active & passive crossings
  - Crossings with active warning devices have lights & gates
  - Passive crossings have crossbucks @ a minimum which are usually reflectorized
  - Volpe Center ignored these cues in assessing motorist ability to distinguish between rolling stock & trucks

# FRA's Regulatory Evaluation

- No acknowledgement of over 2.5M annual Highway Trailer Shipments by Rail. Trailers have reflective material.
- Other types of intermodal equipment also reflectorized: RoadRailers
- No evidence to suggest that motorists will react differently if they perceive a truck or rolling stock ahead
- No evidence that Volpe tests on color & pattern as a distinguishing factor (in front of a screen or on a test loop) can be extrapolated to drivers in general

# Technical Comments: Vertical Striping Pattern

- 4" x 18" and 4" x 36" stripes will interfere with Reporting Marks & Other Required Stencils on Freight Cars
- Regulatory Evaluation failed to account for restenciling Will also interfere with bolts, support plates, corrugations, door hinges, side posts, weld joints

# Technical Comments: Vertical Striping Pattern (cont.)

- Proposed “fencepost” pattern just plain impractical for many cars
  - FRA’s exception could become the rule.
- Safety Appliances:
  - Visibility (under the handhold, grab iron or ladder)
  - Subject to maintenance damage (cutting torch, pry bar)
  - Damage from work boots



## Technical Comments: Edge Sealing

- 3M: Retroreflective sheeting has air between laminations; internal seals which prevent water penetration
- Only small portions of individual cells along cut edge could be affected; routinely used on traffic signage
- 3M no longer manufactures, markets, or recommends the use of edge-sealers

## Technical Comments: Color of Reflective Material

- AAR agrees that color should be standardized for freight cars.
- White is more reflective than yellow.
- Yellow is more expensive; @ least from 1 supplier.

## Technical Comments: Compliance with Other Regulations

- Rolling stock subject to other government reflectorization mandates (i.e. RoadRailer equipment) should be deemed in compliance with *any* reflectorization requirements promulgated by FRA.

# Technical Comments: Installation & Maintenance

- Should *NOT* be required at time of Single Car Air Brake Test
- 3M: 50 – 100 degrees F = major problem for outdoor repair tracks
- Proposed regulation would allow alternative standards = supply management issue
- Freight car owners should submit annual compliance reports vs FRA Fleet ReflectORIZATION Implementation Plans

# Technical Comments: Installation & Maintenance (cont.)

- 20% (Damaged, Obscured, or Missing) Threshold is Arbitrary
  - If FRA has doubled the material amount, then 50% is appropriate & much easier to ascertain.
  - “Damaged” is not defined; should be deleted
- If maintenance is required: SCABT (repair) facility would notify car owner & flag car in AAR Maintenance Advisory Systems.
  - Car owner then has 9 months to correct
- Regulation should specifically state no obligation to clean reflective material.

## Technical Comments: Locomotives

- Grandfather (“diamond-grade” material only)  
Provision is too Narrow:
  - Most RR’s have already been equipping locomotives with *some* reflective material
  - Would require retrofit of substantial units in 2 years if tied to next biennial inspections
  - If FRA must standardize, it should develop a photometric standard which covers non-diamond grade material.

## Technical Comments: Locomotives (cont.)

- FRA should *not* require a standardized pattern, running uniformly the length of the locomotive side.
  - “recognizable to motorists” = too vague
  - Most RR’s have names, symbols, logos on their locomotives which is often reflective material.

## Technical Comments: Locomotives (cont.)

- FRA would require retrofit to diamond-grade material or initial application @ time of next biennial inspection.
- Unreasonable. 40% over 1<sup>st</sup> 2 years and 20% annually thereafter more reasonable.
- No safety justification: FRA cites highway grade crossing accidents involving vehicles striking trains *after* 1<sup>st</sup> 2 units of consist



## Technical Comments: Maintenance-of-Way Equipment

- FRA asks for comments as to inclusion in rule.
- *NONE* of the 707 collisions in FRA's accident pool involved specialized M-of-W equipment.
- Not justified.

## Areas of Agreement:

- Technical suggestions are *NOT* an endorsement of a mandatory federal regulation but:
  - Uniform Color on Freight Cars
  - Total amount of reflective material required on a Freight Car
  - Preferred 10' Spacing
  - Target of 42" above top of rail
  - Placement as close to end of car as possible
  - AAR *PROPOSED* Standard Developed



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*QUESTIONS? COMMENTS?*