

# **EMRA STANDARDS, PRACTICES, & CONCEPTS**

EMRA Document No.: S-RS-01

Adoption Date: 1994.03.15

Revision Date: 2011.07.19

Revision: 1

## **ROLLING STOCK STANDARDS**

This standard covers all rolling stock and dummy locomotives

### **I. REQUIRED**

#### **A. WEIGHTS (applies to all rolling stock and locomotives)**

1. Weight of car is less any removable load.
2. Cars are to be weighted using the following formula:  
Car weight = 1 ounce + 1/2 ounce per inch of car length.
3. Cars may be overweight, but are not to be less than the minimum using the formula in #2.
4. Center of gravity shall be kept as low as possible.
5. Weight shall be equally distributed on all wheels.
6. Powered locomotives shall be a minimum of 2x the weight of an equivalent length car.
7. Any additional information not contained in these standards will be referenced back to the NMRA standards.

#### **B. TRUCKS (applies to all rolling stock and locomotives)**

1. Wheels must be "in track", that is, not dog-tracking in the truck side-frames.
2. Trucks must roll freely under weight.
3. Wheels must spin freely in the truck.
4. Sprung trucks must equalize under weight.
5. Wheels must meet standards for gauge, tread width, and flange depth as established by the NMRA standards gauge.
6. Trucks shall be snugly mounted, but able to swing freely.
7. No cracked or chipped treads or flanges on wheels.
8. RP25 contour preferred on wheels.
9. No electrical path between opposite wheels of the same truck or any other truck, except by electrical circuitry.
10. Any additional information will be referenced back to the NMRA standards.

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## **C. COUPLERS (applies to all cars and locomotives)**

1. All cars and locomotives are to be equipped with Kadee couplers.
2. Coupler height and trip pin height will be checked using the Kadee coupler height gauge.
3. Coupler height shall be 25/64" to the center of the coupler knuckle.
4. Couplers will be body mounted for all rolling stock and locomotives.
5. Coupler knuckles shall have knuckle flashing filed and burnished off.
6. Couplers must be installed so that they return to center position automatically.
7. Coupler mounting boxes will be lubricated with powdered graphite.
8. Dummy AAR couplers may be used only:
  - on front pilots of steam locomotives (if necessary).
  - between units of permanent locomotive lash-ups.
  - between cars of permanent consists (drawbars are acceptable).
9. Any additional information will be referred to Kadee installation instructions.

## **D. DETECTION**

*Accepted July 19, 2011*

1. All rolling stock, except self-detecting equipment (locomotives or other track powered equipment) must be equipped to activate track detection at both ends, as follows:
2. Each of the two outboard wheelsets on every car shall be equipped to provide 22,000 ohms (having not more than a +/- 10% tolerance) resistance across the rails.
3. Additionally, Multiple-platform (articulated) cars with fixed internal couplings shall have one resistance wheelset on each intermediate truck.
4. Cars having an unswitched continuous connection to the rails for lighting or other purposes must have detection resistors installed when that connection does not include the outboard axles.
5. Equipment with a switched connection to the rails or using decoders that don't draw enough current (when in idle or in operation) to activate detection must have resistance wheelsets installed.
6. If resistance across the rails is provided by paint or other non-visible means, said axles will be center marked by a contrasting band of paint around the axle.

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## **II. RECOMMENDED**

### **A. DETAILS**

1. Cars should be equipped with all included details (kit-built)
2. Detail parts should be firmly attached and not dangling from car.
3. Removable loads should be firmly attached so as not to come loose during use.
4. Cars should be equipped only with details suitable for that type of car.

### **B. WEATHERING**

1. Weathering will depend on the "age" of the car.
2. All cars should have at least a light dusting of accumulated road grime.
3. Passenger cars should be lightly weathered to depict well-maintained cars.

### **C. PAINTING/ DECALS**

1. Fictitious paint schemes shall be limited to Monashee Pacific and member's home railroads.
2. Cars for the Monashee Pacific will be painted, decaled, and numbered according to established standards.
3. Cars painted for real railroads will follow prototype practices.

## **III. ADDITIONAL INFORMATION**

### **A. ALL CARS MUST BE CLEARED WITH ROLLING STOCK COORDINATOR BEFORE BEING PLACED ON THE LAYOUT.**

- B. Any car found to not meet the minimum requirements will have a bad order report filed and will not be allowed back into service until repaired and cleared with coordinator.
- C. Serviceable cars will be marked as to being cleared on the underframe.
- D. Any standards not covered in these standards will be referred back to the NMRA standards.

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## IV. WEIGHT CHART

Body Length (inches)	Optimum Weight (ounces)	Body Length (inches)	Optimum Weight (ounces)
2.50	2.25	7.50	4.75
3.00	2.50	8.00	5.00
3.50	2.75	8.50	5.25
4.00	3.00	9.00	5.50
4.50	3.25	9.50	5.75
5.00	3.50	10.00	6.00
5.50	3.75	10.50	6.25
6.00	4.00	11.00	6.50
6.50	4.25	11.50	6.75
7.00	4.50	12.00	7.00

## V. PAINT SCHEMES

Boxcars	boxcar red**
Coal Hoppers	black
Tank Cars	black
Gondolas	black
Covered Hoppers	grey
Ice Reefers	olive green**
Mechanical Reefers	silver
Stock Cars	tuscan red with lime stains
Maintenance Cars	red, including underframe
Caboose	two-tone green
Passenger	two-tone green

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Exception- boxcars and reefers in passenger service are painted to match passenger equipment