



Sacramento Model Railroad Historical Society, Inc.

STANDARDS

This document is comprised of the rolling stock, DCC and track standards of the Sacramento Model Railroad Historical Society, Inc. Many of our standards have been adopted from NMRA Recommended Practices. Please use an HO Scale NMRA Mark IV Gauge or above, to check standards. We require that the membership bench-test their own equipment before being certified by a qualified Standards Committee member. Once a piece of rolling stock is certified, a colored dot will be placed under the equipment with the initials of the certifier on it. Please see the bottom of the last page for a list of qualified certifiers.

General

Appearance

Models displayed or running on the SMRHS layout are expected to have a good appearance. They should be what you would normally expect to see on a prototype railroad. Models, including engines, are expected to be painted. Unpainted brass or plastic locomotives and rolling stock can be run for test and run-in purposes only. They must meet the club standards before operation. Exception can be given by the Board of Directors.

Rolling Stock HO

Weight

NMRA Standard is per the attached chart. An exception on overweight and light cars may be given by the Board of Directors, if there is no way to lighten or weight a car. The car will be carefully tested for performance. An example would be the Alexander Cast Metal Car Kits. Carloads must not cause the weight to be above the maximum standard.

Wheels

Metal wheels are required - RP25 standard. Intermountain wheel sets are recommended, including code 88 (semi-scale). Kadee wheel sets with plastic axles are not acceptable.

Couplers

Couplers must be delayed Kadee standard or scale head at heights as measured by the Micro-Mark Coupler gauge #82824-HO. Couplers and glad hands must clear the gauge without moving. Cars must have properly adjusted glad-hands.

Rolling

Cars must be able to roll freely down a 2.5% grade with no assistance.

Flat Tracking

On a flat track the car must not have bolster wobble. Trucks must be square to the car body and the wheel axles must be parallel to each other. If not, the bolster must be filed or milled to make the trucks square. Trucks must be free turning but not loose. Cars must be well constructed, have no loose parts and meet tunnel clearances of 26 scale feet.

Car Size

Cars must be in scale for the type car modeled.

Electrical

All cars must have detection, which can be a resistor, car lighting or other electrical load. An axle with a 10,000 Ω resistor can be used. Articulated cars must have one detected axle for each frame (E.g. 5 unit well cars must have 5 detected trucks). A train cannot draw more than 3 amps including engines.

DCC Standards

All decoders must be 28/128 steps. The old 14 step decoders are not acceptable. No units can have the address of “3” for normal service on the layout (Except when the engine number is 3). The recommended throttle is the Digitrax DT400R radio throttle or better.

Certification

The Standards Chairman will appoint a number of members to certify rolling stock to be operated on the layout. Training will be provided to qualify certifiers. For a specified period, a color dot will be affixed to the car before the car can be used on the layout. Cars must be certified by one of the certifiers. Certifiers can not certify their own equipment. Members can certify their own equipment, with a certifier looking on. The following test will be conducted:

1. Coupler height (For scale head couplers, the coupler must be centered in the gauge)
2. Car weight
3. Rolling down a 2.5% grade
4. Free turning trucks
5. Trucks are square to the car
6. No loose parts
7. Wheels are in gauge
8. Resistance axle or other electrical load
9. Member ownership identification
10. All certifications are subject to a successful test run

Certifiers will be available to help members get their equipment to pass certification. If it is not possible for equipment to pass certification, the member can request an exception from the board of directors. An example might be a passenger car that has a special truck that will not roll down a 2.5% grade and a replacement truck is not available. Exceptions will be based on the effect on operations of the equipment.

A unit train is one that a member wishes to run without being broken up. In most cases unit trains require special handling such as; passenger, truck trailer, container or single type of car trains. There must be a reason for a unit train. Unit trains are not a way to get around the coupler requirements of the Society standards. The Trainmaster will determine if the train is a unit train. During operations the Trainmaster may restrict the number of unit or extra length trains on the layout. An extra length train is one that will not fit in James siding. James siding is 13 feet 4 inches long. The member must inform the dispatcher of the unit train. When the unit train is not running, it will be stored in Desert Yard (our staging yard) or other yards if space is available during the operating session. At the end of the operating session the unit train must be removed from the layout and taken home.

Engines

Couplers

Same as Rolling Stock. Couplers are optional on the front of steam or passenger diesel engines, except where the engines are to be run in multiple units or are switchers. Drawbars are acceptable where the set of engines is to be treated as one single engine. One end of the draw bar must be removable. As an example, an F unit ABBA set with drawbars would be considered one single engine.

Amperage

All engines in one train cannot have a running draw of more than 2.5 amps. Engines cannot have problems with thermal shutdown.

Track Standards

Mainline

Rail: Code 83 Nickel Silver
Track Centers: Tangent - 2"
Curves - 2½" w/ 40" radius
Radius: 40" Minimum
Turnouts: No. 8 minimum (where the main line takes the diverging route)
Grade: 1.7% maximum

Branch line & Yards

Rail: Code 83 Nickel Silver
Track Centers: Tangent - 2"
Curves – 2 1/2" w/40" radius
Radius: 36" Minimum
Turnouts: No. 6 minimum in yards
 No. 5 minimum in branch lines and industries
Grade: 1.7% maximum

Approved by board March 29, 1991

Modified 9/10/93
Modified 3/31/95
Modified 2/14/97
Modified 3/19/03
Modified 12/19/03
Modified 12/01/05
Modified 5/25/06
Modified 1/16/08
Modified 10/9/09

Certifiers: 10/09

Wolfgang Butsch - Chairman
Bob Rohwer
Mike Knoles
Jim Harris
Brian Zine
Joe Melhorn
Rick Hansen
Ed Zeis
Bob Schott
Tim Grover

CAR WEIGHT

NMRA STANDARD

(Ounce)

<u>Car Length-feet</u>	<u>Min.</u>	<u>NMRA</u>	<u>Max.</u>
30	2.46	3.09	6.18
35	2.89	3.45	6.90
40	3.31	3.81	7.62
45	3.61	4.17	8.54
50	3.90	4.53	9.06
55	4.20	4.89	9.78
60	4.50	5.25	10.50
65	4.80	5.61	11.21
70	5.09	5.97	11.94
75	5.39	6.33	12.66
80	5.69	6.69	13.38
85	5.99	7.05	14.10
90	6.29	7.41	14.82
95	6.59	7.77	15.54