ROCHESTER MODEL RAILROAD CLUB

The Seneca Valley Lines

Rolling Stock Standards

Adopted: July 1, 2014

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I. General Standards

A. Ownership Marking – It is recommended that the owner's initials or color code be placed on the underside of the car. The use of a marker or paint marker is preferred over a sticker or decal.

B. Record – All club-owned rolling stock shall be recorded in the club database on the Club PC.

1. The database shall be used for rolling stock inventories prior to operating sessions and to print car cards for new rolling stock.
2. The database shall be used to record the latest inspection date.
3. The database shall be available to all members for use as their personal rolling stock inventory and to see what should be on the Club layout.

C. Club Layout – All rolling stock to be left on the Club layout for a period longer than 12 hours shall totally conform to these Rolling Stock Standards.

D. Inspection and Inspection Dots

1. Every piece of rolling stock shall be inspected prior to the annual Open House.
2. Upon successful passing of inspection, a specific year's colored dot shall be issued and placed on the underside of that piece of rolling stock with the year handwritten on it. Any old dots shall be covered or removed.
3. The owner may not inspect his own rolling stock.
4. A Bad Order Car Report shall be filled out for each failing car by the inspector.
5. The inspector shall have the option of rejecting a car as soon as a problem is found (unacceptable couplers, dirty wheels, etc.) or upon completing the inspection and noting multiple problems.
6. If the owner is not present during the inspection, the inspector is permitted to correct minor problems without permission from the owner (trip pin adjustment, knuckle or centering spring replacement, etc.).
7. In the event of a disagreement between the owner and the inspector, the Superintendent will make the make the final ruling.

E. Exceptions to these Standards must be approved by Superintendent.

II. Specific Standards

A. Weight

1. All rolling stock shall meet the minimum NMRA Recommended Practices RP-20.1 for car weight. That is 1 ounce plus one-half ounce for every inch of car length with a - 0.1 ounce allowance. See the appendix.
2. Powered Locomotives shall be exempt from this weight standard. Unpowered Locomotives shall be treated like freight cars.

B. Couplers

1. Permissible Types
   a. *All rolling stock, including cabooses, must use metal Kadee #5 couplers or its equivalent which may be offset high or low, extended or shortened, have varying shelf types, or utilize the centering whiskers (e.g. Kadee #148).*
   b. *All other couplers shall have metal coil knuckle springs.*
2. Banned Types
   a. *All EZ-Mate Couplers and any other couplers with plastic whiskers in place of metal coil knuckle springs.*
   b. *All Accumate couplers*
   c. *All plastic shank couplers*
3. Height – All couplers shall match the Kadee #205 Height Gauge.
4. Trip Pins
   a. *All rolling stock must have properly bent trip pins*
   b. *All trip pins shall clear the Kadee #205 Gauge.*
5. Centering Action – All couplers shall spring back to center if pulled to one side or the other without hanging up. This shall be tested with the car on the test track or right side up. Do not hold the car upside down.
6. Secure Mounts – All couplers and cover plates shall be secured in place with a screw. Cover plates permanently attached to the car under the bolster screw, i.e. found on an Accurail car, shall be permitted.
7. Observation Cars – All observation cars must have functioning couplers at both ends.

C. Trucks and Wheels

1. Gauge – All wheels shall be in gauge according to the NMRA Mark IV Gauge. This shall be tested by resting the notch on one side of the gauge on a flange and bending the other notch down onto the other flange. If the gauge hangs up and the notch does not land directly over the flange, the wheel is out of gauge.
2. Ferrous Axles – Axles that are attracted to magnets, i.e. steel axles, are banned from all non-powered freight and passenger rolling stock.
3. Metal Wheel Surfaces – All wheels shall have metal surfaces. Plastic wheels are banned from all rolling stock.
4. Bolster Screws – Bolster screws shall be loose enough to allow free movement of the truck but tight enough to keep the car from rocking.
5. Dirty Wheels – All wheels shall be clean from dirt and grime upon inspection. A car may be rejected simply if the wheels are not clean.

III. Locomotives - In addition to meeting the standards detailed in section I & II above, locomotives to be operated on the layout need to adhere to the following.

A. Long Address - All DCC locomotives must be programmed utilizing the long address. This means that units with a number between 1 and 127, inclusive, will need to be programmed with a leading zero (0), i.e. 0123 for locomotive 123, 055 for locomotive 55, or 09 for locomotive 9.This is necessary to avoid conflicts with consists. Due to the binary nature of our DCC system, NCE utilizes the short address in CV19 to control the consist.

B. Decoder Pro - Use of the Decoder Pro software on the club computer is encouraged to register the locomotive for use at the club as well as store the decoder's program in case a problem arises and needs to be reset. It will also identify potential issues where different members may have locomotives programmed to the same address, or if the DCC address does not match the number on the locomotive.

C. Volume of Sound Units - The choice to install sound in locomotives is at the owner's discretion. However, due to the confined space of the facility, volumes should be kept to a minimum. The volume level shall be set so that it is not, or barely heard, beyond a five-foot radius of the locomotive.

NMRA RECOMMENDED PRACTICES	
CAR WEIGHT	
RP-20.1	Revised : Jan. 1990

Carefully documented tests show a decided advantage in performance past obstructions in the track for cars weighted to an optimum weight. Since the radial forces tending to cause derailments are greater in longer cars, this optimum weight will vary with car length.

While cars of less than optimum weight will often perform satisfactorily on good track work, increasing weight to the optimum will improve the safety factor with which rougher track will be negotiated. Mixing light weight cars into a train of heavier cars is not recommended because of the possibility that the lighter weight cars may be pulled off the track in sharp curves.

Weight in excess of the optimum will seldom add to the ability of a car to roll down a given grade since the additional weight is almost exactly balanced by the increased friction of the axles in their journals. Extra weight simply adds to the drag of a train and adds more weight to be lifted to the summit of a grade.

Cars should be constructed to keep the lowest possible center of gravity. Supplementary weight added to bring the car to optimum weight should be kept as low as possible.

To find the optimum weight of a given car enter the Table below in the desired scale and find the "Initial Weight". Then find the "Additional Weight" and multiply this by the number of actual inches in the length of the particular car body. Add this weight to the "Initial Weight" for the total Optimum Weight of the car.

SCALE	INITIAL WEIGHT (ounces)	+	ADDITIONAL WEIGHT per inch of car body length (Ounces)
O	5	+	1
0n3	1-1/2	+	3/4
S	2	+	1/2
Sn3	1	+	1/2
HO	1	+	1/2
HOn3	3/4	+	3/8
TT	3/4	+	3/8
N	1/2	+	.15

National Model Railroad Association HO Scale Weight Standards Per RP-20.1

Inches	Scale Feet	Ounces	Grams
0.1	0.73	1.05	30
0.2	1.45	1.10	31
0.3	2.18	1.15	33
0.4	2.90	1.20	34
0.5	3.63	1.25	35
0.6	4.35	1.30	37
0.7	5.08	1.35	38
0.8	5.80	1.40	40
0.9	6.53	1.45	41
1.0	7.25	1.50	43
1.1	7.98	1.55	44
1.2	8.70	1.60	45
1.3	9.43	1.65	47
1.4	10.15	1.70	48
1.5	10.88	1.75	50
1.6	11.60	1.80	51
1.7	12.33	1.85	52
1.8	13.05	1.90	54
1.9	13.78	1.95	55
2.0	14.50	2.00	57
2.1	15.23	2.05	58
2.2	15.95	2.10	60
2.3	16.68	2.15	61
2.4	17.40	2.20	62
2.5	18.13	2.25	64
2.6	18.85	2.30	65
2.7	19.58	2.35	67
2.8	20.30	2.40	68
2.9	21.03	2.45	69
3.0	21.75	2.50	71
3.1	22.48	2.55	72
3.2	23.20	2.60	74
3.3	23.93	2.65	75
3.4	24.65	2.70	77
3.5	25.38	2.75	78
3.6	26.10	2.80	79
3.7	26.83	2.85	81
3.8	27.55	2.90	82
3.9	28.28	2.95	84
4.0	29.00	3.00	85
4.1	29.73	3.05	86
4.2	30.45	3.10	88
4.3	31.18	3.15	89
4.4	31.90	3.20	91
4.5	32.63	3.25	92
4.6	33.35	3.30	94
4.7	34.08	3.35	95
4.8	34.80	3.40	96
4.9	35.53	3.45	98
5.0	36.25	3.50	99
5.1	36.98	3.55	101
5.2	37.70	3.60	102
5.3	38.43	3.65	103
5.4	39.15	3.70	105
5.5	39.88	3.75	106
5.6	40.60	3.80	108
5.7	41.33	3.85	109
5.8	42.05	3.90	111
5.9	42.78	3.95	112
6.0	43.50	4.00	113
6.1	44.23	4.05	115
6.2	44.95	4.10	116
6.3	45.68	4.15	118
6.4	46.40	4.20	119
6.5	47.13	4.25	120
6.6	47.85	4.30	122
6.7	48.57	4.35	123
6.8	49.30	4.40	125
6.9	50.02	4.45	126
7.0	50.75	4.50	128
7.1	51.47	4.55	129
7.2	52.20	4.60	130
7.3	52.92	4.65	132
7.4	53.65	4.70	133
7.5	54.37	4.75	135
7.6	55.10	4.80	136
7.7	55.82	4.85	137
7.8	56.55	4.90	139
7.9	57.27	4.95	140
8.0	58.00	5.00	142
8.1	58.72	5.05	143
8.2	59.45	5.10	145
8.3	60.17	5.15	146
8.4	60.90	5.20	147
8.5	61.62	5.25	149
8.6	62.35	5.30	150
8.7	63.07	5.35	152
8.8	63.80	5.40	153
8.9	64.52	5.45	155
9.0	65.25	5.50	156
9.1	65.97	5.55	157
9.2	66.70	5.60	159
9.3	67.42	5.65	160
9.4	68.15	5.70	162
9.5	68.87	5.75	163
9.6	69.60	5.80	164
9.7	70.32	5.85	166
9.8	71.05	5.90	167
9.9	71.77	5.95	169
10.0	72.50	6.00	170
10.1	73.22	6.05	172
10.2	73.95	6.10	173
10.3	74.67	6.15	174
10.4	75.40	6.20	176
10.5	76.12	6.25	177
10.6	76.85	6.30	179
10.7	77.57	6.35	180
10.8	78.30	6.40	181
10.9	79.02	6.45	183
11.0	79.75	6.50	184
11.1	80.47	6.55	186
11.2	81.20	6.60	187
11.3	81.92	6.65	189
11.4	82.65	6.70	190
11.5	83.37	6.75	191
11.6	84.10	6.80	193
11.7	84.82	6.85	194
11.8	85.55	6.90	196
11.9	86.27	6.95	197
12.0	87.00	7.00	198
12.1	87.72	7.05	200
12.2	88.45	7.10	201
12.3	89.17	7.15	203
12.4	89.90	7.20	204
12.5	90.62	7.25	206
12.6	91.35	7.30	207
12.7	92.07	7.35	208
12.8	92.80	7.40	210
12.9	93.52	7.45	211
13.0	94.25	7.50	213
13.1	94.97	7.55	214
13.2	95.70	7.60	215
13.3	96.42	7.65	217
13.4	97.15	7.70	218
13.5	97.87	7.75	220
13.6	98.60	7.80	221
13.7	99.32	7.85	223
13.8	100.05	7.90	224