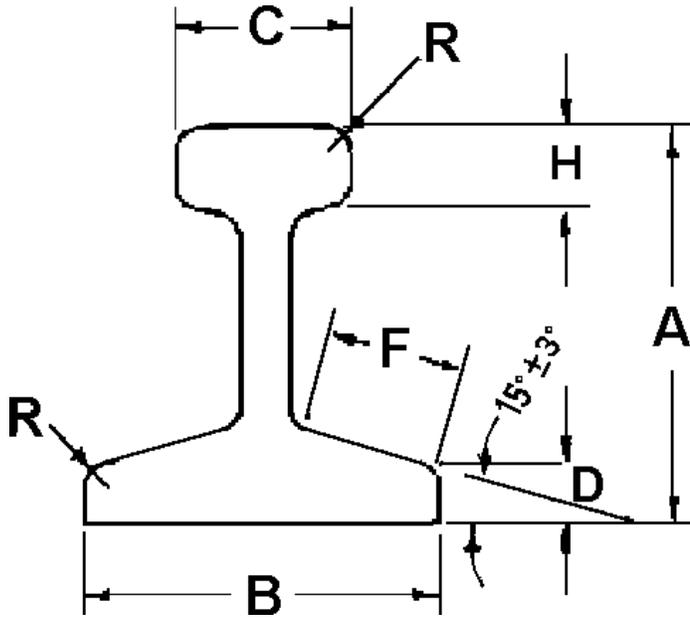


NMRA RECOMMENDED PRACTICES	
RAIL	
RP-15.1	Revised : Jan. 1990

NMRA RECOMMENDED PRACTICES RP-15.1 Rail

These specifications permit the modeling of several different prototype rail sections in the various scales with a minimum number of model rail sections.



Nominal dimensions only are shown. These dimensions should be adhered to as closely as manufacturing techniques permit in order to facilitate matching rails of different manufacturers and to provide common dimensions for the installation of Rail Joiners.

No dimension is shown for web thickness of the rail. Particularly in the smaller sizes it must be a compromise between scale reduction from the prototype and a thickness that will provide mechanical strength and sufficient cross section area to carry electrical propulsion current without excessive resistance.

Hard drawn rail is preferred to medium hardness, and soft drawn or annealed rail is not recommended.

Selection of rail sections that provide 'natural flangeways' resulting from B - C dimensions corresponding to the requirements of **STANDARD S-3** may expedite assembling guard rails and wing rails without fitting or spacing these rails from their stock or frog rails.

TABLE 1

CODE	A	B	C	D	F	H	R
297	.297	.250	.125	.050	.083	.062	.016
250	.250	.224	.112	.044	.073	.055	.014
208	.208	.188	.094	.038	.063	.047	.012
172	.172	.156	.078	.031	.052	.039	.010
148	.148	.132	.066	.026	.044	.033	.009
125	.125	.125	.063	.021	.035	.028	.007
100	.100	.090	.045	.018	.030	.023	.006
83	.083	.080	.040	.016	.027	.020	.005
70	.070	.070	.035	.014	.023	.017	.004
55	.055	.055	.028	.011	.018	.014	.004
40	.040	.040	.020	.008	.013	.010	.003
32	.032	.032	.016	.006	.011	.008	.003

NOTE: Special rail sections incorporating projections beyond the regular section, such as Girder Rail (self-flanging) should conform in all pertinent respects to this specification, departing from it only where necessary to their special function.

Transcriber's Note: the following two tables had become separated from this RP over the last few years and were just recovered and have now been restored.

TABLE 2

PROTOTYPE			EQUIVALENT SCALE RAIL HEIGHT								
	Scale Ratio	1/2" 24	#1 32	0 48	S 64	00 76.2	HO 87.1	TT 120	N 160	Z 220	
*											
Std	Weight	Height									
PRR	155	8.000	.333	.250	.167	.125	.105	.092	.067	.050	.036
AREA	140	7.312	.305	.229	.152	.114	.096	.084	.061	.046	.033
AREA	132	7.125	.297	.223	.148	.111	.094	.082	.059	.045	.032
AREA	115	6.625	.276	.207	.138	.104	.087	.076	.055	.041	.030
AREA	100	6.000	.250	.188	.125	.094	.079	.069	.050	.038	.027
AREA	90	5.625	.234	.176	.117	.088	.074	.065	.047	.035	.026
ASCE	85	5.188	.216	.162	.108	.081	.068	.060	.043	.032	.024
ASCE	80	5.000	.208	.156	.104	.078	.066	.057	.042	.031	.023
ASCE	75	4.812	.201	.150	.100	.075	.063	.055	.040	.030	.022
ASCE	70	4.625	.193	.145	.096	.072	.061	.053	.039	.029	.021
ASCE	65	4.438	.185	.139	.092	.069	.058	.051	.037	.028	.020
ASCE	60	4.250	.177	.133	.089	.066	.056	.049	.035	.027	.019
ASCE	55	4.062	.169	.127	.085	.063	.053	.047	.034	.025	.018
ASCE	50	3.875	.161	.121	.081	.061	.051	.044	.032	.024	.018
ASCE	45	3.688	.154	.115	.077	.058	.048	.042	.031	.023	.017
ASCE	40	3.500	.146	.109	.073	.055	.046	.040	.029	.022	.016
ASCE	35	3.312	.138	.104	.069	.052	.043	.038	.028	.021	.015
ASCE	30	3.125	.130	.098	.065	.049	.041	.036	.026	.020	.014
ASCE	25	2.750	.115	.086	.057	.043	.036	.032	.023	.017	.013

*The weight of prototype Rail is expressed in pounds per yard in the United States.

To model equivalent scale height Rail in the various scales, select from Table 1 the available Rail nearest in height to the equivalent shown in Table 2 above.

Between 1938 and 1963 the reports of the Interstate Commerce Commission listed the distribution of the weight of rail used on the Class 1 railroads of the United States. The abstract below shows the increasing average rail weight between 1940 and 1960. It should be noted that short lines, narrow gage lines and traction lines used lighter rails.

TABLE 3

Weight	1940	1946	1950	1958	1960
< 70	9.54	7.23	6.68	5.28	4.91
70 - 79	10.12	8.64	7.81	6.63	6.55
80 - 89	6.63	14.08	12.88	10.99	10.85
90 - 99	32.10	18.86	16.79	14.74	14.61
100 - 109	18.69	16.94	15.35	13.37	13.58
110 - 119	11.24	17.04	20.07	23.83	23.84
120 - 129	1.91	3.03	2.09	3.17	2.98
130 - 139	9.57	13.71	16.51	20.09	20.63
> 139	0.20	0.46	1.01	1.90	2.05