

NMRA RECOMMENDED PRACTICES	
CURVATURE AND ROLLING STOCK	
Revised 1-90	RP-11

NMRA RECOMMENDED PRACTICES

RP-11 Curvature and Rolling Stock

Complied by Hill, Hazen, Bradley

Equipment should be designed and built to operate satisfactorily at restricted speeds through the minimum turnouts and minimum radius curvature specified below. For operation at typical main line scale speeds (see **DATA SHEET D4d**)

specifications for one or more higher classes should be used.

Layouts should be designed and built with not less than the specified minimum radii and turnouts for the equipment listed. Use of the largest radius curves, properly eased (see **DATA SHEET D3b, D3c, D3c.1**), consistent with the design limitations of the individual layout, is strongly recommended for best operation.

CLASSIFICATION OF EQUIPMENT

Class	Key	Motive Power	Passenger	Freight
Street Cars	A	All street cars, single or coupled with a tow bar or couplers. Includes all types; passenger, freight, etc,		
Interurban	B	Classes C, D and E (below) operating on in-city street car trackage. Includes all motive power, passenger, or freight cars of all lengths equipped with radial MOB couplers. Also see RP-5		
	C	Interurban motors to 40' long with radial MCB couplers.	Trailers to 40' long with radial MCB couplers.	Trailers to 40' long with radial MCB couplers.
	D	Interurban motors to 50' long with radial MCB couplers.	Trailers to 50' long with radial MCB couplers.	Trailers to 50' long with radial MCB couplers.
	E	Interurban motors to 64' long with radial MCB couplers.	Trailers to 64' long with radial MCB couplers.	Trailers to 64' long with radial MCB couplers Standard cars to 40' long with special coupler or adapters for Class B use
MU and Light Electric	F	Electric locos to 50' long with two 4-wheel trucks.	MU and passenger cars to 60' long without diaphragms.	Standard cars to 50' long with regular couplers.
	G	Electric locos to 60' long with two 4-wheel trucks.	MU, passenger, postal baggage cars to 60' long with diaphragms.	All freight cars.
	H	Electric locos to 70' long with two 4-wheel trucks.	MU, passenger, postal baggage cars to 70' long with diaphragms.	
Old Time Pikes, Small	J	Steam locos with 4 wheels. Diesel locos with 4 wheels.	Old time cars, special short cars to 40' long without diaphragms.	Standard cars to 40' long with regular couplers.
Branch Lines and Feeder Lines	K	Steam locos to 11' rigid wheel-base. Diesel locos to 40' long with two 4-wheel trucks.	Old time cars, special cars to 50' long without diaphragms.	Standard cars to 50' long with regular couplers.
	L	Steam locos to 14' rigid wheel-base. Diesel locos to 50' long with two 4-wheel trucks.	Old time cars, special cars to 60' long without diaphragms.	All freight cars.

CLASSIFICATION OF EQUIPMENT (continued)

Class	Key	Motive Power	Passenger	Freight
Standard Trunk Lines	M	Steam locos to 17' rigid wheel-base. Diesel locos to 60' long with two 4-wheel trucks.	Suburban, postal and baggage cars to 60' with diaphragms.	Standard cars to 50' long with regular couplers or with cushion underframes and regular couplers.
	N	Steam locos to 20' rigid wheel-base. Diesel locos to 60' long with two 6-wheel trucks.	Suburban, postal and baggage cars to 70' long with diaphragms.	Standard cars to 62' long with or without cushion underframes and regular couplers.
	O	Steam locos to 24' rigid wheel-base. Diesel and electric locos to 70' long with two 6-wheel trucks.	All cars to 80' long with diaphragms.	Cars to 85' long if not over 9' wide with or without cushion underframes and regular couplers. Plate C cars.
	P	Steam locos to 28' rigid wheel-base. All Diesel locos. All Electric locos.	All passenger cars.	All freight cars

Classification Key	A	B	C	D	E/J	F/K	G/L	H/M	N	O	P
Min. Turnout No.	2.5	3	3	4	4	5	5	6	6	6	7
Minimum Curve (In Degrees)		180	100	80	60	50	40	35	30	25	20
Prototype Radius	36'	50'	65'	78'	100'	118'	146'	166'	193'	231'	288'
O Scale	9"	12.5"	16"	19.5"	25"	30"	36.5"	41.5"	48"	58"	72"
S Scale	7"	9.5"	12"	14.5"	19"	22.5"	27.5"	31"	36"	43.5"	54"
OO Scale	5.5"	8"	10.5"	12.5"	16"	18.5"	23"	26"	30.5"	36.5"	45.5"
HO Scale	5"	7"	9"	11"	14"	16.5"	20"	23"	26.5"	32"	40"
TT Scale	3.5"	5"	6.5"	8"	10"	12"	14.5"	16.5"	19.5"	23"	29"
N Scale	2.75"	3.75"	4.875"	5.875"	7.5"	8.875"	11"	12.5"	14.5"	17.375"	21.5"

Note 1. For classes O and P, minimum high speed turnout and crossover should be No. 8. However, for 3-rail systems, No 6 is the recommended maximum because of the length of the gap in the third rail.

Note 2. Minimum radius and turnout number may be reduced one class for units with "blind" (flangeless) center wheels in a rigid wheel base. Development of "freak" equipment for operation on sharper curves is not recommended,

Note 3. Minimum radius and turnout number should be increased two classes for articulated locomotives.

Note 4. Minimum radius and turnout number may be reduced one class for equipment using truck mounted couplers or for equipment using two trucks at each end, with coupler mounted on the span bolster. The longest possible coupler shank is recommended.

Note 5. Street cars and interurbans should be constructed to negotiate a curve of scale radius 4' sharper than indicated in class A and B respectively to assure ease of operation.

Note 6. See **NMRA STANDARD S-7** for Clearances and **S-6** and **S-8** for Multiple Track Centers for various radii.