

<b>NMRA RECOMMENDED PRACTICES</b>	
<b>RECOMMENDED PRACTICES STANDARD GAUGES, MODULES</b>	
<b>Revised 1-90</b>	<b>MRP-1.0</b>

Recommended Practices are only less mandatory than Standards by virtue of their slightly less critical subject matter and/or the fact that deviation for specific reason is permissible.

(\*) denotes change from previous issue.

Scale	Minimum Parallel Tangent Track Length *+	Maximum Mainline Grade	Minimum Mainline Turnout	Minimum Mainline Radius **	Minimum (*)Industrial Radius +++
Z	(*)2-3/16" (55mm)	4%	#5	7-1/2" (195mm)	6" (152.4mm)
N***	2-1/2" (63.5mm)	(*) 0%	#6	(*)24 (609.6mm)	17" (431.8mm)
TT	3-1/2" (88.9mm)	3%	#6	28-3/4" (730.2mm)	20" (508.0mm)
HO	(*)3" (76.2mm)	3%	#6	32" (812.8mm)	24" (609.6mm)
OO	3" (76.2mm)	3%	#6	36" (914mm)	30" (762.0mm)
S	(*)3" (76.2mm)	2%	#6	43" (1092.2mm)	34" (863.6mm)
O	4" (101.6mm)	2%	#6	60" (1524mm)	36" (914.4mm)
HIRAIL TINPLATE	5-1/2 (139.7mm)	2%	O22 or equal	21" (533.4mm) inside 36" (914mm) outside	

\* Tangent track length is the distance from the end of the bridge track at the interface to the first deviation in mainline, i.e., a switch, curve, crossover, etc.

\*\* This is the minimum radius according to Standard S-8, Class 1-A. It is suggested, however, that a larger radius be used. The only exception being HIGHRAIL/TINPLATE.

\*\*\* NTRAK specifies mainline grade of 0% with 1.5% allowed on secondary or branch lines. Other options and restrictions apply. Check with NTRAK S.I.G.

**RECOMMENDED PRACTICES FOR ALL SCALES**

1. Module width (except Z) will be 24" minimum, 36" maximum; ++ Z scale will be 1'4"(406.4mm) minimum, 36" (914mm) maximum.
2. All trackage behind the mainlines shall be insulated from mainlines.
3. All trackage behind the mainlines should have its own power source, separate from mainline power source.
4. A maximum mainline grade according to MRP-1 for each scale/gauge may be used if proper care is given to the construction of sub-roadbed and grading back to 0 elevation; it should be noted that the use of grades may restrict the length of trains and require the use of more locomotives or power units. NTRAK excepted, 0% mainline grade.
5. If uncoupler magnets are used on the mainlines, they should be the electromagnetic type. It is recommended that permanent magnets NOT be used on mainlines.
6. All trackage behind the mainlines is not covered by NMRA Module Standards and is left to the discretion of

the individual or group, with the exception of S-7 Standards pertaining to mainline clearances.

7. If sky boards are used, recommended range is 8" to 18"; (optimum 14") scenery dividers are optional.

8. Recommended roadbed can be cork, wood or Homosote.

9. Legs should be 2"x2" construction with either 1/4" or 5/16" bolts in leg bottom for adjustment of 1", plus or minus; legs can be attached by way of slip-in boxes, bolts, hinges or cleated.

10. Construction of module should be of either 1/2" plywood or L-girder top.

11. Forward extension modules, i.e., those protruding toward the public viewing side rather than inward toward the back of module, will mark the "front edge of module" reference point as the point at which the front edge would be located if it were not extended outward. This is the point of reference for center lines of mains. Check the S.I.G. for your scale for specific details.

(\*)+ **S scale only:** The minimum unrestricted tangent would be 10" from interface (S"+2") because of the possibility of 2 modules with opposite curves interfacing together, creating an undesirable "S" curve. See section III-A-5-b. page 10 of NASG "S" module standards.

(\*)++ **S scale only:** Width not specified as modules are sometimes reversed.

(\*)+++ Sometimes referred to as "Short Line" or "Secondary" which allow for shorter radii curves including complete helix (loops) where the locomotive passes over the rear of its own train.