



DATA SHEET

TURNOUT CURVES (OF)

Compiled by M. Holland

Turnout Curve Tables for O Fine Standard

The tables are based on Code 124 bullhead rail and Code 143 Flat bottomed rail, both having a railhead

width of 1.6mm and on the turnout curve continuing to the gauge line intersection.

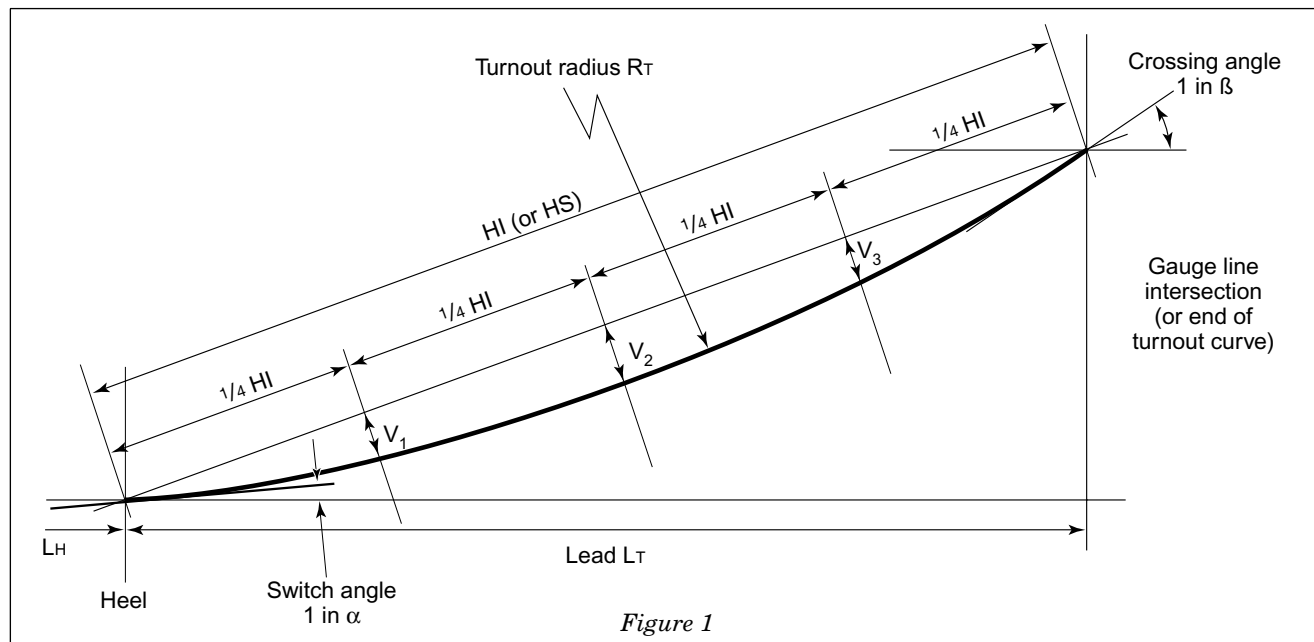


Figure 1

Offsets for Straight Switches

Straight switches were laid in bullhead rail and mainly occurred in the pre-grouping period although many lasted well into BR days. A few flat bottom versions

appeared in industrial locations. Switch details are shown on data sheet D2.2.1.1, which includes location of timbers and slide chairs.

Switch	6	ft	6ft	6ft	6ft	6ft	9ft	9ft	9ft	9ft	9ft	9ft
Crossing angle	β	3	3.5	4	4.5	5	3.5	4	4.5	5	5.5	6
Switch angle	α	12.6	12.6	12.6	12.6	12.6	19	19	19	19	19	19
Turnout radius mm	RT	547	761	1020	1330	1700	727	959	1229	1539	1892	2291
Turnout radius ft	RT	1.8	2.5	3.3	4.4	5.6	2.4	3.1	4.0	5.0	6.2	7.5
Heel divergence mm	hd	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35
Heel length mm	LH	42	42	42	42	42	63	63	63	63	63	63
Lead mm	LT	137	156	173	189	204	168	188	207	226	244	261
Nose distance mm	LN	1.3	1.5	1.8	2.0	2.2	1.5	1.8	2.0	2.2	2.4	2.6
Full lead mm	L	181	199	217	233	248	233	253	272	291	309	326
Offsets V1 and V3 mm		3.3	3.0	2.8	2.5	2.3	3.7	3.5	3.3	3.1	3.0	2.8
Offset V2 mm		4.4	4.0	3.7	3.4	3.1	4.9	4.7	4.4	4.2	3.9	3.7
Switch		12ft	12ft	12ft	12ft	12ft	12ft	15ft	15ft	15ft	15ft	15ft
Crossing angle	β	4.5	5	5.5	6	6.5	7	6	6.5	7	7.5	8
Switch angle	α	25.3	25.3	25.3	25.3	25.3	25.3	31.6	31.6	31.6	31.6	31.6
Turnout radius mm	RT	1198	1491	1819	2186	2592	3040	2140	2528	2953	3416	3918
Turnout radius ft	RT	3.9	4.9	6.0	7.2	8.5	10.0	7.0	8.3	9.7	11.2	12.9
Heel divergence mm	hd	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35
Heel length mm	LH	84	84	84	84	84	84	105	105	105	105	105
Lead mm	LT	218	238	258	277	296	314	288	308	328	347	365
Nose distance mm	LN	2.0	2.2	2.4	2.6	2.9	3.1	2.6	2.9	3.1	3.3	3.5
Full lead mm	L	304	325	345	364	383	401	396	416	436	455	474
Offsets V1 and V3 mm		3.7	3.6	3.5	3.3	3.2	3.0	3.7	3.5	3.4	3.3	3.2
Offset V2 mm		5.0	4.8	4.6	4.4	4.2	4.1	4.9	4.7	4.6	4.4	4.3

Offsets for Semi-curved switches

Semi-curved switches were introduced in the grouping period and continued into BR days. Switch details are

shown on data sheet D2.2.1.2, which includes location of timbers and slide chairs.

Switch		A	A	A	A	A	A	A	B	B	B	B	B
Crossing angle	β	4	4.5	5	5.5	6	6.5	7	6	6.5	7	7.5	8
Switch angle	α	13.96	13.96	13.96	13.96	13.96	13.96	13.96	17.84	17.84	17.84	17.84	17.84
Turnout radius mm	RT	860	1115	1415	1767	2179	2662	3230	2092	2511	2985	3522	4129
Turnout radius ft	RT	2.8	3.7	4.6	5.8	7.1	8.7	10.6	6.9	8.2	9.8	11.6	13.5
Heel divergence mm	hd	7.33	7.33	7.33	7.33	7.33	7.33	7.33	6.23	6.23	6.23	6.23	6.23
Heel length mm	LH	140	140	140	140	140	140	140	158	158	158	158	158
Lead mm	LT	152	167	181	194	206	218	229	231	245	258	272	284
Nose Distance mm	LN	1.8	2.0	2.2	2.4	2.6	2.9	3.1	2.6	2.9	3.1	3.3	3.5
Full lead mm	L	294	309	323	336	349	361	372	391	406	420	433	446
Offsets V1 and V3 mm		2.6	2.4	2.2	2.0	1.8	1.7	1.5	2.4	2.3	2.1	2.0	1.8
Offset V2 mm		3.4	3.2	2.9	2.7	2.5	2.2	2.0	3.2	3.0	2.8	2.6	2.5

Offsets for Fully curved B switches

The tables are based on Code 124 bullhead rail having a railhead width of 1.6mm.

Fully curved B switches laid in bullhead rail were

used by the GWR and many lasted well into BR days. Switch details are shown on data sheet D2.2.1.3, which includes location of timbers and slide chairs.

Switch		B	B	B	B	B
Crossing angle	β	6	6.5	7	7.5	8
Switch angle	α	19.01	19.01	19.01	19.01	19.01
Turnout radius mm	RT	2093	2504	2967	3487	4071
Turnout radius ft	RT	6.9	8.2	9.7	11.4	13.4
Heel divergence	hd	5.83	5.83	5.83	5.83	5.83
Heel length mm	LH	157.5	157.5	157.5	157.5	157.5
Lead mm	LT	238	253	267	281	294
Nose distance mm	LN	2.6	2.9	3.1	3.3	3.5
Full lead mm	L	398	413	428	442	455
Offsets V1 and V3 mm		2.6	2.4	2.3	2.1	2.0
Offset V2 mm		3.4	3.2	3.0	2.8	2.7



DATA SHEET

TURNOUT CURVES (OF)

Compiled by M. Holland

Offsets for semi-curved switches in flat bottom rail

The tables are based on Code 143 Flat bottomed rail having a railhead width of 1.6mm.

BR Flat bottom switches can be either semi-curved or fully curved. Note that there are no A semi-curved

switches. Switch details are shown on data sheets D2.2.1.2 and D2.2.1.3, which include location of timbers and slide chairs.

Switch		B	B	B	B	B
Crossing angle	β	6	6.5	7	7.5	8
Switch angle	α	15.77	15.77	15.77	15.77	15.77
Turnout radius mm	RT	2010	2431	2914	3472	4116
Turnout radius ft	RT	6.6	8.0	9.6	11.4	13.5
Heel divergence mm	hd	8.12	8.12	8.12	8.12	8.12
Heel length mm	LH	189	189	189	189	189
Lead mm	LT	207	219	231	242	253
Nose distance mm	LN	2.6	2.9	3.1	3.3	3.5
Full lead mm	L	398	411	423	434	445
Offsets V1 and V3 mm		2.0	1.9	1.7	1.6	1.5
Offset V2 mm		2.7	2.5	2.3	2.1	2.0

Offsets for fully curved switches in flat bottom rail

Switch		A	A	A	A	A	A	A	B	B	B	B	B
Crossing angle	β	4	4.5	5	5.5	6	6.5	7	6	6.5	7	7.5	8
Switch angle	α	13.24	13.24	13.24	13.24	13.24	13.24	13.24	15.77	15.77	15.77	15.77	15.77
Turnout radius mm	RT	824	1071	1364	1710	2119	2604	3182	2010	2431	2914	3472	4116
Turnout radius ft	RT	2.7	3.5	4.5	5.6	7.0	8.5	10.4	6.6	8.0	9.6	11.4	13.5
Heel divergence mm	hd	8.61	8.61	8.61	8.61	8.61	8.61	8.61	8.12	8.12	8.12	8.12	8.12
Heel length mm	LH	172	172	172	172	172	172	172	207	207	207	207	207
Lead mm	LT	143	156	169	181	192	203	214	207	219	231	242	253
Nose distance mm	LN	1.8	2	2.2	2.4	2.6	2.9	3.1	2.6	2.9	3.1	3.3	3.5
Full lead mm	L	316	330	343	355	367	378	388	416	428	440	452	463
Offsets V1 and V3 mm		2.4	2.2	2.0	1.8	1.7	1.5	1.4	2.0	1.9	1.7	1.6	1.5
Offset V2 mm		3.1	2.9	2.6	2.4	2.2	2.0	1.8	2.7	2.5	2.3	2.1	2.0

Note: If a number of identical turnouts are to be built, it is worth considering making a curved template based on the curved closure rail radius. This can be used both

for making the drawings and testing the accuracy of the curves when laid during construction.