

In the light of future experience other crossings could be added to the above range if found to be really necessary.

A nominal spacing of timbers at 2' 4" centres was decided upon for both switches and crossings and the designs provide for interchangeability between built-up, all welded and cast manganese crossings.

The proposed 'natural' angles to suit the new switches are in each case wider than the existing 'natural' angles, resulting in sharper turnout radii; but the cant deficiency at appropriate maximum speed remain below the specified limit of $3\frac{1}{2}$ ". However the sharper turnout radii associated with flatter toe entry angles and easier switch radii result in shorter lead lengths compared with existing designs and hence give monetary advantages. The relative details are as follows :-

	Existing Switches				Proposed New Switches			
	C/10	D/12	E/16	F/20	C/9 $\frac{1}{2}$	D/10 $\frac{1}{2}$	E/15	F/18 $\frac{1}{2}$
Entry angle 1 in	83	99	133	163	112	155	191	225
Effective radius at toe Chains	13 $\frac{1}{2}$	17 $\frac{1}{2}$	26	34 $\frac{1}{2}$	15 $\frac{1}{2}$	20 $\frac{3}{4}$	32 $\frac{1}{2}$	43
Turnout radius Chains	14 $\frac{1}{2}$	21	37	58	12 $\frac{1}{2}$	16 $\frac{1}{2}$	32 $\frac{1}{2}$	48 $\frac{1}{2}$
Speed at toe (5" deficiency) m.p.h.	33	38	47	53	36	42	52	60
Speed for turnout (3 $\frac{1}{2}$ " deficiency) m.p.h.	29	35	46	58	27	31	43	54
Speed restriction m.p.h.	25	30	40	50	25	30	40	50
Shortening of lead	-				2' 1 $\frac{1}{2}$ "	5' 0"	1' 5"	4' 2"

The nominal gauge of modern concrete sleepered track is now 4' 8 $\frac{3}{8}$ " and in order to derive maximum benefit in running it has been decided that the tighter gauge should be applied through switches and crossings where the new designs are installed. The reduction in track gauge will be accompanied by a similar reduction in flangeway clearances in order to preserve the correct relationship between rail heads and wheel flanges.

You will be aware that the new designs of switches and crossings are to be supplied for use in the new layouts required in connection with the Paddington and Swindon M.A.S. schemes. In this respect, this Region will be the first user of the new designs; and it is probable that some focus of future attention will be centred on the service behaviour of the new fittings both from the B.R.B. and other Regions. I would like a high standard of installation work to be achieved and I know you will co-operate in this endeavour.

Standard drawings of the new switches, crossings and components will be issued when ready. In the meantime I am arranging for Permanent Way Note Sheets to be prepared to give basic information and these will be sent you as soon as possible.

for F.R.L. Barmwell,

G.S. Alley

Copy to:

P. Harvey, Esq. and District Civil Engineers - For information