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Re-design of FB Switches and Crossings

Following the standardisation of the Pandrol 401 type clip for all plain line it became logical to consider its use as a standard in S.&.C. Layouts.

Coupled to this consideration was the need to ensure that bent wing rails and curved closure rails were always properly seated on their baseplates. When wing rails are bent to the required angle and then inclined at 1 in 20 as in existing designs, it is necessary to apply a vertical set to the rails to seat them correctly on their baseplates. The manufacturing operation is difficult and often results in rail foot distortion and variable inclination. Also the durability of the vertical set is variable under traffic conditions leading to an increased maintenance requirement.

Consequently it was decided to recommend the verticality of all rails in S.&.C. layouts as besides meeting the criticisms in respect of wing and closure rails; horizontal rail seats would simplify the introduction of Pandrol housings in baseplate design and also enable many baseplates to be reversible.

In conjunction with the foregoing considerations, opportunity was also taken to investigate possible improvements in the design of switches to provide for -

- (a) A flatter angle of entry at the toe;
- (b) an improved effective radius at the switch toe;
- (c) the switch curve to be tangential to the gauge line in front of the toe.

The proposed new design of switches is associated with a new range of 'natural' crossing angles, strictly limited in the first instance in order to

- (a) reduce the manufacturing work involved in the changeover to new designs.
- (b) limit stocks.
- (c) provide a greater measure of standardisation of layouts.
- (d) reduce patterns for cast manganese crossings to a minimum.

From consideration of a range of turnouts, crossover roads, and double junctions to suit a sequence of speed restrictions between 15 and 70 m.p.h., the following restricted range of crossings has been selected to meet initial requirements -

Common Crossings 1 in 4, 4½, 5, 5½, 6, 6½, 7, 7½, 8, 9, 10,
10½, 13, 15, 16, 18, 21.

Obtuse " 1 in - 4½, 5, 5½, 6, 6½, 7, 7½, 8, ~~10, 12, 15~~
switch diamonds

Cast Manganese 1 in 8, 9, 10, 10½, 13, 15.