Straight Switches (All Standards)

(Based on Midland Railway drawings c 1875-1890)

The geometry of a straight switch is shown in Figure 1 below.

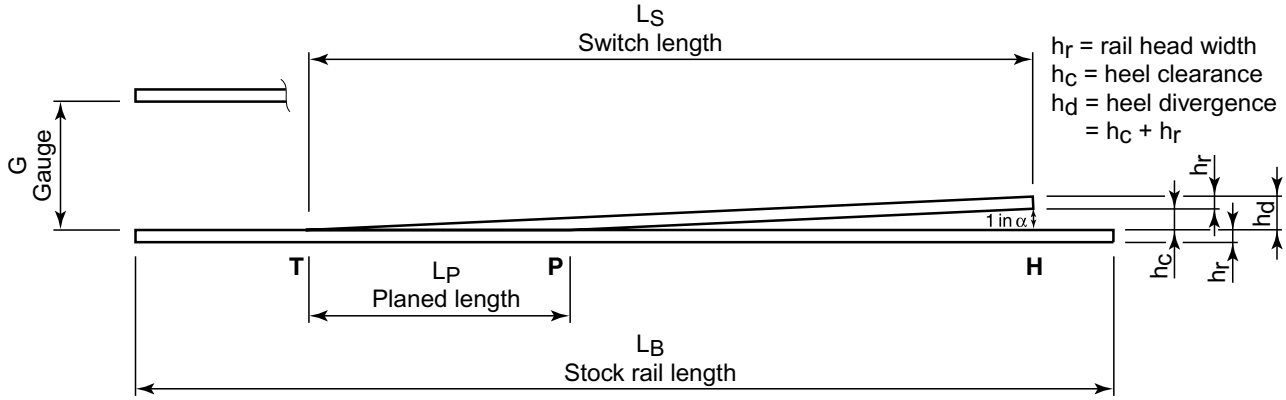

Figure 1 Geometry of a straight switch

The prototype heel clearance (h_c) from the stock rail is $1\frac{3}{4}$in or 1.02mm in 7mm scale and this can be used for Scale 7 giving a heel divergence of 2.62mm when using 1.6mm wide rail. For Fine Standard, h_c is 1.75mm and for Coarse Standard h_c is 2.2mm. Heel divergence, h_d is obtained by adding the rail head width, h_r, to h_c.

The switch dimensions and timbering for the range of switches suitable for most modelling are shown in Figures 2 to 5. Timber dimensions are based on pre-grouping practice and are 10in wide x 9ft long (5.8mm x 63mm) and 12in wide x 9ft long (7mm x 63mm). The prototype thickness for the 10in timbers was 5in and 6in for the 12in wide timbers. All dimensions are in millimetres.

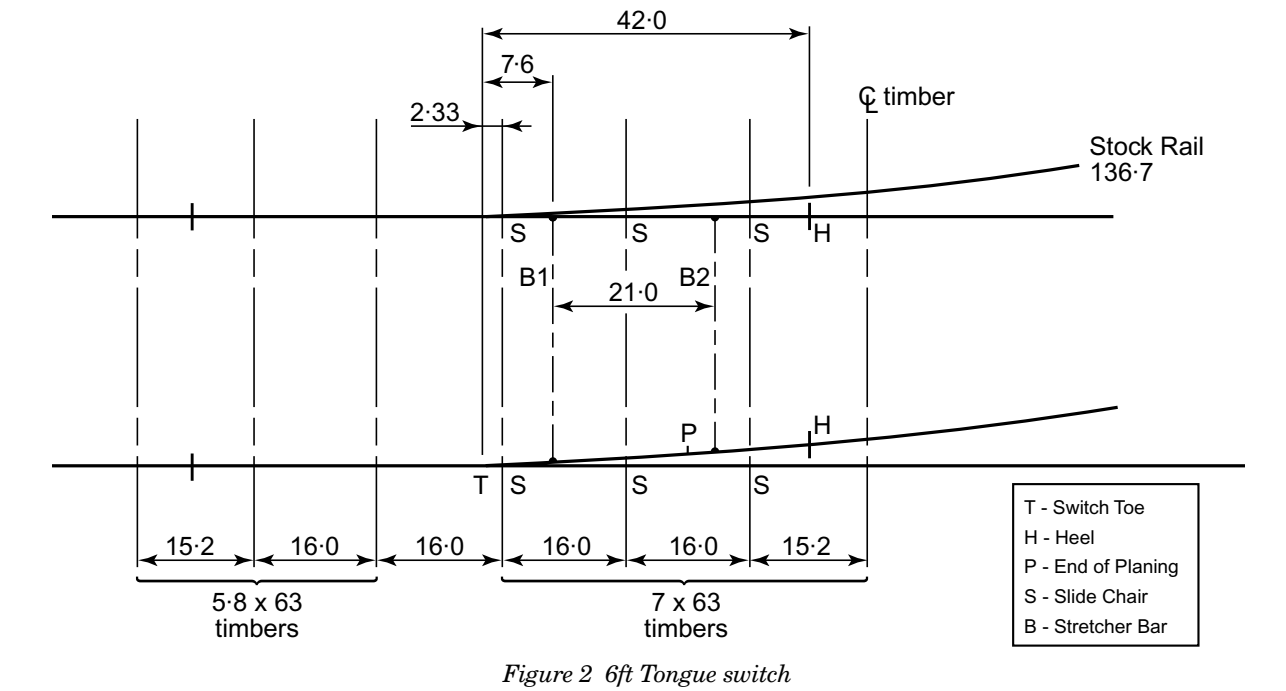

Figure 2 6ft Tongue switch

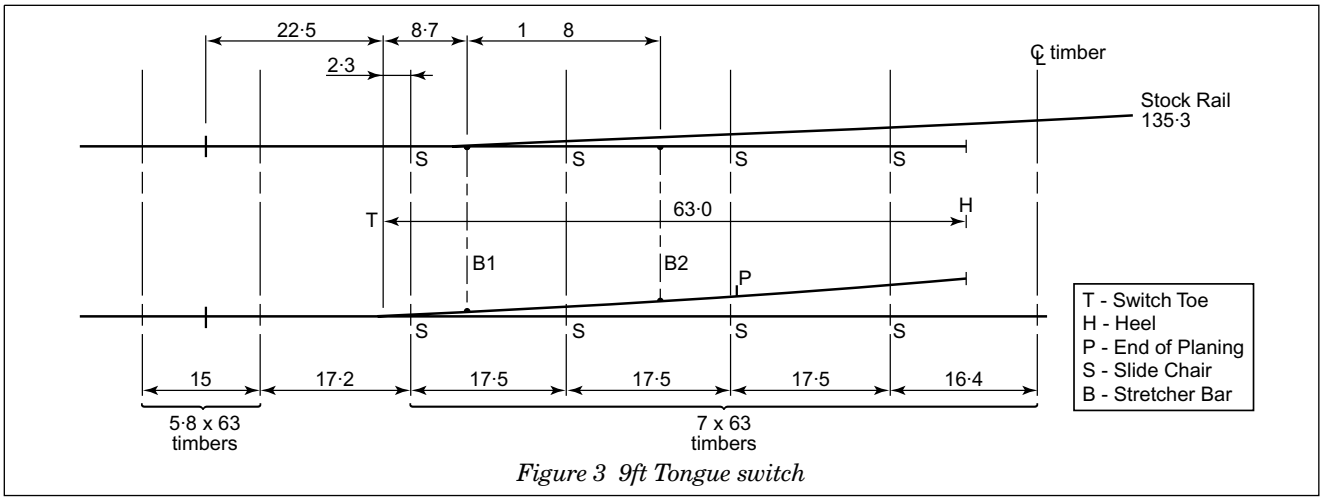

Figure 3 9ft Tongue switch

For a heel switch, the switch rail is 58.4mm long with a mean timber spacing of 18.7mm and with the heel on the centre-line of the timber.

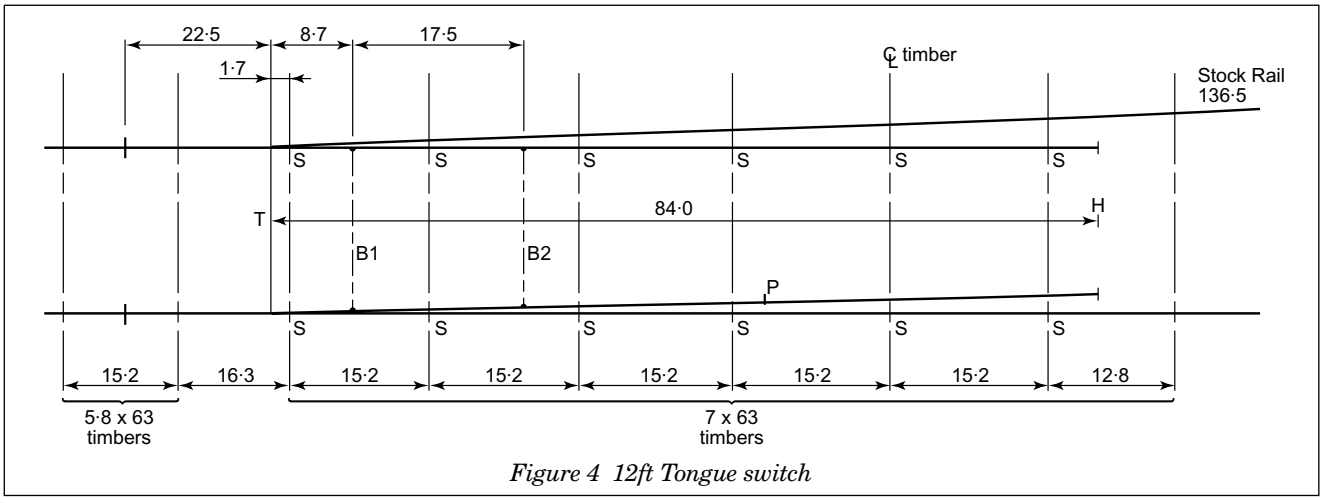

Figure 4 12ft Tongue switch

For a heel switch, the switch rail is 79.3mm long with a mean timber spacing of 15.7mm and with the heel on the centre-line of the timber.

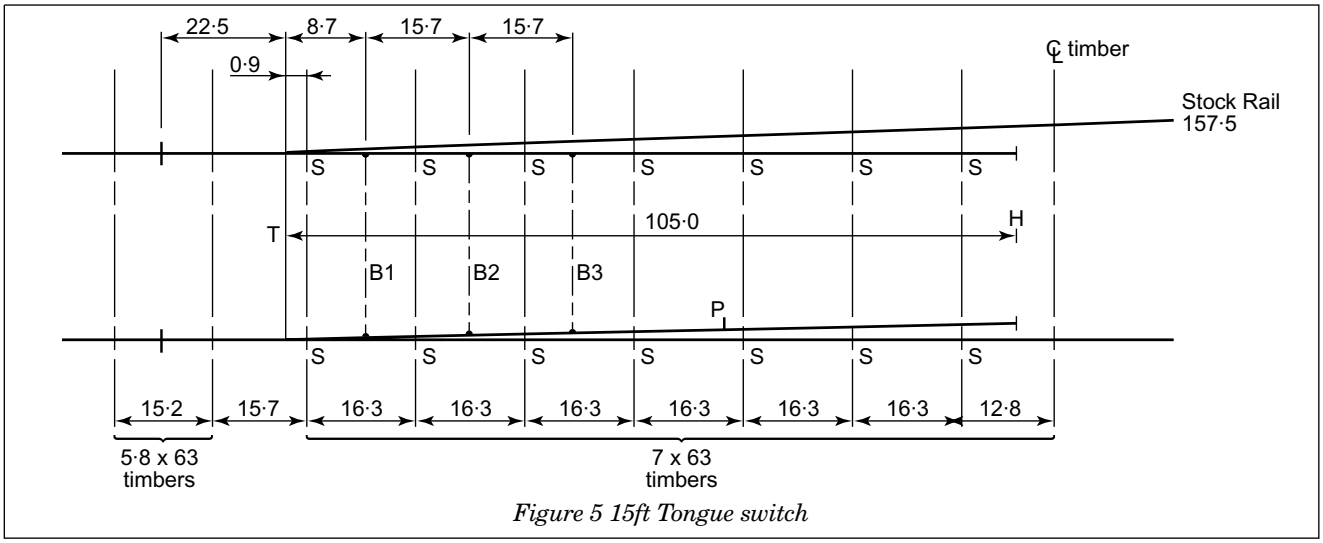

Figure 5 15ft Tongue switch

For a heel switch, the switch rail is 100.3mm long with a mean timber spacing of 16.6mm and with the heel on the centre-line of the timber.