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Date:	4 September 2010
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Level 3 Module

Signalling Installation – Points: General

Endorsement and Authorisation

For endorsement and authorisation, please refer to NR/L3/SIG/11303.

This module is a reformatted version of the previous Signalling Installation Handbook with no change to the content other than correction of terminology.

It represents historic best practice which may no longer be relevant.

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Issue record

Issue	Date	Comments
2	September 2010	Reformatted version of previous document incorporating the text of the installation handbook.
1	August 2000	First issue.

Compliance

This Network Rail standard is mandatory and shall be complied with by Network Rail and its contractors if applicable from 4 December 2010.

When this standard is implemented, it is permissible for all projects that have formally completed GRIP Stage 4 to continue to comply with the Issue of any relevant Network Rail Standards current when GRIP Stage 4 was reached and not to comply with requirements contained herein, unless the designated Standard Owner has stipulated otherwise in the accompanying Briefing Note.

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1 Introduction

Points are the means of switching trains from one track to another. Figure 1 shows a simple track arrangement and gives the common names of the parts of the points.

The whole point mechanism consists of:

- The switchable part of the track (the points).
- A means of moving the points.
- A means of holding them in the correct position.

Additionally, there may also be devices to:

- Lock the points in the correct position so that they cannot move unless unlocked.
- Detect that the points (and the lock if provided) are in the correct position.

Further information may be found in Part P of NR/GN/SIG/11600 in the Signalling Design Handbook.

2 The Points

The switchable portion of track (the points) is provided by the organisation responsible for the permanent way, which checks that it is in good condition and to gauge. (Gauge is the distance between the rails.) The movement between the switch and the stock rails at the toe of the points is nominally 108mm, but may vary between certain limits according to the type of point layout.

The exact arrangement of the switch varies considerably according to the length of switch and type of rails. Long switches require an increased number of stretcher bars, with drives at several positions along their length to make sure the rails are smoothly curved without kinks. The drives which are additional to the one at the toe of the points are known as supplementary or back drives.

The different types of switches are known by a letter code, and the table below shows how these codes relate to the number of stretcher bars and drives. Which type of switch is installed depends on the physical layout, the required speed through the junction and the type of rails

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	Mechanical Supplementary Drives on Stretcher Numbers:				Hydraulic Supplementary Drives on Sleeper No ^s :	
Rail Section/ Switch Type	Flat Bottom Inclined	Bullhead Inclined	Flat Bottom Vertical	UIC 54B Switch/ 113A FBV Stock	113A Flat Bottom Vertical	UIC 54B Switch/ 113A FBV Stock
A	Nil of 2	Nil of 2	Nil of 2	Nil of 2	Nil	Nil
B	Nil of 2	Nil of 2	Nil of 2	Nil of 2	Nil	Nil
C	Nil of 3	Nil of 3	3 of 3	2 of 2	7	7
D	3 of 3	4 of 4	4 of 4	2 of 2	8	8
E	4 of 4	4 of 4	4 of 4	3 of 3	11	11
F	5 of 5		3, 5 of 5	2, 3 of 3	8, 13	7, 13
SG	4, 6 of 6		4, 6 of 6	3, 5 of 5	9, 15	8, 15
G	4, 6 of 6		4, 6 of 6	3, 5 of 5	10, 17	9, 17
H	Not Permitted				9, 17, 25, 30	9, 19, 27

Table 1 - Requirement for Stretchers and Supplementary Drives

3 Point Numbering

Points are numbered in the same way as the lever or switch that operates them (e.g. 27 or 468).

Several points (for example, the two ends of a crossover) may be operated from the same lever or switch. To give them different names a letter suffix is added to the number (e.g. 27A and 27B). The letters are usually allocated so that the "A" end is the one nearest the "Up" end of the line but in older installations other arrangements exist, such as the "A" end being nearest the controlling signal box.

4 Normal And Reverse Positions

The two positions of a set of points are known as "Normal" and "Reverse" and these positions agree with the same named positions for the lever or switch used to operate them. The "Normal" position is usually (but not always) that for the straight through or high speed route through the points.

Signalling plans and diagrams are drawn to show points in their "Normal" position.

A more precise way of describing the position of points, which is often used during testing, is to say "Left (or Right) hand switch closed" as viewed by a person standing in the "four foot" outside the points and facing the toe.