



AST Advanced Signalling Technology

Aim

This course is intended for experienced signal designers and testers who wish to progress towards the design or testing of complex signalling logic.

Key Features

- Course fully up to date to reflect current requirements
- The course concentrates on understanding of interlocking functionality, as well as “Filling in the boxes”
- The delegate will benefit from experimentation on our demonstration interlockings
- Technical jargon is explained in clear English terms
- “intermediate” level concepts are thoroughly revised before advancing to the “advanced” subjects

Course Outcomes

At the end of this course the successful delegate will be able to specify complex signalling arrangements on Signalling Plans and Control Tables, relating to:

- Complex Train Dynamic calculations.
 - Revision of Non-Stopping Headway Calculations
 - Equations of Motion
 - Using the equations to accommodate the effects of acceleration, deceleration and gradient.
 - Determine the effects of station stops upon headway.
- Aspect Sequence Charts
 - Complex Aspect Sequences
 - Aspect Sequence Transitions
 - Aspect sequences for Underbraking
- Junction Signalling
 - Purpose of Junction Signalling
 - Choice of Route Indicator
 - Advance Routing Information Devices
 - Main Approach Free MAF
 - Main Approach Released from Red MAR
 - Approach Release from Yellow, with YY on the approach MAY-YY
 - Approach Release from Yellow, with Flashing Aspects on the approach MAY-FA
 - Main Approach Free, with Splitting Distant on the approach MAF-SD
- Future Train Control Systems
 - Automatic Train Protection
 - Automatic Train Operation
 - Traffic Management,
 - Driver Advisory System
 - Communications Based Train Control
 - European Train Control System ETCS
 - European Rail Traffic Management System ERTMS.
- Revision of common controls at different interlocking levels including:
 - Route Setting,
 - Aspect Clearance,
 - Approach Locking
 - Sectional Route Locking
 - Point Interlocking.
- Demonstrate how these common controls are implemented in standard Route Relay Interlocking RRI technology
- Solve complex control problems:
 - Last Wheel Replacement
 - Raynes Park Control

- Foul Track Circuits
- Opposing Locking Omitted
- Train Operated Route Release
- Identify controls required for complex overlaps
 - Phantom Overlaps
 - Time of Operation Locking
 - Swinging Overlaps

Assessment and Certification

Achievement of the Course Outcomes will be assessed by a theory assessment to demonstrate the underpinning knowledge gained.

The delegate's achievement of the Course Outcomes will be confirmed by a certificate which will be forwarded to the nominated client contact following the course.

Pre-Requisites

A well-prepared delegate is expected to be able to interpret signalling plans, demonstrate an understanding of standard interlocking principles, and complete control tables for simple routes and points.

Practical Information

Duration: 10 Days

Location: at our Derby training centre, or on your premises

Maximum number of delegates: 10

This course is produced and run by Signet Solutions.

For further information contact us:

enquiries@signet-solutions.com

www.signet-solutions.com

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Course Progressions

We offer many signalling technical courses, and it can be difficult to work out what's best for your needs. The following table will assist you.

*Development Courses in green text

These courses typically form the backbone of a career development path, and are usually taken in the order shown. *Available on an "open" basis, in which you can take individual places from our regular timetable.*

*Supplementary Courses in blue text

These courses provide supplementary knowledge about a specific technology or process. They can generally be taken on an "as needed" basis, without any particular order. *Available on a "private" basis, in which you sponsor the delivery of a full course. This works better for four or more delegates.*

This is just a quick guide – please consult our individual course specifications for more detailed information. Please ask us if you have any queries.

Signal Maintenance & Signal Installation	Signal Design	Signal Works Testing
Introduction to Signalling/ Basic Signalling 1 & 2	Basic Signalling Technology Intermediate Signalling Technology Layouts Intermediate Signalling Technology Control Tables Advanced Signaling Technology	Introduction to Signalling/ Basic 1 & 2 Mod 5 - Test Assistant Mod 3c - Verification Tester Mod 3BL - Functional Tester Mod 4 - Functional Tester Mod 2 - Principles Tester Mod 1 - Tester in Charge
SMTH - Signalling Maintenance Testing Handbook Appreciation Route Relay Interlocking - Maintenance Interlocking Design Clamp Lock Installation Clamp Lock Maintenance Cable Jointing Supplementary Back Drives + Stretcher Bars EISS Electrical Installation Skills Electrical Principles Style 63 Points Installation Style 63 Points Maintenance Westpac MK111A Maintenance + Faulting HW100 Points Maintenance EBI Track 200/T121 Track Circuits Fault Finding Techniques Mechanical Signalling	Route Relay Interlocking + Faulting Route Relay Western Region E10k Circuitry Correlation Westpac MK11A - Design Location Design Project Level Crossing Design SSI Appreciation SSI Control Tables SSI Data Appreciation SSI Data Preparation Route Relay Interlocking - Mod 3BI Westpac MK11A - Testing	