

SALTLEY POWER SIGNAL BOX

British Rail's re-signalling scheme for the routes between Birmingham and the East Midlands was completed on August 9th/10th 1969, when the new power signal box at Saltley was opened.

The project involved the installation of the latest type of signalling equipment on a total of 243 route miles, 594 single track miles of railway between Derby, Nottingham, Trent Junction and Birmingham, at a total cost of £11.5m. Of this total £9.3m. was for re-signalling and the remainder for civil engineering work involved in the scheme.

With the completion of the new signalling system, the Saltley power signal box and two similar installations at Trent (Notts) and Derby, control all train movements throughout the area, replacing a total of 157 mechanical type signal boxes.

The new Saltley power signal box controls all train movements within an area bounded by Blackwell, Nuneaton Abbey St., Leamington, Bearley, Tamworth and Aldridge, a total of 90 miles, 210 track miles of railway. This includes routes which not only carry the heaviest freight traffic in the country, but also a considerable volume of passenger traffic. (See Appendix).

The main feature of the new Saltley power box is a 54-foot long signalling console which is located on the first floor of the building. The controls, and an illuminated track diagram of the area, are combined on a near-vertical panel on the console. Each of the 231 colour light signals, 76 position light ground signals, and the 139 sets of electrically operated points controlled from the Saltley power box is also represented on the track diagram, in its correct geographical position.

The old 'mechanical' type of signalling required the movement of levers to operate individual signals and points. In the new power boxes, the levers have been replaced by press buttons. The signalmen can set the signals on a long stretch of line merely by pressing the appropriate buttons. This sets and locks any points in or connected with the route required, proves the line clear where necessary, and clears the signals. A line of white lights appears on the diagram to indicate the route set up and these turn red as the train moves along the line.

A 2" x 1" cathode ray screen positioned at each signal shown on the diagram displays the code number of each train as it passes so that its position is always known.

The main signals throughout the area are of multi-unit colour light type. With multiple aspect colour light signalling, three or four lights are used to indicate in greater detail the running conditions on the line ahead. The signals, carefully sited on the track side at driver's eye-level, have a high powered intensity which has much greater penetration during bad visibility than the oil-lamps on the semaphore type of signal. This reduces the effect of fog on train working.

The signals are fitted with double filament lamps, the second or auxiliary filament being switched on automatically should the main filament fail. Alarm indications on the console inform the signalman of the failure.

British Railways Automatic Warning system is provided at colour light signals on the main passenger routes controlled from the new signal box. This equipment consists of a pair of inductors at the approach to each signal which react on receiver units on locomotives and multiple unit trains. If the signal is displaying a "stop" or "caution" aspect, a warning klaxon is sounded in the driver's cab, and the brakes are applied automatically unless the warning has been acknowledged by the driver. If the signal is showing a "clear" (green) aspect a distinctive bell is sounded in the cab.

The new Saltley power signal box is also the centre of a complex telecommunications network, with 410 telephones linked to it by a total of 139 miles of telecommunication cable, from various outside locations. Of these 225 are installed at signals to enable train drivers to communicate with the signalmen. An incoming call produces a visual display on the console of the signal number concerned.

The ground floor of the power signal box is largely occupied by the Relay Room which houses a total of 10,700 relays through which the new signalling system is operated. Accommodation is also provided on the ground floor of the building for telecommunications apparatus and batteries. There is also a workshop, a store, and a room for the staff.

The introduction of modern signalling with multiple aspect colour light signalling, continuous track circuiting, and the Automatic Warning system makes it possible for much longer sections of line to be controlled from one signal box, reducing considerably the number of signalmen required, and improving traffic regulation. This results in more efficient railway operation, and increases the capacity of the line.

The new Saltley power signal box which replaced 60 mechanical type boxes, is manned by a total of 28 men, including reliefs, divided into three shifts to cover the 24 hours.

The new signalling equipment was supplied and installed by Associated Electrical Industries - General Railway Signals Ltd., under the direction of Mr. A.A. Cardani, C.Eng., M.I.E.E., M.I.R.S.E., Chief Signal & Telecommunications Engineer, British Rail, London Midland Region.

Power Signal Box Saltley

The Saltley Power Signal Box, located on the site of the old Carriage and Wagon Sidings at Lawley Street, controls the lines by multiple aspect signalling and track circuit block working between the following points:-

Tamworth H.L. (inclusive) and Lander Street (inclusive)
Lander Street (inclusive) and Kings Norton (inclusive)
Bordesley Junction (inclusive) and Bordesley South (inclusive).
Lifford Station (inclusive) and Bournville Junction.
Birmingham New Street (exclusive) and Barnt Green M.L.Junction
(inclusive)
Barnt Green S.L.Junction (inclusive) and Redditch North(exclusive)
Kingsbury Stn.Jcn (inclusive) and Water Orton East Jn. (inclusive)
Whitacre Junction (inclusive) and Nuneaton Abbey Junction (exclusive)
Water Orton West Junction (inclusive) and Aldridge Jn. (inclusive)
Birmingham Moor Street (inclusive) and Leamington Spa (exclusive)
Tyseley South (inclusive) and Hall Green (exclusive).
Hatton North Junction (inclusive) and Bearley West (exclusive).
Hatton South Junction (inclusive) and Bearley West (exclusive)

The Power Signal box replaced the following manual Signal Boxes:-

Tamworth High Level	Stockingford Tunnel Sidings
Kettlebrook Sidings	Arley Colliery Sidings
Perrin & Harrisons	Arley & Fillongley
Kingsbury Branch Sidings	Shustoke
Kingsbury Station Junction	Whitacre Junction
Stockingford	Church Road Junction
Coleshill	Selley Oak
Water Orton East Junction	Bournville
Water Orton Sidings	Kings Norton
Water Orton West Junction	Northfield
Aldridge Junction	Halesowen Junction
Sutton Park	Barnt Green M.L.Junction
Park Lane Junction	Barnt Green S.L.Junction
Castle Bromwich	Moor Street
Bromford Bridge	Bordesley North
Bromford Bridge Esso Sidings	Bordesley South
Washwood Heath No. 5	Small Heath North
Washwood Heath Junction	Small Heath South
Washwood Heath No. 6	Tyseley North
Saltley Sidings	Tyseley South
Saltley Junction.	Solihull
Duddeston Road	Knowle
Lander Street Junction	Lapworth Station
St. Andrews Junction	Hatton North Junction
Bordesley Junction	Hatton South Junction
Camp Hill	Acocks Green Station
Tyseley Loce	Hatton West Junction
Kings Heath	Budbrook
Hazelwell	Warwick Station
Lifford Station Junction.	Warwick Avon Bridge.

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Shunting Frames, released from the new Signal Box or with equivalent controls are provided at the following places:-

Kingsbury Branch Sidings - To be provided for the branch line.
Arley Colliery.
Coleshill
Bromford Bridge (Esse Sidings)
Washwood Heath Nos. 1, 2, 3, 4, 5 & 6.
Lawley Street 'A'
Selly Oak
Kings Norton
Small Heath North
Tyseley Loco

Ground Frames, released from the new Signal Box are provided at the following places:-

Tamworth H.L.
Stockingford
Stockingford Tunnel Sidings
Daw Mill Colliery
Whitacre Junction
Water Orton East Junction
Castle Bromwich
Sutton Park
Washwood Heath Up Sidings
Camp Hill
Lifford Station Junction
Kings Norton
Halesowen
Bournville
Barnt Green M.L. Junction
Moor Street
Bordesley South
Small Heath North
Tyseley South
Solihull
Knowle
Lapworth Station
Budbrook
Warwick Station

On the running lines the adjacent Boxes working to the New Signal Box are:-

Derby Power Signal Box
Nuneaton Abbey Junction
Redditch North
Gloucester Power Signal Box
Hall Green
Leamington Spa
Bearley West
Birmingham New Street Power Signal Box.
Walsall Power Signal Box