

Shawford Junction Signalbox

By "SOUTH WESTERN"



Photo]

[T. B. Sands

Interior view of the signalbox at Shawford Junction

SHAWFORD JUNCTION SIGNAL-BOX is situated $2\frac{1}{2}$ miles south of Winchester, on the main London and Southampton line. The junction is fully halfway down the incline of 1 in 250 from the line's highest point at Litchfield Tunnel, 13 miles distant. To the north, just over 1 mile away, is St. Cross Signalbox, and to the south, at a distance of $3\frac{1}{4}$ miles, is Allbrook Signalbox, on the northern outskirts of Eastleigh. The line runs practically north and south, has no sharp curves, and allows, on the down road, high speeds to be reached.

Shawford Junction came into existence on October 1, 1891, with the opening of a link, $1\frac{1}{2}$ miles long, constructed and owned by the Didcot, Newbury & Southampton Railway under an Act of 1888, to connect the southern termination of its line near its station at Winchester (Chesil) with the main line of the London & South Western Railway near the 69th milepost from Waterloo. The D.N.S.R. was opened from Newbury to Winchester on May 4, 1885, but was com-

pelled to seek this outlet to the main line at Shawford instead of an independent route to Southampton, the completion of which was frustrated by financial and other obstacles. Northwards from Winchester, the D.N.S.R. was worked and maintained by the G.W.R., but the Shawford Junction line was worked and maintained by the L.S.W.R., and later by the Southern Railway. On January 1, 1923, the D.N.S.R. was absorbed by the G.W.R. under the Railways Act of 1921.

Three-quarters of a mile south of Shawford Junction is Shawford Station, beyond which four tracks run to Eastleigh. From east to west, they are named the down local, down main, up main and up local. The connections between the first two are 173 yd., and between the latter two 412 yd., south of the station platforms. The Chesil branch is single, becoming double at the junction. From the down branch road, a connection was opened in 1943 to join the down local line just south of Shawford Station. About the same time there was con-

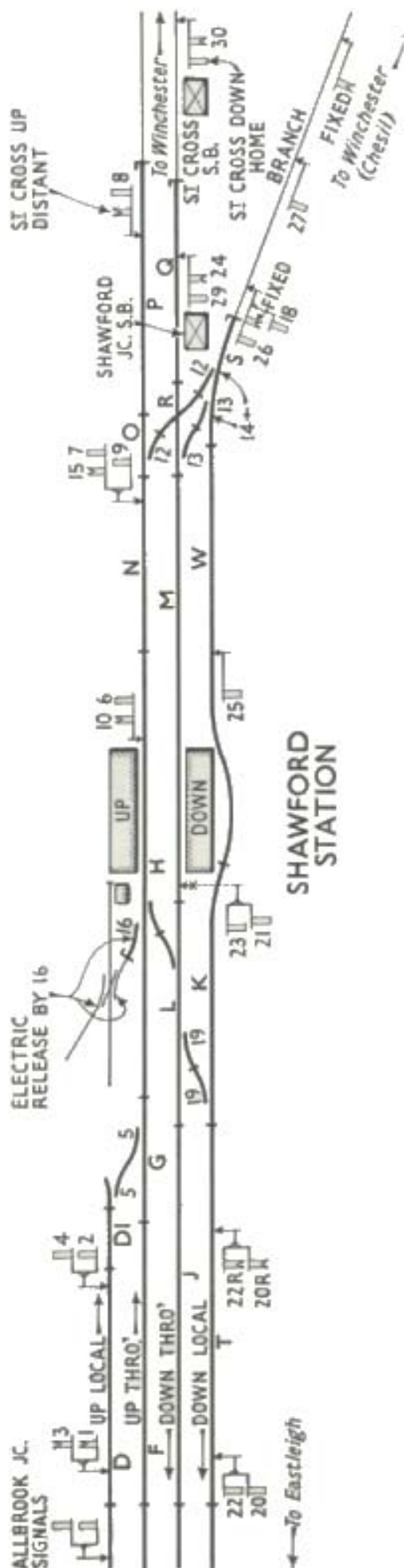


Diagram of the signalling and track layout at Shawford

structed the wartime emergency spur at Winchester Junction to connect the S.R. up main line with the G.W.R. near Worthy Down Station. There is no platform face at Shawford Station to the loop line. A crossover road exists at the south end of the station, where also is the connection on the up road with the yard. A long up siding extends southwards almost to the up local to up through points, the up local line ending in a sand drag.

Shawford Station was opened in 1882, and for many years there were separate signalboxes at the junction and at the station, and also intermediately at Otterbourne, between the station and Allbrook. An Act of 1923 authorised a widening on each side of the existing lines over a distance of 2 miles 68 ch. between Allbrook and Shawford Station. The work was started in 1926, but the new lines and present signalling arrangements by which Shawford Junction Box took over responsibility for what are, in effect, the block sections controlled by the other two boxes, were not completed and brought into use until March 16, 1931.

On the main line, Tyler's three-position block instruments are in use. On the down line, there are the Shawford Junction (29,30), Shawford Station (21,23,24), and the Otterbourne intermediate block (20, 22) signals; on the up road, there are the Shawford Station (1, 2, 3, 4, 6), the Shawford Junction (7, 9, 10), and the Compton intermediate block (8, 15) signals.

The down intermediates, local and through, distants and homes, are worked electrically, with the home and distant of each line operated by the same lever. Electric power also is used to work the station up homes and distants, and the junction down main distant (30) situated below St. Cross down home signal. All signals are upper quadrant semaphores. No. 5 (up local to up through) points and No. 19 (down through to down local) points are motor operated, the current for which is supplied by two hand generators; should either fail, the other can be switched on.

When the signalman wishes to move the points, he pulls the point lever over to the check-lock position, works the hand generator until the indicator shows "reversed" or "normal," depending on the route. This frees the check-lock,

and the lever can then be moved the full distance. Should the points fail, the signalman asks by telephone the person in charge at the station to go to the points affected, and from the adjacent box to remove a key handle which can be used for winding over the points. The withdrawal of this handle cuts off all current, and the current cannot be put on until the handle is restored. A flagman is then necessary at the appropriate signal as, with the current failure, no indication of the aspect of signals Nos. 2, 4, 21 or 23 is shown in the box, and they cannot be moved. A ground frame

No. 6 signal must be pulled before the appropriate distant can be cleared, movement of No. 5 points is adequately safeguarded. Rather unusually, the up local distant is cleared for the crossover movement.

There is sequential locking on both up and down roads, and none of the signals can again be cleared until a train has passed from the line or a quarter of a mile beyond the next signal in advance. Release of the down (20 and 22) and up (8) intermediate block home signals is controlled by Allbrook and St. Cross boxes respectively, which must peg "line clear"



Photo]

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Exterior of the signalbox, looking north, with the Winchester (Chesil) and Newbury branch on the right

at the station, released electrically by a lever in the box, operates the crossover road and the yard connection.

There is complete track circuiting between Allbrook Box, $3\frac{1}{2}$ miles to the south, and points on the up and down main lines about 1,100 yd. north of the box. A track diagram shows track occupation by means of "eyeballs." The home signals are track-locked by the appropriate track circuits. When No. 5 points are reversed, No. 4 signal, controlling movements over the crossing, cannot be replaced until track circuit H, in advance of the crossing, shows "occupied." With No. 5 points normal, set for the up through line, No. 2 signal is similarly restricted. No. 5 points, moreover, cannot be operated until No. 6 signal has been restored to normal. As

before they can be pulled. The appropriate distant signal must also be in the "on" position. Before these signals can be restored to normal, the signalman in advance must have placed his instrument to "train on line." Failure to do so backlocks the signal.

The pulling of No. 6 signal locks not only No. 5 points but also the facing points (12) in advance at the junction. Though, therefore, for an up branch train it is possible for the signalman to clear all his signals, in practice he waits till No. 6 signal is replaced before setting the road for the up branch and pulling the up main to branch signal (9). Before No. 9 can be pulled, a tablet must have been obtained from the Tyer's Patent No. 6 Block Instrument. This method of working ensures that the down main is

not blocked during the whole time an up branch train is approaching from Allbrook. The provision of a down branch outer home signal (27) allows acceptance of down trains simultaneously on the branch and on the main lines.

The branch train, if to run on to the down through road, is brought virtually to a stand at the outer home, which can be freed, should signals have been cleared for a down main-line train, only if the road is set for the down loop line. After the main-line train has passed, the points are reversed for the down branch to main road, and the appropriate signal (26) cleared. With two exceptions, all down branch passenger trains stop at

thus possible, at least in theory, to have as many as five up and six down trains under the box's control at the one time.

On the average summer weekday, a total of 142 trains are booked to pass; of these, 23 are freight; 57 trains call at Shawford Station. On Saturdays, the number is increased to 176, of which 12 are freight. There are six up and six down passenger trains, and three up and three down freight trains on the branch. On a busy Saturday, lever movements total well over 2,000 during the 17½ hours the box is open. A one-man box, it is normally closed from 11.15 p.m. to 5.45 a.m. On Sundays, it is open from 10.30 a.m. to 1.25 p.m., and from 3.40



The 12.42 p.m. Didcot to Southampton Terminus train on the down loop at Shawford Station, headed by Western Region 2-6-0 locomotive No. 6329

Shawford Station, which arrangement compels them to use the down main line at least as far as No. 19 points. Acceptance of trains from St. Cross is permissible with signals cleared for up or down branch trains.

An unusual operational feature is that, on the up road, "out of section" is normally given for a train before it is seen by the signaller. Special instructions authorise the acceptance of a following train as soon as the appropriate up home and distant signals have been replaced, track circuits F (if through line) or D1 (if local line) are clear, and track circuit H shows (or has shown) "occupied." The continuous track circuiting guards against the risk of part of a divided train still occupying the line; the "track" in these circumstances would lock the block in the rear. It is

p.m. to 8.45 p.m. When the box is closed, the block section is from St. Cross to Allbrook.

Perhaps the most interesting feature in the working of the box is the taking of decisions as to the precedence of up trains. The next refuge loop for freights is at Wallers Ash, 7¼ miles to the north, on a rising gradient of roughly 1 in 250 all the way. On weekdays, the problems do not arise to the same extent as on busy summer Saturdays, when a rapid decision has often to be made as to priority. Several factors need consideration: whether a connection has to be made at Winchester; whether a train for Alton should be run first, as the line from Winchester Junction is single, and schedules are arranged for the crossing of trains at specified points; whether to

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run a Chesil-bound train beyond signals Nos. 2 or 4 and risk "blocking" the up line, especially if other fast trains are due, or if a down Chesil train is running late.

One of the main problems with down traffic is in endeavouring to get down stopping trains on to the down local line in time to clear the down through signals for following fast trains. Not uncommonly, the fast is checked by distant signal No. 30 because a local train has been stopped at the station. Had Shawford Station down platform

been an island, and had there been points from the down through to local lines near the signalbox, the working of such traffic could be carried out more expeditiously. Such are only some of the daily problems besetting the signalman. With extra traffic, numerous boat trains to and from Southampton Docks, and working of empty stock, his job, like that of most signalmen, is no sinecure.

In conclusion, the author would like to express his thanks to members of the Southern Region staff for so kindly making a great deal of information available to him.