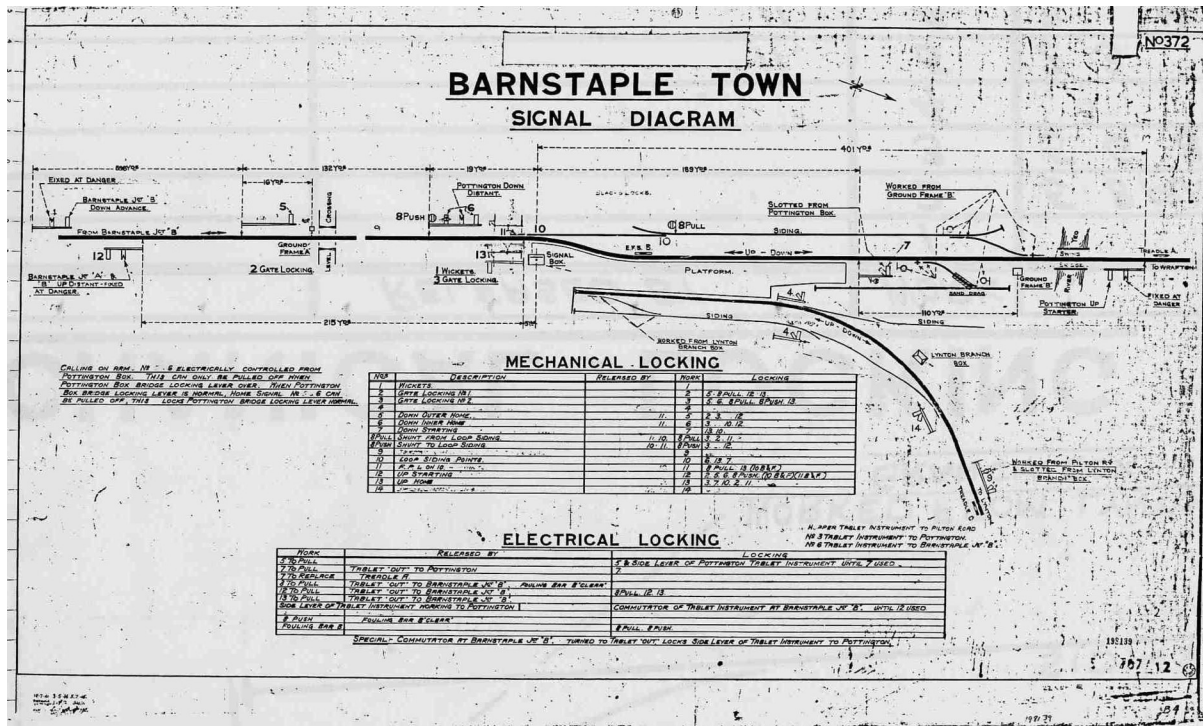


BARNSTAPLE TOWN

Notes on an ex-BR(S) Signal Box Diagram

These notes relate to a copy of a signal-box diagram for **Barnstaple Town** provided some years ago to the Signalling Record Society (SRS) from the microfilmed records of British Railways (Southern Region) (BR(S)). A scanned image of reduced quality is included in this document for ease of reference, but access to the original would be required for a more detailed study of some of the items mentioned below.



Background Information

Barnstaple Town station was opened in 1898 as a new joint station for the London & South Western Railway (L&SWR) and the Lynton & Barnstaple Railway (L&BR). It was inspected for the BoT by Col Yorke on 4th May (L&BR installation) and 5th May (L&SWR) and opened on 16th May, although the Inspection Report was not issued until 19th May. The diagram relates to the L&SWR signal-box (located at the south end of the station) which controlled only the standard-gauge L&SWR line from Barnstaple Junction to Ilfracombe; the separate narrow-gauge L&BR had its own signal-box at the north end of the station. At some unknown date the L&BR box was down-graded to ground-frame (GF) status, the Electric Train Tablet (ETT) instrument for the single-line section to Pilton was transferred to the ex-L&SWR box, and the interlocking in the latter box was modified to provide it with slots on all the ex-L&BR running signals. (It is *assumed* that all these changes took place after the Southern Railway (SR) acquired the L&BR in 1923, and there is circumstantial evidence from SR Signal Instruction 4a/1925 that it had occurred by March 1925.) The L&BR was closed completely in September 1935 and lifted not long afterwards.

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At the north end of the station there was a standard-gauge siding on the Up side of the L&SWR line, with an adjacent narrow-gauge siding off the L&BR; these two sidings were used for goods transfer traffic between the two railways. The standard-gauge siding was abolished in 1940, but the facing point leading towards that siding was retained to act as a safety trap for Pottington swing-bridge. The loop siding on the Down side of the L&SWR line was removed in January 1964. In late 1967 the entire line from Pottington to Ilfracombe was reduced to single track, but Barnstaple Town signal-box remained as a block-post with Electric Key Token (EKT) to Barnstaple Junction 'B' and One-Engine-in-Steam (OES) with wooden 'train staff' to Ilfracombe. The interlocking at Barnstaple Town was altered and a new diagram (S3519) was produced by BR(Western Region).

The author is aware of a number of published signal diagrams for Barnstaple Town which appear to have originated from the SRS or the late George Pryer (GAP) at differing times. Most attempt to portray the installation essentially in its 1923-35 form, but there are a number of subtle differences between them. At the present time it is difficult to determine which, if any, of those diagrams provides a completely accurate representation of Barnstaple Town for any one specific period.

For clarification, and to avoid unnecessary repetition, unless specially stated otherwise all further references in this document to signal-box, signals, sidings etc will relate to the ex-L&SWR standard-gauge installation. Details relating to the original 1898 L&SWR installation are based largely on information from National Archives file MT6/844/8 supplied to the author by a third-party and acknowledged with thanks. Reference has been made also to L&SWR Instruction 118 of 1898 which dealt with the opening of the new station and signal-box.

Detailed Comments on Diagram.

1. Date. At first glance the diagram would *appear* to date between 1923 and 1935, as it shows the L&BR still in place with its signals slotted from the SR box. Yet the diagram has amendment dates from the 1940s in the bottom left-hand margin, the 'West' box at Barnstaple Junction has been re-designated as 'B' (a change which took place in October 1949), the sand-drag (provided after closure of the transfer siding) is in place at the north end, and there is evidence of a BR(W) 'S..../12' number in the bottom right-hand corner. All these items suggest that the diagram had been maintained until at least the early-1960s, but why then did it continue to show so much of the former L&BR installation? Had someone perhaps dutifully carried out various amendments at different times after 1935 without realising that the diagram had not been amended previously to reflect the closure of the L&BR?

The 'negative date' of the diagram in the bottom right-hand corner *appears* to be 1917. Given that the diagram has 'residual traces' of items known to have existed in the original 1898 installation, but subsequently altered at an unknown later date (but certainly by *circa*-1925), this does help to provide a 'not before' date of 1917 for such changes, which otherwise would not have left amendment traces. The reason for the new drawing is unknown, but it *may* not be any more significant than perhaps (say) the addition of the Electrical Locking table or simply replacement of a worn original.

2. Diagram Number. The diagram bears the number 372 in the top right-hand corner, but there are references to 343 in the amendment details in the bottom left-hand margin. There is evidence of a BR(W) 'S' number (7??) in the bottom right-hand corner, but it is believed that the replacement BR(W) diagram for the 1967 alterations was numbered S3519. Given that this diagram came from a BR(S) source, then the *assumption* is as follows:-

- original SR number was 343
- renumbered as S7?? when control passed to BR(W)
- renumbered 372 when control returned to BR(S)
- renumbered S3519 when control passed back to BR(W) again.

3. Slot levers. In the original 1898 installation lever 4 was the Down Distant, 14 was the Up Distant and 9 was a 'safety bar' situated between signals 5 and 6. (It is not known if these levers were already spare by the time that they were re-used for 'slots' on the L&BR signals, or were changed from their original functions for that specific purpose, but there is a *presumption* that the latter situation was the case.) Examination of the 'Released By' column in the Mechanical Locking table shows evidence of deleted entries for 4 and 14 that are consistent with their original use as distant signals.

However there is evidence also of deleted entries in the 'Locking' column, which is not something to be expected normally for distant levers. Those entries *appear* to show that 4 locked 14, 9 locked 14, and 14 locked both 4 and 9. All those entries would be consistent with the *assumed* locking requirements for the period when those levers worked slots on the L&BR signals (*see note below*). However, none of the entries for levers 4, 9 or 14 have any information in the 'Description' column, which – combined with the fact that the 'Locking' details have been erased – would suggest that the Mechanical Locking table has been amended *after* the closure of the L&BR in 1935. In which case, why are the slot numbers still marked against their respective L&B signals?

[**Note:** it is known that some L&BR empty stock trains were propelled from Pilton to Barnstaple Town, presumably to avoid the need to operate the L&BR GF for run-round purposes. It is *assumed* therefore, and there is some circumstantial photographic evidence to support this theory, that the interlocking between the L&BR signals was removed from the GF to permit this, thereby necessitating that the interlocking be applied instead to the slot levers in the ex-L&SWR box.]

4. Down Outer Home (5). This signal was renewed on 21-July-1925 (SR Signal Instruction 23/1925). The SI states that the existing 'C' and 'T' indicators (for the Permanent Speed Restriction over the River Taw viaduct) were re-fixed on the new post, and traces of what are *presumed* to be those circular indicators are evident on the diagram on either side of the lower part of the post. The PSR indicators were abolished on 15-April-1931 (SR SI 13/1931). The Down Outer Home was renewed again on 5-October-1948 (SR SI 37/1948).

5. Subsidiary Arms (5,6). When Col Yorke inspected the original installation on 5-May-1898 he requested the provision of subsidiary arms below the Down Outer Home (5) and Down Inner Home (6) signals to enable trains to be admitted to the platform if Pottington swing-bridge was 'open'. (The L&SWR reported in a letter to

the BoT dated 1-July-1898 that all the changes requested by the Inspector had been completed, but in fact these had taken place quickly enough to be included in L&SWR Instruction 118 of 1898 for the opening of the station on 16th May that year.) In each case the main and subsidiary arms on the same post were worked by the same lever by means of an electro-mechanical selector mounted on the signal-post. The selectors were controlled electrically by the bridge bolt lever at Pottington and determined which arm actually came 'off' when the signalman at Barnstaple Town pulled his respective lever.

The 'Calling On' arm under the Down Outer Home was abolished on 21-July-1925 (SR SI 23/1925) when the Down Outer Home was renewed. The 'Calling On' arm under the Down Inner Home remained in use until both it and the Down Inner Home were abolished as part of the 1967 alterations. The diagram shows the arm below the Down Inner Home and there is 'trace' evidence for the arm below the Down Outer Home. A careful examination of the block of text to the left of the Mechanical Locking table will show further 'trace' evidence where the text has been amended to delete entries for arm 5 and to change other words from plural to singular forms.

6. Safety Bar (9). In the 1898 installation there was a mechanical 'safety bar' installed about mid-way between the Down Outer Home and Down Inner Home signals and this was worked by lever 9. (A remnant of the erased '9' can be seen on the diagram close to the gap in the track.) Bearing in mind the alterations that would have occurred to the Mechanical Locking table for the changes relating to the later 'slot' levers, it would appear from the residual traces in the table that the reversal of lever 9 was required as a release for levers 8PULL and 13. (One may *presume* that, when the lever was reversed, the bar lifted and then fell again.) There is some evidence, but less clear, that lever 9 was locked by the use of 5, 6 or 8PUSH.

[**Note:** it is unclear why this safety bar was provided. The only other installation with which the author is familiar was at Glastonbury, where there was a safety bar located between the Up Home and the loop facing points some distance in advance. In that installation the Up Home was released by the bar, which in turn was released by the FPL for the points, so it provided a 'route locking' facility to keep the points locked after a train had passed the Up Home. Clearly a similar situation did not exist at Barnstaple Town in the Down direction. By contrast, in the Glastonbury example the Down Starting signals which lead over the loop points in a trailing direction were not interlocked with the bar at all.]

7. Loop Siding Points. In the 1898 installation the facing point leading into the loop siding was worked by lever 10, but the trap point at its exit was worked by lever 11. Both points had Black's 'economic' FPLs and traces of the deleted phrase '*Blacks Locks*' can be seen on the diagram just above those points. (A similar arrangement existed at the north end of the loop siding, controlled from GF 'B'.) It is not known why this lever arrangement was used, nor when it was altered, nor whether the alteration took place as part of some overall package of locking changes concurrent with the provision of the 'slot' levers.

In 1898 there was a mechanical fouling bar (MFB) on the platform line, worked by lever 10, but later this was replaced by an independent electric fouling bar marked as EFB 'B' on the diagram. One may *presume* that the original MFB served to prevent

reversal of lever 10 if the siding connection was fouled by a train on the platform line. However it is clear from the Electrical Locking table in the diagram that the later EFB had a different function, namely to lock lever 8 for the associated ground-signals. It is curious to note that, according to the Electrical Locking table, although the EFB locked both 8PULL and 8PUSH functions specifically, only 8PUSH is listed with the relevant 'Released By' requirement for the EFB to be 'clear' – there is no similar mention for 8PULL.

8. GF 'B' Ground Signals. In the original 1898 installation there appear to have been five separate ground-signals worked by GF 'B'. Between the GF and the swing-bridge there were two ground-signals facing to Up trains, one each side of the single-line, which were selected by the lie of the facing point leading into the loop siding; one signal read into the siding, the other ahead on the main line towards the platform. On 14-November-1926 (SR SI 38/1926) one signal was abolished and the other then worked for both routes, but the SI wording is contradictory as to which actual signal remained. Subsequently SR SI 14/1945 recorded that the remaining ground-signal, and the ground-signal reading out of the loop siding to the single-line, "*have been*" abolished.

There was a ground-signal reading out of the transfer siding, and another signal reading into the siding, the latter situated adjacent to the platform line near the base of the Down Starting signal. Both ground signals were abolished on 3-April-1940 (SR SI 6/1940) at the same time as the transfer siding. There is photographic evidence that at some unknown date (if not in fact original) an additional ground-signal, facing to Down trains and reading forward on the platform line towards the swing-bridge, was installed in the 'six-foot' between the platform line and loop siding, level with the Down Starting; this ground-signal was abolished on 8-July-1945 (SR SI 18/1945).

The diagram omits any ground-signal north of the ground-frame, and also the one in the 'six foot' by the Down Starting, yet shows all the others, so clearly there is some inconsistency here and it would be difficult to make an accurate assessment of the diagram date from that detail. No evidence has been found yet to suggest that any ground-signal was in fact mounted *on* the post of the Down Starting, as shown on the diagram, but – purely as speculation – it *might* have been a *post*-1940 change.

9. Sand Drag. The drawing marks a sand drag as part of the crossover connection to the up side 'transfer' siding, in a location which clearly makes the crossover unusable. According to SR SI 6/1940, the transfer siding and its associated ground signals were abolished on 3-April-1940, but the facing point on the main line was left in place to lead to a 40-feet sand drag. This is another example of a *post*-1935 amendment to the diagram which is incomplete, as the sand drag has been added but neither the siding nor its shunt signals have been erased.

[**Note:** there are some published copies of GAP/SRS diagrams which show the sand drag at the end of a slip connection across the transfer siding, but the author believes that to be erroneous. There is no map evidence for such an arrangement and surely it would have been impractical prior to abolition of the transfer siding.]

10. L&BR Down Starting signal. There are two Down Starting signals shown for the L&BR line, both slotted by lever 4. The original location of the Down Starting signal

was on the platform side of the platform line, but at some unknown date that signal was moved to the outside of the run-round loop siding. Then on 28-August-1929 (SR SI 33/1929) the signal was renewed and re-located on the platform, where it remained until 1935. There is no known photographic evidence, nor anything in SI 33/1929, to suggest that two separate signals were in use at any time, nor does there seem to have been any need for such an arrangement. It is *assumed* therefore that this is simply a drawing error.

11. L&BR FPLs. The L&BR used 'economic' facing point locks. A FPL is shown on the facing point close to the L&BR's Up Home, which leads into the run-round loop. There was also an FPL on the facing point close to the L&BR's Down Starting, which lead into the 'transfer' siding, but that is **not** shown. A FPL is shown also on the trailing point of the release crossover in the platform road, but there is no photographic evidence for that, nor would it appear to have been necessary. The reasons for these apparent inconsistencies on the diagram are not known.

12 L&BR Functions. The diagram marks specifically that the engine release crossover points are "*worked from Lynton branch box*", yet there is no similar annotation for the points for the 'transfer' siding or at the entrance to the loop. Likewise, the diagram marks that the lower ringed arm under the L&BR's Down Advanced Starting was "*worked from Pilton Rd and slotted from Lynton branch box*", but there is no equivalent annotation for the working of the slots on the Down Starting and Up Home from the ex-L&BR box.

A close examination of the diagram suggests that there had been a further instance of the phrase "*worked from Lynton branch box*" written in the space just below, and to the right of, the L&BR signal-box. This has been deleted along with the various 'arrows' which appear to have led from it towards the other L&BR signals and points. It is *assumed* therefore that this is another example of the diagram having been subject to an incomplete amendment at some *post*-1935 date.

13. L&BR Down Advanced Starting. This signal, slotted by lever 9 in the ex-L&SWR box, was slotted also by Pilton as its Down Home. It is *believed* that slotting by both the L&BR box and Pilton existed prior to 1923, in which case the addition of the slot by '9' meant that subsequently the signal was slotted by three boxes.

The lower ringed arm was added on 30-August-1927 (SR SI 22/1927). It is unclear whether the figure '9' against the signal is meant to apply to both arms, or just the upper one, but there are faint traces of markings which *could* support the former arrangement. Certainly it has been *assumed* previously that the ringed arm also would have been slotted by '9' and therefore had three slots.

[The ringed arm was used by Pilton to control the diverging route into the yard there, rather than as any form of subsidiary 'draw ahead' signal. When both the Barnstaple boxes had cleared their slots the selection of whether the upper or lower arm was lowered would have been governed by Pilton box.]

It is curious therefore that the lower arm alone is marked specifically "*worked from Pilton Rd and slotted from Lynton branch box*", as use of the term 'worked' tends to indicate that the signal is **not** controlled by the box on whose diagram it appears (in

this case, the ex-L&SWR box). It is *possible* therefore that in fact lever 9 had no control over the ringed arm, but in that case one must question why it was that the signal was slotted from the L&BR box (given that this slot must have been provided in 1927 or later) but not the ex-LS&WR box which was now the block-post. It is possible of course that interpretation of the available information has been confused by another example of a partial amendment.

14. Treadle 'A'. This treadle released a back-lock on lever 7. The treadle is shown on the diagram simply as being somewhere north of the swing-bridge. On an early GAP drawing it is shown as being between the south end of the swing-bridge and the facing point into the north end of the loop siding, but it has not been possible to find any 'trace' evidence on the SR drawing. A 1960s BR(S) diagram for Pottington signal-box includes a treadle identified as 'C' almost directly in front of GF 'B'. The precise position of this treadle therefore remains unclear.

15. Treadle 'C'. This treadle is marked on the L&BR line in advance of the Down Advanced Starting signal. Its purpose is unknown, as there is no other reference to it on the diagram, so it is unclear whether it served a function at Barnstaple Town or Pilton or both. It is *possible* that it may have been added in SR days to release a back-lock on the Down Advanced Starting slot 9, and therefore could have been listed in a deleted entry in the Electrical Locking table (see comments elsewhere in these notes about the Electrical Locking table).

16. Mechanical Locking Table. Because of the number of alterations which must have been made to the locking tables over time, it is difficult to make an accurate judgement about all of the contents which appear to have been modified at some stage. However, apart from the various comments made elsewhere in these notes regarding locking, some further *speculation* may be in order.

For both 8PULL and 13 the 'Locking' entry for '2' is out of the normal ascending sequence and *appears* therefore to be a latter addition (re-using a space in the sequence in the case of 8PULL). Given that both signals used to be released by 9 (when that lever worked the safety bar), then *perhaps* it had been the case that 9 locked 2, so the direct locking between 8PULL/13 and 2 only became necessary after 9 was converted for use as a L&BR 'slot'? However there is less obvious evidence for any changes in the 'locking' entries for lever 2.

17. Electrical Locking Table. This shows evidence of some alterations in the BR period, as Barnstaple Junction West has been amended to 'B' in two places. There is a blank line (above the entry for 8PUSH) which has traces of a deleted entry where the first character in the 'Work' column *appears* to be '9'. As the entries in the lower part of the table appear to relate to later arrangements, then it is considered that any entry for '9' is more likely to date from the period when it was a 'slot' lever rather than the earlier safety bar. It is *suggested* therefore that this entry *may* have been *either*

9 To Pull	Tablet 'Out' to Pilton Road
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or

9 To Replace	Treadle 'C'
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It is difficult to decide which option is more likely, though the latter would account for the otherwise unexplained existence of treadle 'C'. It is not known for certain whether the L&BR had 'tablet out' releases on its section signals, but there is no reference to

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such a provision in a surviving SR diagram for Chelfham or any other L&BR material, and the relative simplicity of L&BR signalling would suggest that the feature was **not** provided.

18. ETT instruments. Block working to Pilton is listed as using 'Hopper No 1' instruments. This is a description unknown other than in SR documents about the L&BR line, whereas photographic evidence shows that in fact the L&BR used Tyer's No 7A instruments. Given the rarity of that pattern in the UK, it is *assumed* that the 'Hopper' description was a local term for what was otherwise an unknown type of instrument in the area.

19. Pilton. There are two places on the diagram where the signal-box at Pilton is described as 'Pilton Road' or 'Pilton RD', whereas other documents of the SR era refer to it as 'Pilton Yard'. Although also described variously as 'Pilton Bridge' or just 'Pilton', no other instances of 'Pilton Road' are known.