

# LONDON & NORTH EASTERN RAILWAY

(SOUTHERN AREA).

## FINCHLEY CENTRAL

### BRINGING INTO USE NEW SIGNAL BOX AND INSTALLATION OF COLOUR LIGHT SIGNALLING.

On Sunday, 31st March, 1940, the existing signal box and mechanical signalling at Finchley Central will be dispensed with and substituted by a new power operated signal box and colour light signalling, in accordance with the arrangements shown on the accompanying diagram. Circulars RR.330 and RR.331 are amended in accordance with the instructions shown in this Circular.

#### 1.—TRACK LAYOUT.

The track layout at Finchley Central will be rearranged to provide three platform roads as follows:—

- No. 1 platform road for trains to the Edgware single line branch.
- No. 2 platform road for trains to the High Barnet branch.
- No. 3 platform road for trains from the Edgware and High Barnet branches.

Electrified reversing sidings will be provided, one north of the station between the Up and Down loops from and to the Edgware branch, and one south of the station between the Down and Up main lines. The existing goods yards and sidings will be retained with some re-arrangement of the connections with the main lines.

The complete track arrangements are shown on the accompanying diagram.

#### 2.—TRACK CIRCUITING.

With the opening of the new signal box at Finchley Central track circuiting will be continuous on both roads between High Barnet and East Finchley inclusive.

On the Edgware branch the track circuiting will commence on the approach side of the Up junction home signal (NQ.9).

#### 3.—METHOD OF SIGNALLING.

Automatic and semi-automatic signalling will be in operation on all running lines between East Finchley and High Barnet.

On and from Sunday, 31st March, the main ground frame at Woodside Park will cease to be used as a signal box.

The Edgware single line will continue to be worked under the "one engine in steam" arrangement in accordance with the instructions shown on pages 171-172 of No. 4 Supplement to the Appendix.

#### 4.—NEW SIGNAL BOX.

The new signalling at Finchley Central will be controlled from a 71-lever power frame with miniature levers of the full-stroke type, located in a new signal box situated on the west side of the line, south of the station. This signal box will be open continuously on weekdays and Sundays.

(a) The numbers of all stop signals will be preceded by the letters "NQ."

(b) All points will be of the electro-pneumatic type.

(c) All track circuits in the area controlled will be indicated on an illuminated diagram.

(d) The Danger aspect of all signals will be indicated by the illumination of a red visual, in the lever plate, behind the lever. In the case of signals NQ.9, NQ.17 and NQ.28, which are equipped with junction indicators, an indication of the diverging route will be given on the illuminated diagram.

(e) The normal and reverse positions of points will be indicated by the illumination of "N" and "R" visuals respectively in the lever plates behind the levers.

(f) Point levers will be equipped with electric locks which will prevent the levers being moved unless the appropriate track circuits are unoccupied and which will prevent their being moved beyond the half-way position until the indications are correct.

(g) Shunt signals will be equipped with electric locks which will prevent their replacement to normal until fouling track circuits are cleared and the indications are correct.

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## 5.—INSTRUMENT PANEL ON LOCKING FRAME.

The following apparatus will be provided on an instrument panel on the locking frame :—

- (i) Yellow visuals illuminated to indicate that the signal mains are alive.
- (ii) Switch for controlling the fog repeating signals.
- (iii) Voltmeter.
- (iv) Press button for siren.
- (v) Air pressure gauge.
- (vi) Switch for dimming illuminated panel.
- (vii) Clock.
- (viii) Clock control visual unit.

## 6.—CIRCUIT-BREAKERS IN SIGNAL MAIN.

Circuit-breakers in the signal main will be provided in the transformer room and access afforded to them through windows in the south wall of the transformer room. Signalmen should familiarise themselves with the position of these circuit-breakers and with the method of operating them as they may be called upon to reset them at the request of the Signal Engineer's Department.

## 7.—TELEPHONES AND TELEGRAPH INSTRUMENTS.

(a) A telephone panel will be provided on the locking frame and will comprise a number of visual and key units in addition to two hand micro-telephones, bridge plugs and emergency ringing current generator.

In addition to the bell warning, an opal visual will be illuminated for all incoming calls and again illuminated as the calls are cleared.

A telephone key will be provided in each unit, the centre position being the normal position. The key must be operated upwards when it is desired to operate No. 2 hand micro-telephone and downwards for No. 1.

A visual will be provided and will be illuminated to indicate that the ringing current is available. When this visual is not illuminated, the emergency ringing generator (which is only available for No. 1 circuit) must be used.

(b) The following telephone circuits will be available in the signal box :—

- Line to Leicester Square Traffic Controller (No. 320).
- Automatic telephone No. 6210.
- Local telephone to East Finchley signal box.
- "    "    "    Finchley Central platform.
- "    "    "    West Finchley platform.
- "    "    "    Finchley Central substation.
- Local telephones to High Barnet, Totteridge and Woodside Park.
- Local telephone to Mill Hill East.

(c) The existing single needle telegraph instrument will be transferred to the new signal box.

## 8.—TYPES OF SIGNALS.

All running stop signals will be of the two-aspect (red and green) long range colour light type.

Shunt signals will be of the ground disk type with external floodlighting, or of the two-aspect short range colour light type.

All running stop signals and most shunt signals will be equipped with electro-pneumatic trainstops of the U.P.T.B. standard type.

Repeating signals may be of the long range two-aspect (yellow and green) type or short range two-aspect type, as circumstances require.

Fog repeating signals of the short range two-aspect type with the letter " F " in black on the yellow aspect will be provided approximately 400 feet in the rear of all running stop signals and will be switched on when required during bad visibility & for testing purposes.

Repeating and fog repeating signals will bear a number corresponding to the number of the stop signal they repeat, prefixed by the letters " R " and " FR " respectively.

Distant signals will be of the externally floodlighted disk type and will take the form of a black swallow-tailed bar on a yellow ground. They will be provided with a plate bearing the name of the signal box from which they are controlled and the description " Outer," or " Inner " as the case may be.

Junction indicators will be provided as required at junction signals (see Rule 35, clause (c)).

## 9.—DISTANT SIGNALS.

The following distant signals for Finchley Central will be provided and will be lowered when all relevant stop signals are lowered as shown below :—

Distant signal.	Controlled by signals.
Finchley Central Down outer distant (under signal NP.13).	NP.13, NQ.30, NQ.29, NQ.28 (with 20 points reversed, NQ.17).
Finchley Central Down inner distant (under signal NQ.28).	NQ.28 (with 20 points reversed NQ.17).
Finchley Central Up outer distant (under signal A.203B, West Finchley inner home signal).	A.203B, NQX.201, NQ.2, NQ.3, NQ.12, NQ.5.
Finchley Central Up inner distant from High Barnet (under signal NQ.3).	NQ.3, NQ.12, NQ.5.
Finchley Central Up outer distant signal from Edgware branch.	NQ.9, NQ.12, NQ.5, with 49 points normal.
Finchley Central Up inner distant signal, Edgware branch.	NQ.12, NQ.5.

## 10.—AUTOMATIC SIGNAL APPROACHING CONTROLLED AREA.

West Finchley southbound starting signal, NQX.201, the automatic signal in rear of Finchley Central Outer Home signal NQ.2, is provided with a telephone communicating with Finchley Central signal box. This signal must be regarded as a semi-automatic signal and the provisions of Rule 81, clause (l) will apply.

## 11.—SHUNT SIGNALS.

The following shunt signals will be provided :—

Signal No.	When lowered applies to movement to	Legend displayed on Route indicator.	Signal No.	When lowered applies to movement to	Legend displayed on Route indicator.
36	No. 2 platform ... ..	—	54	No. 35 road (south reversing siding)...	1
	No. 1 platform ... ..	—		Signal NQ.61 ... ..	2
40	No. 2 platform ... ..	—	59	No. 1 platform ... ..	1
	No. 1 platform ... ..	—		No. 2 platform ... ..	2
No. 28 road ... ..	—	No. 3 platform ... ..		3	
43	No. 3 platform ... ..	1	61	No. 36 road ... ..	—
	No. 2 platform ... ..	2		62	Shunting neck ... ..
	No. 1 platform ... ..	3	Up line ... ..		2
46	No. 25 road (north reversing siding) ... ..	—	67	No. 1 platform ... ..	—
	47	Nos. 26 and 27 roads ... ..		1	No. 2 platform ... ..
Down loop to Edgware ... ..		2	68	No. 2 platform ... ..	—
No. 25 road (north reversing siding) ... ..		3		No. 3 platform ... ..	—
48	Nos. 26 and 27 roads ... ..	1	69	No. 2 platform ... ..	—
	Down loop to Edgware ... ..	2		No. 3 platform ... ..	—
	No. 25 road (north reversing siding) ... ..	3	70	Signal NQ.68 ... ..	—
51	No. 34 road ... ..	1		No. 34 road ... ..	—
	Signal NQ.5 ... ..	2			
53	No. 35 road (south reversing siding) ... ..	3			
	No. 34 road ... ..	1			
	Signal NQ.5 ... ..	2			
	No. 35 road (south reversing siding) ... ..	3			
	Signal NQ.61 ... ..	4			

Shunt signal NQ.69 will have a yellow normal indication and may be passed in the Caution position when the crossover leading to the Up road is normal, i.e., for movements into No. 33 road.

## 12.—TELEPHONES AT SIGNALS.

Telephones for communicating with the Signaller in Finchley Central signal box will be provided at the following signals for use by Drivers when detained at these signals or for other reasons, and by other employees when necessary :—

NQ.30, NQ.29\*, NQ.28\*, NQ.62, NQ.40, NQX.201, NQ.2, NQ.5, NQ.9.

\*—Both telephones on same line to signal box.

(See paragraph 17 for instructions for the use of these telephones.)

## 13.—REPEATING SIGNALS.

The yellow aspect of all repeating signals situated below stop signals will be extinguished when the stop signals above them are at Danger.

## 14.—WEST FINCHLEY—DISTANT SIGNALS.

(a) **Down line.**—A distant signal will be provided on the High Barnet branch approximately 150 feet north of the junction with the Edgware line and will be released by the following signals :—

A.200A, A.200B, A.204.

(b) **Up line.**—A distant signal will be provided under Woodside Park inner home signal NS.213 and will be released by signals :—

NS.213, NS.211, A.203A, A.203B, NQX.201.

## 15.—FOG REPEATING SIGNALS.

The stop signals for which fog repeating signals are provided and the location of the switches controlling such repeating signals are as follows :—

Location of Switch.	Controls Fog Repeating Signals for Stop Signals.
Finchley Central signal box ... ..	NQ.28, NQ.29, NQ.30. NQ.9, A.200A, A.200B. NQ.2, NQ.5.
High Barnet signal box ... ..	NU.1, NUX.242, A.237.
Totteridge (north end of Down platform) ... ..	NT.235A, NT.235B, NT.240. NT.232, NT.230.
Woodside Park (north end of Down platform) ... ..	NS.215A, NS.215B, NS.228. NS.213, NS.220B, A.203A. NS.220A, A.203B.

## 16.—PROVISION OF SWITCH LOCKS.

Switch locks of the ground lock type are provided on the handworked points in the Up Goods Yard and on the handworked points in the Edgware branch sidings north of the station. The operation of the switch locks will be in accordance with the instructions shown in paragraph 18.

## 17.—USE OF TELEPHONES PROVIDED AT SIGNALS.

(a) The following instructions must be strictly observed in connection with the use of the telephones provided at controlled signals :—

(i) In the event of a signal which is not applicable to the normal route of his train being lowered ~~out~~ the correct indication is not displayed by a junction or route indicator, the Driver must immediately on bringing ~~his~~ train to a stand at the signal, use the telephone and, when the Signaller has acknowledged the call by stating the name of his box, inform the Signaller as follows :—" Driver of Train No. — standing at signal No. — speaking. Wrong signal off." The Signaller must repeat this information, to check that he has heard correctly, and then instruct the Driver either to "Accept the signal and proceed," or "Wait until the correct signal is lowered," or "Hold on." When the Driver is instructed to "Accept the signal and proceed," he must repeat the message to ~~check~~ that he has heard correctly.

[For continuation see next page.]

## 17—contd.—USE OF TELEPHONES PROVIDED AT SIGNALS—continued.

(ii) In the event of a semi-automatic stop signal remaining at Danger, after the train has stood at it for two minutes, the Driver must use the telephone and, when the Signalman has acknowledged the call by stating the name of his box, inform the Signalman as follows :—" Driver of Train No. — standing at signal No. — speaking. Signal remains at Danger." The Signalman must repeat this information, to check that he has heard correctly, and then instruct the Driver either to " Proceed past signal No. — with caution to No. — signal (or to station)," or to " Wait for a hand signal," or to " Hold on." When the Driver is instructed to proceed, he must repeat the message to check that he has heard correctly.

(iii) In all cases the description " L.N.E." or " L.M.S." as the case may be, must be given before the words " Train No. —."

In the case of goods trains, ballast trains, light engines, etc., the description of such train must be stated, e.g. " Driver of No. — goods " (or " of ballast train " or " of light engine ") standing at signal No. —.

(iv) The Signalman must never acknowledge the call from a telephone by saying "All right." A Driver who is instructed to " Hold on " must remain at the telephone listening for further instructions, as it is not possible at all places for a Signalman to ring up a person at the signal. A Driver who is instructed to " Wait for a hand signal " must return to his train and await a hand signal from the Station Master, Signalman or other official before he moves his train. Any instruction or information communicated by the telephone must be clearly understood, and both the Driver and the Signalman must not terminate the conversation until they are sure that a clear understanding has been reached.

Where it is possible for the Signalman to ring back to the signal he must supplement the instruction " Hold on," by the words " I will ring you later." The Driver must then replace the telephone receiver and wait near the telephone until the bell rings. He must then go to the telephone and again state the number of his train and the number of the signal at which he is standing.

(v) Telephones provided at signals may be used in emergency to advise a Signalman of an accident or an obstruction.

(vi) A Driver must secure his train against movement by fully applying the brakes before leaving his train to use a telephone.

(b) Signals at which telephones are provided are distinguished by a " D " symbol fixed to the signal post as shown below and/or door of telephone cabinet painted black and white (striped).



## 18.—OPERATION OF SWITCH LOCKS.

(a) The function of a switch lock is to lock points mechanically in a desired position where it is necessary to prevent conflicting moves being authorized by the Signalman and the Shunter or where it is necessary to ensure that a train being worked from a station to a depot or vice versa is brought to a stand at the stop board or the outlet signal respectively. In the latter case the arrangements are such that it is not possible for the inlet or outlet signal to or from the reception road to be lowered and the switch lock released simultaneously.

(b) The switch locks at the Up Goods Yard and the Edgware branch sidings, are of the ground lock type and must be operated as follows:—

When it is necessary for the locked points to be used, the Signalman must reverse the lever controlling the switch lock, which will cause a sign at the switch lock to be illuminated to display the legend " lock free." The Shunter must then depress a foot plunger, situated by the point operating lever, thus energizing the ground lock and so permitting the points to be thrown. The foot plunger must be operated for every point movement.

When the Shunter has completed the desired movement or movements, he must replace the points to normal; the Signalman must then replace the switch lock lever fully to the normal position, which will extinguish the sign at the switch lock.

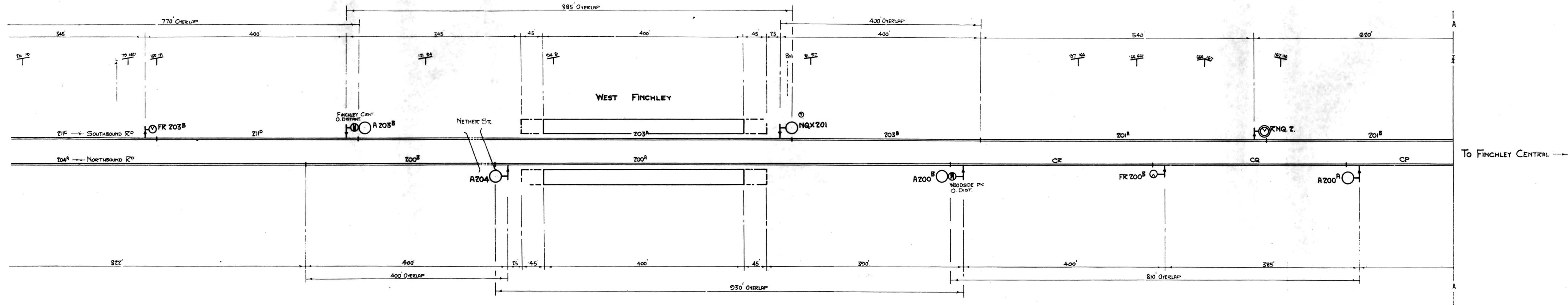
The Signalman cannot replace the switch lock lever to the normal position unless the switch lock is in the " locked " position : the Shunter cannot move the points from normal unless the switch lock lever is reversed. A red visual in the lever plate will be illuminated to indicate to the Signalman that the points are locked.

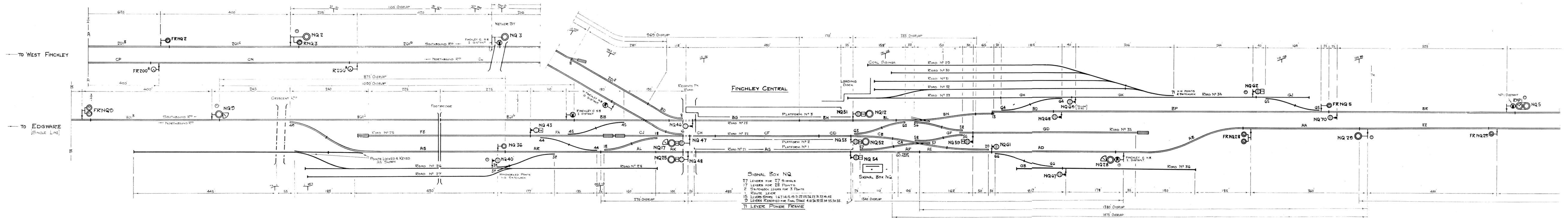
The telephone at signal NQ.62 may be used for communicating with the Signalman in connection with the Up Goods Yard switch lock.

V. M. BARRINGTON-WARD,

Superintendent

(D./N.L.E. Pad.).





SIGNAL BOX NQ

27 LEVERS FOR 27 SIGNALS

17 LEVERS FOR 28 POINTS

2 SWITCHLOCK LEVERS FOR 3 POINTS

1 ROUTE LEVER

15 LEVERS SPARE 1, 6, 7, 14, 15, 19, 21, 22, 23, 26, 27, 31, 37, 41, 42

2 LEVERS RESERVED FOR FINAL STAGE 4, 10, 24, 32, 33, 34, 35, 54, 55

71 LEVER POWER FRAME

