

ROMSEY SIGNAL BOX PROJECT

Operating Guide to the Box

Contents

Introduction

- 1) Description of Functions and Facilities
 - Signal Box Diagram and Track Circuits
 - Block Instruments
 - Lever Frame
 - Telephones
 - Train Register
 - Simulator
 - Outside Facilities

- 2) Reference Information for Operating
 - Copy of Signal Box Diagram
 - Lever Numbers and Locking Chart
 - Special Instructions
 - Bell Codes

- 3) Basic Method of Working
 - Redbridge to Kimbridge (Absolute Block)
 - Kimbridge to Redbridge (Absolute Block)
 - Eastleigh to Romsey (Direction Lever)
 - Romsey to Eastleigh (Eastleigh release, '17 free')

Introduction

Welcome to this historic Type 1 London & South Western Railway signal box. Despite its small frame of 23 levers, Romsey can be very interesting (and hectic) to operate in conjunction with an intensive timetable. Features include

- Double track junction with Absolute Block working to Redbridge SB and Kimbridge SB
- Single line with Direction Lever working from Eastleigh SB
- Sidings controlled by Romsey SB and by a ground frame
- Semaphore and colour light signals
- Mechanical and motor-worked points, including Facing Point Lock lever
- 'Shunt ahead' working over crossover points

This guide is written for near-beginners and for those with some experience, but limited local knowledge of Romsey SB. Everyone is very welcome to operate the Box. However, absolute beginners are advised to initially watch a

demonstration, which Project volunteers will be happy to arrange. Those with considerable signalling experience should, perhaps, read something else or, no doubt, can advise us on the finer points of signalling! We welcome any questions, comments, or views about your preferences for future operating events. Enjoy....

1) *Description of Functions and Facilities*

Signal Box Diagram

- Map of points and signals in area controlled by Romsey SB
- Lights/track circuits (red) are illuminated to show trains occupying sections of track
- Light (white): '17 free'. Illuminated when a train is accepted by Eastleigh SB – allows lever 17 to be reversed.

Block Instruments

- Communication with adjacent boxes. The bells/instruments are positioned on the block shelf
 - Left:* Redbridge SB, for Southampton
 - Centre-left:* Eastleigh SB (power box), also for Fareham
 - Right:* Kimbridge SB, for Salisbury/Andover
- Redbridge: bell + block instrument
- Kimbridge: bell + block instrument; adjacent is another bell for Redbridge
- Eastleigh: bell only. The 'block' is operated as follows
 - Train from Eastleigh:** reverse direction lever 6 to accept the train
 - Train to Eastleigh:** Eastleigh activates '17 free' light

Lever Frame

- Levers 3, 4, 5 only are connected to working signals/points. Apart from no. 4 'Demonstration Points', all levers work according to the track diagram. Note that most levers are shortened, reflecting extensive conversion to colour lights and motor points from the mid-1970s.
- **Colour scheme:**
 - Red – stop signals, shunting signals
 - Red (white stripe) – stop signal released by adjacent box (3, 13, 17)
 - Red/Yellow – home and distant signal*
 - Black – points*
 - Blue – facing point lock (FPL) (9)
 - Blue/Brown – ground frame release (14, 15)
 - Brown (white stripes) – direction lever (6), releases Eastleigh Down Advanced Starting

**NB The track diagram is not an exact replica for any one time in Romsey's history. It is close to the situation 1972-1975, after the line to Eastleigh had been singled, but before all running signals had been converted to colour light. Levers 5 and 20 are labelled 'home & distant', as they were once full colour lights were*

introduced. Given the mix of semaphores/colour lights on the diagram, practice would dictate that the distants would only come off once all relevant running signals were off. Lever 11, motor-worked single line points, is black, but arguably could be blue/black since it also works an FPL.

Telephones

- Communication with shunter at up sidings, ground frame, platform staff, 'Control', and any other centre you might care to imagine....
- Special codes can be used, e.g. from platform and shunting staff to alert Romsey SB of a train ready to depart.

Train Register

- To record bell codes sent/received, types of trains handled and movement times.

Simulator (in locking room downstairs)

- Communication from Redbridge/Kimbridge/Eastleigh, and from other staff/centres via bell codes, block instruments and telephone.

Outside Facilities

- Pavilion with tea/coffee, toilets, and TV showing activity in the Box – for group demonstrations and for people with a disability unable to access the Box.
- Section of track (rather rusty!) with working point and 5 working signals, 2 worked from a ground frame, also level crossing gates.
- Within 5 minutes walk: petrol garage with various facilities including tea/coffee, toilets and shop selling food/sandwiches etc.

Lever Numbers and Locking Chart

- The levers are mechanically interlocked to prevent conflicting moves being set up.
- The sequence of operating levers for basic moves is described later in the section 'Basic Method of Working'.
- The **commonly used** points and signals for through trains are highlighted in **bold**.

No	Decription	Colour	Requires and Locks
1	Down Main Outer Home & Distant	R/Y	11N
2	Down Main Inner Home	R	7, 10N
3	Down Main Starting	R(w)	15, 19N
4	<i>Demonstration Points</i>	<i>B</i>	
5	Down Branch Home & Distant	R/Y	7, 10N
6	Direction Lever from Eastleigh	Br(w)	17N
7	Down Junction Points	Blk	2, 8, 10N
8	Up Junction Points	Blk	7, 9, 16, 20N (<i>ro20</i>)
9	FPL on 8 (locks in reverse)	Blu	7N/7R (<i>lo</i>)
10	Crossover points (east)	Blk	2, 5, 7, 12, 16, 18N
11	Single Line Points	Blk	1N
12	Up No. 1 Siding Points	Blk	10, 16, 18N
13	Up Branch Advanced Starting	R(w)	
14	Up No. 2 Siding Ground Frame Release	Blu/Br	3, 10, 15, 19, 20N
15	Crossover points (west) GF Release	Blu/Br	14, 20N
16	Up Branch Starting	R	8, 9R; 10, 12N
17	Up Main Advanced Starting	R(w)	6N; 11R
18	Up Main Starting	R	8, 10, 12N; 9R
19	Down Main Shunt Ahead (draw ahead)	R(w)	3, 15N
20	Up Main Home & Distant	R/Y	10, 12, 14, 15N; 9R
21	Shunt from Up Main/Branch to Dn Main	R	8N/8R (<i>lo</i>); 10R
22	Shunt from Dn Main to Up Main/Branch	R	9, 10R
23	Shunt from No. 1 Up Siding	R	9. 12R

Key: N = lever normal 'back in the frame'

R = lever reversed 'pulled out'

ro = requires only

lo = locks only

Special Instructions

Trains must pass designated clearing points – and the home signal returned to ‘danger’/in the ‘on’ position - before another train can be accepted from the signal box ‘in rear’ (the box from which you had accepted the previous train). These clearing points are normally approx. ¼ mile in advance of the home signal (the first stop signal in the sequence of running line signals). The local safety elements are therefore that, in the event of a train passing the last stop signal of the box in rear at danger and continuing towards Romsey, the driver would a) pass the Romsey distant signal at caution, b) the Romsey home at danger, and c) would have a further ¼ mile ‘overlap’ in the event of failing to stop at the home.

- Clearing point for acceptance of Down trains from Redbridge is the near end of track circuit H
- Clearing point for acceptance of Up trains from Kimbridge is the near end of track circuit A
- Clearing point for acceptance of Down trains from Eastleigh is the near end of track circuit PG.

Bell Codes

Call attention: **1**

‘ILC’ Is line clear for:

<i>Class of train</i>	<i>Description of train</i>	<i>Code</i>
1	Express passenger	4
2	Ordinary passenger	3-1
3	Express parcels >90mph*	1-3-1
4	Freightliner Parcels/express freight >75mph*	3-2-5 3-1-1
5	Empty coaching stock (ECS)	2-2-1
6	Fully-fitted block/parcels Fully-fitted express freight	5 4-1
7	Express freight, partially fitted	1-2-2
8	Freight, partially fitted	3-2
9	Freight, unfitted*	1-4
10	Light loco	2-3

*Not included in Romsey timetable.

Bell Codes, continued

Note these two codes used for 'shunt ahead' with signal 19 and release 15:

<i>Description</i>	<i>Code</i>
Shunt into forward section	3-3-2
Shunt withdrawn	8

Other codes:

<i>Description</i>	<i>Code</i>
labelling	3-5
Last train incorrectly described	5-3
Warning acceptance	3-5-5
Line now clear re: regulation 4 for train to approach	3-3-5
Train an unusually long time in section	6-2
Obstruction danger	6
Stop and examine train	7
Train passed without tail lamp – to box in advance - to box in rear	9 4-5
Train divided	5-5
Train running away – in wrong direction - in right direction	2-5-5 4-5-5
Shunt train for following train to pass	1-5-5
Engine assisting in rear	2-2
Defective signal – distant - home	8-2 2-8
Opening box	5-5-5
Closing box	7-5-5

3) **Basic Method of Working**

Redbridge to Kimbridge

- *Redbridge: Call attention* 1;
Romsey acknowledges: 1

Redbridge: ILC for ordinary passenger train? 3-1;
Romsey acknowledges: 3-1
+ sets block instrument to 'line clear'

Approx 5 minutes later >>

Redbridge: Train entering section 2;
Romsey acknowledges: 2
+ sets block instrument to 'line blocked'

Romsey (to Kimbridge): Call attention 1
Kimbridge acknowledges: 1

Romsey (to Kimbridge): ILC for ord pass train? 3-1
Kimbridge acknowledges: 3-1
+ block instrument indicates 'line clear'

**Romsey: check no conflicting moves set up –
check levers 7, 10, 15, 19 normal;**

reverse levers 5, 3

Approx 5 minutes later >>

Train clears track circuit H >>

Romsey: lever 5 to normal

Romsey (to Redbridge): Train out of section 2-1
+ sets block instrument to 'normal'
Redbridge acknowledges: 2-1

Train passes Romsey SB with red tail lamp showing >>

Romsey (to Kimbridge): Train entering section 2
Kimbridge acknowledges: 2

Train passes down main starting (signal 3) >>

Romsey: lever 3 to normal

Approx 5 minutes later >>

Kimbridge: Train out of section 2-1
Romsey acknowledges: 2-1

Kimbridge to Redbridge

- *Kimbridge 1*
Romsey acknowledges 1

Kimbridge 3-1
Romsey acknowledges 3-1
+ block instrument to line clear

Later >>

Kimbridge 2
Romsey acknowledges 2
+ block inst to train on line

Romsey (to Redbridge) 1
Redbridge ack 1

Romsey (to Redbridge) 3-1
Redbridge ack 3-1
+ block inst indicates line clear

Romsey: check no conflicting moves set up –
check levers 7, 10, 12, 14, 15 normal;

9 to normal; reverse 8, 9; reverse 20, 16, 13

Later >>

Train clears track circuit A
Romsey: lever 20 to normal

Romsey (to Kimbridge) 2-1
+ block inst to train out of section
Kimbridge ack 2-1

Train passes Romsey SB with red tail lamp >>

Romsey (to Redbridge) 2
Redbridge ack 2
+ block inst indicates train on line

Train passes up branch starting (16) and advanced starting (13) >>

Romsey: levers 16 and 13 to normal

Later >>

Redbridge: 2-1
+ block inst to normal
Romsey ack 2-1

Eastleigh to Romsey/Kimbridge

- *Eastleigh* 1
Romsey ack 1

E'leigh 3-1
R'sey 3-1 + reverse lever 6

Later >>

E'leigh 2
R'sey 2 + lever 6 to normal -*indicates line blocked in E'leigh SB*

R'sey: check lever 11 normal;

reverse 1

R'sey (to Kimbridge) 1
Kimbridge ack 1

R'sey (to Kimbridge) 3-1
Kimbridge ack 3-1
+ *block inst indicates line clear*

R'sey: check levers 10, 15, 19 normal;

reverse 7; reverse 2, 3

Later >>

Train clears track circuit PG

R'sey: lever 1 to normal

R'sey (to Eastleigh) 2-1
Eastleigh ack 2-1
(*no block inst/indication*)

Train passes Romsey SB with red tail lamp >>

Romsey (to Kimbridge) 2
Kimbridge ack 2

Train passes Dn Main Inner Home (2) and Dn Main Starting (3) >>

Romsey: levers 2 and 3 to normal; 7 to normal

Later >>

Kimbridge 2-1
+ *block inst indicates normal*
Romsey ack 2-1

Kimbridge/Romsey to Eastleigh

- Method from Kimbridge - as for Kimbridge to Redbridge
Romsey to Eastleigh....

Romsey (to Eastleigh): 1

E'leigh ack 1

Romsey (to Eastleigh): 3-1

E'leigh ack 3-1

+ light illuminated '17 free'

Romsey: check lever 9 reversed;

reverse levers 20, 18, 17

Train passes Romsey SB with red tail lamp >>

Romsey (to Eastleigh): 2

E'leigh ack 2

Train passes up signals 20, 18, 17

Romsey: levers 20, 18, 17 to normal

Later >>

E'leigh: 2-1

+ '17 free' light extinguished

Romsey ack 2-1
