ROUTE SETTING TYPE RELAY INTERLOCKING (BRITISH)

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STUDY OF ROUTE SETTING TYPE RELAY INTERLOCKING (BRITISH)
(With Self Restoring type Push Buttons)
(Specification No. IRS S-36-87/96)

In route setting type relay interlocking system, route is set automatically when a Signal button (Entrance) and concerned Route button (Exit) are pressed simultaneously operates all the points the route, Overlap and Isolation are set automatically to the required position. Then the route is initiated and gets checked & locked and then the strip light indications appear throughout the route up to the next stop signal and also overlap where ever necessary. Under normal conditions, no route strip light indications appear on the panel.

The passage of the train is indicated by changing of White light to Red light as the train approaches. On clearing of the track the Red light changes to White again. After the arrival of train, the locked route gets released immediately after the train clears the back lock tracks.

In case of any track circuit fails, Red indication appears on the demarked track circuit portion. Correct setting of point is indicated by the Yellow steady point strip light and point failure status indicated by a flashing indication at the corresponding position of point (N or R).

Operation procedure:

a) Automatic point operation

Automatic point operation is possible by route setting i.e. with pressing concerned GN & UN buttons.

b) Individual Point operation

i) Normal to Reverse operation: Press the concerned point button WN along with RWWN common Point group button for Reverse operation.

ii) Reverse to Normal operation: Press the concerned point button WN along with NWWN common Point group button for Normal operation.

iii) Emergency Point operation: When point zone track circuit is failed press EWWN (emergency common point operation button) and concerned WN (point button) release EWWN button and press NWWN/RWWN.

c) Emergency Full route cancellation:-

i) In case of Approach track is clear - Route is released immediately without any time delay after pressing Signal button (GN) and EGGN button.

ii) In case of Dead approach or Approach track available and is occupied - First throw the signal to danger by pressing concerned signal button (GN) and EGGN button (Emergency signal cancellation button). Then press the concerned Signal button (GN) along with EUUYN (Emergency Route cancellation button) and release the pressed buttons. A flashing indication appears at the EUUYN button and after a time delay of 120 seconds the full route gets cancelled. This cancellation is registered by the Emergency route cancellation counter.

d) Emergency Sub-route cancellation:-

To cancel the Sub-route (Point No 18), insert and turn the sub-route cancel key and then press the concerned Point Button WN (18 WN) along with EUYN button (Sub-route cancellation button) and then release the pressed buttons. Sub route gets cancelled immediately. This cancellation is registered by the Emergency Sub-route cancellation counter.

e) Calling 'ON' Signal Initiation:-

For Calling ON signal initiation, concerned Calling ON track should be occupied. This is a three button operation. Now press concerned Signal button (GN) continuously and press COGGN button (calling on initiation button).Then release COGGN button and press concerned Route button (UN) without leaving GN button. Then the route gets initiated and flashing indication appears near the COGGN button. After a time delay of 120/60 seconds Calling ON signal gets cleared. This operation is registered by the 'Calling ON initiation counter'.

f) Calling 'ON' Signal cancellation:-

To put back the Calling ON signal to ON aspect, press the concerned Signal button (GN) and press EGGN button. Then press GN button and the 'Calling ON cancellation button'. A flashing indication appears at the 'Calling ON cancellation button'. After a time delay of 240/120 seconds 'Calling ON cancellation' carried out and route gets released. This operation is registered by the 'Calling ON cancellation counter'.

SM's key serves the purpose of locking the panel. No unauthorised operation is possible without SM's key. It is necessary to insert the SM's key and turn to reverse position for all the operations in the panel except throwing signal to danger.

1) Study the construction of different buttons and note your observation the following :

Observation	Signal (Entrance)	Point	Route (Exit)	Full Route Cancellation	Sub Route Cancellation
a) Colour of the button					
b) Location of button on the panel.					
c) Designation of button					

2) What are the operations necessary to:

a) Set a route:

b) Operate points only :

c) Emergency point operation:

d) Throw a cleared signal to danger:

e) Cancel a route already set without approach track occupied:

f) Cancel a route already set with approach track occupied:

3) Study the panel, operate, observe and record the indications that are displayed on the panel.

Operations	Signal	Observation of indications in panel		Remarks
		Point	Track	
a) When no route has been initiated.				
b) When 20BT down operate point No. 20				
c) When point 20 has not correctly set in Normal position with point tracks clear.				
d) Set S1-DMT and cancel the above route				
e) Set S30-UMTand cancel the above route				
f) Set 'S1 to DMT' route, i) When Train comes to 11AT				
ii) when Train comes on DMT after clearing 11AT				
g) Set the S30-CLAT route i) Train comes on 20AT				
ii) Train comes on CLT after clearing the 20BT				

REVIEW QUESTIONS:-

1) Why there are 2 route buttons on CLAT? State their functions?

2) How do you test the one Signal - one Train feature on the panel?

3) What is the procedure for 'Calling ON' signal initiation and cancellation?

4) What is the procedure for sub-route cancellation?

5) Draw the flow chart for Signal Clearance. (space provided on back side of this sheet)