

NOTICE BOARD

NB 138
Issue 1
23/04/2015
Expires: 22/04/2016
Page 1 of 3



NETWORK RAIL - SIGNAL ENGINEERING Dark Mode events at MSL LC's

Purpose

This Notice Board (NB) is to provide information on Dark Mode activations at Miniature Stop Light (MSL) systems and actions required when the area monitored by the LC equipment is affected by operational restrictions or by undertaking maintenance or engineering works.

With the introduction of Dark Mode for MSL level crossings (both Integrated and Overlay types), queries have arisen in regards to the operation of Dark Mode due to engineering works or operational failure. This NB seeks to clarify those queries and provide guidance.

Scope

This notice board applies to all MSL level crossings with Dark Mode. This includes Integrated MSL from 2009 onwards and Overlay MSL level crossings (currently Ebigate 200 and VaMoS products).

Background

Dark Mode was introduced in 2009 in order to avoid users encountering Stop indications for excessively long times. Dark Mode can be incurred by either a failure of the train detection equipment or by trains failing to clear the monitored area correctly.

There is scientific evidence that users may disregard the STOP (red) indication if displayed for an excessive time. One example is the recent incident at Motts Lane (MSL) level crossing, see RAIB Report [01/2014](#). Recent incidents have been reported following engineering works causing MSL systems to go into Dark Mode.

Figure 1 shows a typical Ebigate 200 dual road system.

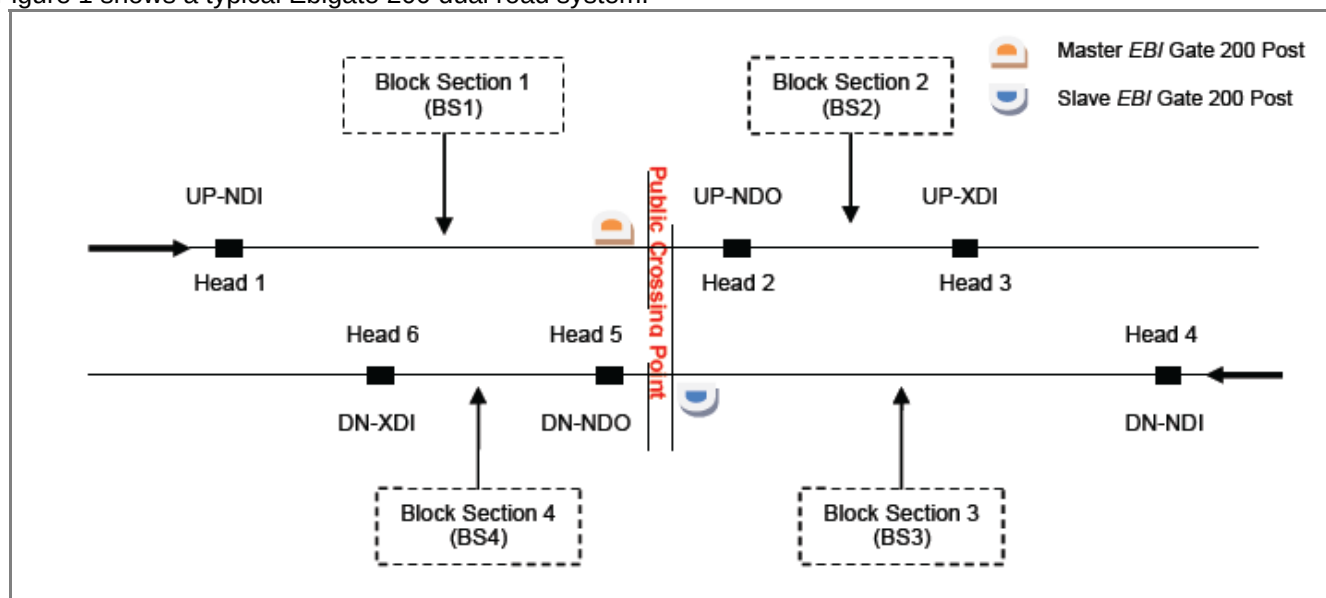


Figure 1: Typical layout of a Dual Line Ebigate 200 system

Originator's Details:-

Colin Gibbons

Network Rail

colin.gibbons@networkrail.co.uk

PUBLISHED UNDER NR/L2/SIG/11120



Documents

Document Sharing Hub

NOTICE BOARD

NB 138
Issue 1
23/04/2015
Page 2 of 3

Description of Dark Mode

User indications are suppressed (indications dark) where the red (not safe to cross) indication may show for excessive periods, incurred in the following scenarios:-

- A system failure is detected, e.g. train detection system fails
- Operational scenario:
 - o If a train enters but does not pass through Block Section 1 quickly enough, the crossing will enter Dark Mode, so it is important not to detain trains in this area.
 - o If any of the train detection equipment is disturbed, e.g. by placing a trolley on the level crossing deck and wheeling it away, then the crossing will enter dark mode. It is therefore important that the train detection sections are operated in the correct sequence. If engineering works are such that it is not possible to operate the train detection sections correctly, then an attendant should be appointed or the crossing switched off.

Dark Mode is a designed system operating mode, in this event the crossing user is directed via the signage to contact the signaller.

The system entering Dark Mode due to system or train detection failure is not a Wrong Side Failure.

Action Required by Engineers and Maintainers

The attending engineer should establish the reason the system entered Dark Mode. This may be achieved by interrogation of the internal event logger; to determine if the Dark Mode activation was due to a system failure, operational irregularity due to engineering works, train operations at a speed incompatible with the strike in controls, or an external influence.

Reminder for those undertaking Engineering Possessions

All pre-planned engineering works shall be undertaken in accordance to [GE/RT8000/HB11](#) "Rule Book Duties of the Person In Charge Of Possession (PICOP)" see figure 2.

5 Arrangements for level crossings

5.1 General

You must not allow any train or OTP movement to take place, or any work to be carried out, that will affect the operation of any level crossing until the necessary arrangements have been put in place for that level crossing.

You must record on the possession arrangements form the arrangements that are applied for each level crossing within the possession.

Figure 2: Extract of PICOP Handbook 11

Action by Operators

Where trains are to be cautioned through the area of the crossing system then Dark Mode events can be expected and provision of an attendant should be considered.