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Level 2

Signalling Design: Module X18 – Level Crossings: History Of Level Crossings

Endorsement and Authorisation

For endorsement and authorisation, please refer to
NR/L2/SIG/11201

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Compliance

This Network Rail standard is mandatory and shall be complied with by Network Rail and its contractors if applicable from 03/09/2011.

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Reference documentation

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Contents

1 HISTORY OF LEVEL CROSSING PROTECTION.	4
2 AUTOMATIC CROSSINGS	4
3 MINIATURE STOP LIGHTS	4
4 Open Crossings With Additional Flashing lights	5
5 MCB-OD	5
6 MCB-OC	5
7 AOCL + B	5
8 Table of Known Modifications To Crossings	5
Table 1 – Crossing Modifications.	5

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1 HISTORY OF LEVEL CROSSING PROTECTION.

1.1.1 Like much of the signalling employed today, level crossing controls have evolved after accidents and incidents, especially with regard to automatic crossings. Three incidents in particular have had a significant effect on modern level crossing controls: the accident at Hixon AHB in 1968, and the accident at Lockington AOCL in 1986 and then at Ufton in 2004.

2 AUTOMATIC CROSSINGS

2.1.1 Automatic open crossings with flashing lights (OCFL - the forerunner of modern day AOCL) and automatic half barriers were introduced into this country in the late 1950's and early 1960's with a great deal of success.

2.1.2 The accident at the AHB at Hixon in 1968, led to stringent safety measures being introduced which almost precluded the use of automatic level crossings.

2.1.3 This situation lasted throughout the 1970's until publication of a report in 1980 which relaxed many of the measures imposed after Hixon and introduced the automatic open crossing remotely monitored (AOCL) - basically an AHB without barriers.

2.1.4 Automation then progressed rapidly until the Lockington accident in 1986. The subsequent report by Professor P F Stott had significant impact on subsequent level crossings development. All but one AOCL crossing was subsequently abolished and rules set for number of road vehicles at AOCL's.

3 MINIATURE STOP LIGHTS

3.1.1 The original crossings were called Miniature Warning Light Crossings (MWL's) The lamps fitted in the majority were SL35, but very old units had different lamps. The lamp units were always sited at the entrance side of the crossings.

3.1.2 There was a series of incidents at MWL which caused ORR to re-think their policy of this type of level crossing protection. In particular, it was considered that users, having passed the MWL were no longer aware of the state of the lights and were then at risk from approaching trains whilst closing the gates. The decision was taken, therefore, at footpath and bridleway level crossings fitted with MWL, that the lights (of greater luminosity than previously fitted at MWL) shall be mounted on the far side of the railway facing towards oncoming users, thus remaining visible at all times whilst a user traverses the crossing. These light units had powerful Quartz halogen lamps and a narrower angle of view so as to be clearly seen over the greater distance. These crossings were referred to as Miniature Stop lights (MSL) to distinguish them from the earlier MWL's.

3.1.3 Later again the use of lights on the exit side was discontinued after a series of incidents where users mistakenly stopped at these lights at Red with the vehicle still on the crossing. However it was decided to still retain the term Miniature Stop Light (MSL) and make it refer to all variants of this crossing. The term of Miniature Warning light (MWL) is now defunct.