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Level 3

Introduction and Management of Lookout Operated Warning System (LOWS) Equipment

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Draft	23/12/08	Draft for comment
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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 06 June 2009.

When this standard is implemented, it is permissible for all projects that have formally completed GRIP Stage 4 to continue to comply with the Issue of any relevant Network Rail Standards current when GRIP Stage 4 was reached and not to comply with requirements contained herein, unless the designated Standard Owner has stipulated otherwise in the accompanying Briefing Note.

Reference documentation

NR/SP/OHS/501	Track Warning Systems
NR/SP/OHS/019	Safety of People Working On or Near the Line
NR/L3/MTC/PL0094	Planning and documenting the safe system of work arrangements
NR/ L2/AMG/029	Product Introduction and Change

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1 Purpose

The purpose of this procedure is to detail the arrangements to manage the safe, consistent introduction and management of Lookout Operated Warning Systems (LOWS) equipment used on Network Rail infrastructure by Infrastructure Maintenance Delivery Units and other Infrastructure Maintenance delivery functions.

2 Scope

This procedure covers all LOWS equipment purchased and used by Infrastructure Maintenance and authorised for use on Network Rail infrastructure by Network Rail Engineering acceptance processes.

This procedure applies to all operators of the equipment and to all other managers and staff having a responsibility under this procedure for the implementation and use of LOWS equipment

3 Definitions

LOWS	Lookout Operated Warning Systems – Electronic radio signal warning equipment that is operated by remote lookout hand sets to a central detection unit.
LOWS Controller	The competent person in charge of the set up and operation of LOWS equipment. The LOWS controller must hold the competence of COSS and can be the COSS of the group being protected by LOWS. He may work in conjunction with a COSS for a separate group being protected by LOWS distant from his own position.
LOWS Lookout	Lookout provided with a LOWS handset who looks out for trains and provides a warning via his handset to the Central unit for management by the LOWS Controller
Mapping	An exercise to establish a pre-determined Safe System of Work (SSoW) for the LOWS equipment at a given location. Establishes the optimum Lookout location and equipment location to provide an effective SSoW while under the protection of a conventional SSoW
Equipment “owner”	A member of staff assigned to manage the correct storage and maintenance for each set of equipment at each depot to which LOWS equipment is allocated
Enhancements Register	Spreadsheet held by the Infrastructure Maintenance HSEQ Manager of proposed equipment enhancements for consideration by the LOWS Steering Group

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4 Procedure

4.1 The Equipment

LOWS equipment operates by the transmission of radio signals between the lookout unit(s) and the site warning unit(s). Provided radio signal detection is established and maintained between the units a safe system warning will be generated when activated. If radio signal detection is lost – then the equipment fails to safe and generates warnings.

The main components of the LOWS equipment for each of the two current suppliers are included below

4.1.1 Zollner Equipment



ZPW “static” worksite warning unit. (White part is A4 size and about 6 inches deep, including battery. Frame protects. Weighs 10kg.) This unit must always be mounted on a tripod



ZPW “patrolling” warning unit (no frame and smaller battery). A4 size and about 3 inches deep (inc. battery). Weighs 4kg.



ZFH lookout unit (plus 5A radio booster)

Basic Operation

Lookouts are away from site of work and have no direct line of sight of the group. Lookout operates toggle switches on ZFH unit to warn of train. The LOWS Controller of the ZPW unit (static or patrolling) receives the warning and moves his group clear of the line. He then cancels the warning on the ZPW unit after each train has passed.

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4.1.2 Schweizer Equipment



EZE Central Control Unit (26kg)



EWK Warning Unit (15kg)



HSF Lookout handset (3kg)

Basic Operation

Lookouts are away from work site and have no direct line of sight of group. The EZE Central Control Unit is required at site to relay a radio signal to EWK Warning Unit(s) and send a “clear” signal back to the lookout. On receipt of a warning from the Lookout, the LOWS Controller at site cancels the warning after each train has passed.

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4.2 Purchase of equipment

4.2.1 Business cases for provision of new equipment are to be submitted by the IMDM or equivalent

4.2.2 The purchase of LOWS equipment can currently be funded from a central HQ authorised budget provision.

4.2.3 To obtain central funding a Business Case must be submitted by the Delivery Unit which meets the criteria defined in the template (cases are built upon avoidance of track access costs, avoidance of train delay, reduction in manpower to achieve safe systems on site). The Business Case template is available from the Head of Infrastructure Maintenance Workforce Health, Safety, Quality & Environment.

4.2.4 Business Cases completed by IMDMs shall be submitted to the Head of Infrastructure Maintenance Workforce Health, Safety, Quality & Environment for review before submission to the Director Infrastructure Maintenance for final acceptance or rejection.

4.2.5 If the Business Case is accepted the Head of Infrastructure Maintenance Workforce Health, Safety, Quality & Environment shall arrange for LOWS equipment and training to be provided through the HQ programme.

4.2.6 Once provided to the delivery units the LOWS equipment, servicing, calibration and any additional training become the responsibility of the owning IMDM

4.3 Implementation strategy – delivery units

4.3.1 The Route Infrastructure Maintenance Director will identify a LOWS Champion responsible for the introduction and coordination of LOWS equipment throughout the route.

4.3.2 The Route Champions will act as the focal point for all LOWS issues and proposed improvements in their route and shall establish communications with other Route champions for the purpose of sharing best practice and lessons learnt

4.3.3 The IMDM shall establish a team for the introduction of LOWS into their delivery unit. The IMDM, supported by the Route champion and implementation team, shall review their required utilisation of LOWS with consideration of:

- the equipment that has been purchased
- its activities
- prospective locations
- mapping of locations
- requirements of NR/SP/OHS/019, Safety of People Working On or Near the Line
- selection of staff to operate the equipment
- training and competence programme for staff
- how staff will be used (i.e. dedicated teams initially for mapping)
- monitoring programme