

NO: IGSB 261

## Infrastructure Group Safety Bulletin

### The purchase, issue and use of the Seaward Live Line Tester (LLT) and Proving Unit for DC Lines.

#### This bulletin is for the attention of:

All NR staff and contractors working for Network Rail whose work activity involves the purchase, issue and use of the Seaward LLT to test whether a conductor rail is dead or alive.

#### Background:

Two separate incidents have required the issue of this safety bulletin. In the first it became apparent that Seaward LLT units were used to test a DC electrified conductor rail without first being 'proved' using the Seaward Proving Unit and in the second the Seaward LLT failed to give a positive reading due to the probe being placed on a contaminated section of conductor rail head during the testing procedure.

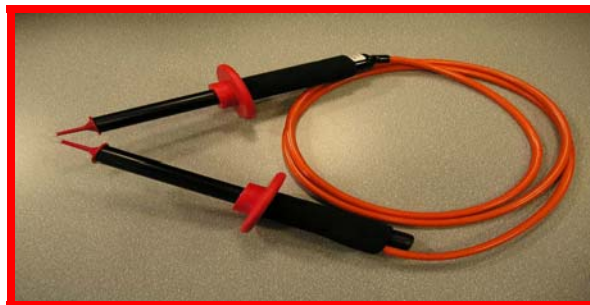


Figure 1. Seaward Live Line Tester



Figure 2. Seaward Proving Unit

#### Action Required 1: Purchase and issue

These two units form the complete LLT testing equipment and must be purchased and issued together; all staff involved in either of these activities must be briefed accordingly.

#### Action Required 2: Use

1. All staff who use this item of equipment must be briefed the following;
  - The Seaward LLT unit must be tested with the proving unit **immediately prior to and after use**. This is an integral part of the process and the only method of confirming the LLT is working at the time of use.
  - When applying the LLT probes to the conductor and running rail, a clean section of rail head should be identified. If there is any suggestion the rail head is not clean then apply pressure and use a scratching motion to make sure of the connection. Never apply the LLT on a ramp end.

- The following photographs show what difference this can make to the indication given by the LED by testing with the probe on a clean uncontaminated section of rail head even within a few centimetres at the same site....



Clean head on the right and illuminated LED on the left.

Contaminated head on the right and no illuminated LED on the left.

2. All staff who use the Seaward LLT are reminded of the operating instructions;
  - I. Before use check the LLT is clean and dry, and visually inspect all parts. If the unit appears damaged do not use, report the defect and place in quarantine.
  - II. Never hold the LLT between the hand guard and the contact electrode, i.e. the probe.
  - III. **Always prove the LLT immediately before and after use** by holding it by the handles, connect the probes to the proving unit terminals and verify the LED indicators on the handle of the LLT are illuminated.
  - IV. If the LED on the proving unit does not illuminate during this part of the process, change the battery in the proving unit. If this does not work, do not use the LLT, report the defect and place it in quarantine.
  - V. **To test the Conductor rail:** Hold the LLT by the handles above the hand-guards; place one probe on the traction return running rail and the other probe on the conductor rail.
  - VI. If the LED indicator on the handle of the LLT is **illuminated** the conductor rail is **live**; contact the person in charge of the isolation if appropriate.
  - VII. If the LED indicator on the handle of the LLT is not illuminated, check the rail head for contamination, and move the contact point or carry out the scratching motion then the rail is switched off or isolated.
  - VIII. Prove the LLT again after testing as stated in III above.

### **Additional Information:**

Refer to DC lines Electrified Working Instructions (NR/WI/ELP/3091 E2 Dec 2006) for further information on the isolation and testing of the conductor rail.