



Rethinking safety through
INCLUSION
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WELLBEING

RAIL
ELEMENT 17G
20/10/2023

OPERATION OF EVENT AND DISTANCE RECORDERS

PURPOSE AND SCOPE

The purpose of this Procedure is to advise Laing O'Rourke personnel of the processes to be applied relating to the purchase, installation and operation of Event Recorder and Distance Recorders.

Whilst distance recorders are required to be installed on all on Track Plant, event recorders shall be fitted to on track machines and hi-rail vehicles that have been registered by the network owner allowing them to travel at more than 30kph.

1.0 PROCEDURES

On Track Plant operating on the rail network shall be fitted with an Event Recorder that is operating and recording data continuously during the operation and movement of the Track Plant.

Laing O'Rourke has fitted Event Recorders to all track machines excluding Hi-Rail vehicles that can't travel at over 30kph except where a network owner stipulates the fitting of such recorders. There will be a function test conducted annually and if any sensors are replaced recalibration will be carried out. Installation of the respective devices is completed by a Select fitter or electrician with the process aligned to the criteria set by the manufacturer/supplier.

2.0 MATTERS RECORDED BY EVENT RECORDER AND DISTANCE RECORDERS

Electronic Event Recorders fitted to the track machines operated by Laing O'Rourke will record information relevant to their type.

Distance recorders will only record kilometres.

3.0 DESIGN REQUIREMENTS AND CRASHWORTHINESS

All Event Recorders fitted to the Laing O'Rourke rolling stock meet the following requirements:

- A visible indication to confirm the Event Recorder is operational and when not operational
- Can retain stored data once removed from the rolling stock or in the event of power loss
- Be designed and installed to withstand the impact of crash or crush forces, heat, fire, vibration, moisture, smoke damage and fluid immersion or ingress (this would include spilt liquids) and from dust
- Be installed within the rolling stock in a secure position such that the structure of the rolling stock will, as far as possible, provide the device protection.

Confirmation of this has been received from the manufacturer that the data recorders supplied meet the legislative requirements.

4.0 STORAGE (MEMORY) AND ACCESSIBILITY OF THE DATA

All data obtained and/or downloaded from the Event Recorder is "read only" to prevent alteration or deletion of data.

The Event Recorder is capable of recording and storing data up to 60 days.

The oldest information captured by an electronic Event Recorder is overwritten first.

Laing O'Rourke has documentation that specifies the source of all the recorded parameters and any signal conversion performed prior to recording the parameter and the downloading of data to other media.

Information downloaded from Event Recorders will be retained as required in terms of incident management and archive requirements.

Distance Recorders will store the kilometres travelled continually. The Recorders are continuous and cannot be re-set unintentionally.



5.0 ACCURACY/VALIDATION

To ensure their accuracy the Event Recorders are validated not less than once a year.

The Event Recorder validation test includes cycling all recorded parameters and determining the full range of each parameter by reading out the recorded data. A copy of the data validation results shall be maintained within the maintenance records until the next validation test.

The sampling rate of electronic Event Recorder occurs once every second or when the status changes.

6.0 SYSTEMS AND PROCEDURES FOR THE USE OF RECORDED DATA

Laing O'Rourke will download the event recorder information following an incident and this shall be undertaken as follows:

- Competent persons perform these tasks
- The data obtained from the Event Recorder is protected against unauthorised disclosure, fire, electronic or magnetic interference or other sources of damage
- Access to the data is only able to be obtained by those persons and positions authorised and competent to receive, download and analyse data from the data logger.

In the event of a Notifiable Occurrence, data is retained by Laing O'Rourke. The systems and procedures must be consistent with the requirements of the respective elements of rail safety legislation or network owner's rules and procedures.

Distance Recorder information will be used for reporting distances travelled per month to ONRSR as well as where relevant for maintenance purposes.

The Select Depot will obtain readings at the end of each month from each item of rolling stock fitted with a distance recorder and have such information loaded into IMPACT. The Rail Safety and Compliance Manager will furnish the total distances travelled by the track machines for the respective month to ONRSR.

7.0 MAINTENANCE, TESTING AND REPAIR

The Recorders are maintained in accordance with the manufacturer's recommendations and form part of the annual inspection check.

Laing O'Rourke has documented systems in place for the maintenance, testing and repair/replacement of the Event Recorder which are aligned to the manufacturer's specifications.

The Event Recorders installed commence recording on activation of the ignition and will record the relevant information which can be downloaded by Select personnel when required. Laing O'Rourke applies a process described in the OEM manual to ensure clocks used to record time are correctly set. If the recorder stops working or is malfunctioning the Rolling Stock operator is to report this to Select as soon as possible.

8.0 REGULATIONS, GUIDES AND STANDARDS

- Rail Safety National Law
- ONRSR Guideline Preparation of a Safety Management System
- RISSB Rolling Stock Standards
- AS 7527 Rolling Stock Event Recorders

9.0 FORMS, TEMPLATES AND REPORTS

The following Documents will be retained / produced in accordance with this Procedure:

- Downloaded data from the machines
- Distances travelled by the On-Track Plant