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Issue	I
Date	February 2001

SIGTAN041 - Battery Cells (formerly RT/E/C/I 9041)

This temporary front sheet facilitates change to the new Network Rail Standards referencing nomenclature.

The Ref above will be formally allocated to this standard when it is next changed in the meantime the contents, date and issue number of this Network Rail Standard are **UNCHANGED and with immediate effect it should be referred to as “(new ref) formerly (old ref)”.**

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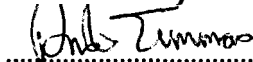


RAILTRACK LINE CODE OF PRACTICE

SIGNALLING EQUIPMENT TECHNICAL ADVICE NOTICE (SIGTAN041) BATTERY CELLS

Approval and Authorisation

Endorsed by:



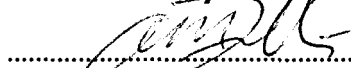
A. Simmons, Professional Head of Signalling

Accepted for issue by:



G Morris, Head of Corporate Standards

Authorised by:



A Doherty, Director of Asset Management

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Railtrack plc
Railtrack House
Euston Square
LONDON
NW1 2EE

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Summary

This code of practice summarises a range of general issues relating to cells on Railtrack s Signalling Infrastructure.

Issue/Revision Record

This code of practice will be updated when necessary by the distribution of a complete document. Subsequent amendments will be marked by vertical black line in the adjacent right hand margin.

Issue	Date	Comments
I	Feb 2001	Original Issue

Implementation

This code of practice highlights issues arising from operational experience, concerning the installation and maintenance of signalling equipment. Where appropriate, it gives current best practice for mitigating risk and is for implementation from 2 Jun 2001. Alternative practices may be accepted where they can be demonstrated to be as good or better than the contents of this document.

Superseded document reference number	Issue	Date
GK/RC 0741 Appendix CE00	I	Sept 96

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Safety

All persons are reminded that all appropriate safety precautions must be observed when undertaking the work covered by this document.

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1. PURPOSE

This document provides a record of best practice general information relating to secondary cells used on Railtrack Signalling Infrastructure, together with relevant technical information and where appropriate, related historical background.

2. SCOPE

This document covers railway secondary cells and associated equipment in use on Railtrack Signalling Infrastructure.

3. REFERENCES

RT/E/S/10660	The Implementation of Signalling Maintenance Work Instructions
RT/E/S/10061	Signalling Maintenance Task Intervals
RT/E/S/10662	Signalling Maintenance Task Interval Change Process
RT/E/S/10047	Management of Safety related reports for Signalling and Operational Telecommunications Failures
RT/E/S/10064	General Instructions to Staff Working on S&T Equipment
RT/E/S/11231	Signalling Maintenance Testing

RT/E/WI/00008	Signalling Maintenance Work Instruction Battery Cells
CE31	Battery Cells, Secondary, Lead Acid
CE32	Battery Cells, Secondary, Alkaline
CE33	Battery Cells, Secondary, Cyclon

4. TESTING

The last operation of all maintenance services is to test by operation from the signal box and to observe that the apparatus functions correctly.

5. PERSONAL SAFETY

All appropriate safety precautions must be observed when undertaking the work covered by this document.

This document does not address general personal safety measures. Local instructions including a COSHH assessment may be in operation and these will highlight those measures which must be taken to control any Health and Safety concerns.

6. CELLS, SECONDARY, GENERAL

6.1 General Precautions and Prevention of Explosions

Always observe safety directives and local instructions and, before starting work, ensure good air circulation to disperse any accumulated gasses, location / battery room doors are fully open and fastened and that ventilation provided is effective. Enforce air circulation by wafting or fanning where no motion of air is apparent.

NEVER tap the cells to check the electrolyte level or loosen the connections to terminals or intercell or intercrate connectors (straps) whilst the cells are on charge or discharge, and gassing.

DO NOT use utensils which have been used for the maintenance of alkaline cells on lead acid cells and visa versa. ACID will destroy alkaline cells and ALKALINE will destroy lead acid cells.

Plastic cases must only be cleaned with a damp cloth because a dry cloth could cause sparking from a build up of static electricity.

Connections must be tight to avoid the risk of accidental sparking and to ensure good conductivity and circuit continuity. However, do NOT use excessive force when checking or tightening connections. **Insulated** box spanners must be used.

Connections to some types of cell, such as Cyclon, are made with push on connectors. Each connector must be pushed on fully and grip the terminal firmly to avoid the risk of accidental sparking and to ensure good conductivity and circuit continuity.

6.2 Short Circuit Risks

CARE MUST BE TAKEN when examining steel cased cells because the outer case is live . Never allow tools or metallic objects to rest across the cells or fall between them as this may cause sparking and damage the cell containers.

Never lay tools, wire or metallic objects on any type of cell because the terminals may be bridged. If the resulting short circuit is of sufficiently high current the object could be melted with the possible danger of splashes of molten metal.

The physical size of a cell is not necessarily indicative of its power. Small cells, such as the 5 Ah Cyclon which can produce 200 amps, should be treated with the same care as for much larger cells.