



BR 1664
November 1990

Technical Specification for Clock Systems



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AMENDMENTS

Amd. No.	Date	Text Affected

British Railways Board

TECHNICAL SPECIFICATION FOR CLOCK SYSTEMS

**Director of Signal and Telecommunications Engineering
British Railways Board
Macmillan House
Paddington Station
LONDON W2 1FT**

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1. INTRODUCTION

1.1. This specification is issued by the Director of Signal and Telecommunications Engineering, Materials Management Group, Room 1103 Rail House, Crewe CW2 6EA.

1.2. All technical enquiries should be addressed to:-

DIRECTOR OF SIGNAL & TELECOMMUNICATIONS ENGINEERING
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1.3. For the purposes of this specification the Engineer is the Director of Signal and Telecommunications Engineering, British Railways Board, or his appointed representative.

2. SCOPE

2.1. This specification details the BR requirements for clock systems for operational purposes. These clocks will be used to display time to the general public and to staff involved in the running of trains.

2.2. The clocks are required to be highly reliable in operation and display accurately the national standard time.

2.3. No preventative maintenance shall be required except for external cleaning.

3. DEFINITIONS AND ABBREVIATIONS

3.1. For the purposes of this specification the words and phrases defined in the General and Special Conditions of Contract shall have the same meanings with the following additions:-

MSF	Call sign for the Very Low Frequency (VLF) radio transmissions from the radio station at Rugby.
Free Running	The condition when the data to operate all types of clock, is either absent or corrupt. The clock then reverts to the use of its own internal mechanism and continue to display the correct time.
Self Correcting	The condition when, on restoration of the power supply and/or on resumption of valid control data, the clock shall correct itself, as required, to that of the control data.
Standard Coded Form	The digital code and protocol used for the transfer of data from the master clock to the slave clocks. ASCII and IRIG "B" capability shall be provided for serial mode and BCD for parallel mode.

3.2. Glossary of Abbreviations

ac	alternating current
ASCII	American Standard Code for Information Interchange
BBC	British Broadcasting Corporation
BCD	Binary Coded Decimal
BIS	Bringing Into Service
BR	British Rail
BRB	British Railways Board
BS	British Standards
BST	British Summer Time
BT	British Telecom
CCITT	International Telegraph and Telephone Consultative Committee
dc	direct current
GMT	Greenwich Mean Time
HV	High Voltage
IBA	Independent Broadcasting Authority
IEE	Institution of Electrical Engineers
MTBF	Mean Time Between Failures
MSF	See sub-section 3.1.
QA	Quality Assurance
SCF	Standard Coded Form
UTC	Universal Co-ordinated Time
VLF	Very Low Frequency

4. REFERENCES

4.1. British Rail

BR 10	Painting schedule for signal boxes and signal department equipment.
BR 967	Railway signalling apparatus: Environmental conditions.
BR 1686	Protection of telecommunications equipment against electrical interference.
BR 3118	Standard maintenance conditions for BR maintained telecommunications equipment.
BR 8665/20	BRB Supplier Quality Assurance Requirements

4.2. British Standards

BS 3939	Guide for graphical symbols for electrical power, telecommunications and electronics diagrams.
BS 4727	Glossary of electrotechnical, power, telecommunication, electronics, lighting and colour terms.
BS 4884	Specification for technical manuals.
BS 5490	Classification of degrees of protection provided by enclosures.
BS 5750	Quality Systems
BS 5783	Code of practise for handling of electrostatic sensitive devices.
BS 6301	Specification for electrical safety requirements for apparatus for connection to telecommunication networks.
BS 6328:Part 1	Specification for apparatus for connection to baseband circuits.
BS 6701	Code of practice for installation of apparatus intended for connection to certain telecommunication systems.