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Guide to

Training of mechanics concerned with the operation and maintenance of earth-moving machinery

[ISO title: Earth-moving machinery — Operation and
maintenance — Training of mechanics]

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- Associated Offices Technical Committee
- Construction Industry Training Board
- Construction Plant-hire Association
- Department of Trade and Industry (Mechanical and Electrical Engineering Division)
- Federation of Civil Engineering Contractors
- Federation of Manufacturers of Construction Equipment and Cranes
- Health and Safety Executive
- Institution of Civil Engineers
- Institution of Highways and Transportation
- Ministry of Defence
- National Coal Board
- Coopted members

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National foreword

This British Standard has been prepared under the direction of the Road Engineering Standards Committee and is identical with ISO 8152:1984 “*Earth-moving machinery — Operation and maintenance — Training of mechanics*” published by the International Organization for Standardization (ISO).

Terminology and conventions. The text of the International Standard has been approved as suitable for publication as a British Standard without deviation. Some terminology and certain conventions are not identical with those used in British Standards; attention is drawn especially to the following. Wherever the words “International Standard” appear, referring to this standard, they should be read as “British Standard”.

Cross-references

International Standards	Corresponding British Standards
ISO 4510:1976	BS 5485:1977 <i>Specification for maintenance and adjustment tools for earth-moving machinery</i> (Identical)
ISO 6012:1982	BS 5635:1982 <i>Recommendations for service instrumentation of earth-moving machinery</i> (Identical)
ISO 6165:1978	BS 5718:1979 <i>Glossary of terms for basic types of earth-moving machinery</i> (Identical)
ISO 6750:1984	BS 6228:1985 <i>Guide to format and content of manuals on operation and maintenance for earth-moving machinery</i> (Identical)

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 8, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

0 Introduction

This International Standard is intended as a guide to the training of mechanics. It has been assumed that candidates for training possess a sufficiently sound general education with suitable bias towards workshop practice and the use of tools, and that they are sufficiently mature to benefit from the training.

In selecting potential trainees account needs to be taken not only of ability, but also of physical and mental toughness, since the maintenance of machinery is arduous and skilful work, which, particularly when carried out in poor site conditions, can require a high degree of medical fitness.

1 Scope and field of application

This International Standard describes the training of mechanics appropriate for earth-moving machinery. It does not specify any procedure for assessing proficiency or competence, since these factors are usually covered by local and national practices and regulations.

This International Standard is not intended to override any applicable national regulations or standards.

It applies to all earth-moving machinery as defined in ISO 6165.

2 References

ISO 4510, *Earth-moving machinery — Maintenance and adjustment tools*.

ISO 6012, *Earth-moving machinery — Service instrumentation*.

ISO 6165, *Earth-moving machinery — Basic types — Vocabulary*.

ISO 6750, *Earth-moving machinery — Operation and maintenance — Format and content of manuals*.

3 Structure of training programmes

3.1 General

The minimum normal training period should be relevant to national practice and local conditions, but preferably should not be less than three years, with an optional fourth year when appropriate for more advanced or specialized training. It is often an advantage, in deciding the training for an individual trainee or group of trainees, if the length of the course can be decided before training commences, particularly relative to the nature and content if a fourth year of training is contemplated.

3.2 Safety

Throughout training, it must continually be emphasized that one of the **most important** aspects of machine operation and servicing is **safety**. Safety precautions must be integrated into every aspect of the training course and should include

- the understanding and application of local and national safety regulations;
- responsibilities in connection with safety measures, accident prevention, fire hazards and personal hygiene, together with the necessity of using machinery guards and shields, and personal protective equipment and safety clothing for eyes, head, ears and feet;
- precautions to be observed when operating earth-moving equipment and attachments, and the safe and proper handling of all hydraulic tools, air tools, special tools and equipment;
- safe methods of lifting by hand and the use of mechanical and hydraulic handling equipment;
- safe handling and storage of liquids and solvents (particularly those which are flammable), including oils, fuels, and acids;
- location of master switches and methods of immobilizing machinery, including all types of earth-moving base machines and equipment;
- dangers associated with high pressure systems;
- safe method of dismantling wheels and the use of a protective cage during inflation of tyres and hydro-inflation, etc.

3.3 Periods of training

In accordance with 3.1, the periods of training described below should be regarded only as typical, and the actual durations should be chosen to conform to national practice and local conditions.

3.3.1 Selection and probationary period

Selection should be made from candidates who have received a sound general education, including a practical background in the elementary use of hand tools. Theoretical attainment during their education should be adequate to enable them to undertake the technical instruction inherent in the training course. The initial three months of the first year of training should, wherever possible, be regarded as a probationary period.

3.3.2 Basic training — (suggested duration: one year) (see clause 4)

Basic training should include use of hand tools and simple machine tools as applied to maintenance and servicing requirements, elementary metrology and the interpretation of simple drawings.