

Specification for

Aircraft engine transport devices

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Engineering Sector Board to Technical Committee ACE/57, upon which the following bodies were represented:

- Association of Webbing Load Restraint Equipment Manufacturers
- British Airways
- British Narrow Fabrics Association
- Civil Aviation Authority (Airworthiness Division)
- Health and Safety Executive
- Ministry of Defence
- Society of British Aerospace Companies Ltd.
- Society of Motor Manufacturers and Traders Ltd.

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National foreword

This British Standard has been prepared under the direction of the Engineering Sector Board. It is identical with ISO 11241:1994 *Aircraft — Aircraft engine transport devices*, published by the International Organization for Standardization (ISO).

Cross-references

International Standard	Corresponding British Standard
ISO 4117:1993	BS M 69:1993 <i>Air cargo equipment — Air and air/land cargo pallets — Specification and testing</i> (Identical)
ISO 4171:1993	BS M 71:1994 <i>Air cargo equipment — Interline pallets</i> (Identical)
ISO 8097:1993	BS M 72:1994 <i>Air cargo equipment — Minimum airworthiness requirements and test conditions for certified air cargo unit load devices</i> (Identical)
ISO 9031:1987	BS M 67:1988 <i>Specification for symbols for the pictorial representation of aircraft cargo handling systems for unit load devices (ULDs)</i> (Identical)

The Technical Committee has reviewed the provisions of the remainder of the standards to which normative reference is made in the text, and has decided that they are acceptable for use in conjunction with this standard.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 10, 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.

Introduction

Aircraft engines can be transported as outsize bulkloads restrained to the requirements of the applicable Weight and Balance Manual.

This International Standard, however, covers their transport as aircraft engine transport devices, as a unit being secured in the aircraft by a Class II ISO 8097 restraint system.

1 Scope

This International Standard specifies functional, dimensional, structural and environmental requirements for the design of aircraft engine transport devices, used to transport aircraft engines in wide-body aircraft. These devices are intended to be used in conjunction with pallets compatible with ISO 8097 Class II restraint requirements. The restraint system parameters and requirements are also to be met for those devices where the pallet structural capability is an integral part of the design. Design parameters specified for air transport of engine transport devices should enable interline capability where feasible with respect to dimensions and loads.

This International Standard specifies minimum air and ground handling features and is intended to ensure interchangeability and compatibility with present and future air transport and ground handling system. The devices specified herein should be designed primarily for air transport and alternatively for surface transport, stowage and maintenance purposes.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 4116:1986, *Air cargo equipment — Ground equipment requirements for compatibility with aircraft unit load devices*.

ISO 4117:1993, *Air and air/land cargo pallets — Specification and testing*.

ISO 4171:1993, *Air cargo equipment — Interline pallets*.

ISO 8097:1993, *Aircraft — Minimum airworthiness requirements and test conditions for certified air cargo unit load devices*.

ISO 9031:1987, *Air cargo equipment — Handling systems for unit load devices (ULDs) — Symbols for pictorial representation*.

IATA, *Unit Load Devices (ULD) Technical Manual 8th Edition*¹⁾.

Motor Carriers Safety Regulations. Part 393.100, Subpart 1, *Protection Against Falling or Shifting Cargo*. United States Department of Transportation²⁾.

3 Types of engine transport devices

This International Standard defines two types of engine transport devices as follows:

- Type A: For split engine pack transport (mainly lower deck);
- Type B: For full engine transport (mainly upper deck).

3.1 Type A is used for shipping of split engine packs, e.g. core-engine packs and fan-engine packs or additional equipment required on air cargo pallets of the below sizes, as applicable.

- 1 534 mm × 3 175 mm (60,4 in × 125 in)
- 2 235 mm × 3 175 mm (88 in × 125 in)
- 2 438 mm × 3 175 mm (96 in × 125 in)

The transport device shall be compatible with ISO 8097 Class II restraint systems.

3.2 Type B is used for shipping full engine packs, generally referred to as “quick engine change” (QEC) kits, compatible with the allowable aircraft volume on integrated air cargo pallets/stands or air cargo pallets of the following sizes.

- 2 235 mm × 3 175 mm (88 in × 125 in)
- 2 438 mm × 3 175 mm (96 in × 125 in)
- 2 438 mm × 4 064 mm ³⁾ (96 in × 160 in)
- 2 438 mm × 4 798 mm ³⁾ (96 in × 196 in)
- 2 438 mm × 6 058 mm (96 in × 238,5 in)

The transport device shall be compatible ISO 8097 Class II restraint systems.

¹⁾ Can be obtained from the International Air Transport Association, 2000 Peel St., Montreal, Quebec, Canada H3A 2R4, or Route de l'Aéroport 33, case postale 672, 1215 Geneva 15, Switzerland.

²⁾ Can be obtained from the US Government Printing Office, Washington, DC 20402, USA (Stock No. 5004-00010).

³⁾ These sizes are not currently included in ISO 8097.