International Standard ISO 6967

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Aircraft — Wide body aircraft main deck container/pallet loader — Functional requirements

Aéronefs — Chargeur de conteneurs et palettes au pont principal d'aéronefs gros porteurs — Caractéristiques fonctionnelles

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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 6967 was developed by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, and was circulated to the member bodies in May 1981.

It has been approved by the member bodies of the following countries :

Australia	France	Romania
Austria	Germany, F.R.	South Africa, Rep. of
Belgium	Ireland	Spain
Brazil	Italy	Sweden
China	Japan	United Kingdom
Czechoslovakia	Korea, Rep. of	USA
Egypt, Arab Rep. of	Netherlands	USSR

No member body expressed disapproval of the document.

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Aircraft — Wide body aircraft main deck container/pallet loader — Functional requirements

0 Introduction

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This International Standard is to be read in conjunction with ISO 4116, *Ground equipment requirements for compatibility with aircraft unit load devices.*

1 Scope and field of application

This International Standard specifies the functional requirements for a self-propelled loader capable of raising pallets and containers with base dimensions and maximum weights as follows :

Length mm (in)	Width mm (in)	Max. gross weight kg (lb)
3 175 (125)	2 438 (96)	6 804 (15 000)
3 175 (125)	2 235 (88)	6 033 (13 300)
2 991 (117.75)	2 438 (96)	5 670 (12 500)
6 058 (238.5)	2 438 (96)	11 340 (25 000)

NOTE — The term "weight" is retained here instead of the correct technical term "mass", in order to conform to current commercial usage.

2 Structure and overall dimensions

2.1 On an adequate chassis, the loader shall provide two platforms :

a) a front platform, which is positioned at the applicable aircraft door and which remains at this position during the loading/unloading operation;

b) a main platform for up and down movement between 483 mm (19.0 in) and 5 540 mm (218 in).

2.2 The overall height of the entire unit shall not exceed 3 600 mm (142 in) when being driven. The height of the front platform (top of rollers) shall not exceed 2 413 mm (95 in) in the fully down position.

2.3 The overall dimensions of the unit shall be kept to a minimum.

2.4 The loader shall support simultaneously, at their maximum gross weight, two 2 438 × 3 175 mm (96 × 125 in) containers/pallets on the main platform and one 2 438 × 3 175 mm (96 × 125 in) container/pallet on the front platform.

2.5 The unit shall have adequate clearance underneath from any portion of the equipment to the ground when negotiating two ramps that intersect at 5°.

3 Platform design, guide rails and stops

3.1 The length of the front platform shall be adequate to accept one 2 438 × 3 175 mm (96 × 125 in) pallet lengthwise.

3.2 The length of the main platform shall be adequate to accept two 2 438 × 3 175 mm (96 × 125 in) pallets one behind the other lengthwise on the platform.

3.3 The width of both platforms shall be adequate to accept a pallet with its 3 175 mm (125 in) dimension across the platforms.

3.4 The surface of both platforms shall allow for longitudinal and lateral movement of load units.

3.5 The loader shall be designed for powered end and side loading of load units :

a) on the front platform the longitudinal movement shall be effected by means of a powered system;

b) on the main platform the longitudinal and lateral movement shall be effected by means of a powered system. The main platform powered system shall be divided into two sections, each of which will accept one 3 175 × 2 438 mm (125 × 96 in) load unit. It shall be possible to control these sections individually or simultaneously.

3.6 The powered system shall be able to drive load units at a speed of approximately 0,3 m/s (60 ft/min). Adjustment to a reduced speed shall be possible.

3.7 The front platform shall be adjustable to the following changes in aircraft attitude with an accuracy of :

a) pitch and roll : half a degree (max. range ± 2°);

b) height : 6,4 mm (0.25 in).

NOTE — It is recommended that the front platform be capable of being attached to the aircraft so as to compensate for changes in aircraft attitude.

3.8 The front platform shall be designed not to interfere with the opening and closing of the aircraft door.

3.9 Removable guide rails, fixed on the main platform and adjustable on the front platform to the following container/pallet widths :

a) 2 438 mm (96 in),

b) 3 175 mm (125 in),

shall be provided as follows :

— front platform : Along the whole length of both sides of the platform to exactly guide load units into the aircraft. They must be adjustable laterally to align with the appropriate in-aircraft guides;

— main platform : 3 175 mm (125 in) apart along both sides of the platform. The guide rails shall consist of two sections positioned adjacent to the powered sections of the platform and be able to be operated independently. All four sections shall automatically extend when the main platform starts moving upward and remain in this position. When the main platform is being lowered and it reaches the height of 1,52 m (60 in) from the ground, it shall be possible for the operator to control the retraction of the guide rails.

3.10 Stops shall be provided as follows:

a) Front platform :

Automatic stops shall be provided at the end adjacent to the main platform. These stops shall rise at the moment the main platform starts moving down and shall retract when the upcoming main platform is level with the front platform. Operation of the main platform must be inhibited if the stops are not extended.

b) Main platform :

Stops shall be provided :

1) at the forward and aft end;

2) at the separation line between the two powered sections.

The stop adjacent to the front platform shall automatically retract as the main platform lines up with the front platform.

The stop between the two sections shall be controlled by the operator individually.

The rear stop shall be of the override type (loading direction). The rear stop shall automatically retract when a load unit is being transferred longitudinally onto the main platform and shall automatically extend as soon as the load unit has passed.

For movement of load units off the main platform end in a longitudinal direction the retraction of the rear stop shall be controlled by the operator. However, it shall only be possible to retract the rear stop when the main platform is stopped at any height between 0,51 and 1,52 m (20 in and 60 in) above the ground.

3.11 All stops and fixed guide rails shall have a minimum height of 102 mm (4 in). Retractable guide rails shall have a height of not less than 51 mm (2 in).

4 Platform operation and loading

4.1 It shall be possible to adjust the container/pallet in a lateral direction on the front platform.

4.2 Platform elevating systems shall be able to hold both platforms at maximum height with full specified continuous lift capacity with no noticeable height decrease for 30 min with and without engine running.

4.3 Both the front and main platform elevating mechanisms shall incorporate safety features to prevent sudden collapse in the event of system failure.

4.4 Load movement in and out of the aircraft shall be carried out by one person (operator). The unit shall be capable of being positioned and operated by one person. The operator shall be able to open and close the aircraft door from the front platform.

4.5 The time taken for the main platform to reach maximum height from the lowered position and vice versa, i.e., one complete cycle, shall be less than 60 s.

4.6 The front platform shall be accessible from the ground at all times.

4.7 It shall not be possible to alter the height of either platform when containers/pallets are bridging the platforms.

5 Mobility and stability

5.1 The unit shall be capable of being driven at speeds up to 16 km/h (10 mph) for at least 3 km (2 miles). The unit does not require the capability of being driven when loaded.

5.2 Power steering shall be provided.

5.3 The unloaded unit shall be capable of starting from rest up a 5° incline under its own power.

5.4 The swept radius should be kept to a minimum to allow the loader to be easily positioned at the aircraft and to be driven on airport service roads.

5.5 For a final safe positioning at the aircraft door a slow positive non-jerking speed is required.

5.6 Power operated adjustable stabilizers shall be installed in order to provide for the stability required for loading/unloading operations. In case of power failure, manual retraction of the stabilizer shall be possible.

5.7 The fully loaded unit in the raised position with stabilizers extended shall be safe in wind velocities up to 129 km/h (80 mph). In the lowered position, the loader shall remain stable in wind velocities up to 193 km/h (120 mph).

5.8 It shall not be possible

a) to activate the transfer system and to raise the main platform from the full down position if the stabilizers are not extended;

b) to drive the loader when the stabilizers are extended;

c) for stabilizers to collapse in the case of a system failure.

6 Controls

6.1 All controls necessary to move and position the loader shall be located in the driver position.

6.2 In addition, an electrical remote control box of minimum weight and size shall be provided to allow control of both platforms and complete loading/unloading processes from the front platform in an elevated position or from the aircraft door area.

6.3 Ample lighting is required for night operations and to illuminate the platforms and close surroundings.

6.4 Normal system warning and indicator lights shall be provided.