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Indian Standard

AIRCRAFT — PALLET DOLLEY — FUNCTIONAL REQUIREMENTS

ICS 49.120

BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

June 1996

Price Group 1

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Air Cargo Handling Sectional Committee had been approved by the Heavy Mechanical Engineering Division Council.

In the preparation of this standard, assistance have been derived from the following publications:

AHM 910	'Basic requirements for aircraft ground support equipment' issued by International Air Transport Association (IATA), Canada.
AHM 911	'Ground support equipment requirements for compatability with aircraft unit load devices' issued by International Air Transport Association (IATA), Canada.
AHM 916	'Basic requirements for ground support equipment towing interface' issued by International Air Transport Association (IATA), Canada.

In reporting the results of a test or analysis made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off values should be same as that of the specified value in this standard.

Indian Standard

AIRCRAFT — PALLET DOLLEY — FUNCTIONAL REQUIREMENTS

1 SCOPE

This standard lays down the functional requirements for a dolley capable of moving unit load devices (ULDs) conforming to IS 7074 (Part 1) : 1992 'Air cargo pallets: Part 1 General requirements'.

2 REFERENCES

The following Indian Standards are necessary adjunct to this standard:

IS No.	*Title*
7073 (Part 1) : 1973	Glossary of terms relating to air cargo pallets and containers: Part 1 Air cargo pallets
7073 (Part 2) : 1973	Glossary of terms relating to air cargo pallets and containers: Part 2 Air cargo containers
7074 (Part 1) : 1992	Air cargo pallets: Part 1 General requirements

3 DEFINITIONS

3.0 For the purpose of this standard, following terms and definitions in addition to terminology and definitions given in IS 7073 (Part 1) : 1973 and IS 7073 (Part 2) : 1983 shall apply.

3.1 Dolley

An equipment capable of moving unit load devices(ULD) between baggage/cargo loading facilities at passanger terminal or cargo warehouse and aircraft position and vice-versa.

4 GENERAL REQUIREMENTS

4.1 The container dolley shall be designed for hauling four fully loaded dollies at a time in a train. The length of the dolley shall be adequate to avoid any interference of ULDs on two adjacent dollies.

4.2 The dolley shall have four-wheel running gear, pulled and steered through an integral towbar.

4.2.1 The wheels, two in the front and two at the rear, shall be mounted on independent axles.

4.3 The dolley shall be fitted with a towbar at the front and a tow hitch at the rear. These shall be of sufficient strength to allow for four fully loaded dollies to be towed in a train.

4.4 The towbar shall swivel in the vertical plane and shall be designed to prevent the towbar from touching the ground and the dolley itself.

4.4.1 The towbar shall be designed to be usable within the eye height range over the ground between 305 mm and 406 mm.

4.5 The geometry of the dolley steering system shall be such that when the dollies are towed in train they follow a true track.

4.6 All components of the running gear shall be within the confines of the frame.

4.7 All steering linkages, brake system components or other mechanisms located on the underside of the dolley shall be protected from damage.

4.8 All tongues, pintles and chassis frames shall be designed to take frequent impact loads.

4.9 Reflective material or flourescent painting shall be used to make the towbar visible in poor lighting conditions.

4.10 The dolley shall have adequate clearance from any portion of the equipment to the ground when negotiating two ramps intersecting at 5 degrees.

5 PLATFORM

5.1 The dolley shall be provided with a roller platform at a height of 508 mm to carry one pallet. The platform shall allow fore/aft longitudinal movement of lower deck ULDs.

5.2 The platform design shall also permit manual movement of ULDs.

5.3 In order to ease the transfer of ULDs to/from the platform and to absorb the initial impact load, lead-on rollers shall be provided that have the maximum possible diameter commensurate with design.

5.4 Guide rails 50 mm high shall be provided along both sides of the platform.

5.5 Retractable stops with vertical restraints shall be provided at each end of the platform to firmly restrain the ULD base on the platform.

5.6 The height of the top of the restraint device, measured from the top of the roller surface shall not exceed 50 mm.

5.7 The retractable stops shall be operatable by one man from both sides of the dolley.

5.8 The overall dimensions of the dolley shall be kept to a minimum. The length of the dolley shall be adequate to avoid any interference of ULDs on two adjacent dollies.

5.9 The dolley shall have a towbar fitted at the front and a tow hitch at the rear of sufficient strength to allow for four fully loaded dollies to be towed in a train.

5.10 The towbar shall swivel in the vertical plane.

5.11 The towbar shall be designed to be usable within the eye height range over the ground between 305 mm and 406 mm.

5.12 Consideration for stops to prevent the towbar from contacting the ground and from contacting the dolley itself should be given.

5.13 Reflective material of flourescent painting shall be used to make the towbar visible in poor lighting conditions.

5.14 The dolley shall have adequate underclearance from any portion of the equipment to the ground when negotiating two ramps which intersect at 5 degrees.

5.15 The force required to actuate any lever or towbar shall not exceed 15 kgf.

5.16 Two walkways, not less than 305 mm wide and having antiskid surface, shall be provided on the platform.

6 MOBILITY

6.1 The dolley shall be capable of being towed at speeds up to 15 km/h.

6.2 The minimum turning radius of a train of four dollies shall not exceed 10 m.

6.3 The dolley shall be provided with a parking brake.

6.4 The brake shall be applied by placing and locking the towbar in the down position.

6.5 The brake shall be self-equalising and shall be capable of locking each wheel against a tangential force, applied at the periphery of the wheel, in either direction, which is equal to the gross weight of fully loaded trolley divided by the number of braked wheels.

6.6 The brake system shall be able to hold the above weight on a 10 percent gradient.

7 CONFIGURATIONS

The dollies shall be designed with following transfer and towing configurations:

i) End towing — 1) Side transfer
2) End transfer

ii) Side towing — 1) Side transfer
2) End transfer

8 OPTIONS

Following facilities may also be provided if required by purchaser:

a) Indexing fingers on one transfer side or end respectively to ease powered transfer from/on to a pallet transporter.
b) Higher towing speed.
c) Additional stops and guides to accommodate ULDs with base dimensions other than those mentioned in IS 7074 (Part 1) : 1992.
d) Omni-directional conveyor platform.
e) Independent operation of brake system, for example pedal or lever operated brakes.

9 MARKING

The following details shall be marked on a plate which will be affixed to dolley at a visible place:

a) Manufacturer's name, initials or recognised trade-mark, if any;
b) Towing speed;
c) Size of dolley; and
d) Towing weight.

Bureau of Indian Standards

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