Society of Automotive Engineers, Inc.
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AEROSPACE RECOMMENDED PRACTICE

ARP 1621

Issued March 1980
Revised

ULD FOR AIRCRAFT TRANSPORTATION OF HORSES

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1. PURPOSE

This Aerospace Recommended Practice (ARP) provides recommendations for the design of unit load devices for transportation of horses on freighter aircraft. Devices may be designed to handle one horse per pallet or several.

2. SCOPE

This ARP defines minimum requirements for horse stalls necessary to maintain a structurally safe operation and protect aircraft from corrosion created by waste spills.

3. DESIGN CONSIDERATIONS - GENERAL

The nature of horse transportation by air creates unique problems which must be considered during the container design if conflicts between the shipper and the airline are to be avoided. Generally the stall is owned by someone other than the airline operating the aircraft and often by someone other than the person handling the shipping and loading of the animal. The stall often gets into an airline route system and remains at an airport away from the owners repair facility until needed for a return movement. It is the responsibility of the stall owner to insure that the stall is in airworthy condition prior to presenting it to the airline for shipment. The degree to which the owner can monitor the condition must be considered when choosing materials and design concepts for the stall. The inability to inspect the stall before a flight dictates that the stall be constructed of durable materials which require minimum maintenance to avoid conflicts or refusal to accept the shipment. For example, a typical pitfall is to design a stall using a net over the stall to obtain certification. Structurally, this practice is acceptable, but if the stall arrives at the aircraft with the net damaged it will be rejected. This usually results in missing the flight since there is not enough time to make a repair.

4. STRUCTURE DESIGN

4.1 The stall shall be constructed of materials which will function in an airline freight environment with minimum maintenance and remain in airworthy condition.

4.2 The stall shall be of sufficient construction as to contain an unruly horse within the confines of the stall under all conditions.

4.3 The stall shall be constructed of materials which are resistant to corrosion and deterioration.

4.4 The stall shall provide for restraint of the horse's head both vertically and horizontally.

4.5 The stall shall provide an enclosed area for the horse's head extending at least 24" (610 mm) aft of the fwd edge of the base of the stall. This enclosure shall allow access to the horse's head and prevent any feed from being dropped on the aircraft.

4.6 The stall should not incorporate easily damaged materials such as straps or nets.

4.7 The stall design should not require that airlines provide any special equipment other than standard tiedown straps and standard freight pallets.

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4.8 It is desirable for the stall to be a completely self-contained structural unit including a pallet.

4.9 Pallet sizes shall be SAE, IATA or ISO standards per the specification listed below having 88 x 125, 96 x 125, 88 x 108 or 96 x 238.5 inch dimensions:

SAE AS 1491 or AS 1130
IATA 50/1A, 50/1B or 50/9
ISO 4170 or 4117

4.10 Knock-down units must not sacrifice durability or structural integrity for the knock-down feature.

4.11 Consideration shall be given in the design to insure that all surfaces that come in contact with the horse are not of a nature to cut, bruise or injure the horse.

5. AIRCRAFT CORROSION PROTECTION

5.1 The stall shall be a minimum of 60" (1.52 m) high at the rear to ensure liquids are deflected into the stall. If aircraft design dictates a height lower than 60" (1.52 m) a deflector of some type shall be provided or it shall be demonstrated that the lower height is acceptable.

5.2 The stall shall have a one piece water tight (leak proof) pan in the floor with no joints. If joints are required, the seal shall be permanent such as a weld. No caulking or seals will be used. The pan shall be 2" (51 mm) deep and shall be durable to resist cracking.

5.3 The manufacturer shall conduct a leak test on each unit by filling the pan full of water. Test reports shall be made and kept on file.

5.4 The rear door or doors shall be water tight with the door overlapping inside the floor pan to ensure all liquids are diverted into the pan.

5.5 Knock-down designs must demonstrate ability to retain corrosion protection features after the unit has been repeatedly knocked down and reassembled.

6. MAINTENANCE/INSPECTION

6.1 The owner and/or manufacturer of the stall shall develop a plan for how and when the unit will be inspected to insure it is maintained in an airworthy condition.

6.2 The manufacturer of the stall shall define specific damage limits and repair procedures for the unit.

7. CERTIFICATION/APPROVAL

7.1 The stall shall be FAA approved by STC (or TSO if acceptable to the FAA) for operation on freighter type aircraft and meet the requirements of NAS3610 (National Aerospace Standard) for the applicable restraint systems on which it will be used.

7.2 The stall owner should have the following data available for inspection by the engineering departments of the airlines which will be requsted to fly this unit:

7.2.1 Copy of certification document (STC or TSO).

7.2.2 Copy of restraint diagrams and placards.

7.2.3 Copy of applicable structural test or analysis reports.

7.2.4 Copy of water leak test report on floor pan.

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