



Internal Air Transport Certification

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Date: 25 September 2014
Item Nomenclature: Trilectron F-22 PAO Carts
File Number: 2004.04.27 Revision 7
Requestor: F-22 SPO AGE, ILSM (MSgt. Joseph Harder)
Superseded Certification Date: 8 September 2014

New Information Summary: Revised letter to clarify tiedown rating. In 2010, the tiedown assembly was tested and verified to have a working rating of 23,000 lbs. The increased tiedown rating has been cited in previous ATTLA certifications since Revision 2 in 2010.

Reference: Wiebe Postema, Lockheed Martin Aeronautics Systems – Marietta, PAO: Cart Tie Down Restraint Capability, 4 February 2010.

Item Description: The subject items are identified to be two-axle ground support carts with physical characteristics as shown in Table 1 below.



Figure 1: F-22 PAO Cooling Carts

F-22 PAO Carts	Electric	Diesel
Length (inches)	143	143
Width (inches)	80	78
Height (inches)	83	92
Gross Weight Rating (lbs)	11,500	11,500
Fwd Axle Rating (lbs)	5800	5800
Rear Axle Rating (lbs)	5800	5800
Tire Pressure (psi)	105	105
Wheelbase (inches)	92	92

Table 1: Physical Characteristics

NOTE: The listed dimensions are approximations. Actual dimensions can vary as long as aircraft limitations published in applicable cargo loading manuals and the conditions of certification listed below are not violated. Adjustments to approach shoring and/or loading methods shall be reported to ATTLA.

Certified Aircraft: USAF KC-10, C-130, C-17, and C-5

Conditions of Certification:

1. Maximum Weight for Air Transport:

- a. Gross Vehicle Weight: 11,500 lbs (gross vehicle weight rating)
- b. Axle Limits: 5,800 lbs each axle (sleeper shoring required)

2. Item Preparation:

- a. Sleeper shoring is required for both axles. See paragraph 5 for shoring specifications. Shoring is the responsibility of the shipper.
- b. All equipment shall be prepared, packaged, or mounted such that there is no adverse effect on the functioning of the equipment after being subjected to the aircraft environmental extremes. MIL-STD-810 provides guidance on approved test methods and data gathering techniques.
- c. All hazardous materials (to include fuel level, batteries, etc.) must be prepared and certified for airlift in accordance with TM 38-250/AFMAN 24-204(l). Do not consider this air transport certification as approval for hazardous materials. Authorization for airlifting hazardous material is the responsibility of AFMC/A4RT (DSN 787-4503 or COM (937) 257-4503).

3. Loading Instructions:

- a. The PAO carts can be loaded using the general procedures as listed in the respective cargo aircraft loading manual.
- b. Sleeper shoring shall be stacked under the frame near each axle, 2 stacks for each axle, 1 each side.
- c. For loading onto KC-10 aircraft, the PAO carts must be centerline loaded in compartments 6-10 with tires and 10K chains positioned as shown in Figure 2 below.

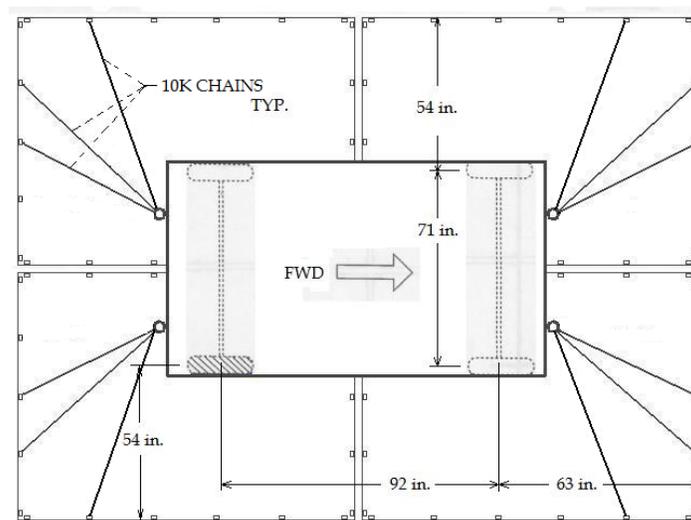


Figure 2: KC-10 Tiedown Pattern

4. Restraint Requirements: The PAO Carts and all accompanying cargo must be restrained to meet MIL-STD-1791 requirements of 3G forward (1.5G for KC-10), 1.5G aft and lateral, and 2G up. In addition, stored or installed equipment must meet these requirements and be capable of withstanding a 4.5G down load. **Note:** The carts have two tie-down provisions on the front end and two tie-down provisions on its aft end. While the tiedowns are marked at 10,000 lbs, the actual working rating is 23,000 lbs each (see Figures 3 and 4 below). Axles may be used as tie-down provisions if needed. Do not attach more than half the required restraint to axles in longitudinal and lateral directions. Axles may be restrained up to their rated capacities in the longitudinal and lateral directions. Axles will not provide vertical restraint. For KC-10 transport, number of chains and orientation shall be as listed in Figure 2. This illustration supersedes the pattern provided in section VG of T.O. 1C-10(K)A-9.

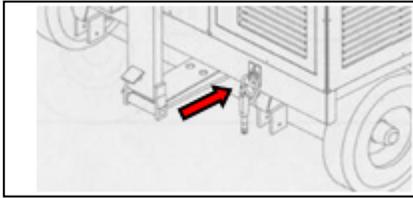


Figure 3: Front Provision

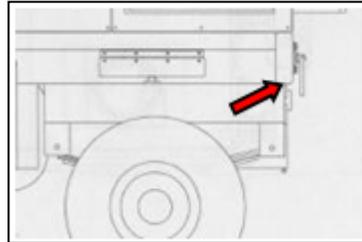


Figure 4: Rear Provision

5. Required Shoring Dimensions & Diagrams:

- a. Sleeper Shoring: Four shoring stacks required. 8" L x 8" W. The sleeper shoring must be stacked built up so that it is snug against the underside of the vehicle/trailer.

Required Distribution:

1. Shipper shall give a copy of this certification to the ATOC representative when the item is presented for airlift. This memo shall be part of the official cargo manifest documentation package and shall be briefed to the aircraft loadmaster prior to loading these items.
2. AMC/A3V & AMC/A4T
3. SDDC TEA

Point of Contact: Mark Kuntavanish, at mark.kuntavanish@us.af.mil or attla@us.af.mil, DSN 785-2330 or Commercial (937) 255-2330. Refer to file number 2004.04.27 Rev 7 to reference this item.

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