



# Internal Air Transport Certification

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**Date:** 28 October 2016  
**Item Nomenclature:** Stryker  
**File Number:** 2002.05.17 Rev 12  
**Requestor:** On File  
**Superseded Certification Date:** 30 March 2016

**New Information Summary:** Added Infantry Carrier Vehicle Dragoon (ICVD), added pintle hook rating and updated Flat Bottom Hull tiedown provision ratings.

**Item Description:** The only visual differences between the Flat Bottom Hull and the Double V- Hull are the front and rear tiedown provisions. Typical Up-Armored Stryker's have Slat, Skirt and Belly Armor as illustrated in Figure 1.

**Table 1: Stryker Interim Armored Vehicle Flat Bottom Hull**

Description	Model	Length	Width	Height
Infantry Carrier Vehicle (ICV)	M1126	312	148	130
Reconnaissance Vehicle (RV)	M1127	312	148	131
Mobile Gun System (MGS)	M1128	302	166	132
Mortar Carrier Vehicle (MCV)	M1129	312	164	124
Command Vehicle (CV)	M1130	312	148	126
Fire Support Vehicle (FSV)	M1131	312	148	131
Engineer Squad Vehicle (ESV)	M1132	312	148	126
Medical Evacuation Vehicle (MEV)	M1133	312	164	122
Anti-Tank Guided Missile Vehicle (ATGM)	M1134	312	148	120
Nuclear Biological Chemical Reconnaissance Vehicle (NBCRV)	M1135	312	148	126
Infantry Carrier Vehicle Dragoon (ICVD)	XM1296	319	152	131

**Table 2: Stryker Interim Armored Vehicle Double V-Hull**

Description	Model	Length	Width	Height
Fire Support Vehicle Variant (FSVV)	M1251	323	166	126
Mortar Carrier Vehicle Variant (MCVV)	M1252	323	166	126
Anti-Tank Vehicle Variant (ATVV)	M1253	323	166	126
Medical Evacuation Vehicle Variant (MEVV)	M1254	323	166	126
Command Vehicle Variant (CVV)	M1255	323	166	126
Infantry Carrier Vehicle Variant (ICVV)	M1256	323	166	130
Engineer Squad Vehicle Variant (ESVV)	M1257	323	166	126

**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 shoring and/or loading methods shall be reported to ATTLA.



**Figure 1: Typical Up-Armored Stryker**

**Certified Aircraft:** USAF C-17 and C-5

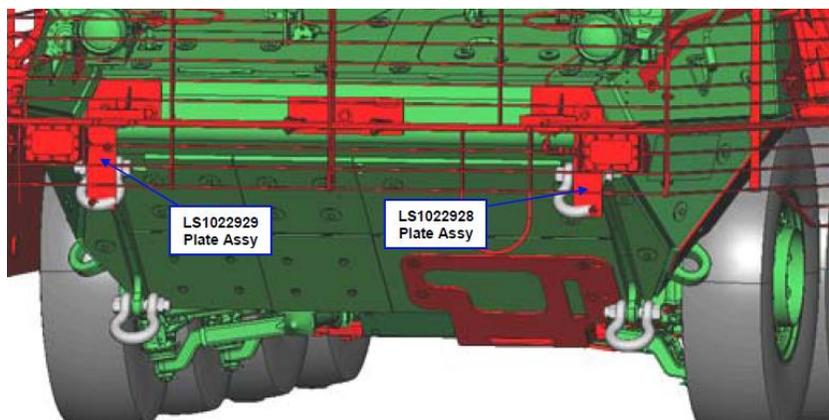
**NOTE:** C-130 procedures have been incorporated into TO 1C-130A-9 and TO 1C-130J-9.

**Conditions of Certification:**

**1. Maximum Weight for Air Transport:** 49,380 lbs (without sleeper shoring); 60,000 lbs (with sleeper shoring)

**2. Item Preparation:**

- a. Tire inflation pressures shall be between 80 -100 psi. If the Central Tire Inflation System (CTIS) does not give tire inflation pressure, the shipper shall provide correct tire gauge to fit the tire valve.
- b. Boomerang and Rhino 3 attachments shall be removed from exterior of vehicle and stowed.
- c. Maximum height is 148” when configured with the Height Management System (HMS) at the “highway” setting.
- d. Remove or fold any antennas as required to ensure they do not contact the aircraft.
- e. The Remote Weapons Station (RWS) with M2/MK19 may be installed in the operational configuration with the travel/safety pin installed.
- f. Remove and stow plate assemblies LS1022928 and LS1022929 as shown in Figure 2.



**Figure 2: Plate Assembly Locations on Flat Bottom Hull**

- g. MEVV tow bar shall be secured on vehicle roadside in position shown in Figure 3.



**Figure 3: MEVV Tow Bar Location**

- h. Litter patients shall not be airlifted inside the MEV or MEVV.
- i. De-energize all electromagnetic interference (EMI) emitters and all munitions shall be configured or packaged for safe transport.
- j. Shipper is responsible for providing all shoring materials. See paragraph 5 for specifications.
- k. 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 vehicle can be loaded using general loading procedures as listed in the respective aircraft cargo loading manual.
- b. Assure that the vehicle has completed its height adjustment cycle and is configured to provide highest possible ground clearance. Position the spotters to assure no contact occurs between the vehicle and the aircraft cargo ramp.

**CAUTION:** Strykers with belly armor and a rear ground clearance less than 12 5/8" require approach shoring. See paragraph 5 for shoring dimensions.

- c. 8-wheel drive is recommended while transiting the ramp. Once vehicle is on the horizontal, driver MUST switch to 4-wheel drive (ensure vehicle moves at least 3 feet on the cargo floor to disengage 8-wheel drive).

**NOTE:** The vehicles should be on/off-loaded with the HMS at the "highway" or "air transport" setting. After loading, the HMS should be set to lower the vehicle onto the vehicle stops for flight.

- d. Position the vehicle for flight, allowing at least 3' between the vehicle and next item (front and rear) for the vehicle to be driven back and forth slightly as part of its initialization at start up for offloading.

- e. When vehicle is in final position on cargo floor, ensure that the service and parking brakes are released and then lower vehicle for flight.

**WARNING:** The vehicle will creep as it lowers to/rises from the bottomed-out condition for flight. Allow for this longitudinal movement and assure personnel are clear of the vehicle.

- f. Assure that Height Management System (HMS) lights are solid before powering off.

**WARNING:** Height adjustment cycle can take up to 3 minutes. Ensure the aircraft is ventilated.

**WARNING:** Height adjustment rise cycle can take up to 4 minutes to complete. Ensure the aircraft is ventilated.

g. Assure 4-wheel drive is selected initially per paragraph 3.c and that adequate clearance exists per paragraph 2.b before offloading the vehicle.

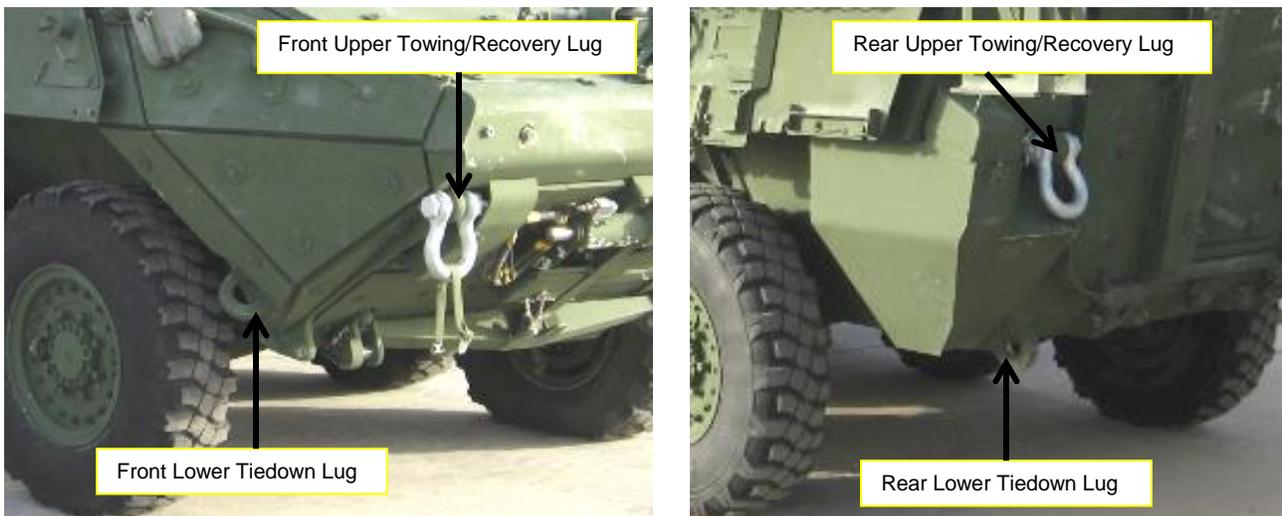
h. After vehicle is lowered for flight and engine shut down, install sleeper shoring.

i. Offloading is essentially the reverse of loading. Remove all restraint prior to vehicle power up. Instruct driver to reconfigure the vehicle to maximum height. Prior to moving vehicle, verify that HMS lights are solid.

**4. Restraint Requirements:** The vehicle and all accompanying cargo must be restrained to meet air transport requirements of 3G forward, 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. The 30-ton rated shackles shall be used in the front and rear upper towing/recovery lugs. Pintle hook is rated at 40,000 lbs.

**Table 3: Provision Location & Rated Capacities, Flat Bottom Hull**

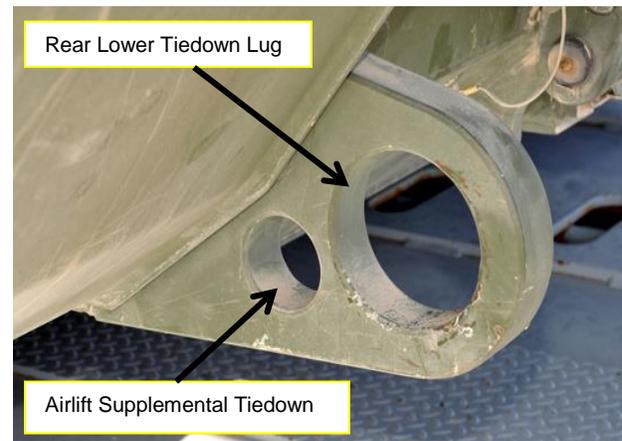
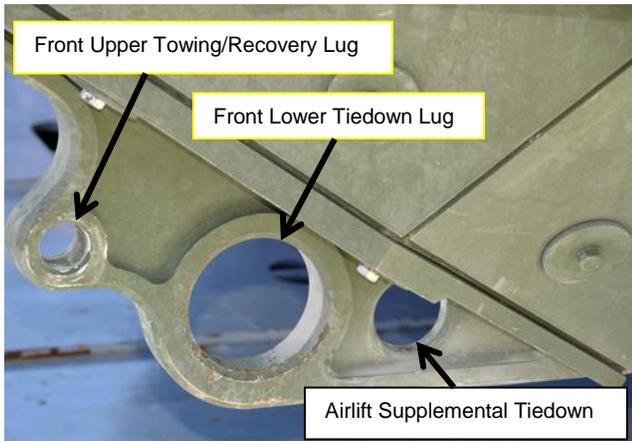
Provision Location	Longitudinal	Lateral	Vertical
Front Upper Towing/Recovery Lug	61,000 lbs	20,700 lbs	13,900 lbs
Rear Upper Towing/Recovery Lug	61,700 lbs	25,000 lbs	20,500 lbs
Front Lower Tiedown Lug	110,000 lbs	110,000 lbs	110,000 lbs
Rear Lower Tiedown Lug	110,000 lbs	110,000 lbs	110,000 lbs



**Figure 4: Flat Bottom Hull Tiedown Provisions (Upper Lugs with 30T Shackle)**

**Table 4: Provision Location & Rated Capacities, Double V-Hull**

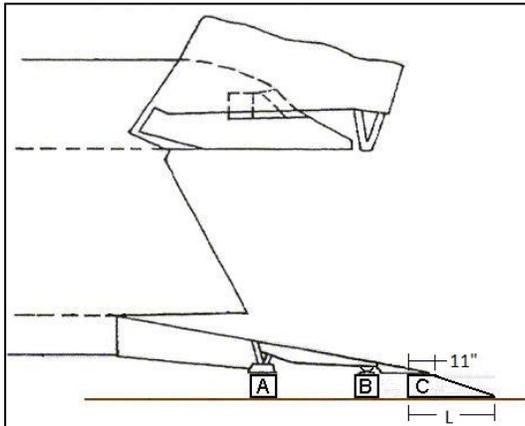
Provision Location	Longitudinal	Lateral	Vertical
Front Upper Towing/Recovery Lug	60,000 lbs	20,600 lbs	13,800 lbs
Rear Upper Towing/Recovery Lug	60,000 lbs	20,600 lbs	16,300 lbs
Front Lower Tiedown Lug	120,000 lbs	42,300 lbs	28,300 lbs
Rear Lower Tiedown Lug	120,000 lbs	47,700 lbs	31,800 lbs
Airlift Supplemental Tiedown	25,000 lbs	25,000 lbs	25,000 lbs



**Figures 5: Double V-Hull Tiedown Provisions**

**5. Shoring Dimensions & Diagrams:**

- a. Approach shoring (when required): minimum recommended dimensions for 10° approach angle, requirements for other configurations are in the applicable aircraft loading manual.



**C-5 Forward Shoring (Forward Kneel)**

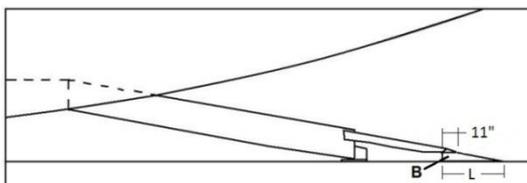
Pedestal Shoring

- "A" 16" L x 13" W x 2" H (2 each inboard)
- 18" L x 15" W x 2" H (2 each outboard)
- "B" 15" L x 15" W x 6" H (4 each)

Approach Shoring

- "C" 57" L x 18" W x 8" H (2 required)
- (Length (L) includes 11" to support the ramp toe)

**(C-5) CAUTION:** Width of approach shoring "C" in the area under the toe must be as wide as the ramp toe it is placed under. The remaining approach shoring extending away from the ramp toe extension contact point must be a minimum of 18 inches wide.



**C-17 Shoring**

Approach Shoring

- "B" 48" L x 18" W x 9" H (2 required)
- (Length (L) includes 11" to support the ramp toe)

- b. Sleeper Shoring: 23" L x 12" W (8 stacks). The sleeper shoring must be built up so that it is snug against the underside of the vehicle. The shoring may be tapered to accommodate suspension.

**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:** Tom McPeak, at thomas.mcpeak.1@us.af.mil or ATTLA@us.af.mil, DSN 986-9903 or Commercial (937) 656-9903. Refer to file number 2002.05.17 Rev 12 to reference this item.



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