



## Internal Air Transport Certification

AFLCMC/EZFC (ATTLA)  
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<https://cs3.eis.af.mil/sites/AFLCMCEZF/AirCerts>



**Date:** 12 April 2016

**Item Nomenclature:** High Mobility Multipurpose Wheeled Vehicles (HMMWVs)

**File Number:** 2016.03.27

**Requestor:** On File

### Reference Documents:

1. ASC/ENFC memo, 6 July 2007, Airlift Certification of HMMWV Systems, 2002.03.05.
2. ASC/ENFC memo, 2 September 2010, Airlift Certification of M1097R1, 2010.08.26.
3. ASC/ENFC memo, 23 January 2009, Airlift Certification of M1123, 2009.01.27.
4. ASC/ENFC memo, 13 March 2012, Airlift Certification M997A3 HMMWV Ambulance, 2011.12.14.
5. AFLCMC/EZFC memo, 17 April 2007, Airlift Certification of Armored HMMWVs Supporting Combat Operations, 2007.06.22 Rev 4.

**NOTE:** The above references are all rescinded/replaced by this certification letter.

**Item Description:** The HMMWV family of vehicles is comprised of several configurations and/or variants. These configurations consist of, but are not limited to, external ancillary components or equipment, up-armored and/or Expanded Capacity Vehicles (ECV).

**NOTE:** USMC Pre & Post Revision B HMMWV Variants weighing up to 15,500 lbs are certified in ATTLA Internal Air Transport Certification 2014.09.08.

**Table 1: HMMWV Description**

Nomenclature	Configuration	Dimensions (Inches) <sup>1</sup>			Maximum Weight (Pounds)
		Length	Width	Height	
HMMWV <sup>2</sup>	Multipurpose	200	87	75 <sup>3</sup>	Note <sup>4</sup>
	Up-Armored	235	102	118	14,100 <sup>5</sup>

<sup>1</sup> Vehicle dimensions are approximate due to vehicle configurations

<sup>2</sup> If the vehicle's dimensions are greater than listed, assess loadability IAW Section IV of applicable T.O. 1C-XX-9

<sup>3</sup> Approximate height without shelter

<sup>4</sup> Refer to Table 2

<sup>5</sup> Maximum gross weight for air transport

**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: Various HMMWV Models

**Certified Aircraft:** USAF C-130, C-17, and C-5

**Conditions of Certification:**

**1. Maximum Weight for Air Transport:**

Table 2: Model Numbers and Ratings

Model	Maximum Weight (Pounds)	Axle Limit (Pounds)	
		Front	Rear
M966	8,660	4,100	5,700
M966A1	8,840	4,500	6,500
M997 <sup>1</sup>	9,100	4,100	5,700
M997A1 <sup>1</sup>	9,280	4,500	6,500
M997A2 <sup>1</sup>	9,580	4,500	6,500
M997A3 <sup>1</sup>	12,100	5,300	7,000
M998 <sup>2</sup>	7,700	4,100	5,700
M998A1 <sup>2</sup>	7,880	4,500	6,500
M1025	8,200	4,100	5,700
M1025A1	8,380	4,500	6,500
M1025A2	10,300	4,500	6,500
M1026	8,200	4,100	5,700
M1026A1	8,380	4,500	6,500
M1035	7,700	4,100	5,700
M1035A1	7,780	4,500	6,500
M1035A2	10,300	4,500	6,500
M1036	8,200	4,100	5,700
M1037	8,660	4,100	5,700
M1038 <sup>2</sup>	7,700	4,100	5,700
M1038A1	7,880	4,500	6,500
M1042	8,660	4,100	5,700
M1043	8,400	4,100	5,700
M1043A2	10,300	4,500	6,500

Model	Maximum Weight (Pounds)	Axle Limit (Pounds)	
		Front	Rear
M1044	8,400	4,100	5,700
M1044A1	8,580	4,500	6,500
M1045	8,400	4,100	5,700
M1045A1	8,580	4,500	6,500
M1045A2	10,300	4,500	6,500
M1046	8,400	4,100	5,700
M1046A1	8,580	4,500	6,500
M1097 <sup>2</sup>	10,000	4,100	6,500
M1097A1 <sup>2</sup>	10,000	4,500	6,500
M1097A2 <sup>3</sup>	10,300	4,500	6,500
M1097R1	10,000	4,100	6,500
M1113ECV <sup>3</sup>	11,500	5,750	7,000
M1114ECV <sup>3</sup>	12,100	5,750	7,000
M1116ECV <sup>3</sup>	12,100	5,300	7,000
M1123 <sup>4</sup>	10,300	5,000 <sup>4</sup>	6,500
M1145ECV <sup>3</sup>	12,100	5,300	7,000
M1151	11,500	5,050	7,000
M1151A1 <sup>3</sup>	12,100	5,750	7,000
M1152	11,500	5,050	7,000
M1152A1 <sup>3</sup>	12,100	5,750	7,000
M1165A1 <sup>3</sup>	12,100	5,750	7,000
M1167A1 <sup>3</sup>	13,100	5,800	7,700

<sup>1</sup> Ambulance

<sup>2</sup> Models converted into the M1097R1 configuration

<sup>3</sup> Models that may exceed the maximum vehicle weight limitation up to 14,100 pounds and up to 7,500 pounds per axle with the use of sleeper shoring.

<sup>4</sup> If the front axle weight is greater than 4,500 pounds, then sleeper shoring is required.

**Note:** For clarification, M1113, M1114, M1116, and M1145 do not have “A” suffix chassis — they have expanded capacity vehicle (ECV) chassis.

## 2. Item Preparation:

**NOTE:** HMMWV’s may be airlifted alone, equipped with shelters, and/or grouped with trailers. Accompanying item may need a separate certification letter.

**NOTE:** Trailers may be loaded separately and shelters may be removed and palletized. Any removed loose equipment shall be restrained and contained with the vehicle(s), or packaged and treated as separate cargo.

**NOTE:** Shelter payload may be further restricted by the carrying capability of the particular HMMWV.

**NOTE:** Structural modifications to shelters are not permitted without qualification and specific approval.

**NOTE:** Cargo is not approved to be secured to the M998 built-up wooden shelter. Cargo must be secured to the vehicle.

- a. Verify transportability requirements for approved weight limitations in Table 2.
- b. C-130: Maximum height of HMMWV/shelter combination shall not exceed 105”.
- c. Ensure HMMWV mounted shelters are of the approved type and weight.

**NOTE:** Axle and payloads on trailers shall be within the allowables for the model and series. Payloads within the trailer or components mounted directly shall be required to meet aircraft restraint requirements.

- d. There are specific series trailers that are approved for flight and used in the field with HMMWVs; these are M101, M116, or M1102 series of trailers. Other trailers can also be transported with the HMMWVs provided the HMMWV can safely on/off load them and the trailer can meet aircraft restraint requirements.
- e. Shipper is responsible for providing all shoring materials when required. See paragraph 5 for specifications.
- f. 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(I). 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. Load vehicle using normal vehicle loading procedures as listed in the respective aircraft cargo loading manual.
- b. C-130: All loads carried in the C-130 shall be configured to provide a loadmaster access aisle measuring at least 14” wide x 72” high or 30” wide x 48” high through the aircraft’s wheel well area. If any personnel other than the primary flight crew are to accompany the load, the required escape aisle through the wheel well area is to be 14” wide from floor to ceiling.

c. C-130: On the M977 Series HMMWVs (Ambulances), it is recommended to drive the HMMWV in to eliminate the need for approach shoring.

d. Shipper provided sleeper shoring may be required, the shipper shall provide sleeper shoring for vehicles that exceed the rated capacities in the up-armored configurations; see Table 2, Note 3.

**NOTE:** When the maximum vehicle weight exceeds the rated capacity, both ends of the vehicle will require sleeper shoring.

**NOTE:** It is permissible to have sleeper shoring only on one end of the vehicle when the nearby axle exceeds Table 2, Note 3; up to 7,500 lbs per axle.

**4. Restraint Requirements:** The HMMWV 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.

**CAUTION:** The radius rods shall not be used for restraint/tiedown.

**CAUTION:** Applying restraint to suspension components other than the lower axle support/control arms may cause alignment problems or damage to that component.

**NOTE:** The front and rear bumper tiedown rings are primary tiedown points.

**NOTE:** The lower axle support/control arms may be used when restraint obtained from the primary tiedown points and pintle hook is insufficient; these have a longitudinal and lateral rated capacity of 7,000 lbs and 4,000 lbs respectively.

**Table 3: Provision Location & Rated Capacities**

<b>HMMWV TIEDOWN RING LIMITS (POUNDS)</b>				
<b>Index</b>	<b>Description</b>	<b>Vertical</b>	<b>Longitudinal</b>	<b>Lateral</b>
1	Front Bumper Small Tiedown Rings <sup>1 2</sup>	5,000	10,000	7,500
2	Front and Rear Bumper Large Tiedown Rings <sup>2 3</sup>	25,000	25,000	25,000
3	Tiedown Rings Aft of Front Bumper <sup>4</sup>	0	0	0
4	Tiedown Rings Forward or Aft of Rear Coil Springs <sup>4</sup>	0	0	0
5	Pintle Hook	0	30,000	0
6	Sling Load Lifting Shackle	0	0	0

<sup>1</sup>Tiedown rings that only rotate vertically.

<sup>2</sup>All vehicles including M1097's may be restrained up to a maximum weight of 10,000 lbs using only the small and large tiedown rings on the bumper.

<sup>3</sup>Tiedown rings that swivel 360 degrees; these tiedown rings are only on the following models (M1097A2, M1113ECV, M1114ECV, M1116ECV, M1145ECV, M1151A1, M1152A1, M1165A1 and M1167A1). See Note 3 of Table 2.

<sup>4</sup>Tiedown points welded to the frame are certified for airdrop rigging only.

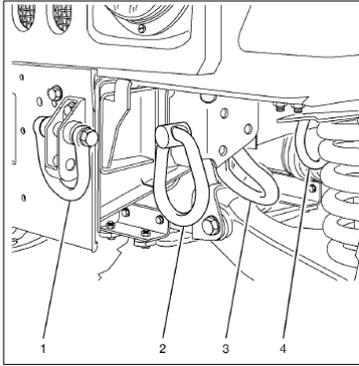


Figure 2: Front Provisions

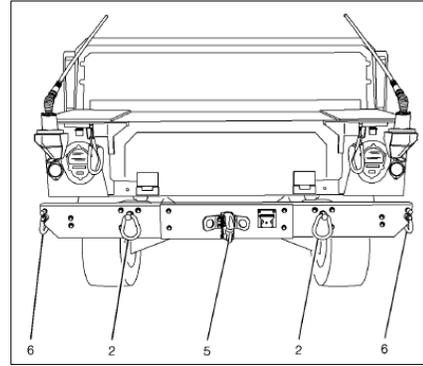
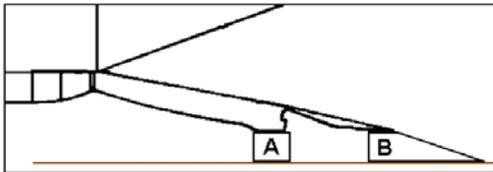


Figure 3: Rear Provisions

## 5. Shoring Dimensions & Diagrams (when required):

- a. C-5/C-17: For configurations with one shoring stack located at each end of the vehicle, the minimum base dimensions for each shoring stack are 24" L x 10" W , stacked to within ½" of front and rear bumpers. Shoring shall be placed on the vehicles' lateral centerline under the vehicle's front and/or rear bumpers, as necessary, then secure each stack with cargo straps. As an option, the C-130 sleeper shoring dimensions as listed in paragraph 5.b may be used.
- b. C-130: For configurations with two shoring stacks located at each end of the vehicle, the minimum base dimensions for each shoring stack should be 24" L x 5" W and stacked to within ½" of the vehicle's front and/or rear bumper or frame/chassis area. Secure each stack with cargo straps, as necessary. Two stacks shall be placed under each end (if required), one stack each side.
- c. C-130 Only: M977 Series HMMWVs (Ambulances) will require approach shoring; only if backed into the C-130 to reduce its projection.



### C-130 Shoring

Pedestal Shoring

"A" 18" L x 18" W x 4" H

Approach Shoring

"B" 57" L x 18" W x 8" H (2 required)

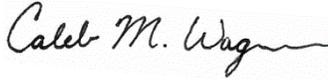
(Ramp toe end shall be supported by the approach shoring – min 12" L)

**(C-130) CAUTION:** Width of approach shoring "B" under the ground loading ramp must be 24" wide. The remaining approach shoring extending away from the auxiliary ramp contact must be a minimum of 18 inches wide.

### 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 this/these item/s.
2. AMC/A3V & AMC/A4T
3. SDDC TEA

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