



**DEPARTMENT OF THE AIR FORCE**  
**AEROSPACE SUSTAINMENT DIRECTORATE (AFMC)**  
**ROBINS AIR FORCE BASE GEORGIA**

03 April 2012  
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MEMORANDUM FOR HQ AFSOC/A3/A5

FROM: WR-ALC/GRU (SOF/PR)  
235 BYRON St, Ste 19A  
Robins AFB, GA 31098

SUBJECT: Use of Qualified Medical Equipment on the CV-22

1. This letter provides permanent authorization for use of the following pieces of carry-on, carry-off medical equipment on the CV-22. This letter cancels and supersedes the previous letter dated 10 January 2012:

- a. Propaq Encore Vital Signs Monitor, model no. 206EL, weight (wt) - 13.5 lbs
- b. Zoll M-Series Critical Care Transport (cct) Monitor, Defibrillator, wt - 34.0 lbs
- c. Welch Allyn Propaq LT, wt- 2 lbs

The defibrillator synchronization feature of the Welch Allyn Propaq LT is not aeromedical airworthiness certified.

- d. IV AC Medsystem III Multi-Channel Infusion Pump, wt - 5.1 lbs

IV AC Medsystem III Multi-Channel Infusion Pump should be positioned at the same level as the patient or attach the pump to the patient(s) litter per USAFRL AFRL-HE-BR-TR-1998-0021, Testing and Evaluation Report of IV AC Med System III Multi-Channel Infusion Pump and IVAC Power Adapter, Model 1555.

- e. Impact Continuous/Intermittent Portable Aspirator, model no. 326m, wt - 12.0 lbs
- f. Impact Uni-Vent Ventilator, model no. 754, wt- 13.0 lbs
- g. 10-liter Portable Therapeutic Liquid Oxygen Converter (PTLOX), model no. *cru-87/u*, wt - 41.0 lbs at F.S. 409
- h. Backpack/Battlefield Medical Oxygen System (BMOS), wt - 18.0 lbs at F.S. 409
- i. Pressed steel tank gas oxygen cylinder, model no. 3ht1850, wt - 13.1 lbs, location to be determined by flight crew.

j. SMEED, wt - 20.0 lbs

When SMEED equipped litter is installed within a litter tier, the follow restrictions apply:

- (1) Weight of SMEED with equipment installed shall not exceed 75 lbs.
- (2) No more than one SMEED may be installed in the litter tier.
- (3) No more than two litters may be occupied in the tier.
- (4) The litter spot directly above the SMEED installation shall not be used.

Ensure SMEED does not impede egress points when installed on litter.

k. Heartstart (Mrx) Monitor/Defibrillator model no. M3535A, M3536A, M3536M6. wt- 13.21bs for M3535A, M3536A. wt- 18.3lbs for M3536M6 w/manual paddles.

l. Emergency Evacuation Hyperbaric Stretcher (EEHS) model no.: 24/88/SAT170, wt - 123.76 lbs

When carried on the aircraft, the following restrictions apply to the SOS Emergency Evacuation Hyperbaric Stretcher IAW USAFRL report AFRL-HE-BR-TR-200 1-0069, Testing and Evaluation of the SOS ltd Hyperlite, Emergency Evacuation Hyperbaric Stretcher Model 24/88/SAT170:

- (1) When in use with patient, SOS Emergency Evacuation Hyperbaric Stretcher shall be secured to cargo floor with the addition of 5000 lbs cargo straps and picking up additional cargo rings as required to bring total securing load to 200 longitudinal, 200 vertical and 100 lateral (in the aircraft axes).
- (2) When not in use with patient, SOS Emergency Evacuation Hyperbaric Stretcher shall be secured to cargo floor.

m. Nonin Onyx II Pulse Oximeter (PULSOX) model no.: 9550, wt - 1.89 oz

n. BCI (hand-held) Pulse Oximeter model no.: 3303, wt - 19 oz

o. Electrical Cord Assembly Set (ECAS) model no.: 1079, wt - 63 lbs with Pelican case

Do not plug any equipment into ECAS other than the Zoll M-Series Critical Care Transport (CCT) Monitor Defibrillator, the Impact Continuous/Intermittent Portable Aspirator, Model No. 326M, and the Impact Uni-Vent Ventilator, Model No. 754. NEMA 5-15 receptacles on ECAS provide 400 Hz power. Most equipment having mating plugs is not compatible with 400 Hz power.

- (1) Equipment plugged into ECAS is not safely grounded. Avoid direct contact with metallic parts. Wear insulating gloves when handling.

- (2) Electrical contact between equipment plugged into ECAS and aircraft structure may result in sparks or ground loop current. Keep equipment electrically isolated from aircraft structure.
  - (3) The electrical cord assembly set (ECAS) consists of polyvinyl chloride (PVC) insulated wire. Burning PVC emits highly toxic, acidic, thick black smoke. Aircrew shall be warned of the dangers associated with this wire, including respiratory distress and eye irritation. Aircrew shall be provided with protective breathing apparatus to be used in fighting fire involving this wire. In the event the wire is burning, power should be removed immediately and every effort made to dump burning wire from the aircraft. Any part of the ECAS not actively being used shall be stored in the designated case.
- p. Blood pressure cuff (use with Propaq 206), wt - 1.8 oz
- q. Intraosseous Infusion System (EZ-IO), wt - 16.05 oz
- r. Ready Heat Blanket nsn 6532-01-525-4062, wt - 2 lbs
- s. Intracranial Pressure (ICP) Monitoring System model no.: 82-6605-sp, wt - 15.16 oz
- t. Overweight litter (OWL), wt - 23.3 lb

When carried on the aircraft, the following restrictions apply to the overweight litter system:

- (1) When in use with patient, overweight litter shall be secured to cargo floor with the addition of 5000 lbs cargo straps and picking up additional cargo rings as required to bring total securing load to 20G longitudinal, 20G vertical and 10G lateral (in the aircraft axes) IAW North American Rescue Products Technical Report on The Overweight Litter (OWL), report no. 06 FY 2007.
  - (2) When not in use with patient, OWL shall be folded into storage configuration and secured to cargo floor tie down rings with two 5000 lbs cargo straps each wrapped twice around the OWL and tightened, one at each end.
- u. Masimo Rainbow SET Rad-57 Signal Extraction Pulse CO-Oximeter (Rad-57), wt - 13 oz

The following warnings and recommendations are applicable to the Rad-57 in accordance with USAARL Report No. 2011-13 Rotary-Wing Airworthiness Certification Evaluation of the Masimo Rainbow SET Rad-57 Pulse CO-Oximeter:

- (1) Auditory alarms from this medical device cannot be heard in the flight environment. It is recommended that care providers rely on visual indications from the display to determine if there are any alarms or other system malfunctions.

- (2) This medical device is not compatible with Night Vision Devices. Crewmembers using night vision goggles will experience “blooming” from the light being emitted from this medical device. This active signature may also be seen from outside the aircraft at significant ranges with the unaided vision and more so with night vision devices. It is recommended that care providers conceal the LED display and apply the light shield accompanying this medical device to the patient’s finger to eliminate light being emitted from the sensor.
  - (3) This medical device has not been tested beyond the temperature ranges of -26°C or 60°C. As such, accuracy of the equipment beyond these ranges is unknown.
  - (4) This medical device has not been tested beyond the pressure altitude of 18,000 ft. As such, accuracy of the equipment beyond this limit is unknown.
  - (5) This medical device operates on 4 AA Alkaline batteries, and it is recommended that spare batteries be carried at all times.
2. This equipment is also limited by the following restrictions as well as CV-22 NATOPS, T.O.1V-22(C)B-1, and applicable CV-22 Interim Flight Clearances (IFCs) and Flight Releases.
- a. Electronic medical equipment has been evaluated for compliance with MIL-STD-464a. However, equipment anomalies may occur due to the electromagnetic environment. WRALC/GRU Engineering shall be notified of any electromagnetic compatibility (EMC) observed to assess impact on safety of flight.
  - b. When not in use, all other medical equipment shall either be stowed in a Pelican case or shall be restrained to the cargo floor using cargo straps to 20G longitudinal, 20G vertical, and 10G lateral (in the aircraft axes).
  - c. Internal loading of a Pelican case shall not exceed 153 Lbs. Maximum total weight of fully loaded Pelican case is 183 Lbs. The Pelican case shall be secured to the cargo tie down rings at F.S. 333 (one container) and F.S. 526 (up to two containers) IAW NAVAIRSYSCOM 4.3.5.4 Memorandum with Approved Securing Method for Pelican Box within V-22 Cabin.
  - d. The equipment list has not been tested for compliance with MIL-STD-704D and may not operate correctly when connected to aircraft power.
  - e. Night vision aided flights not authorized with medical equipment powered on.
  - f. No equipment shall be stored in such a manner that it is located underneath or interferes with the operation of an occupied crashworthy troop seat. The retention straps used to secure equipment shall not pick up tie down rings beneath occupied crashworthy troop seats.

- g. Equipment may not be stowed in front of or in the vicinity of an occupied crashworthy troop seat such that the seated occupant is able to or required to place their feet on top of this equipment while seated.
  - h. No equipment may be stowed in front of an occupied crashworthy troop seat such that the legs of the seated occupant are unable to swing freely and completely in front of the occupant or such that the lower legs and feet are forced to be placed behind the knees and/or underneath the seat pan.
  - i. CV-22 cabin noise levels or use of hearing protection by aeromedical personnel may impact ability to discern audible alarms generated by emergency medical equipment components.
  - j. Emergency medical equipment may not perform per manufacturer specifications for altitude, temperature, and humidity extremes in which the CV-22 may operate.
3. Ensure that the weight and balance handbook has been updated for all configuration changes and a Form F clearance (DD365-4 or authorized equivalent) is generated prior to flight.

[REDACTED]

4/10/2012

[REDACTED]