



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AERONAUTICAL SYSTEMS CENTER (AFMC)
WRIGHT-PATTERSON AIR FORCE BASE OHIO

MEMORANDUM TO: ASC/WNU
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WRIGHT-PATTERSON AFB, OH 45433

1 August 2011

FROM: ASC/WLNJ (C-27J PROGRAM BRANCH)
BLDG 16, RM 127.L
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SUBJECT: Safe to Fly (STF) Memorandum for Impact Instrumentation, Inc. 731 Series EMV+ Ventilator on C-27J

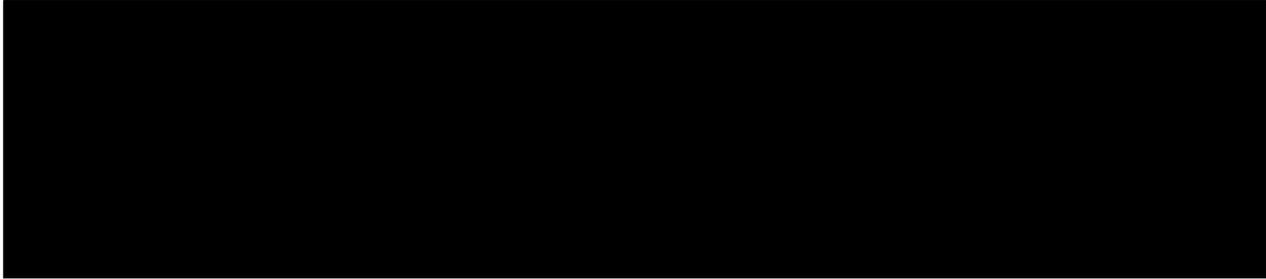
References: a. ASC/WNUP report, 10 June 2011, Technical Report of the Impact Instrumentation, Inc. 731 Series EMV+ Ventilator

b. ASC/WNU memo, 25 July 2011, Safe-To-Fly (STF) Recommendation for Impact 731 EMV+ Ventilator

c. TO 1C-27J-9, Cargo Loading and Offloading Manual

1. Based on tests documented in reference "a", the Impact 731 EMV+ Ventilator is approved for transport and operational usage on the C-27J.
2. The Impact 731 EMV+ Ventilator is a portable patient ventilator. The Impact 731 EMV+ Ventilator is mounted to the Special Medical Emergency Evacuation Device (SMEED) or may be strapped to NATO litters.
3. The Impact 731 EMV+ Ventilator mounted on the SMEED or NATO litters meets the restraint requirement of 9G forward (3G if transported as cargo), 2G Up, 1.5G aft, 1.5G lateral, and, if unsupported by other structure, 4.5G down. The Impact 731 EMV+ Ventilator weighs 9.6 pounds. Special procedures are listed below.
 - a) When used in-flight, auditory alarms produced by the ventilator are not able to be heard. Care providers must rely on visual alarms only. One-on-one monitoring is recommended.
 - b) The screen and SpO₂ sensor are not NVG compatible. The SpO₂ sensor covers must be used to make it NVG friendly. The care provider can also try to reposition the ventilator and place tape over most of the light bar to reduce NVG interference for other crew members.
 - c) When the internal battery temperature exceeds 45°C (113°F) the battery will not recharge. When the battery reaches 75°C (167°F), the unit will shut down to prevent failure. Care providers need to ensure that the internal battery is fully charged before every mission. Do not use AC power outside the range of 0°C to 45°C (32°F to 113°F).
 - d) During vibration testing, occurrences of alarm conditions were not uncommon. While many of these alarms could be false alarms presented due to the high vibration environment, there were also occurrences of more severe alarm conditions which affected the operation of the ventilator. These alarms were not seen during the KC-135 In-Flight Assessment. The care providers should not leave the patient unattended and manually ventilate if necessary.
 - e) While using the Volume Support mode, the ventilator only met the ±10% tidal volume criteria during the 0°C temperature test, due to circuit compliance. Care providers should consider this limitation.

f) High-power electromagnetic sources (e.g. nearby ground-based radar, other emitters in close proximity) may cause the ventilator to malfunction. Malfunction during normal flight operations is unlikely to occur; however, in all cases the care provider(s) should not leave the patient unattended and manually ventilate if necessary.



Cc: HQ AMC/SGX