



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
**US ARMY RESEARCH, DEVELOPMENT AND ENGINEERING COMMAND**  
**AVIATION AND MISSILE RESEARCH, DEVELOPMENT, AND ENGINEERING CENTER**  
**5400 FOWLER RD**  
**REDSTONE ARSENAL, ALABAMA 35898-5000**

AMSRD-AMR-AE-D

6 October 2004

MEMORANDUM FOR AMCOM Procurement Office (AMSAM-AC-LS-A, Mr. Jim Lang)

SUBJECT: US Army Research and Development Command (USA RDECOM) Aviation Engineering Directorate (AED) Authorization to use Version 12 Software and all Subsequent Releases of Version 12 Software, Herein Identified as Version 12.xx for Avion Manufacturing, Inc. Virtual Master Blade (TTS 9621)

1. Avion Manufacturing, Inc. designed, built and tested the Virtual Master Blade (VMB) to perform static balancing of tail rotor blades for AH-64 and UH-60 series helicopters, and to balance the UH-60 main rotor tip cap. The VMB provides an easy-to-use tool that accurately measures the blade's span and chord moments and generates recommended weight adjustments to return the blades to the original manufacturer's production specification. Avion Manufacturing, Inc. has introduced an improved version of software, Version 12.xx, to be used with the VMB.
2. The Aviation Engineering Directorate has performed a commercial validation and verification of the VMB, Version 12.xx software. Tail rotor blades of the AH-64 and UH-60 series aircraft and the UH-60 main rotor tip cap were successfully static balanced using the fixture with Version 12.xx software.
3. Since the VMB is to be utilized as test equipment to measure the critical characteristics of Critical Safety Items, the self-calibration and tolerance measuring capabilities of the VMB were evaluated by AED. This evaluation ensured adherence to US Army Aviation and Missile Command QE-STD-2, Revision A and Original Equipment Manufacturers' standards for each tail rotor blade.
4. This memorandum for record is not an authorization to procure any material or services as "Sole Source". Procurement of the VMB and any spare parts must be accomplished through "Local Purchase" at this time. The sole purpose of this memorandum for record is to authorize the use of the VMB with Version 12 software.

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5. The end items affected are as follows:

AIRCRAFT	BLADE PART NUMBER	BLADE NATIONAL STOCK NUMBER
AH-64	7-311422050-3 <sup>(note 1)</sup>	1615-01-154-7139
	7-311422050-5 <sup>(note 1)</sup>	1615-01-312-2387
	7-311422050-7 <sup>(note 1)</sup>	1615-01-312-2387
	7-311422050-9 <sup>(note 1)</sup>	1615-01-312-2387
UH-60	70101-31000-043 <sup>(note 1)</sup>	1615-01-113-8188
	70101-31000-044 <sup>(note 1)</sup>	
UH-60 Tip Cap	70150-09107-041	1560-01-447-9774

Note 1: If erosion protection is installed, this part number requires that the VMB be equipped with, and the blade be balanced with, the appropriate erosion protection blade software option.

5. Depot and AVIM units are authorized to use the VMB, Part Number AV-002-002 to evaluate and balance all AH-64 tail rotor blades, the UH-60 tail rotor paddle and the UH-60 main rotor tip cap. AVUM level maintenance units are authorized to static balance all AH-64 tail rotor blades listed above, and are authorized to evaluate UH-60 tail rotor paddles. AVUM units are NOT authorized to add or remove weights to balance the UH-60 tail rotor paddles. Evaluation and balancing must be performed in accordance with procedures contained in the Avion Manufacturing, Inc. Virtual Master Blade Operator's Manual, Version 12.xx dated 28 October 2003 or later. The operator's manual is written for the Avion Manufacturing, Inc part number AV-002-001. No additional tools to the AVUM shop set are necessary to static balance tail rotor blades.

6. A copy of this memorandum for record shall be inserted into the Avion Manufacturing, Inc. VMB operator's manual as authority to utilize the fixture for the blades listed in paragraph 5.

7. This memorandum augments the memorandum dated 13 March 2002. Both Version 11.09 software and Version 12.xx are authorized for use.

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8. The points of contact for this action are Mr. Bruce Albert, AMSRD-AMR-AE-D, DSN 897-2350, extension 9814, or commercial (256) 705-9814, and Mr. Bob Branhof, AMSRD-AMR-AE-A, DSN 897-2350, extension 9630 or commercial (256) 705-9630.

A handwritten signature in black ink, appearing to read 'M. Jude', with a long horizontal flourish extending to the right.

MARK J. JUDE  
Chief, Apache Division