



SERVICE BULLETIN

DATE: 14 APRIL 2003

PAGE 1 OF 7

MANDATORY **MANDATORY** **MANDATORY**

* Supersedes SB600N-020R1 dated 22 February 2000, revised to incorporate FAA Policy ASW-2001-01.

ELECTROMAGNETIC COMPATIBILITY (EMC) TEST FOR OPTIONAL EQUIPMENT EFFECTS ON THE FADEC CONTROL

1. PLANNING INFORMATION

A. Aircraft Affected:

All 600N helicopters with assembly/components affected by this notice.

B. Assembly/Components Affected By This Notice:

Any modification, not previously approved, with a high potential for electromagnetic interference (EMI). Electrical equipment is determined to have a high potential for interference if the optional electrical equipment requires large currents (greater than 25 amps) to operate, radiates strong (greater than 30 watts) electromagnetic fields, has a transmitting antenna located near (less than 1.64 feet (0.5 m) away) the FADEC system, or has a High Frequency (HF) transmitter of any power. Examples of types of equipment in this class are HF radios, high powered radars, hoists, and radio installations with transmitting antennas located near the FADEC system. Examples of types of equipment possibly requiring large currents to operate or radiating strong electromagnetic fields are EMS equipment, night sun lights, air conditioners, video and sound systems, FLIR sensors, forward looking radars, weather radars, communication systems and datalink transmission systems. Equipment that does not meet this criteria is considered to not have a high potential for interference and does not need to be tested per this Bulletin.

Do not test previously approved installations, or installations identical to those previously approved by the FAA or through compliance to previous revisions of this Bulletin.

Do not test Type Certificated or Supplemental Type Certificated installations, or installations qualified to a Federal Aviation Administration accepted standard for radiated and conducted emissions.

C. Reason:

Type certificate data sheet H3WE requires an (EMC) test for any modification with a high potential for (EMI). This test demonstrates that the operation of optional electrical equipment does not adversely affect the operation of the Full Authority Digital Electronic Control (FADEC) system for the Rolls-Royce Allison (RRA) 250-C47M engine. Failure to comply with this Bulletin may result in abnormal operation or loss of the FADEC system. This condition may cause a precautionary/emergency landing situation.

D. Description:

This test consists of ground and/or flight tests, during which the Equipment Under Test (EUT) is operated while the FADEC system is monitored for any anomalies.

E. Time of Compliance:

Recurring compliance, upon installation of assembly/components affected by this bulletin.

F. FAA Approval:

The technical aspects of this Bulletin are FAA Approved.

MANDATORY **MANDATORY** **MANDATORY**



DATE: 14 APRIL 2003

PAGE 2 OF 7

SERVICE BULLETIN

/// MANDATORY ////////////////////////////////////// MANDATORY ////////////////////////////////////// MANDATORY ///

G. Manpower:

All tests shall be witnessed by a test director who has received instruction from RRA in the use of Chandler Evans Maintenance Terminal 95 and a pilot qualified in the MD600N.

NOTE: RRA personnel will provide instructions on completion of this test procedure using the 250-C47M engine maintenance terminal software. Following instruction and FAA concurrence, the trained personnel may complete the testing as defined by 600N-CE-8044P.

H. Criteria For Determining Ground/Flight Test Applicability:

In most cases, ground and flight testing is required to show EMC. If the optional electrical equipment can only be operated under flight conditions, then ground testing need not be performed.

I. Test Site and Facility:

Conduct the test at a location that minimizes EMI to the aircraft from external sources.

J. Test Data Documentation:

(Ref. Figure 1, Figure 2, and Figure 3)

A report cover sheet and test data sheets shall be prepared prior to the test. Test data sheets shall identify each operating mode of the EUT.

For EUT that can operate over multiple frequencies, test at least one (1) frequency in the low end, middle, and high end of the range. EUT that can operate over a large frequency range test at least one (1) frequency in each octave of frequency range and at the low and high end of the overall range. If any EMI response is detected during testing, perform additional testing to determine the frequency at which the greatest EMI effect occurs.

At the completion of the test, a report consisting of the cover sheet and test data sheets must be approved by an approved technician or a RRA representative. The approved technician or RRA representative's signature on the report cover sheet verifies the test data has been reviewed and there is no unacceptable EMI effect on the FADEC system.

A copy of this report shall be delivered to MDHI Field Service for MDHI records. Any and all installations that result in a detected EMI effect are to be reported by MDHI to the FAA, Los Angeles Aircraft Certification Office.

Contact RRA for requirements on becoming an approved technician.

K. Equipment Installation Approval:

Approval of the optional equipment installation shall be the responsibility of the installing organization.

L. Points of Contact:

For further assistance, contact your local MDHI Field Service Representative or contact the Field Service Department at MDHI, Mesa, Arizona.
Telephone 1-800-388-3378 or (480) 346-6387.
DATAFAX: (480) 346-6813.

M. Warranty Policy:

None

/// MANDATORY ////////////////////////////////////// MANDATORY ////////////////////////////////////// MANDATORY ///



SERVICE BULLETIN

DATE: 14 APRIL 2003

PAGE 3 OF 7

/// MANDATORY ////////////////////////////////////// MANDATORY ////////////////////////////////////// MANDATORY ///

N. Tooling:

Refer to the latest revision of the “600N Electromagnetic Compatibility Test For Optional Equipment Effects On The FADEC”, MDHS document number 600N-CE-8044P, for tooling requirements. Contact MDHI Field Service to verify or obtain the latest revision of the test document 600N-CE-8044P.

O. Other Publications Affected:

None

2. ACCOMPLISHMENT INSTRUCTIONS

- (1). Perform EMC test in accordance with the latest revision of MDHS document 600N Electromagnetic Compatibility Test For Optional Equipment Effects On The FADEC, number 600N-CE-8044P.
- (2). Record compliance to this Bulletin in the Compliance Record section of the rotorcraft Log Book, and specify all equipment tested.

/// MANDATORY ////////////////////////////////////// MANDATORY ////////////////////////////////////// MANDATORY ///



DATE: 14 APRIL 2003
PAGE 4 OF 7

SERVICE BULLETIN

/// MANDATORY ////////////////////////////////////// MANDATORY ////////////////////////////////////// MANDATORY ///

EMC EVALUATION TEST REPORT FOR

NON-QUALIFIED ELECTRICAL/ELECTRONIC

EQUIPMENT WITH A HIGH POTENTIAL FOR INTERFERENCE

INSTALLED ON THE MD600N

HELICOPTER EQUIPPED WITH THE ROLLS-ROYCE MODEL

250-C47M FADEC SYSTEM

These tests are accomplished in accordance with the FAA approved test procedure in latest revision of MDHS approved test procedure 600N-CE-8044P

AIRCRAFT TESTED

Aircraft Registration Number _____ **Date of Test** _____

Aircraft Serial Number _____

TEST RESULTS APPROVAL

Authorized Technician _____ **Date:** _____

Figure 1. Sample Report Cover Sheet

/// MANDATORY ////////////////////////////////////// MANDATORY ////////////////////////////////////// MANDATORY ///



DATE: 14 APRIL 2003
PAGE 6 OF 7

SERVICE BULLETIN

MANDATORY  **MANDATORY**  **MANDATORY** 

EMC TEST DATA SHEET

TEST PHASE: _____ DATE: _____
 HELICOPTER S/N: _____ PILOT _____
 AUTHORIZED TECHNICIAN _____ TEST DIRECTOR _____

SOURCE			VICTIM (FADEC)	
EQUIPMENT	FILE NAME	OPERATING MODE	TEST PASS	TEST FAIL
CLEAR	T0A	NO EQUIPMENT UNDER TEST		
#1 KX-165 NAV/COM	T1A	ON/OFF		
#1 KX-165 NAV/COM	T1B	TRANSMIT ON 118.0		
#1 KX-165 NAV/COM	T1C	TRANSMIT ON 123.7		
#1 KX-165 NAV/COM	T1D	TRANSMIT ON 128.65		
#1 KX-165 NAV/COM	T1E	TRANSMIT ON 135.9		
#2 KX-196A COM	T2A	ON/OFF		
#2 KX-196A COM	T2B	TRANSMIT ON 118.0		
#2 KX-196A COM	T2C	TRANSMIT ON 123.7		
#2 KX-196A COM	T2D	TRANSMIT ON 128.65		
#2 KX-196A COM	T2E	TRANSMIT ON 135.9		
KMA-24H-71 AUDIO PANEL	T3A	ON/OFF		
KT-76A TRANSPONDER	T4A	ON/OFF		
KT-76A TRANSPONDER	T4B	STANDBY TO ALT PUSH IDENT (XPDR MUST BE INTERROGATED)		
KG55A COMPASS SYSTEM	T5A	ON/OFF		

Notes:

Figure 3. Sample Test Data Sheet (Sheet 1 of 2)

MANDATORY  **MANDATORY**  **MANDATORY** 



SERVICE BULLETIN

DATE: 14 APRIL 2003
PAGE 7 OF 7

MANDATORY  **MANDATORY**  **MANDATORY**

EMC TEST DATA SHEET

TEST PHASE:	_____	DATE:	_____
HELICOPTER S/N:	_____	PILOT	_____
AUTHORIZED TECHNICIAN	_____	TEST DIRECTOR	_____

SOURCE			VICTIM (FADEC)	
EQUIPMENT	FILE NAME	OPERATING MODE	TEST PASS	TEST FAIL
KG-55A COMPASS SYSTEM	T5B	SLAVE COMPASS LEFT AND RIGHT		
VIDEO RECORDER	T6A	ON/OFF		
VIDEO RECORDER	T6B	ACTIVATE RECORD/PLAY MODES		
VIDEO RECORDER	T6C	ACTIVATE FAST FORWARD & REWIND		
WESCAM CAMERA	T7A	ON/OFF		
WESCAM CAMERA	T7B	PAN LEFT/RIGHT AND UP/DOWN		
WESCAM CAMERA	T7C	ZOOM IN/OUT & 2X EXTENDER IN/OUT		
WESCAM CAMERA	T7D	FOCUS & 2X EXTENDER IN/OUT		
KRA10A RADAR ALT	T8A	ON/OFF		
KRA10A RADAR ALT	T8B	PRESS TO TEST		
KN-63 DME	T9A	RECEIVE LOCK ON DISTANCE THEN OFF/ON		
ARGUS 5000 MOVING MAP	T10A	ON/OFF		
FREZZI TALENT LIGHT	T11A	ON/OFF		
END	T12A	ALL EQUIPMENT UNDER TEST ON		

Notes:

Figure 3. Sample Test Data Sheet (Sheet 2 of 2)

MANDATORY  **MANDATORY**  **MANDATORY**