

Engine

*ASAM
UH-1-01-ASAM-05
inspection of engine
power shaft bolt*

01 17 281200Z SEP 01 PP PP UUUU AA ZYUW

FROM
:CDRANCOM REDSTONE ARSENAL AL//AMSAM-SF-A//
TO
:AIG 8881
:AIG 9004
:AIG 7515
:AIG 7471
:AIG 12124
:CRDATC ABERDEEN PROVING GROUND MD//CSTE-DTC-AT-WC-W//
:CDR8GAD RICHMOND KY//SI0BG-OC//
:RAYTHEON RANGE SYSTEMS ENGINEERING KWAJALEIN MH//PAT2//
:CHIEF ARMY AIR DIV HOLLOWAN AFB NM//CSTE-DTC-WG-NRO-T//
:USDOCO LANDSOUTHEAST IZMIR TU//AV//
:WALLOPS FLIGHT FACILITY NASA WALLOPS ISLAND VA//
: CODE 831.2 AIRCRAFT QA//
INFO
:CDRMDW WASHINGTON DC//ANLG-LS//
:FBI WASHINGTON DC//ISD ASOS AVIATION//
:FAA SOUTHWEST RGN HQ FORT WORTH TX//ASW-100//
:CGSASAMDC ARLINGTON VA//CSSD/ZA//

XMT

ACCT

TEXT

UNCLAS
SUBJECT - AVIATION SAFETY ACTION MESSAGE, MAINTENANCE MANDATORY,
RCS CSGLD-1860(R1), ALL UH-1 AND AH-1 SERIES HELICOPTERS WITH T53
ENGINE INSTALLED, ONE TIME INSPECTION OF POWER SHAFT BOLTS, UH-1-
01-ASAM-05, AH-1-01-ASAM-04 (TB 1-1520-243-20-29).

NOTE

THIS IS AN AVIATION SAFETY ACTION MESSAGE ISSUED IAW AR 95-1,
CHAPTER 6, 1 SEP 97. THIS MESSAGE HAS NOT BEEN TRANSMITTED TO
UNITS SUBORDINATE TO ADDRESSEES. ADDRESSEES SHOULD IMMEDIATELY
RETRANSMIT THIS MESSAGE TO ALL SUBORDINATE UNITS, ACTIVITIES OR
ELEMENTS AFFECTED OR CONCERNED. THE RETRANSMITTAL SHALL REFERENCE
THE MESSAGE. ACTION ADDRESSEES WILL IMMEDIATELY VERIFY THIS
TRANSMISSION TO CDR, ANCOM, ATTN: AMSAM-SF-A (SOF COMPLIANCE
OFFICER).

1. PRIORITY CLASSIFICATION -

NOTE

IAW AR 95-1, PARA 6-6A, MACOM COMMANDERS MAY AUTHORIZE TEMPORARY
EXCEPTION FROM ASAM MESSAGE REQUIREMENTS. EXCEPTION MAY ONLY
OCCUR WHEN COMBAT OPERATIONS OR MATTER OF LIFE OR DEATH IN CIVIL
DISASTERS OR OTHER EMERGENCIES ARE SO URGENT THAT THEY OVERRIDE
THE CONSEQUENCES OF CONTINUED AIRCRAFT OPERATION.

A. AIRCRAFT IN USE - UPON RECEIPT OF THIS MESSAGE, MAKE THE
FOLLOWING ENTRY ON THE DA FORM 2408-13-1. ENTER A RED HORIZONTAL
DASH // - // STATUS SYMBOL WITH THE FOLLOWING STATEMENT: "INSPECT
ENGINE POWER SHAFT BOLT IAW UH-1-01-ASAM-05, AH-1-01-ASAM-04 (TB
1-1520-243-20-29) WITHIN THE NEXT 150 FLIGHT HOURS, BUT NLT 30
JUNE 2002." CLEAR THE RED HORIZONTAL DASH // - // ENTRY WHEN THE
PROCEDURES IAW PARA 8 AND 9 ARE COMPLETED. THE AFFECTED AIRCRAFT
SHALL BE INSPECTED AS SOON AS PRACTICAL BUT NO LATER THAN 30 JUNE
2002. COMMANDERS WHO ARE UNABLE TO COMPLY WITH THE REQUIREMENTS
OF THIS MESSAGE WITHIN THE TIME FRAME SPECIFIED WILL UPGRADE THE
AFFECTED AIRCRAFT STATUS SYMBOL TO A RED //X//.

B. AIRCRAFT IN MAINTENANCE -

(1) AIRCRAFT IN AVUM, AVIM, OR DEPOT LEVEL MAINTENANCE - SAME AS PARA 1A.

(2) AIRCRAFT AT CONTRACTOR FACILITY - U.S. HELICOPTERS WILL INSPECT DD 250 AIRCRAFT PRIOR TO THOSE AIRCRAFT DEPARTING FOR FERRY TO FINAL DESTINATION.

C. AIRCRAFT IN TRANSIT -

(1) SURFACE/AIR SHIPMENT - SAME AS PARA 1A.

(2) FERRY STATUS - SAME AS PARA 1A.

D. MAINTENANCE TRAINERS (CATEGORY A AND B) - N/A.

E. COMPONENT/PARTS IN STOCK AT ALL LEVELS (DEPOT AND OTHERS) INCLUDING WAR RESERVES - UPON RECEIPT OF THIS MESSAGE, DEPOT AND MATERIEL ACTIVITY COMMANDERS WILL ENSURE THE MATERIEL CONDITION TAGS OF ALL ITEMS IN ALL CONDITION CODES LISTED IN PARAGRAPHS 6 AND 7 ARE ANNOTATED TO READ: "UH-1-01-ASAM-05, AH-1-01-ASAM-04 (TB 1-1520-243-20-29), INSPECTION OF POWER SHAFT BOLTS NOT COMPLIED WITH."

(1) WHOLESALE STOCK - UPON RECEIPT OF THIS MESSAGE, DEPOT AND MATERIEL ACTIVITY COMMANDERS WILL ENSURE ALL ITEMS IN CONDITION CODES //A// AND //B// LISTED IN PARAGRAPHS 6 AND 7, ARE PLACED IN CONDITION CODE //3// AND TAGGED WITH A SUSPENDED TAG/LABEL - MATERIEL, DD FORM 1575/DD FORM 1575-1. DO NOT REMOVE ORIGINAL CONDITION TAGS. REPORT COMPLIANCE WITH THIS MESSAGE IAW PARAGRAPH 14B(2) NLT 12 OCTOBER 2001.

(2) RETAIL STOCK - UPON RECEIPT OF THIS MESSAGE, COMMANDERS AND FACILITY MANAGERS MAINTAINING RETAIL STOCK AT INSTALLATION LEVEL AND BELOW SHALL CONTACT THE SUPPORTED AVIATION UNIT TO PERFORM THE PROCEDURES REQUIRED IAW PARAGRAPHS 8 AND 9 ON SUSPECT MATERIEL. DISPOSE OF DISCREPANT MATERIEL IAW PARAGRAPH 10.

F. COMPONENTS/PARTS IN WORK (DEPOT LEVEL AND OTHERS) - N/A.

2. TASK/INSPECTION SUSPENSE DATE - COMPLETE THE INSPECTION IAW PARA 8 WITHIN THE NEXT 150 FLIGHT HOURS BUT NLT 30 JUNE 2002.

3. TAMMS REPORTING COMPLIANCE SUSPENSE DATE - REPORT COMPLIANCE IAW PARA 14A(1) NLT 19 OCTOBER 2001.

4. SUMMARY OF PROBLEM -

A. THERE HAVE BEEN TWO CIVILIAN T53 SHOULDERED SHAFT BOLTS, PART NUMBER 1-140-067-14, FOUND IN SERVICE CONTAINING INCLUSIONS IN THE METAL. THIS SAME BOLT IS USED ON THE ARMY T53 SERIES ENGINES AND IS COMMONLY REFERRED TO AS THE "POWER SHAFT BOLT". THIS BOLT POSITIONS THE AFT END OF THE POWER SHAFT IN THE ENGINE ASSEMBLY. FAILURE OF THE POWER SHAFT BOLT CAN RESULT IN ENGINE SHUTDOWN. IF THE POWER SHAFT BOLT FAILS, THE POWER SHAFT COULD MOVE FORWARD AND CONTACT THE COMPRESSOR SHAFT, CAUSING THE COMPRESSOR AND THE POWER TURBINE TO BECOME WELDED TOGETHER.

B. FOR MANPOWER/DOWNTIME AND FUNDING IMPACTS SEE PARA 12.

C. THE PURPOSE OF THIS MESSAGE IS TO REQUIRE A MANDATORY MAGNETIC PARTICLE INSPECTION OF ALL POWER SHAFT BOLTS, PART NUMBER 1-140-067-14.

5. END ITEMS TO BE INSPECTED - ALL UH-1 AND AH-1 SERIES AIRCRAFT WITH T53 SERIES ENGINE INSTALLED.

6. ASSEMBLY COMPONENTS TO BE INSPECTED -

NOMENCLATURE	PART NO.	NSN
ENGINE, AIRCRAFT, TURBINE	1-000-060-22	2840-00-134-4803
ENGINE, AIRCRAFT, TURBINE	1-000-060-23	2840-00-621-1860

7. PARTS TO BE INSPECTED -

NOMENCLATURE	PART NO.	NSN
SHAFT, SHOULDERED	1-140-067-14	3040-00-943-0054

8. INSPECTION PROCEDURES -

A. REMOVE POWER SHAFT BOLT (TM 1-2840-260-23P, FIGURE 19, ITEM 5) IAW TM 55-2840-229-23.

NOTE

ACCURATE MEASUREMENT OF THE SHIM THICKNESS DURING DISASSEMBLY WILL SAVE SIGNIFICANT EFFORT WHEN THE ENGINE IS REASSEMBLED.

- (1) RECORD SHIM THICKNESS (TM 1-2840-260-23P, FIGURE 19, ITEM 4), AND RETAIN FOR REUSE.
- (2) DISCARD RING (TM 1-2840-260-23P, FIGURE 19, ITEM 6). THE ENGINE MAINTENANCE MANUAL (TM 55-2840-229-23) WILL BE CHANGED TO SHOW THIS RING AS A ONE TIME USE ITEM.

NOTE

THE MAGNETIC PARTICLE (MP) INSPECTION OF THIS BOLT IS AN AVIM LEVEL TASK THAT WILL BE PERFORMED USING A HORIZONTAL WET UNIT. THE PORTABLE TEST UNIT IS NOT APPROVED FOR THIS INSPECTION DUE TO THE NEED TO DETECT SUBSURFACE FLAMS.

- B. INSPECT POWER SHAFT BOLT IAW TM 55-2840-229-23, PARA 4-7.4. BOTH THE VISUAL AND MAGNETIC PARTICLE INSPECTIONS ARE REQUIRED IAW TM 55-2840-229-23, PARA H-19, WITH THE FOLLOWING CHANGES -

- (1) CLEAN CONTACT AREA ON BOLT ENDS TO ENSURE GOOD CONDUCTION.
- (2) END-TO-END AMPS SHALL BE 400 (NOT 700/900 AS SPECIFIED IN THE TM).

- C. THE FOLLOWING CRITERIA APPLY FOR THIS INSPECTION -

- (1) BOTH SURFACE AND SUBSURFACE DEFECTS - NO CRACKS, CRACK LIKE INDICATIONS, LAMINATIONS, SEAMS, LAPS, OR BURSTS ARE ALLOWED. ALSO, SURFACE AND SUBSURFACE INDICATIONS REPRESENTING DISCONTINUITIES CAUSED BY PITS OR POROSITY SHALL BE REJECTED.
- (2) SURFACE NONMETALLIC INCLUSIONS - TOTAL LENGTH OF ALL INDICATIONS IN ANY ONE SQUARE INCH AREA SHALL NOT EXCEED 0.25 INCHES. NO SINGLE INDICATION SHALL EXCEED 0.030 INCHES IN LENGTH. PARALLEL INDICATIONS SHALL BE SEPARATED BY AT LEAST 0.180 INCHES. INDICATIONS SHALL NOT EXTEND OVER MACHINED EDGES OR CHAMFERS, OR INTO HOLES OR FILLETS.

- (3) SUBSURFACE NONMETALLIC INCLUSIONS - TOTAL LENGTH OF ALL INDICATIONS IN ANY ONE SQUARE INCH AREA SHALL NOT EXCEED 0.25 INCHES. NO SINGLE INDICATION SHALL EXCEED 0.030 INCHES IN LENGTH. PARALLEL INDICATIONS SHALL BE SEPARATED BY AT LEAST 0.120 INCHES.

- (4) SURFACE/SUBSURFACE NOTES - TWO NONMETALLIC, COLINEAR INDICATIONS SHALL BE CONSIDERED AS ONE INDICATION IF THE DISTANCE OF CLOSEST APPROACH IS LESS THAN THE LENGTH OF THE SHORTEST INDICATION. IF SUCH A CONDITION EXISTS, THE LENGTH OF THE INDICATION TO BE EVALUATED SHALL BE THE SUM OF THE TWO INDICATIONS PLUS THE DISTANCE SEPARATING THE INDICATIONS.

- D. IF THE POWER SHAFT BOLT DOES NOT MEET THE INSPECTION CRITERIA IAW PARAGRAPHS 8B AND 8C, PROCEED TO PARA 9A.

- E. IF THE POWER SHAFT BOLT DOES MEET THE INSPECTION CRITERIA IAW PARAGRAPHS 8B AND 8C, PROCEED TO PARA 9B.

9. CORRECTION PROCEDURES -

- A. REPLACE ALL POWER SHAFT BOLTS THAT DO NOT MEET THE REQUIREMENTS SPECIFIED IN PARAGRAPHS 8B AND 8C.

- B. FOR BOLTS THAT MEET THE REQUIREMENTS OF PARAGRAPHS 8B AND 8C, VIBROETCH THE LETTERS "MP" ON THE FLAT RECESSED AREA OF THE BOLT HEAD MIDWAY BETWEEN THE CENTER HOLE AND THE RADIUS TRANSITION AREA. DEPTH OF VIBROETCH MARKING SHALL NOT EXCEED 0.005 INCH. TOUCH UP THE BOLT THREADED END CONTACT AREA PER MIL-L-23398 (NSN IS 9150-01-260-2534). TOUCH UP BOLT HEAD CONTACT AREA AND VIBROETCH MARKINGS PER MIL-C-10578, INHIBITED PHOSPHORIC ACID (NSN IS 6850-00-174-9672).

NOTE

PAY PARTICULAR ATTENTION TO THE SPECIFIED TORQUE SCALES WHEN RE-ASSEMBLING THE ENGINE. THE POWER SHAFT BOLT IS TORQUED IN INCH-POUNDS, AND THE RING/NUT IS TORQUED IN FOOT-POUNDS.

C. REASSEMBLE ENGINE IAW TM 55-2840-229-23 PROCEDURES, AND CLEAR THE RED HORIZONTAL DASH //--// ENTRY.

10. SUPPLY/PARTS AND DISPOSITION -

A. PARTS REQUIRED - ITEMS CITED IN PARA 7 MAY BE REQUIRED TO REPLACE DEFECTIVE ITEMS.

B. REQUISITIONING INSTRUCTIONS - REQUISITION REPLACEMENT PARTS USING NORMAL SUPPLY PROCEDURES. ALL REQUISITIONS SHALL USE PROJECT CODE (CC 57-59) "X0Y" (X-RAY ZERO YANKEE).

NOTE

PROJECT CODE "X0Y" IS REQUIRED TO TRACK AND ESTABLISH A DATA BASE OF STOCK FUND EXPENDITURES INCURRED BY THE FIELD AS A RESULT OF SOF ACTIONS.

C. BULK AND CONSUMABLE MATERIALS

NOMENCLATURE	PART NUMBER	NSN
RING, EXTERNALLY THR	1-140-233-02	5365-00-156-8958
SEAL RETAINER	1-300-462	5330-00-253-1722
PROTECTIVE, STEEL CORROSION	MIL-C-10578	6850-00-174-9672
LUBRICANT, DRY FILM	MIL-L-23398	9150-01-260-2534

D. DISPOSITION - DEMILITARIZE/MUTILATE IAW TM 1-1500-328-23 ANY PART/COMPONENT WHICH DOES NOT MEET INSPECTION CRITERIA.

E. DISPOSITION OF HAZARDOUS MATERIAL - IAW ENVIRONMENTAL PROTECTION AGENCY DIRECTIVES AS IMPLEMENTED BY YOUR SERVICING ENVIRONMENTAL COORDINATOR (AR 200-1).

11. SPECIAL TOOLS AND FIXTURES REQUIRED -

NOMENCLATURE	PART NUMBER	NSN
SOCKET, WRENCH, FACE	LTCT506	5120-00-473-7591
SOCKET, WRENCH	LTCT505	4920-00-473-7589

12. APPLICATION -

A. CATEGORY OF MAINTENANCE - AVIM. AIRCRAFT DOWNTIME WILL BE CHARGED TO AVIM MAINTENANCE. REPORT AIRCRAFT NON-MISSION CAPABLE MAINTENANCE (NMCM) WHILE UNDERGOING INSPECTION AND CORRECTION IAW THIS MESSAGE.

B. ESTIMATED TIME REQUIRED -

(1) US-1 - TOTAL OF 4 MAN-HOURS USING 1 PERSON. TOTAL OF 4 HOURS DOWNTIME FOR ONE END ITEM.

(2) AR-1 - TOTAL OF 6 MAN-HOURS USING 1 PERSON. TOTAL OF 6 HOURS DOWNTIME FOR ONE END ITEM. ADDITIONAL TIME FOR AR-1 IS FOR REMOVAL/REPLACEMENT OF THE IR SUPPRESSOR.

C. ESTIMATED COST IMPACT TO THE FIELD -

NOMENCLATURE	PART NO./NSN	QTY	COST EA.	TOTAL \$
RING EXTERNALLY THR	1-140-233-02	1	827.29	827.29
	5365-00-156-8958			
SHAFT, SHOULDERED	1-140-067-14	1	46.50	46.50
	3040-00-943-0054			
SEAL, RETAINER	1-300-462	1	32.36	32.36
	5330-00-253-1722			

TOTAL COST PER AIRCRAFT = \$106.15

D. TB/NWOS TO BE APPLIED PRIOR TO OR CONCURRENTLY WITH THIS INSPECTION - N/A.

E. PUBLICATIONS WHICH REQUIRE CHANGE AS A RESULT OF THIS INSPECTION -

(1) TM 55-2840-229-23 AND DMNR 1-2840-113 WILL BE CHANGED TO REFLECT THE LOWER END-TO-END AMP AND CLEANING REQUIREMENTS IDENTIFIED IN PARAGRAPH 8B.

(2) TM 55-2840-229-23 WILL BE CHANGED TO SHOW P/N 1-140-233-02 AS A ONE TIME USE ITEM.

(3) A COPY OF THIS MESSAGE SHALL BE INSERTED IN THE APPROPRIATE PUBLICATIONS AS AUTHORITY TO IMPLEMENT THE CHANGE UNTIL THE PRINTED CHANGE IS RECEIVED.

13. REFERENCES -

- A. DA PAM 738-751, 15 MAR 99.
- B. TM 1-2840-260-23P.
- C. TM 55-2840-229-23.
- D. TM 1-1500-328-23.
- E. DMWR 1-2840-113.

14. RECORDING AND REPORTING REQUIREMENTS -

A. AIRCRAFT -

(1) TAMMS REPORTING COMPLIANCE SUSPENSE - UPON ENTERING REQUIREMENTS OF THIS MESSAGE ON DA FORM 2408-13-1 FOR ALL EFFECTED AIRCRAFT, COMMANDERS WILL FORWARD A PRIORITY MESSAGE, DATAFAX OR E-MAIL TO CDR, AMCOM, ATTN: AMSAM-SF-A (SOF COMPLIANCE OFFICER), REDSTONE ARSENAL, AL 35898-5000, IAW AR 95-1, NLT DATE SPECIFIED IN PARAGRAPH 3. DATAFAX NUMBER IS DSN 897-2111 OR (256) 313-2111. EMAIL ADDRESS IS "SAFEADM@REDSTONE.ARMY.MIL". THE REPORT WILL CITE THIS MESSAGE AND TB NUMBER, DATE OF ENTRY IN DA FORM 2408-13-1, THE AIRCRAFT MISSION DESIGN SERIES AND SERIAL NUMBERS OF AIRCRAFT IN NUMERICAL ORDER.

(2) TASK/INSPECTION REPORTING SUSPENSE - NO SPECIAL REPORT OF THE RESULTS OF THIS INSPECTION IS REQUIRED.

B. WHOLESALE SPARE PARTS/ASSEMBLIES -

(1) REPORTING MESSAGE RECEIPT - N/A.
(2) TASK/INSPECTION REPORTING SUSPENSE - DEPOT AND MATERIEL ACTIVITY COMMANDERS WILL PROVIDE A DD FORM 1225 TO THE WHOLESALE MATERIEL POINT OF CONTACT (SPARES) LISTED IN PARAGRAPH 16C NLT DATE SPECIFIED IN PARAGRAPH 1E(1). PROVIDE AN ESTIMATE OF THE COST REIMBURSABLE FUNDING REQUIRED TO MOVE SERVICEABLE ITEMS ON HAND LISTED IN PARAGRAPHS 6 AND 7 TO A WORK AREA, UNPACK THE MATERIEL, REPACK THE MATERIEL AFTER INSPECTION BY AMCOM INSPECTORS, AND TO RETURN THE MATERIEL TO STORAGE, AS APPROPRIATE. REPORT, BY ORIGINAL SERVICEABLE CONDITION CODE, THE QUANTITY OF MATERIEL PLACED IN CONDITION CODE //J//. REPORT BY E-MAIL OR DATAFAX AND PROVIDE LOCAL POINT OF CONTACT.

C. RETAIL SPARE PARTS/ASSEMBLIES -

- (1) REPORTING MESSAGE RECEIPT - N/A.
- (2) TASK/INSPECTION REPORTING SUSPENSE - N/A.

D. THE FOLLOWING FORMS ARE APPLICABLE AND ARE TO BE COMPLETED IAW DA PAM 738-751, 15 MAR 99 -

NOTE

ULLS-A USERS WILL USE APPLICABLE "E" FORMS.

- (1) DA FORM 2408-5-1, EQUIPMENT MODIFICATION RECORD (ENGINE).
- (2) DA FORM 2408-13, AIRCRAFT STATUS INFORMATION RECORD.
- (3) DA FORM 2408-13-1, AIRCRAFT INSPECTION AND MAINTENANCE RECORD.
- (4) DD FORM 1574/DD FORM 1574-1, SERVICEABLE TAG/LABEL - MATERIEL (COLOR YELLOW). ANNOTATE REMARKS BLOCK WITH "INSPECTED SERVICEABLE IAW UH-1-01-ASAM-05, AH-1-01-ASAM-04 (TB 1-1520-243-20-29)."
- (5) DD FORM 1575/DD FORM 1575-1, SUSPENDED TAG/LABEL - MATERIEL (COLOR BROWN). ANNOTATE REMARKS BLOCK WITH "SUSPENDED IAW UH-1-01-ASAM-05, AH-1-01-ASAM-04 (TB 1-1520-243-20-29)."
- (6) DD FORM 1576/DD FORM 1576-1, TEST/MODIFICATION TAG/LABEL - MATERIEL (COLOR BLUE). ANNOTATE AUTHORITY BLOCK WITH "UH-1-01-ASAM-05, AH-1-01-ASAM-04 (TB 1-1520-243-20-29)".