Flight Safety Message: uh1/0005.msg

Contents
1. Subject
2. Priority Classification
3. Task/Inspection Suspension Date
4. Reporting Compliance Suspension Date
5. Summary of Problem
6. End Items To Be Inspected
7. Assembly Components To Be Inspected
8. Parts to be Inspected
9. Inspection Procedures
10. Corrective Procedures
11. Supply/Parts and Disposition
12. Special Tools and Fixtures Required
13. Application
14. References
15. Recording and Reporting Requirements
16. Weight and Balance
17. Points of Contact

Display Without Table Of Contents


Subject

SAFETY OF FLIGHT MESSAGE, TECHNICAL, RCS CSGLD-

1840[81], ALL UH-1 SERIES AIRCRAFT, REVISION TO UH-1-99-03 (TB 1- 1520-210-30-01, DATED 9 JUN 99), MANDATORY INSPECTION OF TAIL BOOM VERTICAL FIN SPAR ASSEMBLY, UH-1-00-05 (TB 1-1520-210-30-01, DATED FEB 00).
NOTE
THIS IS A SAFETY OF FLIGHT MESSAGE ISSUED IAW AR 95-1,
CHAPTER 4, 1 SEP 97. THIS MESSAGE HAS NOT BEEN TRANSMITTED
TO UNITS SUBORDINATE TO ADDRESSEES. ADDRESSEES SHALL
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
CURR. AMC/OM, ATTN: AMSAM-OF-A (SOF COMPLIANCE OFFICER).

Priority Classification

NOTE
THE CHANGES AS A RESULT OF THIS MESSAGE WILL BE
REFLECTED IN A REVISION TO TB 1-1520-210-30-01,
FEBRUARY 2000.

NOTE
SEE AR 95-1, PARA 6-6a, FOR EXCEPTION AUTHORITY
OF MAJOR COMMANDERS.
A. AIRCRAFT IN USE - UPON RECEIPT OF THIS MESSAGE THE
CONDITION STATUS SYMBOL OF THE CITED AIRCRAFT WILL BE CHANGED TO
A RED HORIZONTAL DASH //\, THE RED HORIZONTAL DASH //\ ENTRY
SHALL STATE "INSPECT TAIL BOOM VERTICAL FIN SPAR ASSEMBLY IAW
1-00-05 AT THE NEXT 75 FLIGHT HOUR SPECIAL INSPECTION AND, AS
APPLICABLE IAW PARA 9b, SUBMIT THE MOST RECENT X-RAY TO AMC/OM NLT
BOTH THE INSPECTION OF PARA. 8 AND CORRECTION OF PARA. 9 ARE
COMPLETED. THE AFFECTED AIRCRAFT SHALL BE INSPECTED AT THE NEXT
SCHEDULED 75 HOUR SPECIAL INSPECTION. FAILURE TO COMPLY WITH THE
REQUIREMENTS OF THIS MESSAGE WITHIN THE TIME FRAME SPECIFIED WILL
CAUSE THE STATUS SYMBOL OF THE AFFECTED AIRCRAFT TO BE UPGRADED
TO A RED //X//.
B. AIRCRAFT IN DEPOT MAINTENANCE - SAME AS PARA 1A.
C. AIRCRAFT UNDERGOING MAINTENANCE - SAME AS PARA 1A.
D. AIRCRAFT IN TRANSIT - SAME AS PARA 1A.
E. MAINTENANCE TRAINERS (CATEGORY A AND B) - SAME AS PARA
1A.
F. COMPONENT/PARTS IN STOCK AT ALL LEVELS (DEPOT AND OTHERS)
INCLUDING WAR RESERVES - N/A.
G. COMPONENT/PARTS IN WORK (DEPOT LEVEL AND OTHERS) - SAME

Task/Inspection Suspense Date

(A) AT THE NEXT SCHEDULED 75 HOUR SPECIAL INSPECTION.
(B) SUBMITTAL OF X-RAYS IAW PARA 9b NLT 25 FEB 2000.

Reporting Compliance Suspense Date
- NO LATER THAN 1 MAR 2000

IAW PARA 14A OF THIS MESSAGE.

Summary of Problem

A. BACKGROUND -
   (1) SOF UH-1-99-03 REQUIRED INSPECTION OF THE VERTICAL
       FIN SPAR FOR CRACKS AND DEBONDING. DETAILED INSPECTION
       PROCEDURES WERE PROVIDED IN THE PUBLISHED VERSION OF TB 1-1520-
       210-30-01 DATED 9 JUN 99 THAT WERE NOT INCLUDED IN THE MESSAGE

VERSION OF SOF UN-1-99-03.

(1) -- THE SOF STATES THAT IF THE VERTICAL FIN SPAR IS FOUND CRACKED, THE BOOM ASSEMBLY SHALL NOT BE USED. THE UN-1 MAINTENANCE MANUAL, TM 55-1520-210-23-1, ALLOWS FOR REPAIR OF VERTICAL FIN SPAR CRACKS NEAR THE 90 DEGREE GEARBOX MOUNT ATTACHMENT AREA. IT HAS BEEN DETERMINED THAT THIS REPAIR IS ACCEPTABLE AND MAY CONTINUE TO BE USED PROVIDING THAT A RECURRING VISUAL INSPECTION BE PERFORMED ON THE SPAR FOR CRACK GROWTH.

(2) -- SOF UN-1-99-03 (TB 1-1520-210-30-01 DATED 9 JUN 99) REQUIRED AT LEAST TWO OF COUNTERSUNK RIVET ON EXPOSURE #3 TO BE VISIBLE TO BE AN ACCEPTABLE X-RAY. REPORTS HAVE SINCE BEEN RECEIVED THAT SHOW CRACKS EMANATING FROM THE TOP/UPPER EDGE OF THE RIVET HOLE. THESE CRACKS WOULD NOT BE FOUND USING THE TWO THINGS CRITERIA. FOR THIS REASON, THE ENTIRE CIRCUMFERENCE OF THE COUNTERSUNK RIVET IS REQUIRED TO BE VISIBLE ON THE X-RAY FILM.

(3) -- AMCOM HAS RECEIVED AND CONFIRMED SEVERAL REPORTS WHICH INDICATE THE X-RAY PROCEDURE OF TB 1-1520-210-30-01 DATED 9 JUN 99, IS BEING PERFORMED IMPROPERLY. AIRCRAFT THAT WERE INSPECTED BY ANY ENTITY OTHER THAN AN ARNG AVIATION CLASSIFICATION REPAIR ACTIVITY DEPOT (AVCRAD) ARe OF PARTICULAR CONCERN.

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

B. THE PURPOSE OF THIS MESSAGE IS TO REVISE SOF UN-1-99-03 AND TB 1-1520-210-30-01 DATED 9 JUN 99 TO:

(1) ALLOW REPAIR OF CRACKS IN THE VERTICAL FIN SPARS NEAR THE 90 DEGREE GEARBOX MOUNT IAW THE UN-1 MAINTENANCE MANUAL.

(2) REQUIRE THE ENTIRE CIRCUMFERENCE OF THE COUNTERSUNK RIVET OF EXPOSURE #3 TO BE VISIBLE ON THE RADIOGRAPH.

(3) REQUIRE THE SUBMITAL OF ONE SET OF X-RAY FILM FOR REVIEW, IF APPLICABLE.

(4) CLARIFY LOCATION OF CRACK INITIATION.

(5) PROVIDE DISPOSITION OF CRACKED TAILBOOMS.

End Items To Be Inspected
- ALL UN-1 SERIES AIRCRAFT.

Assembly Components to be Inspected

Parts to be Inspected

Inspection Procedures

NOTE
INCORPORATE THESE REVISED INSPECTION PROCEDURES INTO THE NEXT 75 HOUR SPECIAL INSPECTION IAW SOF UN-1-99-03 (TB 1-1520-210-30-01 DATED 9 JUN 99). THERE IS NO IMMEDIATE REQUIREMENT TO INSPECT THE TAILBOOM BEFORE THE NEXT SCHEDULED 75 HOUR INSPECTION.

A. REVISE THE INSPECTION PROCEDURES OF TB 1-1520-210-30-01 DATED 9 JUN 99 AS FOLLOWS -

http://www.redstone.army.mil/cgi-bin/atcom1.sh/?uh1/0005.msg

02/23/2000
(1) Change the note preceding Paragraph 8D(24) - "A film density of 2.0 to 2.8 is mandatory across the area of interest. The penetrators outline (edges) and 24 hole must be visible on the radiographs to qualify the image. The edge of tape used to attach the penetrator may appear as a crack on the X-ray film."

(2) Add the following sentence to both Paragraphs 8D(9) and 8D(17) - "Secure the penetrator using tape over the lead numbers and 47 hole only. This will eliminate possible interpretation errors from indications generated by the edges of the tape."

(3) Change Paragraph 8D(25)(A) to read - "Carefully examine exposure to assure that a single rivet is shown above the penetrator and at least two rivets are shown below the penetrator. At least 0.2 inches of film beyond the top of the single (countersunk) rivet located above the penetrator must be visible on the X-ray to determine the status of the spar for this exposure. If the rivet is located under the angle support, which ties the left and right spar caps together, all of the 42 degree gearbox, it is possible that the entire rivet circumference will not be visible. In this situation, the radiograph must be redone using the following method:"

(4) Change Paragraph 8D(25)(A)(1) to read - "Carefully drill out the three most outboard rivets (left hand side) in the angle support (see Figure 9A). Figure 9A will be changed in the revision to TB 1-1520-210-20-01."

(5) Change the first sentence of Paragraph 8D(25)(A)(2) to read - "Carefully insert a plastic or phenolic wedge between the angle support and the left hand spar cap just enough to permit the X-ray film to slide up between the angle support and the spar cap."

(6) Change Paragraph 8D(25)(A)(4) to read - "If at least 0.2 inches of film above the countersunk rivet is visible, continue with interpretation and evaluation for cracks. If this criteria cannot be achieved, contact the technical PIO in Paragraph 16A for further instructions."

(7) Change the first sentence in Paragraph 8D(27) to read - "If the X-ray inspection required removal of the three most outboard rivets attaching the angle support to the spar cap (reference Figure 9A), and no cracks were found during this inspection, the rivets shall be replaced with the following fasteners:",

(8) Add the following note between Paragraph 8F(2) and 8F(2)(A) - "Note

Some spars may have a doubler repair on the outboard side of the left hand spar cap flange near the 90 degree gearbox mount. This repair is authorized by TM 55-1520-210-23-1, PARA 2-296.1, Figure 2-73.1."

(9) Change Paragraph 8F(2)(A) to add the following after the last sentence - "If a doubler repair is installed, or has been previously installed in this area, per TM 55-1520-210-23-1, PARA 2-296.1, Figure 2-73.1., visually inspect the underneat/Aft side of the spar to detect crack growth using an inspection mirror through the uppermost lightening hole in the spar web."

(10) Change Paragraph 8F(3) to read - "If no cracks are found, accomplish correction procedures of PARA 9."

B. Determine if the X-ray inspections were performed by an Army Avcrad X-ray team or an Amcom approved source IAW PARA 98. Report IAW PARA 98.

**Correction Procedures**

A. REVISE THE CORRECTION PROCEDURES OF TB 1-1520-210-30-01
DATED 9 JUN 99 AS FOLLOWS -
(1) CHANGE PARAGRAPH 5A TO READ - "IF A CRACK IS
CONFIRMED ON THE VERTICAL FIN SPAR ASSEMBLY, DETERMINE THE
SERVICEABILITY OF THE VERTICAL FIN SPAR ASSEMBLY AS FOLLOWS:
(A) CRACKS ON THE OUTBOARD SIDE OF THE LEFT HAND
SPAR CAP FLANGE BETWEEN THE UPPER MOST DUSS FASTENER RECEPTEACLE
AND THE 90 DEGREE GEARBOX MOUNT MAY BE REPAIRED USING THE
CRITERIA CONTAINED IN TM 55-1520-210-23-1, PARA 2-296.1, FIGURE 2-
73.1, HOWEVER, THE CRACK CANNOT EXCEED THE REPAIRABLE LENGTH
LIMITS SPECIFIED IN THE TM.
(B) ALL OTHER CRACKS, TO INCLUDE THOSE ON THE
OUTBOARD SIDE OF THE LEFT HAND SPAR CAP FLANGE BETWEEN THE UPPER
MOST DUSS FASTENER RECEPTEACLE AND THE 90 DEGREE GEARBOX MOUNT
THAT EXCEED THE REPAIRABLE LENGTH LIMIT SPECIFIED IN TM 55-1520-
210-23-1, PARA 2-296.1, FIGURE 2-73.1, SHALL NOT BE REPAIRED AND
THE TAILBOOM SHALL BE CONSIDERED DISCREPANT.
NOTE
THE REQUIREMENT TO SUBMIT X-RAY FILM SAMPLES
DOES NOT APPLY TO FMS CUSTOMERS.
B. UNITS THAT HAVE HAD THEIR X-RAY INSPECTIONS PERFORMED BY
ANY ENTITY OTHER THAN AN ARNG AVCRAD X-RAY TEAM, SHALL SUBMIT ONE
SET OF X-RAY FILM TO AMCOM UNLESS PREVIOUSLY SUBMITTED AND
APPROVED BY THE LOGISTICS POC LISTED AT PARA 16B. CONTACT MIKE
HARAGAN, THE LOGISTICAL POC LISTED AT PARA 16B, DSN 645-0211,
(256) 955-0211, EMAIL "MIKE.HARAGAN@REDSTONE.ARMY.MIL", FOR
INSTRUCTIONS ON WHERE TO SEND ONE SET OF FILM FROM THE MOST
RECENT X-RAYS (TO INCLUDE EXPOSURE #1, #2, AND #3) FOR REVIEW.
UNITS NEED TO INCLUDE WITH SUBMITTED FILM: A POINT OF CONTACT
WITH EMAIL, PHONE/FAX NUMBER AND RETURN ADDRESS IN ORDER TO
RECEIVE A TIMELY REPORT OF THE RESULTS. UNITS SHALL IDENTIFY THE
NAME OF THE ORGANIZATION/COMPANY PERFORMING RADIOGRAPHIC
INSPECTIONS. IF UNITS CHANGE THE ORGANIZATION/COMPANY PERFORMING THE
X-RAY INSPECTION IN THE FUTURE, RESUBMITTALS SHALL BE MADE
WITHIN 15 DAYS OF THE NEW INSPECTION.
C. SOP UN-1-99-03, TB 1-1520-210-30-01 9 JUN 99, DESCRIBES
A TYPICAL CRACK AS EMANATING FROM A RIVET HOLE AND PROPAGATING
TOWARD THE EDGE OF THE SPAR CAP IN EITHER DIRECTION. REPORTS
HAVE SINCE BEEN RECEIVED THAT SHOW CRACKS PROPAGATING FROM RIVET
HOLES IN A VARIETY OF ORIANTATIONS. WHEN EXAMINING THE X-RAY
FILM OR PERFORMING THE VISUAL INSPECTION, ATTENTION SHOULD BE
PAID TO THE ENTIRE CIRCUMFERENCE OF EACH RIVET HOLE FOR
INDICATIONS OF CRACKS. ILLUSTRATIONS DEPICTING TYPICAL SPAR
CRACK ORIENTATION ARE AVAILABLE FOR VIEWING ON THE UTILITY
HELICOPTERS WEB PAGE. THE URL ADDRESS IS:
WWW.UHPO.REDSTONE.ARMY.MIL. GO TO SAFETY, THEN UN-1 IROQUOIS
INFORMATION. ACCESS TO THE WEB SITE IS CONTROLLED. PROCEDURES
TO OBTAIN LOGIN ID ARE ACCESSIBLE BY CLICKING THE REGISTER
BUTTON.

Supply/Parts and Disposition

A. PARTS REQUIRED - SAME AS UN-1-99-03 (TB 1-1520-210-30-01
DATED 9 JUN 99).
B. REQUISITIONING INSTRUCTIONS - SAME AS UN-1-99-03 (TB 1-
1520-210-30-01 DATED 9 JUN 99).
C. BULK AND CONSUMABLE MATERIALS - SAME AS UN-1-99-03 (TB 1-
1520-210-30-01 DATED 9 JUN 99).
D. DISPOSITION - DEmMILITARIZE/MUTILATE IAW TM 1-1500-328-23
ANY PART/COMPONENT WHICH DOES NOT MEET INSPECTION CRITERIA.
E. DISPOSITION OF HAZARDOUS MATERIAL - SAME AS UN-1-99-03

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02/23/2000