

WESTERN UNION C.R.C.
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USDA FOREST SVC
3905 VISTA AVE
BOISE ID 83705

USFS BIFC

MAR 21 1990

1 R RUCIFRD5665 0800013 DA-BDCVBA
R 202030Z MAR 90 ZEX
FM CDR AVSCOM ST LOUIS MO //AMSAV-XSOF//
TO RUCLRFA/USDA FOREST SERVICE AVIATION AND FIRE MANAGEMENT
//BOISE INTERAGENCY FIRE CENTER 3905 VISTA AVE
BOISE ID 83705//
DA-BDCVBA

UNCLAS

SECTION 01 OF 02

SUBJECT - AVIATION SAFETY MESSAGE, ALL UH-1H/V AIRCRAFT, IMPROVED
PARTICLE SEPARATOR (UH-1-90-ASM-02)

NOTE - THIS MESSAGE IS NOT A SAFETY OF FLIGHT MESSAGE. THIS IS A
AVIATION SAFETY MESSAGE AND HAS NOT BEEN TRANSMITTED TO UNITS
SUBORDINATE TO ADDRESSEES. REQUEST ADDRESSEES RETRANSMIT THIS
MESSAGE TO ALL SUBORDINATE UNITS, ACTIVITIES OR ELEMENTS AFFECTED OR
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CONCERNED. THE RETRANSMITTAL SHALL REFERENCE THIS MESSAGE.

NOTE - AVSCOM IS INTRODUCING AVIATION SAFETY MESSAGES (ASM).
SAFETY-OF-FLIGHT (SOF) MESSAGES WILL REMAIN UNCHANGED.

ASMS MAY MODIFY MAINTENANCE ACTIONS IN ACCORDANCE WITH FUTURE
PUBLICATION CHANGES (I.E. REVISIONS TO PUBLISHED INSPECTION
PROCEDURES, TBD/RETIREMENT LIFE INCREASES).

ASMS SHALL NOT CALL FOR COMPLIANCE REPORTING TO AVSCOM.
ASMS SHALL NOT CAUSE THE STATUS OF THE AIRCRAFT TO CHANGE UPON
RECEIPT.

ASMS SHALL NOT CALL FOR AN ENTRY IN DA FORM 2408-13 UPON RECEIPT.

ASMS MAY PROVIDE SAFETY RELATED INFORMATION TO INCLUDE AVIATION
EQUIPMENT (I.E. NVG, ALSE, MOISTS).

RETAIN AND UTILIZE THIS MESSAGE IAW DA PAM 738-751, 15 JAN 88, PARA
1-17.

A. TM 55-1520-210-23P-1, AVIATION UNIT AND INTERMEDIATE MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST, ARMY MODEL UH-1H/V HELICOPTER,
BASIC DTD 26 FEB 81, THRU CHG 17 DTD 5 JULY 89.

1. PURPOSE - THE PURPOSE OF THIS MESSAGE IS TO -

A. ALERT UH-1H/V USERS OF DETERIORATION OF THE INTERNAL SEAL
ASSEMBLIES FOR THE IMPROVED PARTICLE SEPARATOR AND RECOMMEND A ONE
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TIME INSPECTION OF THE SEALS.

B. ALERT ALL UH-1H/V USERS OF THE POSSIBILITY OF ICE BUILD UP
INSIDE THE SEPARATOR DURING WINTER CONDITIONS WHILE AIRCRAFT IS

TO REPLY BY MAILGRAM MESSAGE. SEE REVERSE SIDE FOR WESTERN UNION'S TOLL - FREE PHONE NUMBERS



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PARKED OUTSIDE.

2. IMPROVED PARTICLE SEPARATORS (FIGURE 107A, TM55-1520-210-23P-1) HAVE BEEN INSTALLED ON CERTAIN UH-1H/V AIRCRAFT VIA MODIFICATION WORK ORDER, MWO 55-1520-210-50-25, BASIC DTD 1 OCT 88, THRU CHANGE 1 DTD 15 SEP 89. THE SEPARATOR UTILIZES TWO INTERNAL SEAL ASSEMBLIES (FIGURE 107A, ITEMS 35 AND 44). VORTEX GENERATORS OR SWIRL TUBES ARE USED TO REMOVE FOREIGN MATERIAL FROM THE AIR ENTERING THE ENGINE INLET.

3. RECENT DEFICIENCY REPORTS RECEIVED FROM THE FIELD INDICATE A DETERIORATION OF THE SMALLER SEAL ASSEMBLY, P/N CE00553-1D4A. THE SEAL ASSEMBLY USES A BELLOWS WHICH IS FABRIC BACKED WITH A RUBBER LAYER BONDED WITH ADHESIVE TO THE FABRIC. THE RUBBER LAYER SEEMS TO BE DETERIORATING AND CRACKING CAUSING THE RUBBER TO FLAKE OFF IN PIECES. THE FABRIC BACKING FACES TO THE ENGINE INLET THEREFORE PREVENTING INGESTION OF RUBBER THROUGH THE ENGINE INLET. IF THIS CONDITION GOES UNDETECTED FOR AN EXTENDED PERIOD OF TIME, SEVERE DETERIORATION MAY OCCUR WHICH WOULD DEFORM THE ENTIRE SEAL. THE PAGE 04 RUCIFRD5665 UNCLAS SEAL WOULD THEN LOSE ITS EFFECTIVENESS AS A SEAL.

4. RECENT DEFICIENCY REPORTS ALSO INDICATE A PROBLEM WITH THE LARGER SEAL ASSEMBLY, P/N CD00553-1D213A, WHICH ALSO USES A BELLOWS LIKE CONSTRUCTION SIMILAR TO THAT OF THE SMALLER SEAL. THE REPORTS CITE DEFORMATION OF THE BELLOWS CAUSING IT TO BE PULLED INTO THE ENGINE INLET AIR STREAM. THIS RESULTS IN A DISRUPTION OF AIR FLOW TO THE ENGINE CAUSING HIGHER EXHAUST GAS TEMPERATURES. BELLOWS DEFORMATION SHOULD NOT, HOWEVER, CAUSE A SIGNIFICANT REDUCTION IN ENGINE PERFORMANCE.

5. AVSCOM AND THE MANUFACTURER OF THE IMPROVED PARTICLE SEPARATOR ARE INVESTIGATING THESE REPORTED SEAL PROBLEMS. UNTIL THE CAUSE FOR THE DEFICIENCIES IS DEFINED, IT IS RECOMMENDED THAT THE SEAL ASSEMBLIES BE VISUALLY INSPECTED WITHIN 75 FLIGHT HOURS, AND EVERY PHASE THEREAFTER. THE REPORTED SEAL FAILURES HAVE OCCURRED ANYWHERE FROM 25 TO 150 FLIGHT HOURS. INSPECTION OF THE SEAL ASSEMBLIES WILL REQUIRE REMOVAL OF THE TOP HALF OF THE SEPARATOR. SHOULD ANY CRACKING, DETERIORATION OR DEFORMATION OF EITHER SEAL ASSEMBLY BE FOUND, CONTACT THE LOGISTICAL POINT OF CONTACT LISTED IN THIS MESSAGE.

6. DURING OPERATION, PERFORMANCE OF THE IMPROVED PARTICLE SEPARATOR PAGE 05 RUCIFRD5665 UNCLAS IS NOT APPRECIABLY AFFECTED BY SLEET, FREEZING RAIN, AND SNOW. A RECENT DEFICIENCY REPORT, HOWEVER, HAS SURFACED A PROBLEM WITH PARKED AIRCRAFT SUBJECTED TO THESE ELEMENTS. ACCUMULATION ON THE EXTERIOR OF THE AIRCRAFT DOES NOT SEEM TO BE A PROBLEM. NEVERTHELESS, BLOWING SNOW, SLEET OR FREEZING RAIN CAN ENTER THE SEPARATOR THRU THE SWIRL TUBES. WHEN THAWING OCCURS WATER MAY ENTER THE SEPARATOR THROUGH THE SWIRL TUBES. SHOULD TEMPERATURES THEN FALL BELOW FREEZING, ICE CAN FORM IN SIGNIFICANT AMOUNTS ON THE INTERIOR OF THE SEPARATOR. THIS WILL BECOME MORE LIKELY AS WE APPROACH THE END OF THE WINTER SEASON.

7. THE FORMATION OF ICE INSIDE THE SEPARATOR POSES A FOD THREAT. REPORTS OF ICE INGESTED INTO THE ENGINE SHOW THAT DAMAGE OCCURS TO INLET GUIDE VANES AND COMPRESSOR BLADES CAUSING REDUCED ENGINE

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PERFORMANCE.

8. CURRENTLY THERE IS NOT A COVER FOR THE IMPROVED SEPARATOR. A COVER WILL BE AVAILABLE IN THE NEAR FUTURE, PROBABLY AS A LOCALLY MADE ITEM. THE ONLY WAY TO PREVENT BUILD UP OF ICE INSIDE THE SEPARATOR IS TO COVER THE SEPARATOR OR KEEP THE AIRCRAFT IN A HANGAR.

9. UNTIL SUCH TIME THAT A COVER IS AVAILABLE, THE FOLLOWING
PAGE 06 RUCIFRD5665 UNCLAS
PRECAUTIONS ARE RECOMMENDED

A. AIRCRAFT PARKED OUTDOORS IN AREAS SUBJECT TO SLEET, FREEZING RAIN, OR SNOW, SHOULD HAVE THE IMPROVED PARTICLE SEPERATOR

20:11 EST

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WESTERN UNION C.R.C.
MCLB DRAHER 3B
ALBANY GA 31704 20PM

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FINAL SECTION OF 02

COVERED WITH A TARP OR OTHER FORM OF TEMPORARY COVER.

B. IF POSSIBLE, HANGAR AIRCRAFT SUBJECT TO THESE ELEMENTS.

C. AIRCRAFT THAT HAVE BEEN PARKED AND EXPOSED TO SLEET,
FREEZING RAIN OR SNOW SINCE THE LAST FLIGHT, SHOULD BE INSPECTED BY
REMOVING THE UPPER HALF OF THE SEPARATOR. ALL SNOW AND/OR ICE
SHOULD BE REMOVED PRIOR TO STARTING THE ENGINE.

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10. DIRT AND SAND CAN ALSO ENTER THE IMPROVED PARTICULAR SEPARATOR
WHEN THE AIRCRAFT IS PARKED ALLOWING ACCUMULATION NEAR THE ENGINE
INLET. INGESTION OF THE ACCUMULATED DIRT AND SAND DOES NOT DAMAGE
OR DEGRADE THE ENGINE. HOWEVER, UNITS MAY USE THE ABOVE PRECAUTIONS
TO PREVENT ANY FOREIGN MATERIAL FROM ACCUMULATING INSIDE THE
SEPARATOR.

11. CURRENTLY, TM 55-1520-210-23-1, PARAGRAPH 4-57.2 REQUIRES THAT
THE TOP SCREEN ASSEMBLY OF THE IMPROVED PARTICLE SEPARATOR BE
REMOVED IF IN-FLIGHT-ICING CONDITIONS ARE EXPECTED. AFTER FURTHER
REVIEW IT HAS BEEN DETERMINED THAT THE INSTALLATION OF THE TOP
SCREEN IS NOT A FACTOR IN ICE BUILD UP DURING FLIGHT. THE ABOVE
REMOVAL OF THE SCREEN ASSEMBLY IS BEING DELETED FROM THE MANUAL.

12. A SPECIAL INSPECTION WILL BE ADDED TO TM 55-1520-210-23-1 TO
REQUIRE THE INSPECTION OF PARAGRAPH 9C ABOVE. A COPY OF THIS
MESSAGE SHALL BE INSERTED IN THE APPROPRIATE TM AS AUTHORITY TO
IMPLEMENT THE CHANGE UNTIL THE PRINTED CHANGE IS RECEIVED.

13. POINTS OF CONTACT -

A. TECHNICAL POINT OF CONTACT FOR THIS MESSAGE IS MR. FRED
KERSHAW, AMSAV-ECH, DEFENSE SWITCHED NETWORK (DSN)(AUTOVON) 693-1683
OR COMMERCIAL 314/263-1683.

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B. MESSAGE POINT OF CONTACT IS MR. LVELL MYERS, AMSAV-XSOF, DSN
(AUTOVON) 693-9089 OR COMMERCIAL 314/263-9089.

C. FOREIGN MILITARY SALES (FMS) RECIPIENTS REQUIRING

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