Gen-77-10
inverters

RAAUZEXH RULNNAC1107 0981158-UUUU--RUWMDTA.
ZNR UUUUU
R 081200Z APR 77 ZEX
FM CDR ARNG-CAC EDGEWOOD MD //NGB-AVN-L//
TO AIG 7401
INFO RUEADWD/CNGB WASH DC //CNGB-ARL-A//
R 072035Z APR 77
FM CDR USAAVSCOM STL MO //DRSAV-FEG//
TO AIG 8881
BT
UNCLAS
NOTE - THIS MESSAGE HAS NOT, REPEAT HAS NOT, BEEN TRANSMITTED TO UNITS SUBORDINATE TO ADDRESSEES. ADDRESSEES ARE RESPONSIBLE FOR DISSEMINATION OF MESSAGE TO ALL SUBORDINATE UNITS, ACTIVITIES, ELEMENTS, OR FOREIGN USERS AFFECTED OR CONCERNED. RETRANSMITTAL SHALL REFERENCE THIS MESSAGE.
SUBJ - MAINTENANCE ADVISORY MESSAGE CONCERNING ALL ARMY AIRCRAFT UTILIZING ROTARY AIRCRAFT MOTOR GENERATORS (INVERTERS). (GEN-77-10)
1. THIS IS A TRANSMITTAL OF INFORMATION RECEIVED FROM ECOM/ RSEL-MA-DT TOGETHER WITH INFORMATION FROM THIS HEADQUARTERS.
2. DELETE LISTING OF ROTARY INVERTERS FROM TB 55-1500-327-24, 15 JUNE 1976 AS A TBO ITEM AND DISREGARD INSTRUCTIONS IN THE EIR

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PAGE 2 RULNNAC1107 UNCLAS
DIGEST ITEMS PUBLISHED IN TB 43-0001-9-2, JUNE 1975, TO SEND ALL INVERTERS TO DEPOT FOR OVERHAUL AFTER EVERY 900 FLIGHT HOURS OF SERVICE. TM 55-1510-204-20 SERIES MANUALS FOR THE OV-1B, C AND D AIRCRAFT WILL BE REVISED TO REFLECT THIS CHANGE.
3. A SIGNIFICANT INCREASE IN THE INVERTERIS OPERATIONAL RELIABILITY HAS RESULTED FROM THE IMPLEMENTATION OF STRINGENT DEPOT OVERHAUL STANDARDS WHICH INCLUDES A REQUIREMENT TO ONLY INSTALL HIGH SPEED MS-TYPE BEARINGS. THIS PROGRESS, AS VERIFIED BY THE RECENT SURVEY, NOW WARRANTS CLASSIFICATION OF THE ROTARY INVERTER AS A "CONDITION ITEM" INSTEAD OF A "TIME CHANGE" ITEM. HOWEVER, SUCCESS OF THIS POLICY REQUIRES THAT EACH USER ORGANIZATION PERFORM SCHEDULED MAINTENANCE AND SEND INVERTERS TO DEPOT FOR OVERHAUL WHEN INDICATED BY SPECIFIED CONDITIONS.
4. THE FOLLOWING POLICY SHALL BE IMPLEMENTED BEGINNING AT THE NEXT PERIODIC OR PHASE INSPECTION, OR 100 FLIGHT HOURS, WHICHEVER COMES FIRST CLN
A. AVIATION UNIT MAINTENANCE (AVUM) - EVERY 200 FLIGHT HOURS, REMOVE THE INVERTER AND SEND TO AVIONICS DIRECT SUPPORT MAINTENANCE.
B. AVIONICS DIRECT SUPPORT MAINTENANCE - CLEAN AND INSPECT INVERTER FOR CRACKED OR DAMAGED CASE, AND BROKEN CONNECTOR PINS OR CRACKED

CONNECTOR INSERTS. INSPECT THE BRUSHES FOR WEAR, ONE AT A TIME SO THEY ARE PROPERLY RE-INSTALLED IN THE SAME BRUSH HOLDER. WEAR TO THE RECOMMENDED END OF THE WEAR MARK (A 1/32-INCH WIDE DIAGONAL GROOVE IN THE BOTTOM HALF (WIDTH) OF THE BRUSH OR A PARALLEL GROOVE IN THE TOP EDGE OF THE BRUSH) WILL GIVE AT LEAST 500 INVERTER OPERATIONAL HOURS AT FULL LOAD. INSPECT THE BRUSH CONTACT AREA OF THE COMMUTATOR AND SLIP RINGS FOR SERIOUS GROOVING AND PITTING; A CONDITION REQUIRING DEPOT OVERHAUL. IF REQUIRED, INSTALL NEW BRUSHES. THIS REQUIRES BRUSH RUN-IN FOR PROPER SEATING. WHILE USING MOTOR GENERATOR TEST SET AN/GSM-65, APPLY 1/4 TO 1/3 FULL RATE LOAD FOR 2 HRS; THEN FULL LOAD UNTIL DC BRUSHES ARE SEATED 100P/C IN DIRECTION OF ARMATURE ROTATION AND 75P/C OF BRUSH THICKNESS.
AC BRUSHES REQUIRE SEATING TO 50P/C OF BRUSH CONTACT AREA.
PERFORM OPERATIONAL TEST - CHECK THE VOLTAGE AND FREQUENCY REGULATION OF THE INVERTER FOR THREE PHASE DELTA OPERATION USING MOTOR GENERATOR TEST SET AN/GSM-65 AS FOLLOWS CLN
(A) ADJUST THE POWER APPLIED TO AN/GSM-65 TO 27.5 VDC; ADJUST THE TEST SET LOAD REGULATOR CONTROL FOR A READING ON THE AC AMP METER EQUAL TO ONE-HALF THE INVERTER'S FULL LOAD; AND ADJUST (IF

NESSARY) THE INVERTER'S VOLTAGE AND FREQUENCY POTENTIOMETERS FOR METER READINGS OF 115 VAC AND 400 HZ; TIGHTEN ADJUSTMENT LOCKNUTS.
(B) INCREASE THE VOLTAGE APPLIED TO AN/GSM-65 TO 29 VDC; AND SET THE LOAD REGULATOR CONTROL TO 0; RECORD THE OUTPUT VOLTAGE AND FREQUENCY.
(C) REDUCE THE APPLIED VOLTAGE TO 26 VDC; ADJUST THE LOAD REGULATOR CONTROL FOR AN AC AMPS READING EQUAL TO FULL LOAD; RECORD THE OUTPUT VOLTAGE AND FREQUENCY. THE REGULATION STANDARDS REQUIRED FOR THIS TEST ARE AS FOLLOWS - VOLTAGE 115 PLUS/MINUS 2-1/2 VAC; FREQUENCY 400 PLUS/MINUS 10 HZ. THE TESTS LISTED IN MANUALS FOR RANGE OF ADJUSTMENT OF OUTPUT VOLTAGE AND FREQUENCY AND FOR OVERSPEED ARE TO BE OMITTED.
C. AVIONICS GENERAL SUPPORT MAINTENANCE - BEARING REPLACEMENT. THIS COMPONENT HAS A CRITICAL EFFECT UPON THE INVERTER'S RELIABILITY AND SERVICE-LIFE. THEREFORE, IT IS MANDATORY THAT ONLY THE FOLLOWING TWO MS TYPE HIGH-SPEED BEARINGS BE INSTALLED IN THE APPLICABLE INVERTER - (A) BEARING NSN 3110-00-106-8543 IN PU-543()/A (ALL MODELS), PU-544A/A (BENDIX MODEL), & PU-733/A (AMF "LELAND" MODEL)) (B) BEARING NSN 3110-00-689-7392 IN THE FOLLOWING FOURAMP

INVERTERS CLN
544/A, PU-545/A, PU-572/A, AND PU-573/A.
D. OPERATIONAL RELIABILITY DEPENDS UPON EXERCISING PROPER JUDGMENT WHEN TO TURN IN THE INVERTER FOR DEPOT OVERHAUL. INVERTERS SHOULD NOT BE OPERATED TO FAILURE, THEREFORE,

IT IS ESSENTIAL TO TURN IN FOR DEPOT OVERHAUL ANY INVERTER WHICH VIBRATES TOO MUCH, OVERHEATE, IS UNUSUALLY NOISY, OR HAS A BRUSH CONTACT AREA ON THE COMMUTATOR AND/OR SLIP RINGS THAT EXHIBITS SERIOUS GROOVING OR PITTING.

5. THE APPROPRIATE ECOM AND AVSCOM MANUALS/PUBLICATIONS WILL BE REVISED TO REFLECT THE ABOVE INFORMATION.

6. EVENTUALLY, EVERY INVERTER, AS A RESULT OF IMPLIMENTING THIS POLICY, WILL EXHIBIT CONDITIONS THAT WILL REQUIRE REPAIR AND/OR DEPOT OVERHAUL. HOWEVER, SINCE THIS INEVITABLE OCCURRENCE WILL BE A NORMALLY EXPECTED EVENT, SUBMISSION OF AN EIR WILL NOT BE REQUIRED EXCEPT FOR UNWARRANTED OR UNUSUAL OCCURRENCES.

7. INSERT INFORMATION CONTAINED IN THIS MESSAGE IN THE APPROPRIATE TMS UNTIL RECEIPT OF THE FORMAL CHANGE.

8. POINT OF CONTACT FOR INFORMATION ON THE INVERTERS IS MR. JOE PAWLAK, ECOM, AUTOVON 992-1309.

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