SCHEDULED PERIODIC INSPECTION WORKCARDS
TRANSMITTING SET, RADIO AN/GRT-21(V) AND AN/GRT-22(V)

P/N 8004200G1 THRU 8004200G10

FA8501-05-D-0002
BASIC AND ALL CHANGES HAVE BEEN MERGED TO MAKE THIS A COMPLETE PUBLICATION

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LIST OF EFFECTIVE CARDS

INSERT LATEST CHANGE CARDS. DISPOSE OF SUPERSEDED CARDS IN ACCORDANCE WITH APPLICABLE REGULATIONS.

NOTE: The portion of the text affected by the latest change is indicated by a vertical line in the outer margin of the card.

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THE TOTAL NUMBER OF CARDS IN THIS PUBLICATION IS 21, CONSISTING OF THE FOLLOWING:

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CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO	CARD TIME	PUBLICATION NUMBER	CHANGE NO.
I-01					TO 31R2-2GRT-106WC-1	

MAN MIN	WORK AREA	WORK UNIT CODE SYS	WORK UNIT CODE SUB	INTRODUCTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER	SERVICE	FIGURE	CARD NO.
									I-02

GENERAL INTRODUCTION

1. THESE WORKCARDS CONTAIN ALL REQUIREMENTS FOR ACCOMPLISHING SCHEDULED MAINTENANCE ON GROUND ELECTRONIC (C-E) EQUIPMENT DURING ITS ENTIRE SERVICE LIFE. IT ESTABLISHES INSPECTION, ACCESSORY REPLACEMENT, DEPOT LEVEL, AND BASE LEVEL REPAIR REQUIREMENT/RESTRICTIONS. THESE REQUIREMENTS ARE PRIMARILY TECHNICAL IN NATURE AND THE CONDITIONS LISTED ARE INTENDED TO DIRECT ATTENTION TO KNOWN PROBLEM AREAS. THESE REQUIREMENTS ARE DEVELOPED FOR NEW C-E EQUIPMENT THROUGH MAINTENANCE ENGINEERING AND COMPARISON OF SIMILAR INSTALLATION, OR IN-SERVICE C-E EQUIPMENT. THE INTERVAL BETWEEN THE ACCOMPLISHMENT OF A REQUIREMENT IS INTENDED TO BE THE LONGEST PERIOD OF TIME THAT AN ITEM OR COMPONENT CAN SAFELY OPERATE WITHOUT AN INSPECTION OR OBSERVATION. WHEN THE C-E EQUIPMENT IS OPERATED IN OTHER THAN THE PRIMARY PURPOSE, OR MAJOR USE CLASS, THE NECESSARY REQUIREMENTS HAVE BEEN ADJUSTED ACCORDINGLY, AND THE REQUIREMENTS IDENTIFIED AS TO CLASS OF OPERATION. THESE REQUIREMENTS AND INSPECTION INTERVALS ARE THE MAXIMUM AND SHOULD NEVER BE EXCEEDED. LOCAL CONDITIONS,(TYPE OF MISSION, SPECIAL UTILIZATION, GEOGRAPHICAL LOCATION, ETC.) MAY DICTATE MORE FREQUENT INSPECTIONS, REPLACEMENT OR MORE THOROUGH INSPECTIONS, THEREFORE, COMMANDS, LOCAL COMMANDERS, AND THEIR MAINTENANCE OFFICERS HAVE THE PREROGATIVE TO INCREASE THE FREQUENCY OR SCOPE OF ANY REQUIREMENT, AND ARE EXPECTED TO EXERCISE THIS PREROGATIVE.

2. THE INSPECTIONS PRESCRIBED BY THESE WORKCARDS WILL BE ACCOMPLISHED AT SPECIFIED PERIODS BY AIR FORCE ORGANIZATIONAL ACTIVITIES WITH ASSISTANCE PROVIDED BY AIR FORCE INTERMEDIATE MAINTENANCE ACTIVITIES AND SPECIALIZED REPAIR ACTIVITIES, WHEN REQUIRED. COMPLIANCE WITH THE PROVISIONS OF THESE WORKCARDS IS REQUIRED TO ASSURE THAT LATENT DEFECTS ARE DISCOVERED AND CORRECTED BEFORE MALFUNCTIONING OR SERIOUS TROUBLE RESULTS.

(CONTINUED ON BACK)

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO	CARD TIME	PUBLICATION NUMBER	CHANGE NO.
I-02					TO 31R2-2GRT-106WC-1	

MAN MIN	WORK AREA	WORK UNIT CODE SYS	WORK UNIT CODE SUB	INTRODUCTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER	SERVICE	FIGURE	CARD NO. I-02

3. THE INSPECTION REQUIREMENTS ARE STATED IN SUCH A MANNER AS TO ESTABLISH WHAT EQUIPMENT IS TO BE INSPECTED, WHEN IT IS TO BE INSPECTED, AND WHAT CONDITIONS ARE TO BE SOUGHT. IN SCOPE, THE REQUIREMENTS ARE DESIGNED TO DIRECT THE ATTENTION OF MAINTENANCE PERSONNEL TO COMPONENTS AND AREAS WHERE DEFECTS MAY EXIST AS A RESULT OF USAGE UNDER NORMAL OPERATING CONDITIONS. THEY ARE NOT INTENDED TO PROVIDE COVERAGE FOR ROUTINE CLEANING, WASHING, ETC., NOR ARE THEY DESIGNED TO LEAD TO THE DETECTION OF ISOLATED DISCREPANCIES THAT MAY OCCUR ON A ONE-TIME BASIS, OR DISCREPANCIES THAT ARE THE RESULT OF CARELESSNESS, ABUSE OR POOR MAINTENANCE PRACTICES. DURING ACCOMPLISHMENT OF THE SPECIFIC REQUIREMENTS DIRECTED BY THESE WORKCARDS, MAINTENANCE PERSONNEL SHOULD OBSERVE BOTH THE EQUIPMENT BEING INSPECTED AND THE COMPONENTS IN THE SURROUNDING AREA FOR DEFECTS OR IRREGULARITIES NOT WITHIN THE SCOPE OF THE REQUIREMENTS. REQUIREMENTS REQUIRING THE USE OF ELECTRICAL POWER FOR ACCOMPLISHMENT ARE IDENTIFIED BY A COMMERCIAL " @" SYMBOL PRECEDING THE PARAGRAPH NUMBER FOR THE REQUIREMENTS.

4. THE REPLACEMENT SCHEDULE DIRECTS REPLACEMENT OF ITEMS AT A SPECIFIC TIME WHEN A FAILURE WOULD COMPROMISE SAFETY OR OPERATION BEYOND REASONABLE LIMITS OR DEFINITELY CAUSE A MISSION FAILURE. ALSO CONSIDERED ARE ANY HIGH COST ITEMS WHOSE FAILURE WOULD RESULT IN CONDEMNATION AND ANY SHORT LIFE ITEMS WHICH WOULD REQUIRE FREQUENT UNSCHEDULED MAINTENANCE. ITEMS NOT LISTED WILL BE KNOWN AS " CONDITIONS ITEMS" AND WILL BE REPLACED ONLY WHEN NECESSARY.

5. BASE LEVEL REPAIR RESTRICTIONS, LISTS ITEMS (BY WORK UNIT CODE, NOMENCLATURE, FSC, AND PART NUMBER) FOR WHICH BASE LEVEL REPAIR RESTRICTIONS HAVE BEEN ESTABLISHED, AND DESCRIBES THE REPAIRS WHICH ARE NOT AUTHORIZED.

6. THE TIME IN MAN-MINUTES FOR ACCOMPLISHMENT OF REQUIREMENTS REFLECTS ONLY THE TIME REQUIRED FOR INSPECTION OR REPLACEMENT. THIS TIME DOES NOT INCLUDE TIME REQUIRED TO GAIN ACCESS TO THE EQUIPMENT TO FACILITATE ACCOMPLISHMENT. THOSE FACTORS (PERSONNEL AND EQUIPMENT SHORTAGES, LACK OF PARTS, ADVERSE WORKING CONDITIONS, AND QUALIFICATIONS OF PERSONNEL) WHICH WILL DIRECTLY AFFECT THE LENGTH OF TIME OF ANY SCHEDULED MAINTENANCE ARE NOT INCLUDED BECAUSE THEY CANNOT BE ACCURATELY PREDICTED.

MAN MIN	WORK AREA	WORK UNIT CODE SYS	WORK UNIT CODE SUB	INSPECTION REQUIREMENTS	ELECTRICAL POWER	SERVICE	FIGURE	CARD NO. I-03

(CONTINUED FROM PREVIOUS CARD)

7. THESE WORKCARDS DO NOT CONTAIN DETAILED INSTRUCTIONS FOR TROUBLESHOOTING TO FIND CAUSES FOR MALFUNCTIONING, NOR DO THEY CONTAIN INSTRUCTIONS FOR REPAIR, ADJUSTMENT, OR OTHER MEANS OF RECTIFYING DEFECTIVE CONDITIONS. PROPER INSTALLATION OF A PIECE OF EQUIPMENT OR ACCESSORY IS NOT NECESSARILY WITHIN THE SCOPE OF THESE WORKCARDS AS ADEQUACY AND COMPLETENESS OF INSTALLATION WILL HAVE BEEN DETERMINED AT THE TIME OF, INSTALLATION. APPLICABLE PORTIONS OF THE APPROPRIATE MAINTENANCE MANUAL SHOULD BE CONSULTED TO OBTAIN " HOW TO "MAINTENANCE INSTRUCTIONS AS THEY ARE BEYOND THE SCOPE OF THESE WORKCARDS.

8. FOR THE PURPOSE OF CLARIFICATION OF TERMS USED IN THESE WORKCARDS, THE FOLLOWING DEFINITIONS ARE GIVEN:
SPECIFIED - REFERS TO A DEFINITE AMOUNT, OPERATION, OR LIMITATION WHICH HAS BEEN ESTABLISHED AND IS CONTAINED IN APPLICABLE DIRECTIVES.
EVIDENCE - IS PROOF OF A SUSPECTED OR EXISTING UNSATISFACTORY CONDITION.
SECURE - MEANS THE COMPONENT IS PROPERLY MOUNTED OR ATTACHED TO RELATED EQUIPMENT, INCLUDING APPLICABLE SAFETYING.
ACCESSIBLE - IS THE TERM APPLIED TO EQUIPMENT THAT MAY BE INSPECTED WITHOUT FURTHER DISASEMBLY OR REMOVAL OF COVERS, CLOSURES, PANELS, ETC., OTHER THAN THOSE REQUIRED TO ACCOMPLISH THE MORE SPECIFIC REQUIREMENTS APPLICABLE TO THE PARTICULAR INSPECTIONS.

9. CHANGES AND REVISIONS TO THESE WORKCARDS WILL BE PUBLISHED WHEN NECESSARY TO ADD, DELETE, OR CHANGE FREQUENCY OR SCOPE OF REQUIREMENTS. SUCH CHANGES WILL BE BASED ON FACTUAL DATA ACCUMULATED AS A RESULT OF MAINTENANCE EXPERIENCE WITH THE EQUIPMENT. RECOMMENDATIONS PROPOSING CHANGES TO THESE WORKCARDS SHOULD BE SUBMITTED ON AFTO FORM 22 IN ACCORDANCE WITH TO 00-5-1 TO THE USING COMMAND HEADQUARTERS.

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO	CARD TIME	PUBLICATION NUMBER	CHANGE NO.
I-03					TO 31R2-2GRT-106WC-1	

MAN MIN	WORK AREA	WORK UNIT CODE SYS	WORK UNIT CODE SUB	INSPECTION REQUIREMENTS	ELECTRICAL POWER	SERVICE	FIGURE	CARD NO. I-03
				NOTE ALL CORROSION WILL BE TREATED IN ACCORDANCE WITH TO 1-1-689.				

MAN MIN	WORK AREA	WORK UNIT CODE SYS	WORK UNIT CODE SUB	INTRODUCTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER	SERVICE	FIGURE	CARD NO.
									1-001

INSPECTION REQUIREMENTS

1. THESE INSPECTION WORKCARDS PROVIDE THE REQUIREMENTS FOR INSPECTION AND WILL BE USED AS A GUIDE IN PERFORMING THE INSPECTION TO INSURE THAT NO ITEM IS OVERLOOKED. THE CARD SIZE AFFORDS CONVENIENT HANDLING BY MAINTENANCE PERSONNEL WHILE PERFORMING AN INSPECTION. WORK ASSIGNMENT INFORMATION IS PROVIDED AT THE BOTTOM OF EACH CARD TO PERMIT ESTABLISHMENT OF A CONVENIENT FILING SYSTEM FOR THE SET OF CARDS AND IN MAKING WORK ASSIGNMENTS TO MAINTENANCE PERSONNEL.
2. DETAILED INSTRUCTIONS FOR THE USE OF THESE CARDS AND THE DESCRIPTION AND APPLICATION OF OTHER FORMS AND CHARTS TO BE USED IN CONJUNCTION WITH THESE CARDS ARE CONTAINED IN 00-20 SERIES TECHNICAL ORDERS.

MAN MIN	WORK AREA	WORK UNIT CODE SYS	WORK UNIT CODE SUB	168 DAY	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE IN	FIGURE	CARD NO. 1-002
005				@ 1. AMPLIFIER RADIO FREQUENCY AM-6154/GRT-21 (V) BLOWER FOR ADEQUATE AIR FLOW WITH NO INDICATION OF EXCESSIVE NOISE OR VIBRATION. @ 2. AMPLIFIER RADIO FREQUENCY AM-6155/GRT-22(V) BLOWER FOR ADEQUATE AIR FLOW WITH NO INDICATION OF EXCESSIVE NOISE OR VIBRATION.				

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO	CARD TIME	PUBLICATION NUMBER	CHANGE NO.
1-002				:05	TO 31R2-2GRT-106WC-1	

MAN MIN	WORK AREA	WORK UNIT CODE SYS	WORK UNIT CODE SUB	336 DAY	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	FIGURE	CARD NO. 1-003

@ TRANSMITTING SET AN/GRT-21 (V) AND AN/GRT-22 (V) MINIMUM PERFORMANCE (50 WATT MODE).

1. TEST EQUIPMENT REQUIRED:
   - A. BIRD 8135 RF LOAD OR EQUIVALENT.
   - B. BIRD 43 THRU-LINE WATT METER OR EQUIVALENT WITH 25 AND 100 WATT ELEMENTS.
   - C. HEWLETT-PACKARD HP200AB AUDIO OSCILLATOR OR EQUIVALENT.
2. PLACE THE FOLLOWING CONTROLS AS INDICATED:

CONTROL(EXCITER)	SETTING
REMOTE-LOCAL	LOCAL
PUSH TO TALK/CARRIER TEST	PUSH TO TALK
AC POWER ON-OFF	ON
CONTROL(POWER AMPLIFIER)	**SETTING**
HIGH VOLTAGE SWITCH ON-OFF	OFF
POWER ON-OFF	OFF
TUNE OPERATE	OPERATE

(CONTINUED ON BACK)

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO	CARD TIME	PUBLICATION NUMBER	CHANGE NO.
1-003				:015	TO 31R2-2GRT-106WC-1	

MAN MIN	WORK AREA	WORK UNIT CODE SYS	WORK UNIT CODE SUB	336 DAY	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	FIGURE	CARD NO. 1-003

WARNING

DO NOT DISCONNECT THE COAXIAL OUTPUT CABLE OF THE TRANSMITTER TO THE ANTENNA WITHOUT FIRST PLACING THE REMOTE-LOCAL SWITCH IN LOCAL POSITION, AND CARRIER TEST SWITCH TO PUSH-TO-TALK POSITION, TO ASSURE THAT THE TRANSMITTER WILL NOT BE REMOTELY KEYED WITH ITS LOAD DISCONNECTED. WHILE THE TRANSMITTER IS PROTECTED FROM EXCESSIVE HIGH LOAD VSWR IN THIS CONDITION, IT IS POSSIBLE FOR MAINTENANCE PERSONNEL TO SUSTAIN RF BURNS IF HANDLING OPEN CABLE ENDS WITH THE TRANSMITTER KEYED.

3. CONNECT WATTMETER AND DUMMY LOAD TO EXCITER OUTPUT K1J1 (50-WATT OPERATION). FOR 10 WATT PERFORMANCE TESTS PROCEED TO CARD 1-005.

4. ON THE EXCITER PLACE TEST SWITCH 1 TO THE FOLLOWING POSITIONS AND OBSERVE TEST METER INDICATIONS.

SWITCH POSITION	METER READING
FWD	LESS THAN OR EQUAL TO 3,
	LESS THAN 0 PERMISSIBLE
RVS	LESS THAN OR EQUAL TO 3
	LESS THAN 0 PERMISSIBLE

5. KEY TRANSMITTER IN CW MODE BY PLACING PUSH TO TALK - CARRIER TEST SWITCH TO CARRIER TEST. VERIFY AT LEAST 10 WATTS OUTPUT ON WATTMETER.

6. ON THE EXCITER PLACE TEST SWITCH 1 TO THE FOLLOWING POSITIONS AND OBSERVE TEST METER INDICATIONS.

SWITCH POSITION	METER READING
FWD	40 TO 45 (VHF)
	40 TO 45 (UHF)
RVS	0 TO 10

MAN MIN	WORK AREA	WORK UNIT CODE SYS	WORK UNIT CODE SUB	336 DAY	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	FIGURE	CARD NO. 1-004

(CONTINUED FROM PREVIOUS CARD)

7. UNKEY THE SET BY PLACING THE PUSH TO TALK - CARRIER TEST SWITCH TO PUSH TO TALK.
8. ON THE POWER AMPLIFIER PLACE THE FOLLOWING CONTROLS AS INDICATED:

CONTROL	SETTING
POWER ON-OFF	ON
HV ON-OFF	ON

9. WAIT APPROXIMATELY 1 MINUTE AFTER WHICH HV INDICATOR WILL ILLUMINATE.
10. ON THE POWER AMPLIFIER PLACE THE TEST SWITCH TO THE FOLLOWING POSITIONS AND OBSERVE TEST METER INDICATIONS.

SWITCH POSITION	METER READING
FWD	LESS THAN OR EQUAL TO 3
RVS	LESS THAN 0 PERMISSIBLE

11. KEY EXCITER ON BY PLACING PUSH TO TALK-CARRIER TEST SWITCH TO CARRIER TEST. VERIFY AT LEAST 50 WATT OUTPUT ON WATTMETER.
12. ON THE EXCITER PLACE THE TEST SWITCH TO THE FOLLOWING POSITION AND OBSERVE TEST METER INDICATION:

SWITCH POSITION	METER READING
FWD	12 TO 35 (VHF) 16 TO 38 (UHF)

MAN MIN	WORK AREA	WORK UNIT CODE SYS	WORK UNIT CODE SUB	336 DAY	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	FIGURE	CARD NO. 1-004

13. ON THE POWER AMPLIFIER PLACE THE TEST SWITCH TO THE FOLLOWING POSITION AND OBSERVE TEST METER.

SWITCH POSITION	METER READING
FWD	40 TO 45
RVS	0-10

14. UNKEY EXCITER BY PLACING PUSH TO TALK-CARRIER TEST SWITCH TO PUSH TO TALK POSITION.

15. IF UNABLE TO OBTAIN PROPER READING AT ANY POINT DURING THE FOREGOING ROUTINE, REFERENCE TO 31R2-2GRT-102. THIS COMPLETES THE PERFORMANCE FOR THE 50 WATT MODE. PROCEED TO CARD 1-006 FOR PERCENT OF MODULATION METER CALIBRATION INSPECTION CHECK.

CARD NO. 1-004A	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE TO 31R2-2GRT-106WC-1 31 MARCH 2006	CHANGE NO. 7

MAN MIN	WORK AREA	WORK UNIT CODE SYS	WORK UNIT CODE SUB	336 DAY	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	FIGURE	CARD NO. 1-004A

SOLID STATE VANE SWITCH (SSVS) OPERATION CHECK

1. REFER TO TO 31R2-2GRT-102 PARAGRAPH 5-60 FOR CHECK OUT PROCEDURE.

CARD NO. 1-004A	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE TO 31R2-2GRT-106WC-1 31 MARCH 2006	CHANGE NO. 7

MAN MIN	WORK AREA	WORK UNIT CODE SYS	WORK UNIT CODE SUB	336 DAY	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	FIGURE	CARD NO. 1-005

EXCITER T-1108(V)/GRT-21(V) AND T-1109(V)/GRT-22(V) MINIMUM PERFORMANCE (10 WATT MODE, POWER AMPLIFIER IS NOT CONNECTED).

1. TEST EQUIPMENT REQUIRED:
   - A. BIRD 8135 RF LOAD OR EQUIVALENT.
   - B. BIRD 43 THRU-LINE WATT METER OR EQUIVALENT WITH 25 AND 100 WATT ELEMENTS.
   - C. HEWLETT-PACKARD HP200AB AUDIO OSCILLATOR OR EQUIVALENT.
2. PLACE THE FOLLOWING CONTROLS AS INDICATED:

CONTROL (EXCITER)	SETTING
REMOTE-LOCAL	LOCAL
PUSH-TO-TALK/CARRIER	PUSH TO TALK
AC POWER ON-OFF	ON

(CONTINUED ON BACK)

MAN MIN	WORK AREA	WORK UNIT CODE SYS	WORK UNIT CODE SUB	336 DAY	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	FIGURE	CARD NO. 1-005

WARNING

DO NOT DISCONNECT THE COAXIAL OUTPUT CABLE OF THE TRANSMITTER TO THE ANTENNA WITHOUT FIRST PLACING THE REMOTE-LOCAL SWITCH IN LOCAL POSITION. AND CARRIER TEST SWITCH TO PUSH-TO-TALK POSITION, TO ASSURE THAT THE TRANSMITTER WILL NOT BE REMOTELY KEYED WITH ITS LOAD DISCONNECTED. WHILE THE TRANSMITTER IS PROTECTED FROM EXCESSIVE HIGH LOAD VSWR IN THIS CONDITION, IT IS POSSIBLE FOR MAINTENANCE PERSONNEL TO SUSTAIN RF BURNS IF HANDLING OPEN CABLE ENDS WITH THE TRANSMITTER KEYED

3. CONNECT WATT METER AND DUMMY LOAD EXCITER OUTPUT K1J3.

   A. ON THE EXCITER PLACE TEST SWITCH 1 TO THE FOLLOWING POSITIONS AND OBSERVE TEST METER INDICATIONS.

SWITCH POSITION	METER READING
FWD	LESS THAN OR EQUAL TO 3
	LESS THAN 0 PERMISSIBLE
RVS	LESS THAN OR EQUAL TO 3
	LESS THAN 0 PERMISSIBLE

4. KEY EXCITER IN CW MODE BY PLACING PUSH-TO-TALK--CARRIER TEST SWITCH TO CARRIER TEST. VERIFY 10 WATT OUTPUT ON WATTMETER.

5. ON THE EXCITER PLACE TEST SWITCH 1 TO THE FOLLOWING POSITION AND OBSERVE TEST METER INDICATION.

SWITCH POSITION	METER READING
FWD	40 to 45

MAN MIN	WORK AREA	WORK UNIT CODE SYS	WORK UNIT CODE SUB	336 DAY	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	FIGURE	CARD NO. 1-005A

(CONTINUED FROM PREVIOUS CARD)

6. UNKEY EXCITER AN DISCONNECT TEST EQUIPMENT.
7. IF UNABLE TO OBTAIN PROPER READINGS AT ANY POINT DURING THE FOREGOING ROUTINE, REFERENCE TO 31R2-2GRT-102. RETURN LOCAL/REMOTE SWITCH AND PUSH-TO-TALK/CARRIER TEST SWITCH TO ORIGINAL OPERATING POSITIONS. THIS COMPLETES THE PERFORMANCE CHECKS FOR THE 10 WATT MODE. PROCEED TO CARD 1-006 FOR PERCENT OF MODULATION METER CALIBRATION INSPECTION.

MAN MIN	WORK AREA	WORK UNIT CODE SYS	WORK UNIT CODE SUB	336 DAY	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	FIGURE	CARD NO. 1-006

TRANSMITTING SET AN/GRT-21 (V) AND AN/GRT-22 (V) PERCENT OF MODULATION METER CALIBRATION INSPECTION.

1. TEST EQUIPMENT REQUIRED:
   - A. OSCILLOSCOPE MIL-0-9960C OR EQUIVALENT.
   - B. AUDIO OSCILLATOR, HP 200AB OR EQUIVALENT.
   - C. TEST PROBES AND CABLES AS REQUIRED.
   - D. GENERAL RADIO 874-GAL VARIABLE ATTENUATOR.
   - E. CRYSTAL MIXER, HP 10514A OR EQUIVALENT.
   - F. SIGNAL GENERATOR, AN/USM 323 OR EQUIVALENT.
   - G. THRULINE WATTMETER, AN/URM-43 OR EQUIVALENT.
2. PLACE THE FOLLOWING CONTROLS AS INDICATED:

CONTROL (EXCITER)	SETTING
REMOTE-LOCAL	LOCAL
PUSH TO TALK/CARRIER TEST	PUSH TO TALK
AC POWER ON-OFF	OFF
CONTROL (POWER AMPLIFIER)	SETTING
POWER ON OFF	OFF

(CONTINUED ON BACK)

MAN MIN	WORK AREA	WORK UNIT CODE SYS	WORK UNIT CODE SUB	336 DAY INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	FIGURE	CARD NO. 1-006

HIGH VOLTAGE SWITCH ON-OFF — OFF
TUNE OPERATE — OPERATE

3. CONNECT TEST EQUIPMENT AS ILLUSTRATED IN FIGURE U1-001.
4. SET 874-GAL TO 60 DB.
5. SET AN/USM 323 FOR A 0 DBM CW RF OUTPUT AT 2 MHZ ABOVE OR BELOW THE OPERATING FREQUENCY ON THE TX UNDER TEST.
   A. PLACE THE FOLLOWING CONTROLS AS INDICATED:
      AC POWER ON/OFF - ON
      PUSH TO TALK/CARRIER TEST - CARRIER TEST
6. INSURE TX OUTPUT POWER IS AT LEAST 10 WATTS.
7. CONNECT (600 OHM BALANCED) OUTPUT OF AUDIO OSCILLATOR (HP 200AB OR EQUIVALENT) SET TO 0 DBM (0.775 VOLTS RMS) FOR A TRANSMITTER STRAPPED FOR HIGH LEVEL AUDIO INPUT AND -27 DBM (35 MV RMS) FOR A TRANSMITTER STRAPPED FOR LOW LEVEL AUDIO INPUT AT 1 KHZ ACROSS PINS J AND F OF J5.

015

8. JUMPER PINS G AND H OF J5 AND GROUND THIS JUNCTION.

NOTE

FOR EQUIPMENT USING AFCS A3 KEYER CARD, PLACE JUMPER BETWEEN PINS G AND H AND BETWEEN PINS A AND M OF J5.

MAN MIN	WORK AREA	WORK UNIT CODE SYS	WORK UNIT CODE SUB	336 DAY	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	FIGURE	CARD NO. 1-006A

(CONTINUED FROM PREVIOUS CARD)

9. ON THE EXCITER, PLACE TEST SWITCH 1 TO SWITCH 2 ENABLE, AND SWITCH 2 TO AF LVL-H POSITION. KEY EXCITER BY PLACING REMOTE-LOCAL SW TO REMOTE. EXC METER SHOULD INDICATE 18 PLUS OR MINUS 2 (0 DBM).

NOTE

THE METER READING OF AF LVL-H SHOULD BE DISREGARDED IF THE EXCITER A1 COMPRESSION CARD IS JUMPERED FOR THE LOW LEVEL AUDIO INPUT STRAPPING OPTION.

MAN MIN	WORK AREA	WORK UNIT CODE SYS	WORK UNIT CODE SUB	336 DAY	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	FIGURE	CARD NO. 1-007

(CONTINUED FROM PREVIOUS CARD)

10. WHILE OBSERVING OSCILLOSCOPE, SLOWLY DECREASE THE THE ATTENUATION OF THE 874-GAL UNTIL THE MODULATED WAVEFORM APPEARS ON THE OSCILLSCOPE, USING THE FORMULA:

$$\frac{E\ MAX - E\ MIN}{E\ MAX + E\ MIN} \times 100\%$$

VERIFY THAT THE MODULATION PERCENTAGE EQUALS 90%. IF NECESSARY, ADJUST MOD LEVEL POTENTIOMETER ON THE EXCITER FRONT PANEL FOR CORRECT INDICATION.

11. PLACE SWITCH 2 TO THE % MOD POSITION. METER SHOULD READ 30.

12. ADJUST EXCITER FRONT PANEL MOD LEVEL POTENTIOMETER FOR % MOD METER READING OF 20. USING FORMULA IN STEP 10, VERIFY THAT MODULATED WAVEFORM ON OSCILLOSCOPE EQUALS 80%.

13. IF METER READINGS OF 30 AND 20 DO NOT EQUAL 90 AND 80 PERCENT MODULATION RESPECTIVELY, PERFORM METER CALIBRATION IN ACCORDANCE WITH T.O. 31R2-2GRT-102.

14. READJUST THE FRONT PANEL MOD LEVEL POTENTIOMETER FOR 90% ON THE SCOPE AND A METER READING OF 30. THEN PLACE SWITCH 2 TO A POSITION OTHER THAN % MOD (IF LEFT IN THE MOD POSITION, THE METER WILL PEG NEGATIVE AFTER THE EXCITER IS UNKEYED). UNKEY THE EXCITER BY PLACING REMOTE-LOCAL SW TO LOCAL.

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1-007					TO 31R2-2GRT-106WC-1	

MAN MIN	WORK AREA	WORK UNIT CODE SYS	WORK UNIT CODE SUB	336 DAY	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	FIGURE	CARD NO. 1-007

15. ON THE POWER AMPLIFIER PLACE THE FOLLOWING CONTROLS AS INDICATED:

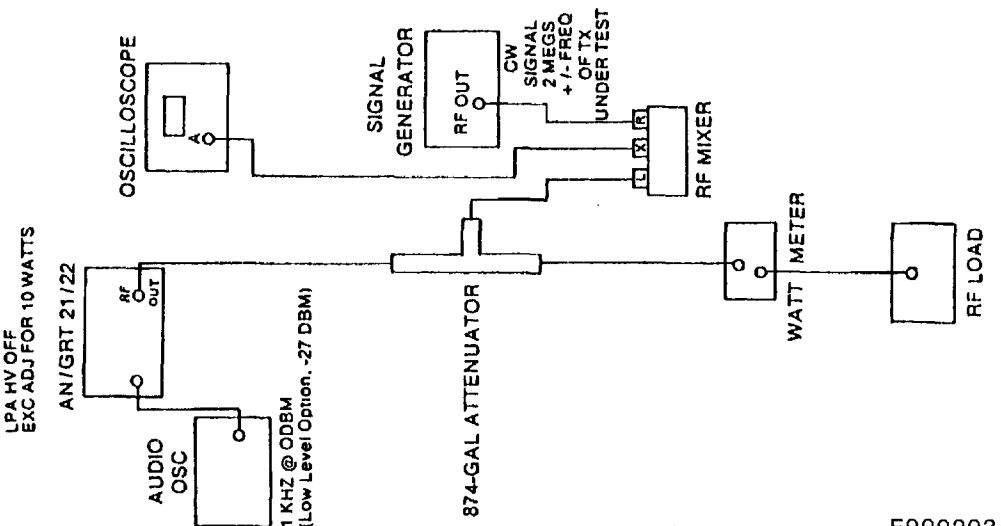
CONTROL	SETTING
POWER ON-OFF	ON
HV ON OFF	ON
TUNE OPERATE	OPERATE

WAIT APPROXIMATELY 1 MINUTE FOR HV INDICATOR TO ILLUMINATE.

16. KEY THE EXCITER AS IN STEP 9 AND SLOWLY ADJUST ATTENUATION OF THE 874 GAL UNTIL THE MODULATION ENVELOPE IS DISPLAYED ON THE OSCILLOSCOPE. WAVEFORM SHOULD EQUAL 90% AND BE UNDISTORTED AND SYMMETRICAL. UNKEY THE EXCITER AS IN STEP 14.

17. THIS COMPLETES THE CHECK. RETURN THE EQUIPMENT TO NORMAL OPERATION.

PUBLICATION NUMBER	INSPECTION REQUIREMENTS	FIGURE	CHANGE NO.	CARD NO.
TO 31R2-2GRT-106WC-1	336 DAY	U1-001		1-008



MAN MIN	WORK AREA	WORK UNIT CODE SYS	WORK UNIT CODE SUB	336 DAY	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	FIGURE	CARD NO. 1-009

FREQUENCY CHECK, 10 OR 50 WATT MODE.

WARNING

DO NOT DISCONNECT THE COAXIAL OUTPUT CABLE OF THE TRANSMITTER TO THE ANTENNA WITHOUT FIRST PLACING THE REMOTE-LOCAL SWITCH IN LOCAL POSITION, AND CARRIER TEST SWITCH TO PUSH-TO-TALK POSITION, TO ASSURE THAT THE TRANSMITTER WILL NOT BE REMOTELY KEYED WITH ITS LOAD DISCONNECTED. WHILE THE TRANSMITTER IS PROTECTED FROM EXCESSIVE HIGH LOAD VSWR IN THIS CONDITION, IT IS POSSIBLE FOR MAINTENANCE PERSONNEL TO SUSTAIN RF BURNS IF HANDLING OPEN CABLE ENDS WITH THE TRANSMITTER KEYED.

1. TEST EQUIPMENT REQUIRED:
   - A. BIRD 8135 RF LOAD OR EQUIVALENT.
   - B. GENERAL RADIO 874-GAL VARIABLE ATTENUATOR OR EQUIVALENT.
   - C. HP5245L FREQUENCY COUNTER WITH 5253B PLUG IN UNIT OR EQUIVALENT.
2. CONNECT EQUIPMENT JACK K1J3 (10-WATT CONFIGURATION) OR K1J1 (50-WATT CONFIGURATION) TO THE INPUT OF THE VARIABLE ATTENUATOR (GENERAL RADIO 874-GAL) OR EQUIVALENT. CONNECT THE VARIABLE ATTENUATOR DIRECT OUTPUT TO THE RF DUMMY LOAD (BIRD 8135 OR EQUIVALENT) AND THE ATTENUATED OUTPUT TO THE FREQUENCY COUNTER INPUT. SET VARIABLE ATTENUATOR TO 60 DB.

(CONTINUED ON BACK)

MAN MIN	WORK AREA	WORK UNIT CODE SYS	WORK UNIT CODE SUB	336 DAY INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	FIGURE	CARD NO. 1-009

3. SET THE CONTROLS AS FOLLOWS:

   A. EXCITER.

      (1) REMOTE-LOCAL TO LOCAL.

      (2) PUSH-TO-TALK-CARRIER TEST TO PUSH-TO-TALK.

      (3) AC POWER ON-OFF TO ON.

   B. POWER AMPLIFIER.

      (1) POWER OFF (ON FOR 50 WATT).

      (2) HIGH VOLTAGE OFF (ON FOR 50 WATT).

4. KEY EXCITER BY PLACING PUSH-TO-TALK CARRIER TEST SWITCH TO CARRIER TEST AND REDUCE VARIABLE ATTENUATOR SETTING UNTIL FREQUENCY COUNTER STABILIZED. FREQUENCY SHOULD READ DESIRED FREQUENCY +/- 0.001% FOR CRYSTAL OSCILLATOR OR+/- 0.0005% FOR SYNTHESIZER-OSCILLIATOR.

5. UNKEY EXCITER BY PLACING PUSH-TO-TALK/CARRIER TEST SWITCH IN THE PUSH-TO-TALK POSITION.

6. IF PROPER METER READINGS ARE OBTAINED, REMOVE ALL TEST EQUIPMENT. PLACE EQUIPMENT ON A PROPER ANTENNA, THEN RETURN LOCAL/REMOTE SWITCH AND PUSH-TO-TALK/CARRIER TEST SWITCH TO ORGINAL OPERATING POSITIONS. THIS COMPLETES THE PERFORMANCE CHECKS FOR THE 10 OR 50 WATT MODE.

MAN MIN	WORK AREA	WORK UNIT CODE SYS	WORK UNIT CODE SUB	336 DAY	INSPECTION REQUIREMENTS	ELECTRICAL POWER OFF	SERVICE OUT	FIGURE	CARD NO. 1-010

TRANSMITTING SET AN/GRT-21(V) AND AN/GRT-22(V) AND EXCITER T-1108(V)/GRT-21(V) AND T-1109(V)/GRT-22(V), VISUAL INSPECTION FOR THE FOLLOWING CONDITIONS.

WARNING

INSURE ALL POWER TO THE UNIT UNDER INSPECTION IS OFF BEFORE PROCEEDING.

1. DUST.
2. DIRT
3. CORROSION PREVENTION AND CONTROL.

NOTE

CORRECTIVE ACTION WILL BE INITIATED IMMEDIATELY WHEN CORROSION IS FOUND TO PREVENT FURTHER DETERIORATION OF THE EQUIPMENT.

(CONTINUED ON BACK)

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO	CARD TIME	PUBLICATION NUMBER	CHANGE NO.
1-010				:15	TO 31R2-2GRT-106WC-1	

MAN MIN	WORK AREA	WORK UNIT CODE SYS	WORK UNIT CODE SUB	336 DAY INSPECTION REQUIREMENTS	ELECTRICAL POWER OFF	SERVICE OUT	FIGURE	CARD NO. 1-010

CORROSION IS THE DETERIORATION OF A MATERIAL BY CHEMICAL OR ELECTRO-CHEMICAL REACTION WITH ITS ENVIRONMENT. INSPECT THE COMPLETE SYSTEM FOR EVIDENCE OF CORROSION. PROCEDURES FOR IDENTIFICATION, ISOLATION AND CONTROL OF CORROSION ARE IDENTIFIED IN THE FOLLOWING TECHNICAL ORDERS:

TO 1-1-689 PREVENTION AND CONTROL OF CORROSION AND FUNGUS IN COMMUNICATIONS, ELECTRONIC, METEOROLOGICAL, AND AVIONIC EQUIPMENT.

TO 1-1-691 AIRCRAFT WEAPONS SYSTEMS CLEANING AND CORROSION CONTROL.

TO 1-1-8 APPLICATION OF ORGANIC COATINGS, AEROSPACE EQUIPMENT.

4. TIGHTNESS OF CONNECTORS AND LEADS.

MAN MIN	WORK AREA	WORK UNIT CODE SYS	WORK UNIT CODE SUB	336 DAY	INSPECTION REQUIREMENTS	ELECTRICAL POWER OFF	SERVICE OUT	FIGURE	CARD NO. 1-011

TRANSMITTING SET AN/GRT-21(V) AND AN/GRT-22(V), EQUIPMENT GROUNDING CHECKS.

1. INSPECT FACILITIES AND EQUIPMENT GROUNDING PER TO 31-10-24, CHAPTERS 3, 4 AND 10.

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO	CARD TIME	PUBLICATION NUMBER	CHANGE NO.
1-011				:10	TO 31R2-2GRT-106WC-1	

MAN MIN	WORK AREA	WORK UNIT CODE SYS	WORK UNIT CODE SUB	INTRODUCTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER	SERVICE	FIGURE	CARD NO.
									2-001

SERVICING AND LUBRICATION

1. THESE INSPECTION WORKCARDS PROVIDE THE REQUIREMENTS FOR SERVICING/LUBRICATION AND WILL BE USED AS A GUIDE IN PERFORMING THE INSPECTION TO INSURE THAT NO ITEM IS OVERLOOKED. THE CARD SIZE AFFORDS CONVENIENT HANDLING BY MAINTENANCE PERSONNEL WHILE PERFORMING AN INSPECTION. WORK ASSIGNMENT INFORMATION IS PROVIDED AT THE BOTTOM OF EACH CARD TO PERMIT ESTABLISHMENT OF A CONVENIENT FILING SYSTEM FOR THE SET OF CARDS AND IN MAKING WORK ASSIGNMENTS TO MAINTENANCE PERSONNEL.
2. DETAILED INSTRUCTIONS FOR THE USE OF THESE CARDS AND THE DESCRIPTION AND APPLICATION OF OTHER FORMS AND CHARTS TO BE USED IN CONJUNCTION WITH THESE CARDS ARE CONTAINED IN 00-20 SERIES TECHNICAL ORDERS.

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO	CARD TIME	PUBLICATION NUMBER	CHANGE NO.
2-001					TO 31R2-2GRT-106WC-1	

MAN MIN	WORK AREA	WORK UNIT CODE SYS	WORK UNIT CODE SUB	84 DAY	INSPECTION REQUIREMENTS	ELECTRICAL POWER OFF	SERVICE OUT	FIGURE	CARD NO. 2-002

AMPLIFIER, RADIO FREQUENCY AM-6154/GRT-21(V) AND AM-6155/GRT-22(V) CLEANING.

WARNING

OBSERVE THAT ALL POWER IS OFF BEFORE PROCEEDING.

1. MATERIALS REQUIRED:
   - A. DETERGENT AND WATER.
   - B. UTENSIL IN WHICH TO IMMERSE FILTER.
   - C. EZ KLEEN RP SUPER FILTER COAT P/N: 411 FSN: 4130-00-860-0042 (OPTIONAL).
   - D. FOAM FILTER ELEMENT P/N: 0945-M/100 (OPTIONAL).
   - E. VACUUM CLEANER.
   - F. SOFT BRISTLE BRUSH.
2. REMOVE FRONT FILTER FROM UNIT BY LOOSENING TWO PHILLIPS HEAD SCREWS. REMOVE THE FOAM FILTER ELEMENT. THE ELEMENT MAY BE CLEANED WITH A DETERGENT AND WATER SOLUTION, RINSED IN WATER AND LET DRY. IF THE FOAM FILTER IS NOT AVAILABLE, THE METAL MESH FILTER MAY BE CLEANED AND REUSED AS FOLLOWS:
   - A. GENTLY TAP FILTER TO REMOVE LOOSE DIRT.
   - B. FLUSH DIRT FROM SIDES WITH DETERGENT AND WATER SOLUTION.
   - C. RINSE FILTER IN CLEAR WATER AND LET DRY.

MAN MIN	WORK AREA	WORK UNIT CODE SYS	WORK UNIT CODE SUB	84 DAY INSPECTION REQUIREMENTS	ELECTRICAL POWER OFF	SERVICE OUT	FIGURE	CARD NO. 2-002

D. RECOAT THE FILTER WITH KZ KLEEN RP SUPER FILTER COAT.

3. VACUUM CLEAN AND WIPE ALL DIRT FROM FANS AND OPENING.

A. REMOVE FAN MODULE AND BLOW THE SQUIRREL CAGE OUT.

B. PERFORM A GOOD VISUAL INSPECTION FOR BROKEN WIRES, BURNT COMPONENTS, AN/OR LOOSE CONNECTIONS.

4. REPLACE THE FOAM FILTER ELEMENT ON THE FRONT OF THE METAL MESH FILTER. REPLACE FILTER ON THE UNIT AND TIGHTEN THE TWO PHILLIPS-HEAD SCREWS.

5. REMOVE TUNED CAVITY AND INSPECT AIR FLOW PATH FOR DIRT. CLEAN AS NECESSARY.

6. REMOVE REAR FILTER FROM UNIT BY LOOSENING FOUR PHILLIPS-HEAD SCREWS AND GENTLY TAP FILTER TO REMOVE LOOSE DIRT.

7. REMOVE PLATE COVERING THE AIRWAY BETWEEN THE BLOWER ASSEMBLY AND TUNABLE FILTER BY LOOSENING THE THREE PHILLIPS SCREWS.

A. PULL-OUT AND CLEAN FILTER BY WASHING IN DETERGENT AND WATER SOLUTION, THEN RINSE IN CLEAR WATER AND LET DRY. DO NOT APPLY FILTER COAT.

8. REPLACE FILTERS ON UNIT AND TIGHTEN PHILLIPS-HEAD SCREWS.

9. REINSTALL FAN MODULE.

10. REINSTALL CAVITY.