TO 31M1-2FMQ12-6WC-1

TECHNICAL MANUAL

SCHEDULED PERIODIC INSPECTION WORKCARDS

DIGITAL IONOSPHERIC SOUNDING SYSTEM AN/FMQ-12

PART NUMBER 50400001

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LIST OF EFFECTIVE CARDS

INSERT LATEST CHANGED CARDS. DESTROY SUPERSEDED CARDS.

Note: The portions of the text affected by the change is indicated by a vertical line in the outer margins of the page. Change to illustrations are indicated by miniature pointing hands. Changes to wiring diagrams are indicated by shaded areas or by minature pointing hands.

Dates of issue for original and changed pages are:

Original .... 0 .... 15 DEC 98

TOTAL NUMBER OF CARDS IN THIS PUBLICATION IS 37 CONSISTING OF THE FOLLOWING:

Card No.	*Change No.	Card No.	*Change No.
Title	0	2-001 thru 2-08	0
A	0	4-001	0
i thru vi	0	5-001	0
1-001 thru 1-019	0		

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INTRODUCTION

THESE WORK CARDS CONTAIN ALL REQUIREMENTS FOR ACCOMPLISHING SCHEDULED MAINTENANCE ON GROUND 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 EQUIPMENT THROUGH MAINTENANCE ENGINEERING AND COMPARISON OF SIMILAR INSTALLATIONS, OR IN-SERVICE 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 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 INSPECTION, REPLACEMENT OR MORE THOROUGH INSPECTION. 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.

INTRODUCTION - Continued

THE INSPECTIONS PRESCRIBED BY THESE WORKCARDS WILL BE ACCOMPLISHED AT SPECIFIED PERIODS BY AIR FORCE ORGANIZATIONAL ACTIVITIES WITH ASSISTANCE PROVIDED BY AIR FORCE 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.

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 ONETIME 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 **AT** (@) SYMBOL PRECEDING THE PARAGRAPH NUMBER FOR THE REQUIREMENTS.

INTRODUCTION - Continued

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 **CONDITION ITEMS** AND WILL BE REPLACED ONLY WHEN NECESSARY.

BASE LEVEL REPAIR RESTRICTION, 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.

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.

INTRODUCTION - Continued

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.

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.

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.

INTRODUCTION - Continued

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 DISASSEMBLY OR REMOVAL OF COVERS, CLOSURES, PANELS, ETC., OTHER THAN THOSE REQUIRED TO ACCOMPLISH THE MORE SPECIFIC REQUIREMENTS APPLICABLE TO THE INSPECTION.

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.

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.

INTRODUCTION - Continued

NOTE

ALL CORROSION WILL BE TREATED IN ACCORDANCE WITH TO 1-1-689.

SAFETY SUMMARY

THE FOLLOWING ARE GENERAL SAFETY PRECAUTIONS THAT ARE NOT RELATED TO ANY SPECIFIC PROCEDURES AND THEREFORE DO NOT APPEAR ELSEWHERE IN THIS PUBLICATION. THESE ARE RECOMMENDED PRECAUTIONS THAT PERSONNEL MUST UNDERSTAND AND APPLY DURING MANY PHASES OF OPERATIONS AND MAINTENANCE. PERSONNEL MUST AT ALL TIMES OBSERVE ALL SAFETY REGULATIONS. SOME EQUIPMENT AND CHEMICALS HAVE INHERENT HAZARDS THAT CANNOT BE MECHANICALLY SAFEGUARDED. PERSONNEL MUST PERFORM THESE FUNCTIONS WITH CAUTION.

GENERAL SAFETY PRACTICE

ALL PRECAUTIONS REQUIRED TO ENSURE THE SAFETY OF PERSONNEL AND EQUIPMENT SHALL BE OBSERVED, SUCH AS THE PROHIBITION OF RINGS. WATCHES, PENDANT JEWELRY, SMOKING, EATING, AND CONTAINERS OF LIQUIDS AT THE EQUIPMENT RACKS, IN ACCORDANCE WITH TO 00-25-234, GENERAL SHOP PROCEDURES.

SOLDERING

AVOID BREATHING FUMES GENERATED BY SOLDERING. EYE PROTECTION IS REQUIRED. GOOD GENERAL VENTILATION IS NORMALLYADEQUATE.

SAFETY SUMMARY - Continued

KEEP AWAY FROM LIVE CIRCUITS

OPERATING PERSONNEL MUST AT ALL TIMES OBSERVE ALL SAFETY REGULATIONS. DO NOT REPLACE COMPONENTS WHEN ELECTRICAL POWER IS APPLIED TO THE UNIT UNDER TEST. DO NOT ATTEMPT TO INSTALL OR REMOVE CIRCUIT CARDS WHEN THE EQUIPMENT RACK IS **ON.**

DO NOT SERVICE ALONE

UNDER NO CIRCUMSTANCES SHOULD ANY PERSON REACH INTO THE EQUIPMENT FOR THE PURPOSE OF SERVICING THE EQUIPMENT EXCEPT IN THE PRESENCE OF SOMEONE WHO IS CAPABLE OF RENDERING AID.

RESUSCITATION

PERSONNEL WORKING WITH OR NEAR HIGHLY TOXIC CHEMICALS SHOULD BE FAMILIAR WITH MODERN METHODS OF RESUSCITATION. SUCH INFORMATION MAY BE OBTAINED FROM BASE MEDICAL SERVICES.

SAFETY SUMMARY - Continued

ELECTROSTATIC DISCHARGE DEVICES

IF AN ITEM CONTAINS A PART IDENTIFIED AS AN ELECTROSTATICALLY SENSITIVE DEVICE (ESD), APPLICABLE PRECAUTIONS WILL APPEAR IN THIS PUBLICATION. ALL ELECTROSTATICALLY SENSITIVE DEVICES WILL BE MARKED WITH THE SYMBOL. WHEN AN ENTIRE PARAGRAPH, INCLUDING ALL SUBPARAGRAPHS, IS CONSIDERED ESD CRITICAL, THE SYMBOL WILL BE PLACED BETWEEN THE STEP NUMBER AND TITLE. OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC DISCHARGE SENSITIVE ITEMS.

THE FOLLOWING WARNINGS AND CAUTIONS APPEAR IN THE TEXT OF THIS VOLUME AND ARE STATED HERE FOR EMPHASIS.

WARNING

LETHALVOLTAGES MAY EXIST IN THE DELAY LINE CHASSIS. DISCHARGE THE CAPACITORS WITH A GROUNDED SHEPHERDS STICK BEFORE DOING ANY WORK INSIDE THE DLC.

- RF RADIATION HAZARD WHEN TRANSMITTER IS IN USE. DO NOT START THIS INSPECTION UNTIL TRANSMITTER IS OFF AND ARRANGEMENTS ARE MADE TO ENSURE IT REMAINS OFF THROUGHOUT THE ENTIRE INSPECTION.

SAFETY SUMMARY - Continued

CAUTION

DO NOT PERFORM STEP 4 WITH THE FANS EXTENDED. OVERHEATING CAN OCCUR.

- WHEN WORKING IN AND AROUND THE FPA, **DO NOT** MOVE WIRES/COMPONENT LEADS. SERIOUS ARCING CAN OCCUR.
- DO NOT APPLY SEALANT/PAIN/GREASE/ETC. OF ANY KIND TO GUY WIRES, ANCHOR RODS OR INSULATORS. MAY CAUSE PREMATURE EQUIPMENT FAILURE.

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB –SYS	INTRODUCTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER	SERVICE	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.
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.
3. THE INSPECTIONS CONSIST OF CHECKING THE EQUIPMENT BY PERFORMING VISUAL EXAMINATIONS AND USING BOTH BUILT–IN MONITORING EQUIPMENT AND EXTERNAL TEST EQUIPMENT. THE TEST EQUIPMENT REQUIRED IS SPECIFIED IN THE PROCEDURES REFERENCED IN THE APPLICABLE TECHNICAL MANUALS. UNLESS OTHERWISE SPECIFIED, ALL REFERENCED INSPECTIONS WILL BE ACCOMPLISHED WITH ALL UNITS ON LINE AND OPERATIONAL.

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
1–001					31M1–2FMQ12–6WC–1 15 DEC 98	

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB –SYS	28 DAY INSPECTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	CARD NO. 1–002

OPERATIONAL CHECK

NOTE

THE FMQ–12 SHOULD BE IN CONTINUOUS OPERATION. **DO NOT** OPERATE ANY SWITCHES OR CONTROLS OTHER THAN THOSE INDICATED IN THE CHECKS BELOW.

@ 1. TURN **ON** THE PRINTER AND COMPUTER MONITOR.

@ 2. FINAL POWER AMPLIFIER CATHODE CURRENT CHECK.

A. PUT THE EQUIPMENT IN THE ALT–1 (DGS) MODE. PM LT KB

B. ESTABLISH A FIXED FREQUENCY OPERATION BY ENTERING AT THE COMPUTER KEYBOARD:

(1) COMMAND: DIS

(2) RECORD THE NUMBER UNDER THE LETTER O

(3) COMMAND: O=0 (ZERO)

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
1–002					31M1–2FMQ12–6WC–1 15 DEC 98	

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB –SYS	28 DAY INSPECTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	CARD NO. 1–002

(4) COMMAND: PRO F3

(5) COMMAND: SET 3

(6) COMMAND: F=4.5 (OR NEAREST FREQUENCY IF 4.5 IS RESTRICTED)

(7) COMMAND: R=2

(8) COMMAND: RUN F3

C. PLACE THE TUBE NUMBER SWITCH 1A2A1S1 TO POSITION 1.

D. RECORD THE INDICATION ON THE DISS PERFORMANCE LOG. (A READING OF LESS THEN 0.1MA OR MORE THAN 0.6MA INDICATES A PROBLEM MAY EXIST. SEE TO 31M1–2FMQ12–2).

E. REPEAT STEPS B, C, AND D FOR POSITIONS 2 THRU 14 OF THE TUBE NUMBER SWITCH.

NOTE

A VARIATION OF MORE THAN 35% BETWEEN THE TUBE READINGS OR FROM PREVIOUS INSPECTION VALUES INDICATES A PROBLEM MAY EXIST. SEE TO 31M1–2FMQ12–2.

F. PLACE THE TUBE NUMBER SWITCH IN POSITION 15. RECORD THE PLATE VOLTAGE ON THE DISS PERFORMANCE LOG. NORMAL INDICATION IS 0.5± 0.1 DC MA.

Resume Normal Operation

SET 1
DIS
O = C

PRO A1 —> ALT 2

> 0.05 mA is O.K.

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB –SYS	28 DAY INSPECTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	CARD NO. 1–003

G. OBSERVE THE RF OUTPUT METER. ANY MOVEMENT ABOVE ZERO IS CONSIDERED GOOD. RECORD THE READING ON THE DISS PERFORMANCE LOG.

H. OBSERVE THE POWER OUTPUT WINDOW ON THE EXCITER CHASSIS.

(1) WITH THE FWD PEP BUTTON DEPRESSED, RECORD THE INDICATION ON THE DISS PERFORMANCE LOG (SHOULD BE 10 KW ± 1 KW).

(2) WITH THE RFL PEP BUTTON DEPRESSED, RECORD THE VSWR ON THE DISS PERFORMANCE LOG (SHOULD BE LESS THAN 0.5).

I. ENTER COMMAND: STO

@ 3. RUN A CALIBRATION IONOGRAM.

A. ENSURE PRINTER SERIAL PORT IS CONNECTED TO JMO ON THE BACK OF THE PROCESSOR/ TRANSCEIVER.

B. PLACE THE PULSE POWER SUPPLY POWER ON/OFF SWITCH, 1A2A4S3, IN THE OFF POSITION.

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
1–003					31M1–2FMQ12–6WC–1 15 DEC 98	

MAN MIN	WORK AREA	WORK UNIT		28 DAY INSPECTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER	SERVICE	CARD NO.
		SYS	SUB –SYS			ON	OUT	1–003

CAUTION

EXTEND THE FAN DRAWER WHEN THE P/T DRAWER IS EXTENDED TO CONTINUE SUPPLYING COOLING AIR TO PCB'S. LACK OF COOLING MAY CAUSE PREMATURE COMPONENT FAILURE.

C. EXTEND THE PROCESSOR/TRANSCEIVER (P/T) DRAWER AND ITS COOLING FAN DRAWER.

D. MOVE S16 ON CARD A33 OF THE PROCESSOR/TRANSCEIVER FORWARD TO THE CAL POSITION.

E. COMMAND: PRO A3

F. COMMAND: SET 3

G. ENSURE THE PARAMETERS IN THE WINDOW ARE AS FOLLOWS:

PPPPPPP	SSQUU	CAB	XLZT	NRW	HEIG
0202100	01110	12E	41D1	525	0106

H. COMMAND: RUN A3 16

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB – SYS	28 DAY INSPECTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	CARD NO. 1–004

I. OBSERVE THE NUMBERS ON THE RIGHT OF THE PRINTOUT. THEY SHOULD BE BETWEEN 5 AND 9 AND SHOULD ALL BE WITHIN ONE OF EACH OTHER. FOR INSTANCE, IF THE PREDOMINATE NUMBER IS 7, NO NUMBER SHOULD BE LOWER THAN 6 OR HIGHER THAN 8. RECORD THESE NUMBERS ON THE DISS PERFORMANCE LOG. PRESERVE THE PRINTOUT FOR LATER COMPARISON.

J. ENTER COMMAND: STO

K. PLACE THE PPS POWER ON/OFF SWITCH, 1A2A4S3, IN THE **ON** POSITION.

L. MOVE SWITCH S16 ON CARD A33 AT PROCESSOR/TRANSCEIVER REARWARD TO THE RUN POSITION.

M. PUSH THE P/T DRAWER AND ITS COOLING FAN DRAWER BACK INTO THE RACK.

@ 4. RUN AN A1 IONOGRAM. AT THE COMPUTER KEYBOARD:

A. COMMAND: PRO A1

B. COMMAND: SET 1

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
1–004					31M1–2FMQ12–6WC–1 15 DEC 98	

MAN MIN	WORK AREA	WORK UNIT		28 DAY INSPECTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER	SERVICE	CARD NO.
		SYS	SUB –SYS			ON	OUT	1–004

C. COMMAND: RUN A1

D. AFTER THE TRANSMITTER HAS PULSED THROUGH THE FREQUENCY RANGE SET IN THE A1 PROGRAM AND A FEW SECONDS HAVE BEEN ALLOWED FOR PROCESSING, OBSERVE THE COMPUTER MONITOR PRESENTATION. IT SHOULD BE AN IONOGRAM REPRESENTATIVE OF THE PRESENT CONDITIONS ABOVE THE STATION. SHORTLY THEREAFTER, THE PRINTER SHOULD SHOW THE EXACT SAME THING. RECORD, ON THE DISS PERFORMANCE LOG, AN OK IF THE PRESENTATION IS GOOD AND A CHECK MARK IF NOT.

E. COMMAND: DIS

F. COMMAND: O= NUMBER RECORDED IN 2B(2) ABOVE.

@ 5. RETURN THE EQUIPMENT TO THE ALT–2 (NORMAL) MODE.

@ 6. TURN OFF THE MONITOR AND PRINTER.

7. REVIEW THE LATEST PERFORMANCE LOG ENTRIES, WITH RESPECT TO THE MOST RECENT PREVIOUS ENTRIES, TO DETERMINE IF A NEGATIVE TREND IS OCCURRING.

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB –SYS	56 DAY INSPECTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	CARD NO. 1–005

FOD AND 14 IONOGRAM TEST

NOTE

THE FMQ–12 SHOULD BE IN CONTINUOUS OPERATION. **DO NOT** OPERATE ANY SWITCHES OR CONTROLS OTHER THAN THOSE INDICATED IN THE CHECKS BELOW.

@ 1. TURN **ON** THE PRINTER AND COMPUTER MONITOR.

@ 2. PERFORM THE FOD TEST.

A. PUT THE EQUIPMENT IN THE ALT–1 (DGS) MODE.

B. ESTABLISH THE PROPER CONDITIONS FOR THE TEST BY ENTERING AT THE COMPUTER KEYBOARD:

(1) COMMAND: DIS

(2) RECORD THE NUMBER UNDER THE LETTER O

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
1–005					31M1–2FMQ12–6WC–1 15 DEC 98	

MAN MIN	WORK AREA	WORK UNIT		56 DAY INSPECTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER	SERVICE	CARD NO.
		SYS	SUB –SYS			ON	OUT	1–005

(3) COMMAND: O = 0 (ZERO)

(4) PLACE THE PPS POWER ON/OFF SWITCH, 1A2A4S3, IN THE **OFF** POSITION.

(5) COMMAND: PRO B3

(6) COMMAND: SET 3

C. ENSURE THE PARAMETERS DISPLAYED IN THE WINDOW ARE:

PPPPPPP	SSQUU	CAB	XLZT	NRW	HEIG
F0D2100	01108	32E	4151	434	1237

NOTE

FREQUENCY SPAN (SS TO UU) MUST BE AT LEAST 4 MHZ.

D. COMMAND: RUN B3

NOTE

TO SEE A FULL IONOGRAM DISPLAY ON THE MONITOR, SIMULTANEOUSLY DEPRESS ALT AND S.

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB –SYS	56 DAY INSPECTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	CARD NO. 1–006

E. AFTER APPROXIMATELY 30 TO 45 SECONDS, THE MONITOR AND THEN THE PRINTER SHOULD SHOW THE SAME PRESENTATION AS IN FIGURE 1, MINUS ANY LOCALLY INHIBITED FREQUENCIES. THE LETTERS **OK** SHOULD BE CLEARLY DEFINED AND THE MAJORITY OF THE NUMBERED TRACES SHOULD START ON THE LEFT BETWEEN 120 AND 200 KM.

F. PLACE THE PPS POWER ON/OFF SWITCH, 1A2A4S3, IN THE **ON** POSITION.

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
1–006					31M1–2FMQ12–6WC–1 15 DEC 98	

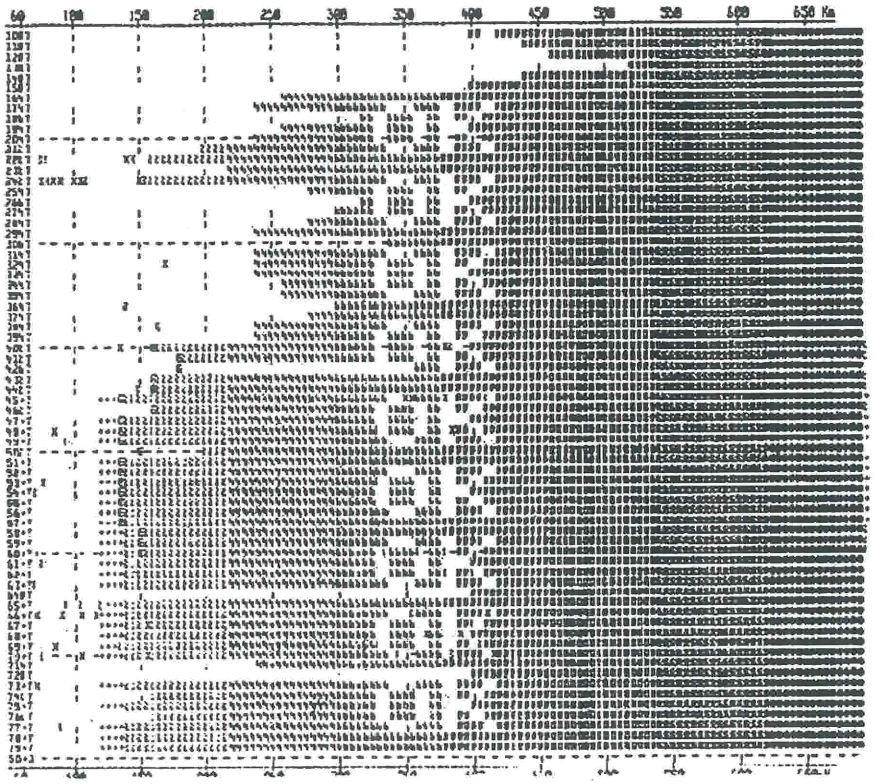


FIGURE 1. FULL IONOGRAM

31M1-2FMQ12-6WC-1

CARD NO.
1-006

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB –SYS	· 56 DAY INSPECTION INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	CARD NO. 1–007
			(*)	@ 3. PRODUCE A HARD COPY A1 IONOGRAM BY ENTERING: A. COMMAND: PRO A1 B. COMMAND: SET 1 C. COMMAND: RUN A1 D. WAIT UNTIL THE PRINTER HAS FINISHED PRINTING. @ 4. PERFORM 14 IONOGRAM (ASC AND PREAMPLIFIER SWITCHING) CHECK. A. COMMAND: PRO C3 B. COMMAND: SET 3 C. ENSURE THE PROGRAM PARAMETERS IN THE WINDOW ARE: PPPPPPP SSQUU CAB XLZT NRW HEIG 0203100 XX1XX 32E 41D1 424 1206			

O-Scope method.

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
1–007					31M1–2FMQ12–6WC–1 15 DEC 98	

MAN MIN	WORK AREA	WORK UNIT		56 DAY INSPECTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER	SERVICE	CARD NO.
		SYS	SUB –SYS			ON	OUT	1–007

D. USING THE A1 IONOGRAM RUN IN STEP 3 ABOVE AS A REFERENCE, SET SS AT 1 MHZ BELOW FOF2 AND UU AT 1 MHZ ABOVE THE CORRESPONDING X RETURNS FOR FOF2.

E. ENSURE PRINTER SERIAL PORT IS CONNECTED TO JMO ON THE BACK OF THE PROCESSOR/TRANSCEIVER.

F. PLACE THE ANTENNA SELECTOR ON THE ASC TO POSITION 1, PRESS AND HOLD THE TEST SWITCH ON THE ASC AND ENTER COMMAND: RUN C3. HOLD TEST SWITCH DEPRESSED UNTIL IONOGRAM IS FINISHED PRINTING.

G. AFTER THE IONOGRAM HAS PRINTED, WHILE STILL DEPRESSING THE TEST SWITCH, PRESS AND HOLD THE O/X SWITCH AND ENTER COMMAND: RUN. HOLD BOTH SWITCHES DEPRESSED UNTIL IONOGRAM IS FINISHED PRINTING,.

H. YOU NOW HAVE TWO SHORT IONOGRAMS. THE FIRST SHOULD SHOW ALL OF THE O TRACE AND VERY LITTLE OF THE X TRACE. THE SECOND SHOULD SHOW ALL OF THE X TRACE AND VERY LITTLE OF THE O TRACE.

I. PERFORM STEPS E AND F FOR ANTENNA SELECTOR POSITIONS 2 THROUGH 7.

J. WHEN ALL 14 OF THE IONOGRAMS ARE COMPLETE, ENTER:

(1) COMMAND: DIS

(2) COMMAND: O= NUMBER RECORDED IN 2B(2) ABOVE.

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB –SYS	56 DAY INSPECTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	CARD NO. 1–008

@ 5. RETURN THE EQUIPMENT TO THE ALT–2 (NORMAL) MODE.

@ 6. TURN OFF THE MONITOR AND PRINTER.

7. REVIEW THE 7 SETS OF IONOGRAMS TO INSURE A SIGNIFICANT CHANGE FROM O TO X.

8. COMPARE THESE IONOGRAMS WITH THOSE TAKEN 56 DAYS AGO TO DETERMINE IF SIGNIFICANT DEGRADATION IS OCCURRING.

9. RECORD WHETHER THE NEW IONOGRAMS ARE OK OR NOT ON THE DISS PERFORMANCE LOG.

10. FILE THE PRESENT 14 IONOGRAMS FOR COMPARISON NEXT MONTH.

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
1–008					31M1–2FMQ12–6WC–1 15 DEC 98	

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB -SYS	84 DAY INSPECTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	CARD NO. 1-009

PRE-AMP GAIN, PHASE, DISCRETE FOURIER TRANSFORM CALIBRATION TEST AND DIGITIZER CALIBRATION CHECK.

1. MATERIALS NEEDED:
   - A. OSCILLOSCOPE, INFINITE PERSISTENCE, PREFERABLY DIGITAL.
   - B. FREQUENCY SYNTHESIZER.
   - C. BNC T
   - D. 2 RG58 TEST CABLES, APPROX. 10 FT AND 6 FT.
   - E. 7-SECTION IF SPLITTER.

@ 2. TURN **ON** THE FREQUENCY SYNTHESIZER TO ALLOW SUFFICIENT WARMUP TIME.

@ 3. PRE-AMP GAIN TEST PROCEDURE:
   - A. SIMULTANEOUSLY DEPRESS ALT AND 1 TO ENTER THE DGS MODE.

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
1-009					31M1-2FMQ12-6WC-1 15 DEC 98	

MAN MIN	WORK AREA	WORK UNIT		84 DAY INSPECTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER	SERVICE	CARD NO.
		SYS	SUB – SYS			ON	OUT	1 – 009

B. COMMAND: DIS

C. RECORD THE NUMBER UNDER THE LETTER O.

D. COMMAND: O = 0 (ZERO)

E. PLACE THE PPS POWER ON/OFF SWITCH, 1A2A4S3, TO THE **OFF** POSITION.

NOTE

ALTHOUGH ANY OSCILLOSCOPE THAT HAS A PERSISTENCE FUNCTION CAN BE USED FOR THE FOLLOWING TEST, BEST RESULTS ARE ATTAINED WHEN THE O'SCOPE IS DIGITAL.

F. DISCONNECT 1A2A5 PLS FROM JLS AT THE REAR OF THE ANTENNA SWITCH CHASSIS. CONNECT BNC T TO JLS. CONNECT PLS TO ONE SIDE OF THE T AND CONNECT THE OTHER SIDE TO CHANNEL 1 OF THE OSCILLOSCOPE.

G. CONNECT OSCILLOSCOPE EXTERNAL TRIGGER INPUT TO MONITOR C ON THE FRONT OF THE PROCESSOR/TRANSCEIVER.

H. SET OSCILLOSCOPE CHANNEL 1 AMPLITUDE TO 100 MV/DIV AND SWEEP SPEED TO 10 MS/DIV.

I. SET TRIGGER TO CHANNEL 4, NORM, AC

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB –SYS	84 DAY INSPECTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	CARD NO. 1–010

J. COMMAND: PRO G3

K. COMMAND: SET 3

L. ENSURE THE PARAMETERS IN THE WINDOW ARE:

PPPPPPP	FRQUY	CAB	XLZT	NRW	HEIG
079411E	00.00	15E	0B20	524	4000

NOTE

IF Q IS NOT A PERIOD, INPUT F= ANY FREQUENCY THAT HAS A DECIMAL, FOR INSTANCE 3.5, AND THEN BACK TO F=0.

M. COMMAND: DRI. INPUT THE FOLLOWING:

F=5
G=0
H=300

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
1–010					31M1–2FMQ12–6WC–1 15 DEC 98	

31M1-2FMQ12-6WC-1

CARD NO.
1-010

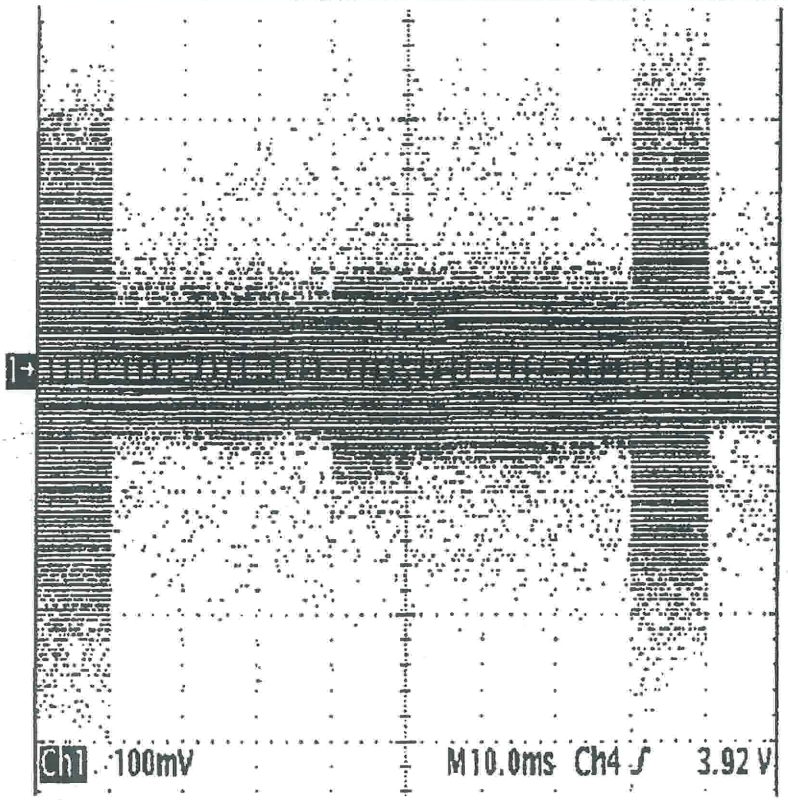


FIGURE 1. PRE-AMP NOISE LEVELS

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB –SYS	84 DAY INSPECTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	CARD NO. 1–011

N. COMMAND: RUN G3

O. AN OSCILLOSCOPE PRESENTATION SIMILAR TO FIGURE 1 SHOULD APPEAR.

(1) THERE SHOULD BE 8 NOISE SEGMENTS, EACH 10 MS WIDE.

(2) STARTING FROM THE LEFT SHOULD BE THE SUM SIGNAL @ 600 TO 800 MV, FOLLOWED BY THE 7 ANTENNA SIGNALS, EACH @ 100 TO 150 MV.

(3) THE SIGNAL AMPLITUDES FROM THE 7 ANTENNAS SHOULD BE WITHIN 10% OF EACH OTHER.

P. COMMAND: STO

Q. DISCONNECT BNC T FROM 1A2A5 JLS AND RECONNECT PLS.

R. DISCONNECT OSCILLOSCOPE TRIGGER CABLE FROM MONITOR C.

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
1–011					31M1–2FMQ12–6WC–1 15 DEC 98	

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB –SYS	84 DAY INSPECTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	CARD NO. 1–011

@ 4. PHASE TEST PROCEDURE:

A. PULL OUT THE ANTENNA SWITCH CHASSIS. DISCONNECT LG1 THRU LG7 AT THE LOWER REAR OF THE CHASSIS (THE INTERNAL ONES, NOT THE CABLES COMING FROM THE ANTENNA) AND CONNECT THEM TO THE 7–SECTION IF SPLITTER.

B. INSTALL SERIAL CABLE BETWEEN THE PRINTER AND 1A1A1 JMO AT THE REAR OF THE PROCESSOR/TRANSCEIVER.

C. COMMAND: PRO G3

D. COMMAND: SET 3

E. ENSURE THE PARAMETERS IN THE WINDOW ARE:

PPPPPPP	FRQUY	CAB	XLZT	NRW	HEIG
0594133	00.00	15E	OB20	524	4000

F. COMMAND: DRI. INPUT THE FOLLOWING:

F=5
G=0
H=300

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB –SYS	84 DAY INSPECTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	CARD NO. 1–012

G. SET THE FREQUENCY SYNTHESIZER TO 5.002500 MHZ AND 8.7 DB (100 MV) ATTENUATION.

H. CONNECT THE 50 OHM OUTPUT OF THE FREQUENCY SYNTHESIZER TO THE IF SPLITTER INPUT.

I. COMMAND: RUN G3

J. APPROXIMATELY 26 SECONDS LATER, AND APPROXIMATELY EVERY 21 SECONDS THEREAFTER, THE PRINTER WILL SWEEP ACROSS 8 TIMES, GIVING 2 COLUMNS OF SIGNALS AND SOME OPERATIONAL INFORMATION ON THE LEFT. THE PRINTOUT SHOULD BE NEARLY IDENTICAL TO FIGURE 2.

NOTE

THE COLUMN INFORMATION AT TOP LEFT OF FIGURE 2 WAS ADDED TO ASSIST WITH STEP 4K.

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
1–012					31M1–2FMQ12–6WC–1 15 DEC 98	

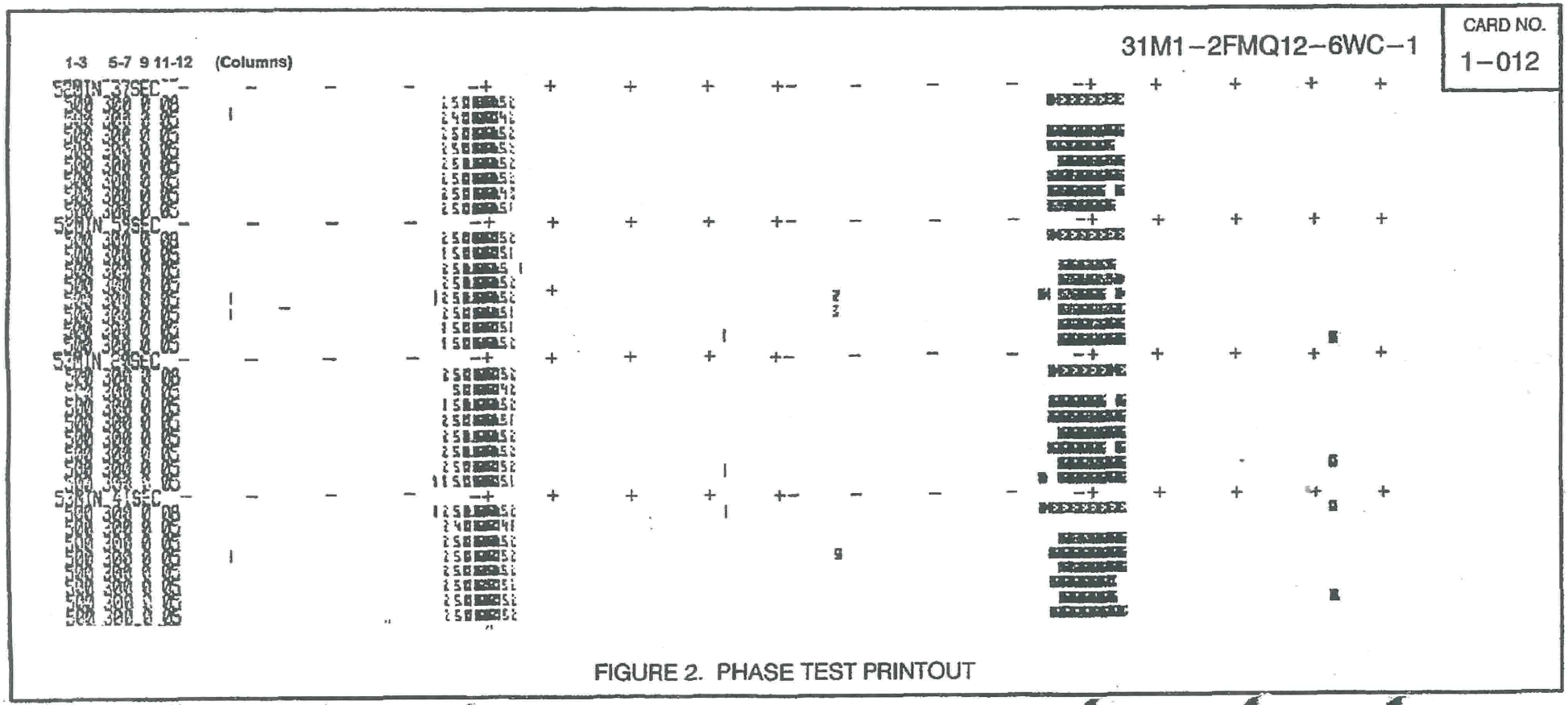


FIGURE 2. PHASE TEST PRINTOUT

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB –SYS	84 DAY INSPECTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER OFF	SERVICE OUT	CARD NO. 1–013

K. STARTING FROM THE LEFT, THE INFORMATION GIVEN IS:

(1) COLUMNS 1–3: FREQUENCY USED

(2) COLUMN 4: BLANK

(3) COLUMNS 5–7: HEIGHT USED

(4) COLUMN 8: BLANK

(5) COLUMN 9: GAIN USED

(6) COLUMN 10: BLANK

(7) COLUMN 11: NOISE THRESHOLD VALUE

(8) COLUMN 12: AMPLITUDE OVERFLOW

(a) FOR COLUMN 11, THE SOUNDER LOOKS AT THE AMOUNT OF NOISE PRESENT DURING NON–SIGNAL TIME, SETS AN ATTENUATION EQUAL TO THAT NOISE AND PASSES ONLY SIGNAL STRENGTHS ABOVE THAT POINT.

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB –SYS	84 DAY INSPECTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER OFF	SERVICE OUT	CARD NO. 1–013

(b) FOR COLUMN 12, SEE TO 31M1–2FMQ12–1 FOR EXPLANATION AND CONVERSION FORMULAE.

L. THE LEFT SIGNAL COLUMN IS AMPLITUDE. IT SHOULD BE CENTERED, WITHIN ONE CHARACTER, OVER THE MINUS TO PLUS DOPPLER CONVERGENCE POINT. THERE SHOULD BE AT LEAST ONE OPTIFONT 15 IN THE MIDDLE OF EACH SIGNAL.

M. THE RIGHT SIGNAL COLUMN IS PHASE. IT SHOULD BE CENTERED OVER THE MINUS TO PLUS DOPPLER CONVERGENCE POINT AND MUST BE WITHIN ONE DIGIT OF ZERO, WHICH IS CORRECT PHASING. THEREFORE, THE NUMBERS ALLOWED ARE 1, 0 AND 15.

N. IN BOTH SIGNAL COLUMNS, THE SUM SIGNAL IS SHOWN FIRST, FOLLOWED BY ANTENNA 1 THRU 7. NOTICE THAT ANTENNA 1 IN THE PHASE COLUMN HAS NO SIGNAL. THAT IS BECAUSE ALL OF THE OTHER ANTENNAS ARE REFERENCED TO IT.

O. DISCONNECT LG7 FROM THE IF SPLITTER AND LOOK TO SEE THE ANTENNA 7 SIGNAL DISAPPEAR ON THE PRINTOUT.

NOTE

FIGURE 3 IS AN EXAMPLE OF THE PRINTOUT WHEN DISCONNECTING THE ANTENNAS. IT NORMALLY TAKES TWO PRINTOUT CYCLES TO CHECK EACH ANTENNA, SINCE, AT THE TIME OF CONNECT OR DISCONNECT, THE SIGNAL WILL BE SPREAD ACROSS THE PRINTOUT.

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB –SYS	84 DAY INSPECTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER OFF	SERVICE OUT	CARD NO. 1–014

P. RECONNECT LG7, DISCONNECT LG6 AND LOOK FOR ANTENNA 6 SIGNAL TO DISAPPEAR.

NOTE

DUE TO CIRCUIT SPILLOVER, THE ANTENNA SIGNALS WILL PROBABLY NEVER DECREASE TO COMPLETE ZERO, BUT SHOULD DECREASE TO LESS THAN 5% OF NORMAL STRENGTH.

Q. SUCCESSIVELY CONNECT AND DISCONNECT EACH ANTENNA UNTIL EACH HAS BEEN INDIVIDUALLY CHECKED. SEE FIGURE 3.

R. COMMAND: STO

S. DISCONNECT LG1 THRU LG7 FROM THE IF SPLITTER, DISCONNECT THE IF SPLITTER FROM THE FREQUENCY SYNTHESIZER AND TURN IT OFF.

T. RECONNECT LG1 THRU LG7 TO THEIR RESPECTIVE CONNECTORS AT THE BOTTOM REAR OF THE ANTENNA SWITCH CHASSIS.

U PUSH THE ANTENNA SWITCH CHASSIS BACK INTO THE RACK.

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
1–014					31M1–2FMQ12–6WC–1 15 DEC 98	

31M1–2FMQ12–6WC–1

CARD NO.
1–014

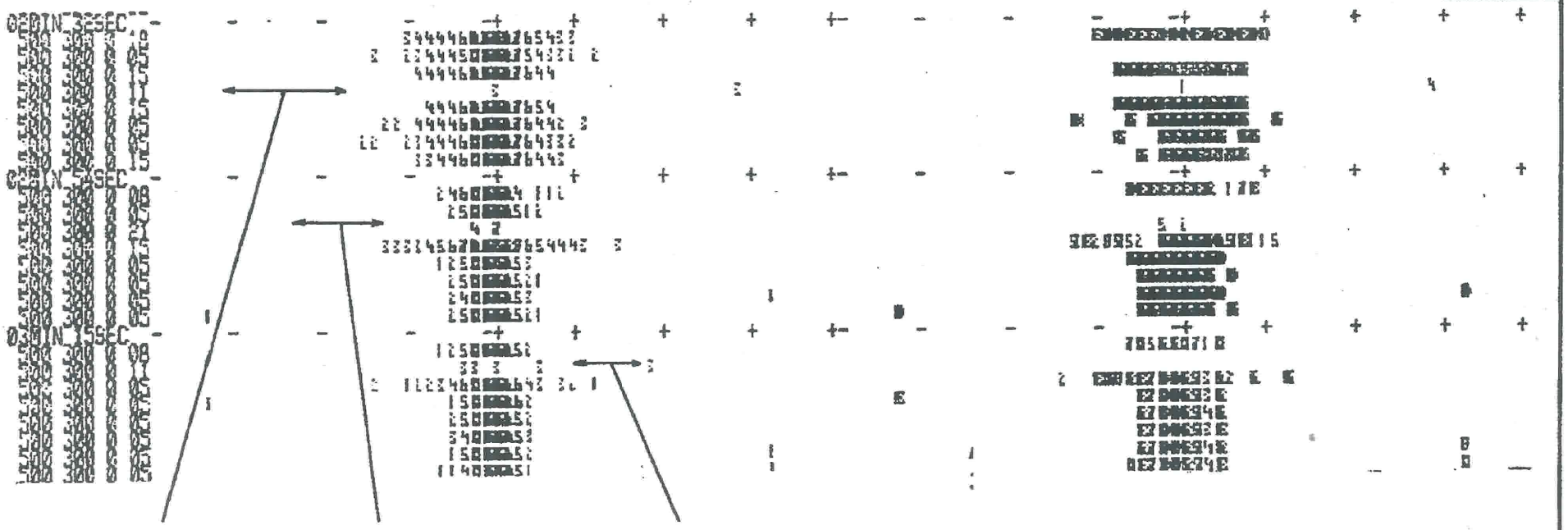


FIGURE 3. PRINTOUT OF DISCONNECTING ANTENNA 3, THEN 2, THEN 1

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB –SYS	84 DAY INSPECTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	CARD NO. 1–015

@ 5. DISCRETE FOURIER TRANSFORM CALIBRATION PROCEDURE: THE DISS MUST BE ABLE TO RECOGNIZE AND ACT UPON A 2 HZ VARIANCE IN THE RECEIVED SIGNAL.

A. DISCONNECT PMS FROM JMS AT THE REAR OF THE P/T AND CONNECT THE 50 OHM OUTPUT OF THE FREQUENCY SYNTHESIZER TO JMS.

B. CONNECT THE SERIAL CABLE BETWEEN THE PRINTER AND JMO AT THE REAR OF THE P/T.

C. SET THE FREQUENCY SYNTHESIZER FOR AN OUTPUT OF 225,000 HZ AT 100 MV RMS (–8.7 DBM).

D. COMMAND: PRO F3

E. COMMAND: SET 3

F. ENSURE THE PARAMETERS ARE AS FOLLOWS:

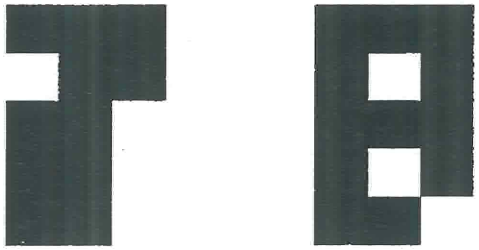
PPPPPPP	FRQUY	CAB	XLZT	NRW	HEIG
0400100	02.30	32E	0100	765	1204

G. COMMAND: RUN F3

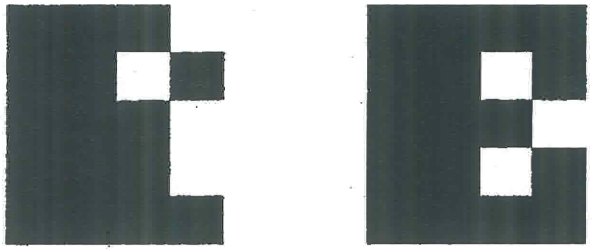
CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
1–015					31M1–2FMQ12–6WC–1 15 DEC 98	

31M1-2FMQ12-6WC-1

CARD NO.
1-015



OPTIFONT 7 AND 8



OPTIFONT 12 AND 13

FIGURE 4.

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB –SYS	84 DAY INSPECTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	CARD NO. 1–016

H. THE PRINTOUT SHOULD BE A SERIES OF OPTIFONT 7'S OR 8'S ON THE RIGHT HALF OF THE PAPER (SEE FIGURE 4).

I. CHANGE THE FREQUENCY SYNTHESIZER OUTPUT TO 225, 002 HZ.

J. THE PRINTOUT SHOULD BE A SERIES OF OPTIFONT 12'S OR 13'S ON THE RIGHT HALF OF THE PAPER (SEE FIGURE 4).

K. COMMAND: STO

L. DISCONNECT THE TEST CABLE FROM JMS AND RECONNECT PMS TO JMS.

M. COMMAND: DIS

N. ENTER THE NUMBER, RECORDED IN STEP 3C ABOVE, UNDER THE LETTER O.

O. PLACE THE PPS POWER ON/OFF SWITCH, 1A2A453, TO THE **ON** POSITION.

P. SIMULTANEOUSLY DEPRESS ALT AND 2 TO PUT THE SYSTEM BACK INTO THE ARTIST (NORMAL) MODE OF OPERATION.

6. PERFORM DIGITIZER CALIBRATION PER 31M1–2FMQ12–9.

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
1–016					31M1–2FMQ12–6WC–1 15 DEC 98	

MAN MIN	WORK AREA	WORK UNIT		168 DAY SPECTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER	SERVICE	CARD NO.
		SYS	SUB –SYS			OFF	OUT	1–017

5. TURN **ON** THE FACILITY INPUT POWER CIRCUIT BREAKER, THE TRANSMITTER RACK MAIN POWER AND UPS.

6. OBSERVE THAT THE DISS IS AUTOMATICALLY FUNCTIONING NORMALLY

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB –SYS	168 DAY INSPECTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER	SERVICE	CARD NO.
						OFF	OUT	1–017

RECEIVE ANTENNA

1. MATERIALS NEEDED:

   A. SCREWDRIVER, CABINET STYLE, 6 INCH

   B. SILICONE SEALANT

WARNING

RF RADIATION HAZARD WHEN TRANSMITTER IS IN USE.
DO NOT START THIS INSPECTION UNTIL TRANSMITTER IS OFF
AND ARRANGEMENTS ARE MADE TO ENSURE IT REMAINS OFF
THROUGHOUT THE ENTIRE INSPECTION.

@ 2. TURN **OFF** THE TRANSMITTER RACK MAIN POWER, THE UPS AND THE FACILITY INPUT POWER CIRCUIT BREAKER.

3. OPEN EACH RECEIVE ANTENNA PREAMPLIFIER BOX AND INSPECT FOR WATER INTRUSION.

4. SEAL LEAKS WITH SILICONE SEALANT AS NECESSARY.

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
1–017					31M1–2FMQ12–6WC–1 15 DEC 98	

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB –SYS	336 DAY INSPECTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	CARD NO. 1–018

LOCAL INTERFERENCE CHECK

1. EQUIPMENT REQUIRED:
   - A. SPECTRUM ANALYZER
   - B. SCREWDRIVER, COMMON, #2
   - C. SCREWDRIVER, PHILLIPS, #2
   - D. SREWDRIVER HEX TYPE, 5/16 IN
   - E. 2 EA N TO BNC ADAPTORS
   - F. FEMALE, N TYPE, INLINE CONNECTOR (BULLET)
   - G. 2 EA RG–58 TEST CABLES

@ 2. TURN **ON** THE SPECTRUM ANALYZER AND ALLOW SUFFICIENT WARM–UP TIME.

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
1–018					31M1–2FMQ12–6WC–1 15 DEC 98	

MAN MIN	WORK AREA	WORK UNIT		336 DAY INSPECTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER	SERVICE	CARD NO.
		SYS	SUB –SYS			ON	OUT	1–018

@ 3. TURN ON PRINTER AND RECORD PRESENT OPERATING PARAMETERS BY EITHER RUNNING AN IONOGRAM OR DEPRESSING PRINT SCREEN. (PRINTER WILL MOST LIKELY PRODUCE LATEST IONOGRAM AS SOON AS IT IS TURNED ON.)

@ 4. AT THE TRANSMITTER RACK, TURN **OFF** THE MAIN POWER AND THE UPS.

5. DISCONNECT TRANSMITTER CABLE, PER1, FROM THE BACK OF THE EXCITER CHASSIS AND CONNECT IT TO THE SPECTRUM ANALYZER 50 OHM SIGNAL INPUT.

NOTE

THE TRANSMITTER ANTENNA IS NOW BEING USED AS A RECEIVE/LISTENING DEVICE.

6. SET THE SPECTRUM ANALYZER TO:

   A. SWEEP START: 0 HZ

   B. SWEEP STOP: 2 MHZ

   C. ATTENUATION: 10 DB/DIV

7. RECORD FREQUENCY AND STRENGTH OF THE 2 OR 3 STRONGEST SIGNALS.

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB –SYS	336 DAY INSPECTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	CARD NO. 1–019

8. COMPARE THESE READINGS WITH THOSE RECORDED LAST YEAR TO DETERMINE IF ANY LOCAL SIGNAL INTERFERENCE SOURCES HAVE CHANGED.

9. REMOVE THE RF INPUT FILTER, A30, FROM THE BOTTOM OF THE PROCESSOR/TRANSCEIVER. USING THE FEMALE N TYPE INLINE CONNECTOR, THE N TO BNC ADAPTORS AND THE TEST CABLES, CONNECT THE TRANSMIT CABLE, PER1, TO THE INPUT SIDE OF THE FILTER AND CONNECT THE FILTER OUTPUT SIDE TO THE 50 OHM INPUT OF THE SPECTRUM ANALYZER.

10. SET THE SPECTRUM ANALYZER AS IN STEP 6 ABOVE.

11. COMPARE THESE NEW INDICATIONS TO THOSE TAKEN EARLIER IN STEP 7. AT INSTALLATION, THE RF INPUT FILTER WAS SET TO ATTENUATE THE 1 OR 2 (DEPENDING ON FREQUENCY SPREAD) STRONGEST LOCAL INTERFERERS. THERE SHOULD BE AT LEAST A 20 DB REDUCTION IN THE STRONGEST SIGNAL, NORMALLY IN THE AM BAND BETWEEN 600 KHZ AND 1.6 MHZ.

NOTE

IF THE RF INPUT FILTER IS NOT ATTENUATING PROPERLY OR IF THE INTERFERENCE SOURCES HAVE CHANGED, PERFORM THE RF FILTER ADJUSTMENT IN TO 31M1–2FMQ12–9.

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
1–019					31M1–2FMQ12–6WC–1 15 DEC 98	

MAN MIN	WORK AREA	WORK UNIT		336 DAY INSPECTION	INSPECTION REQUIREMENTS	ELECTRICAL POWER	SERVICE	CARD NO.
		SYS	SUB –SYS			ON	OUT	1–019

12. DISCONNECT THE RF INPUT FILTER AND REINSTALL IT IN THE PROCESSOR/TRANSCEIVER.
13. RECONNECT PER1 TO THE EXCITER.
@ 14. TURN ON THE TRANSMITTER RACK MAIN POWER AND THE UPS.
@ 15. USING THE INFORMATION RECORDED IN STEP 3 ABOVE, RETURN THE DISS TO ITS PREVIOUS OPERATION.

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

SERVICING AND LUBRICATION REQUIREMENTS

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.
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 AND DATE	CHANGE NO.
2–001					31M1–2FMQ12–6WC–1 15 DEC 98	

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB –SYS	28 DAY SERVICE	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	CARD NO. 2–002

TAPE TRANSPORT CLEANING N/A

1. MATERIAL REQUIRED
   - A. NEW DATA ARCHIVE TAPE
   - B. 95% DENATURED ALCOHOL
   - C. 2 COTTON SWABS
   - D. LOW PRESSURE AIR
   - E. FLASHLIGHT

@ 2. AT ANY TIME OTHER THAN 8 TO 12 MINUTES AFTER THE HOUR, SLIDE THE TAPE TRANSPORT LOCK TO THE LEFT AND REMOVE THE USED DATA ARCHIVE TAPE FROM THE ARTIST3 (REFERENCE FIGURE 1).

@ 3. VISUALLY INSPECT THE SENSOR HOLES FOR DIRT OR DUST. IF NECESSARY, CLEAN THEM WITH LOW PRESSURE AIR.

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
2–002					31M1–2FMQ12–6WC–1 15 DEC 98	

31M1–2FMQ12–6WC–1

CARD NO.
2–002

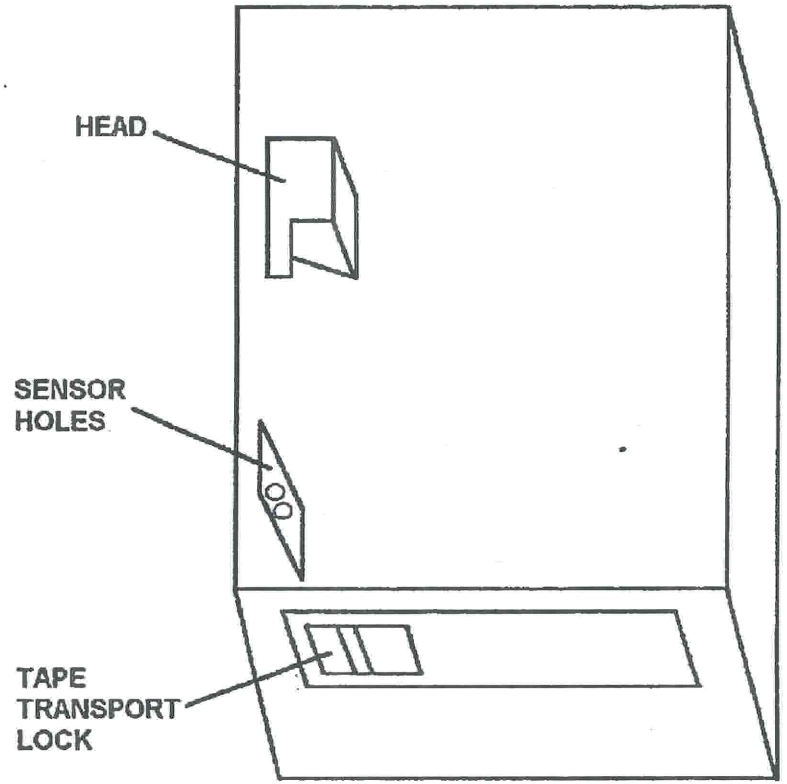


FIGURE 1. TAPE TRANSPORT

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB –SYS	28 DAY SERVICE	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	CARD NO. 2–003

@ 4. SLIDE TAPE TRANSPORT LOCK TO THE RIGHT AND THE TAPE HEADS WILL SWING OUT APPROXIMATELY 4" BACK ON THE LEFT SIDE.

@ 5. DIP A COTTON SWAB IN ALCOHOL, VIGOROUSLY SHAKE OFF EXCESS, AND VERY LIGHTLY RUB THE TAPE HEADS.

@ 6. USE A CLEAN DRY COTTON SWAB TO VERY LIGHTLY REMOVE ANY EXCESS ALCOHOL LEFT ON THE HEADS.

7. SLIDE THE TAPE TRANSPORT LOCK BACK TO THE LEFT, INSERT THE NEW TAPE AND SLIDE THE TAPE TRANSPORT LOCK BACK TO THE RIGHT.

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
2–003					31M1–2FMQ12–6WC–1 15 DEC 98	

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB -SYS	28 DAY SERVICE	INSPECTION REQUIREMENTS	ELECTRICAL POWER ON	SERVICE OUT	CARD NO. 2-004

FAN SERVICE

1. MATERIAL REQUIRED

   A. SCREWDRIVER, COMMON, #2

   B. SCREWDRIVER, PHILLIPS, #2

   C. VACUUM CLEANER WITH NON-METALLIC WAND

   D. FLASHLIGHT

CAUTION

DO NOT LEAVE THE FAN ASSEMBLIES EXTENDED LONGER THAN NECESSARY TO ACCOMPLISH INSPECTIONS 2 AND 3. LOSS OF AIRFLOW TO P/T, FPA AND PPS CHASSIS MAY CAUSE PREMATURE COMPONENT FAILURE.

@ 2. PULL OUT THE DESK RACK FAN ASSEMBLY, ENSURE THAT EACH OF THE 9 FANS IS BLOWING STRONGLY AND NOT MAKING EXCESSIVE NOISE. PUSH THE FAN ASSEMBLY BACK IN.

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
2-004					31M1-2FMQ12-6WC-1 15 DEC 98	

MAN MIN	WORK AREA	WORK UNIT		28 DAY SERVICE INSPECTION REQUIREMENTS	ELECTRICAL POWER	SERVICE	CARD NO.
		SYS	SUB –SYS		ON	OUT	2–004

@ 3. PERFORM STEP 2 PROCEDURES ON THE UPPER AND LOWER TRANSMITTER RACK FAN ASSEMBLIES.

CAUTION

DO NOT PERFORM STEP 4 WITH THE FANS EXTENDED. OVERHEATING CAN OCCUR.

@ 4. REMOVE THE SILVER, LOUVERED COVER FROM THE DESK RACK FAN FILTER ASSEMBLY, REMOVE THE FILTER AND VACUUM THE INTAKE SIDE. REPLACE THE FILTER AND THE COVER.

@ 5. PERFORM STEP 4 PROCEDURES ON THE UPPER AND LOWER TRANSMITTER RACK FAN ASSEMBLIES.

@ 6. CHECK TO ENSURE THE TRANSMITTER RACK VENTILATION FAN IS BLOWING STRONGLY OUT OF THE TOP OF THE RACK AND IS NOT MAKING EXCESSIVE NOISE.

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB –SYS	56 DAY SERVICE	INSPECTION REQUIREMENTS	ELECTRICAL POWER OFF	SERVICE OUT	CARD NO. 2–005

CLEANING AND CORROSION CONTROL

1. EQUIPMENT REQUIRED:
   - A. SCREWDRIVER, COMMON, #2
   - B. SCREWDRIVER, PHILLIPS, #2
   - C. VACUUM CLEANER WITH NON–METALLIC WAND
   - D. CLEAN, LINT FREE CLOTH
   - E. APPROVED CLEANING FLUID OR WARM WATER
   - F. NO–OX GREASE OR SUITABLE SUB
   - G. SOCKET SET WITH RATCHET AND EXTENSIONS

@ 2. TURN **OFF** THE TRANSMITTER RACK MAIN POWER, THE UPS AND THE FACILITY INPUT POWER CIRCUIT BREAKER.

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
2–005					31M1–2FMQ12–6WC–1 15 DEC 98	

MAN MIN	WORK AREA	WORK UNIT		56 DAY SERVICE	INSPECTION REQUIREMENTS	ELECTRICAL POWER	SERVICE	CARD NO.
		SYS	SUB –SYS			OFF	OUT	2–005

3. VACUUM AND/OR WIPE–DOWN, AS NECESSARY, THE COMPUTER MONITOR, ARTIST3, KEYBOARD, PRINTER, MODEMS, DESK TOP AND DESKRACK (INCLUDING INSIDE THE BACK).

4. PULL OUT THE PROCESSOR/TRANSCEIVER, VACUUM THE TOP AND BOTTOM, AND PUSH BACK IN.

5. VACUUM AND/OR WIPE DOWN, AS NECESSARY, THE TOP, SIDES AND INSIDE THE BACK OF THE TRANSMITTER RACK.

CAUTION

WHEN WORKING IN AND AROUND THE FPA, **DO NOT** MOVE WIRES/ COMPONENT LEADS. SERIOUS ARCING CAN OCCUR.

6. PULL OUT THE FPA, REMOVE THE TOP AND BOTTOM COVERS AND VACUUM CLEAN THE TOP AND BOTTOM OF THE CHASSIS. REPLACE THE TOP AND BOTTOM COVERS AND PUSH BACK INTO THE RACK.

7. **ONE AT A TIME**, PERFORM PARA 6 ON THE EXCITER, PULSE POWER SUPPLY AND ANTENNA SWITCH, TO INCLUDE WIPING DOWN WITH A CLEAN CLOTH (DRY OR DAMP) AS NECESSARY.

WARNING

LETHAL VOLTAGES MAY EXIST IN THE DELAY LINE CHASSIS. DISCHARGE THE CAPACITORS WITH A GROUNDED SHEPHERDS STICK BEFORE DOING ANY WORK INSIDE THE DLC.

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB –SYS	56 DAY SERVICE	INSPECTION REQUIREMENTS	ELECTRICAL POWER OFF	SERVICE OUT	CARD NO. 2–006

8. PERFORM PARA 6 AND 7 ON THE DELAY LINE CHASSIS.
9. CAREFULLY CHECK ALL OF THE SCREWS, NUTS AND BOLTS ON THE CAPACITORS AND COILS IN THE DLC FOR TIGHTNESS. **DO NOT OVER TIGHTEN**.
10. INSPECT THE GROUND CONNECTIONS AT THE BOTTOM REAR OF THE DESK RACK AND TRANSMITTER RACK AND REPLACE ANY MISSING OR DETERIORATED NO–OX GREASE.
11. INSPECT THE GROUND CONNECTIONS AT THE RECEIVE ANTENNAS, THEIR PREAMPLIFIER BOXES AND THE TRANSMIT ANTENNA. REPLACE ANY MISSING OR DETERIORATED NO–OX GREASE.
12. INSPECT THE RECEIVE ANTENNAS, THE TRANSMIT ANTENNA AND THE GROUND END OF THE TRANSMIT ANTENNA APRON AND GUY WIRES FOR CORROSION. IDENTIFICATION, ISOLATION AND CONTROL OF CORROSION ARE FOUND IN TO'S 1–1–8, 1–1–689 AND 1–1–691. SCHEDULE AND/OR PERFORM CORROSION CONTROL ASAP.
13. ENSURE NOTHING (WEEDS, TREES, KITES, BALLOONS, ETC.) IS TOUCHING THE ANTENNAS OR THE TRANSMIT APRON. REMOVE SUCH OBJECTS IMMEDIATELY.

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
2–006					31M1–2FMQ12–6WC–1 15 DEC 98	

MAN MIN	WORK AREA	WORK UNIT		56 DAY SERVICE	INSPECTION REQUIREMENTS	ELECTRICAL POWER	SERVICE	CARD NO.
		SYS	SUB –SYS			OFF	OUT	2–006

@ 14. TURN **ON** THE FACILITY INPUT POWER CIRCUIT BREAKER, THE TRANSMITTER RACK MAIN POWER AND THE UPS.

@ 15. BEFORE LEAVING, OBSERVE THAT THE DISS IS AUTOMATICALLY FUNCTIONING NORMALLY.

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB –SYS	168 DAY SERVICE	INSPECTION REQUIREMENTS	ELECTRICAL POWER OFF	SERVICE OUT	CARD NO. 2–007

N/A

TRANSMIT ANTENNA

1. MATERIALS REQUIRED:

   A. CABLE TENSIOMETER

   B. SURVEYOR'S TRANSIT/THEODOLITE

WARNING

RF RADIATION HAZARD WHEN TRANSMITTER IS IN USE.
DO NOT START THIS INSPECTION UNTIL TRANSMITTER IS OFF
AND ARRANGEMENTS ARE MADE TO ENSURE IT REMAINS OFF
THROUGHOUT THE ENTIRE INSPECTION.

@ 2. TURN **OFF** THE TRANSMITTER RACK MAIN POWER, THE UPS AND THE FACILITY INPUT POWER CIRCUIT BREAKER.

3. INSPECT THE FOLLOWING TRANSMIT ANTENNA ITEMS AND SERVICE AS NECESSARY.

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
2–007					31M1–2FMQ12–6WC–1 15 DEC 98	

MAN MIN	WORK AREA	WORK UNIT		168 DAY SERVICE	INSPECTION REQUIREMENTS	ELECTRICAL POWER	SERVICE	CARD NO.
		SYS	SUB –SYS			OFF	OUT	2–007

A. METALLIC SURFACES FOR RUST, CORROSION OR BLISTERING OF PAINT OR GALVANIZED COATING.

B. GUY WIRES ARE IN PLACE AND THE TOWER IS PLUMB (USE SURVEYOR'S TRANSIT/THEODOLITE).

C. APRON AND TRANSMISSION LINE ARE PROPERLY IN PLACE AND FREE OF ANY FOREIGN OBJECTS.

D. TOWER BASE FASTENERS ARE TIGHT AND LADDERS OR OTHER DEVICES ATTACHED TO THE TOWER ARE SECURE AND SAFE FOR INTENDED USE.

E. GUY WIRE TO ANCHOR ATTACHMENT AND SAFETY WIRES.

F. GUY ANCHOR BLOCK MOVEMENT.

G. GUY AND APRON TENSION. USE CABLE TENSIOMETER, FSN 6635–00–530–1129, 150–450 LBS, $508.61. GUY WIRES ARE 300 LBS AND APRON CABLES ARE 198 LBS:

H. ANCHOR RODS FOR ABUSE BY VEHICLES, MOWERS, ETC.

CAUTION

DO NOT APPLY SEALANT/PAINT/GREASE/ETC. OF ANY KIND TO GUY WIRES, ANCHOR RODS OR INSULATORS. MAY CAUSE PREMATURE EQUIPMENT FAILURE.

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB – SYS	168 DAY SERVICE	INSPECTION REQUIREMENTS	ELECTRICAL POWER	SERVICE	CARD NO.
						OFF	OUT	2–008

I. INSULATORS FOR CLEANLINESS AND FREEDOM FROM FOREIGN MATERIALS.

J. COAXIAL LINES SUPPORTED BY MESSENGER CABLE FOR OUTER JACKET WEAR (SEVERAL MID–SPAN SPOT CHECKS).

K. CABLE DUCTS FOR FOREIGN MATTER SUCH AS RODENTS, INSECTS OR WATER.

L. ALL NON–BURIED GROUNDS FOR WIRE TO ROD MECHANICAL/ELECTRICAL INTEGRITY.

M. BALUN CASE FOR CLEANLINESS AND SECURE GROUND CONNECTION.

N. BALUN LIGHTNING ARRESTOR GAPS FOR DAMAGE AND PROPER SPACING. REPLACE IF ANY PORTION BURNED AWAY.

O. ALL CONNECTIONS ARE TIGHT AND FREE OF FOREIGN MATERIAL.

P. TOWER LIGHTS FOR PROPER OPERATION AND SECURE MECHANICAL CONDITION.

@ 4. TURN **ON**, FACILITY INPUT POWER CIRCUIT BREAKER, THE TRANSMITTER RACK MAIN POWER AND THE UPS.

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
2–008					31M1–2FMQ12–6WC–1 15 DEC 98	

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB –SYS	TIME REPLACEMENT ITEMS	INSPECTION REQUIREMENTS	ELECTRICAL POWER	SERVICE	CARD NO.
			(4)	1. EVERY 730 DAYS, REPLACE: AS Required A. 14 AMPLIFIER TUBES, PN 8590.				4–001

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
4–001					31M1–2FMQ12–6WC–1 15 DEC 98	

MAN MIN	WORK AREA	WORK UNIT SYS	WORK UNIT SUB-SYS	REPAIR RESTRICTIONS	INSPECTION REQUIREMENTS	ELECTRICAL POWER	SERVICE	CARD NO.
								5-001
		AA	A00	1. TURNSTILE LOOP ANTENNA:				
				A. REPAIR BEYOND CORROSION TREATMENT NOT AUTHORIZED.				
		AA	AA0	2. ANTENNA PREAMPLIFIER:				
				A. NO REPAIR AUTHORIZED.				
		AA	CFA	3. RF ANALYST:				
				A. NO REPAIR AUTHORIZED.				
		AA	CGB	4. UNINTERRUPTIBLE POWER SUPPLY:				
				A. NO REPAIR AUTHORIZED BEYOND BATTERY REPLACEMENT.				

CARD NO.	WORK AREA(S)	TYPE MECH RQR	MECH NO.	CARD TIME	PUBLICATION NUMBER AND DATE	CHANGE NO.
5-001					31M1-2FMQ12-6WC-1 15 DEC 98	