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ESD-TDR-63-127

IEC TR 51200 (Amarillo)
1 March 1963
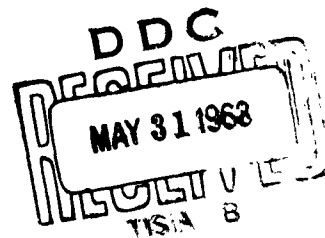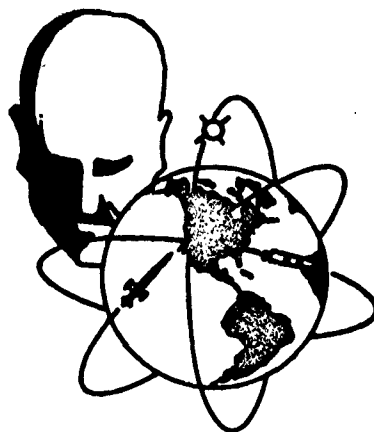Copy No. (   )

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TEST REPORT FOR ON-SITE
ACCEPTANCE TESTS OF THE REMOTE
COMMUNICATIONS CENTRAL AN/FYQ-4
TECHNICAL DOCUMENTARY REPORT
ESD-TDR-63-127
465L SYSTEM PROGRAM OFFICE
L. G. HANSCOM FIELD, BEDFORD, MASS.

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MAY 31 1963

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(Prepared by International Electric Corporation under Contract No. AF 19(626)-8,
Item 3. 1. 3. f. 9 of the 4 October 1961 Statement of Work)

FOREWORD

This is an official International Electric Corporation report containing the test results, data, recommendations and conclusions for the Category I On-Site Acceptance Tests of the Remote Communication Central AN/FYQ-4 which were conducted at Amarillo, Texas on 29 and 30 October 1962.

These tests comprise the first of a series of Category I tests to be performed at five selected RCC sites in accordance with AFR 80-14 Milestone No. 24 of the Strategic Air Command Control System (465L) Test Plan.
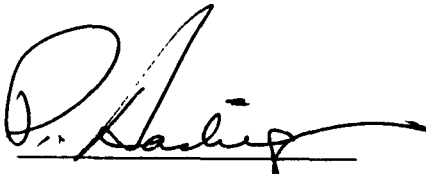
Cryptos were not available during the performance of these tests. When the Cryptos have been installed, and tests to verify Crypto compatibility have been performed, a supplement to this report will be issued.

ABSTRACT

This report serves to verify, to the satisfaction of IEC and the Air Force, the compliance of the Remote Communications Central (RCC) installed at Amarillo AFB, Amarillo, Texas, with the requirements of IEC TS 51200B "First Article and Acceptance Test Specification for the Remote Communications Central AN/FYQ-4."

Test results were satisfactory except for non-compliance with several requirements in Appendix H - Mechanical Inspection. These were listed as Open Items on the DD 250 Form and will be corrected at a later date. Change Notice No. 1, (Attachment I to this report) dated 12 November, 1962, was issued to correct print-outs not properly referenced in the test procedures and to include corrected test procedures and results. Change Notice No. 1 will be reflected in future RCC Acceptance tests.

The Cryptos were not available for full compliance with the test requirements. Subsequent tests will be performed when the Cryptos are installed at this site. When the RCC is tested for Crypto compatibility and Mechanical/Visual inspection is completed, the RCC will be ready for integration into the 465L System.

P. Hachigian
Director, Engineering Div.

R. A. Zais
Colonel, USAF
System Program Director 465L

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LIST OF ILLUSTRATIONS

1. ADMINISTRATIVE DATA

1.1 PURPOSE OF TEST. - To verify compliance of the Remote Communication Central (RCC) installed at Amarillo AFB, Amarillo, Texas, with the required specifications and test procedures of IEC TS 51200B "First Article and Acceptance Test Specification for the Remote Communication Central AN/FYQ-4."

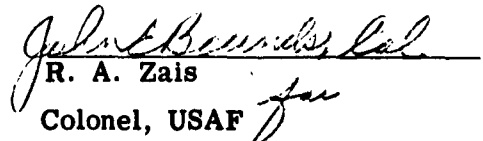**1.2 MANUFACTURER.** - International Telephone and Telegraph Corporation.

1.3 MANUFACTURER'S SYSTEM NO. - 402.

1.4 TEST SPECIFICATION. - IEC TS 51200B, "First Article and Acceptance Test Specification for the Remote Communication Central AN/FYQ-4."

1.5 QUANTITY OF ITEMS TESTED. - One (1) RCC, less the Crypto Unit, which was unavailable for the tests, consisting of the following:

	Nomenclature	Quantity
a.	Teleprinter Electrographic TT-352/FYQ-4	2
b.	Console, Digital Data Control OA-3943/FYQ	2
c.	Core Memory Group AN/FYA-1	1
d.	Data Analysis Group OA-3699/FYQ-4	1
e.	Data Analysis Group OA-3700/FYQ-4	1
f.	Main Distributor Frame, Digital Data MX-3871/FYQ-4	1
g.	Control-Indicator Group OA-3701/FYQ-4	1
h.	Modem Assembly, Digital Data MD 452/FYQ-4	1

Figures 1, 2, and 3 illustrate the actual Remote Communication Central equipment installed at Amarillo AFB, Texas, which were included in these tests.

FIGURE 1

VIEW OF LEFT-HAND ROW OF RCC CABINETS INSTALLED AT AMARILLO AFB

Reading from left to right, the cabinets are:

1. Data Analysis Group (Logic A) OA-3699/FYQ-4
2. Data Analysis Group (Logic B) OA-3700/FYQ-4
3. Core Memory Group AN/FYA-1
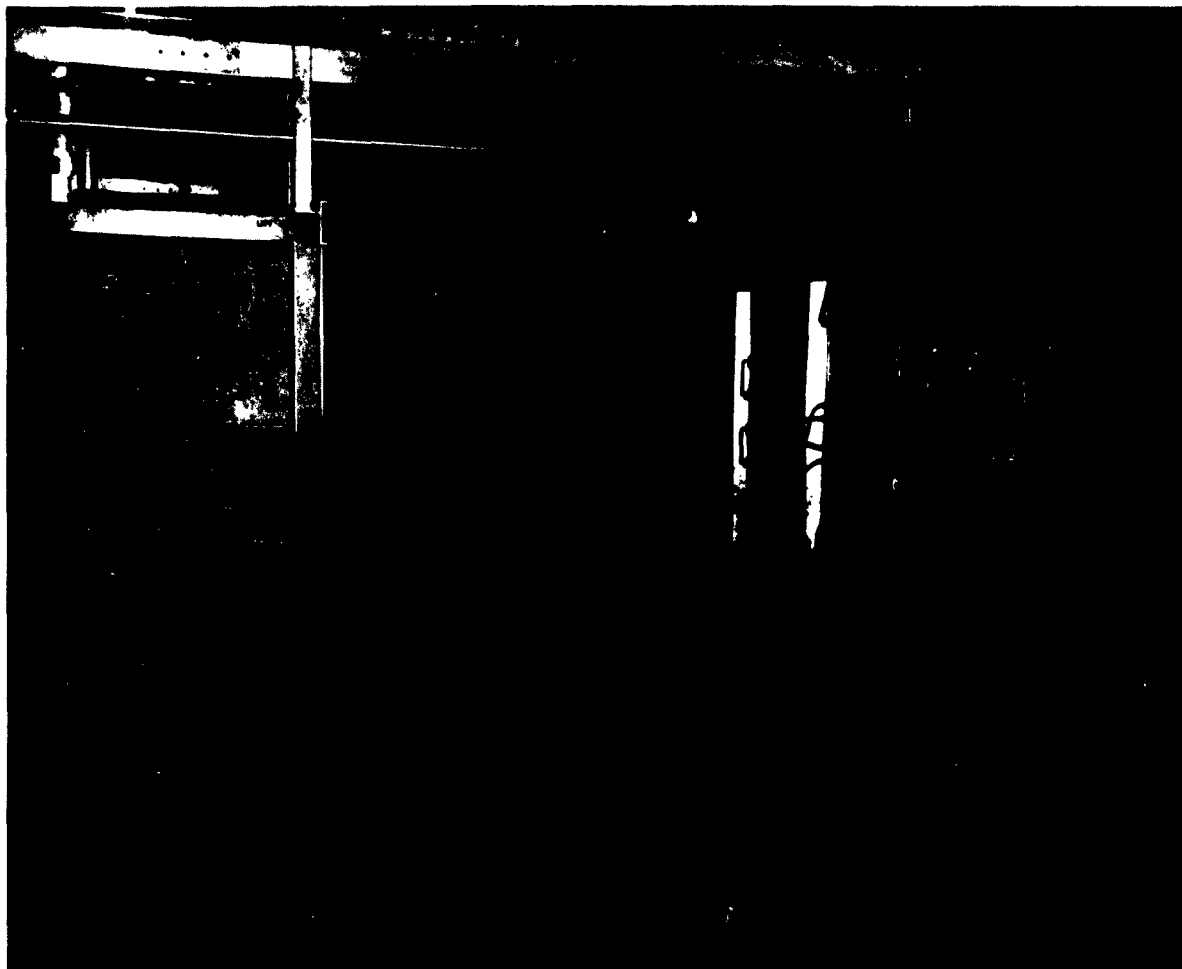
FIGURE 2

VIEW OF RIGHT-HAND ROW OF RCC CABINETS INSTALLED AT AMARILLO AFB

Reading from left to right, the cabinets are:

1. Main Distributing Frame, Digital Data MX-3871/FYQ-4
2. Cryptographic Unit (not available at the time of testing)
3. Modem Assembly, Digital Data MD-452/FYQ-4
4. Control-Indicator Group OA-3701/FYQ-4
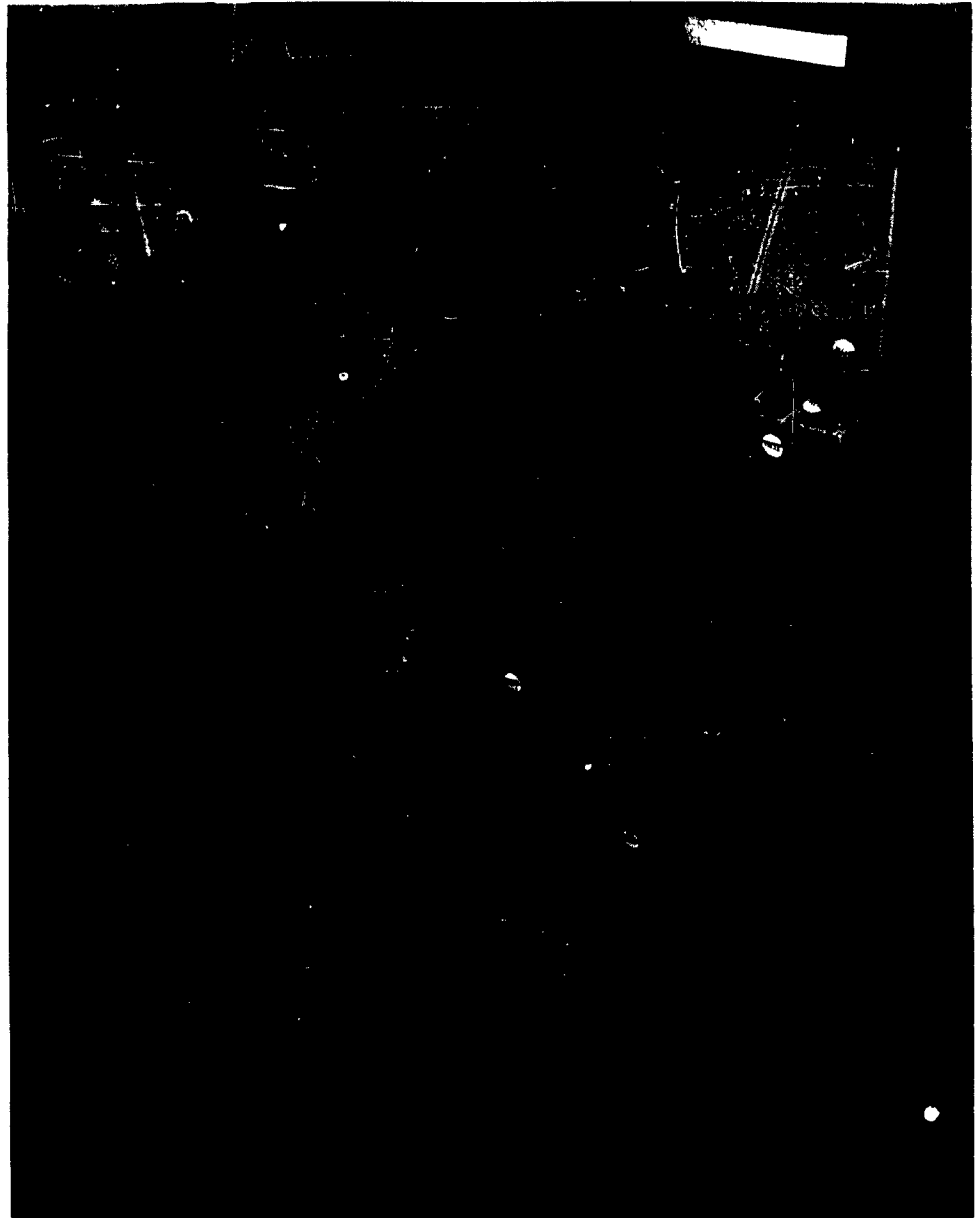
FIGURE 3

OPERATOR'S AREA OF RCC INSTALLATION AT AMARILLO AFB

Reading from left to right, the equipment consists of:

1. Console, Digital Data Control OA-3943/FYQ
2. Teleprinter, Electrographic TT-352/FYQ-4

1.6 SECURITY CLASSIFICATION OF ITEMS TESTED. - Unclassified.

1.7 DATE TEST COMPLETED. - Testing was started on 29 October 1962 and was successfully completed on 30 October 1962. Actual time to complete the tests was ten hours (excluding Appendix H).

1.8 TEST CONDUCTED BY. - ITT Kellogg engineering personnel under the guidance of IEC engineers. These tests were witnessed and certified by ITTK and IEC Product Assurance representatives, AFQCR and Air Force Joint Task Force representative.

1.9 DISPOSITION OF EQUIPMENT. - The RCC successfully passed all performance tests. The RCC will be tested for Crypto compatibility when the Crypto is installed at Amarillo. When the Mechanical/Visual inspection (Appendix H) is completed, the RCC will be ready for integration into the 465L System.

2. TEST EQUIPMENT - The following test equipment was utilized in testing the RCC:

2.1 SPECIAL TEST EQUIPMENT

    a. Performance Test Set (PTS) TE-1021
    b. Message Generator Test Set (MGTS) TE-1022
    c. EDTCC Simulator TE-1023

2.2 COMMERCIAL TEST EQUIPMENT. - Oscilloscope-TEKTRONIX 545 or equivalent with type CA plug-in unit. A Hickock Oscilloscope, equivalent to the TEKTRONIX 545, was used in performing these tests:

2.3 AUXILIARY TEST EQUIPMENT. - Cable Assembly TE-1024.

3. TEST PROCEDURES

3.1 The test procedures to which the RCC were tested, are contained in Appendices A, B, C, F and H of IEC TS 51200B, as modified by Appendix K, with the following exceptions:

a. The tests were not performed in the sequence outlined in TS 51200B since a properly calibrated oscilloscope was not available at the start of testing. Tests A-4, A-5 and A-6 required oscilloscope readings and were performed last.

b. The Cryptos were not available for the RCC Category I tests. Tests to verify Crypto Compatibility will be performed when the Crypto is installed at the RCC site. The following steps were not performed due to unavailability of Cryptos.

(1) Test A-1		Step 17 Resync. Cryptos
		Step 18, b.1, 2 in Required Results
(2) Test A-4		Steps 38, 39, 46, 47
(3) Test C-20		Steps 2, 3, 4, 5, 19, 20, 23, 24

c. Tests were started with cards A-36 and A-37 missing from the Logic B Output Line Selector Drawer. The cards arrived within an hour after tests started and all affected steps in the procedures were rerun.

d. In tests B-3, B-4, B-6 C-3, C-5 and C-6, the FORMAT CONTROL lamp for Receiver B on the F&FC illuminated. All tests were performed to conclusion with the malfunction. At the conclusion of the first day of testing, the malfunction was isolated to a defective connector pin B on J-5 of the

Logic B cabinet. The malfunction was corrected, and prior to the start of the second day's testing, the affected tests were re-run and performed successfully.

3.2 Figure 4 illustrates the Interconnection Block Diagram of the RCC and test equipment.

4. TEST DATA AND RESULTS

a. Test Results are contained in Appendices A, B, C, F and H of this report.

b. The following Printouts were obtained during the tests:

(1) Figure 5 is the typical printout obtained when the message is processed normally.

(2) Figure 6 is the typical printout obtained after a line switch has occurred.

(3) Figure 7 is the printout obtained in Test A-5.

(4) Figure 8 is the summary of the 114 printouts obtained in Test A-5.

(5) Figure 9 is the printout with errors obtained in step 8.h of Test B-4.

(6) Figure 10 is the printout with errors obtained in step 12 of Test C-22.

XMIT A

REC A

BUFFER A

OLS A

SELF CHECK

XMIT B

REC B

BUFFER B

OLS B

PERFORMANCE TEST SET

EDTCC SIMULATOR

F S C

LINE STORES

MSG. GENERATOR TEST SET
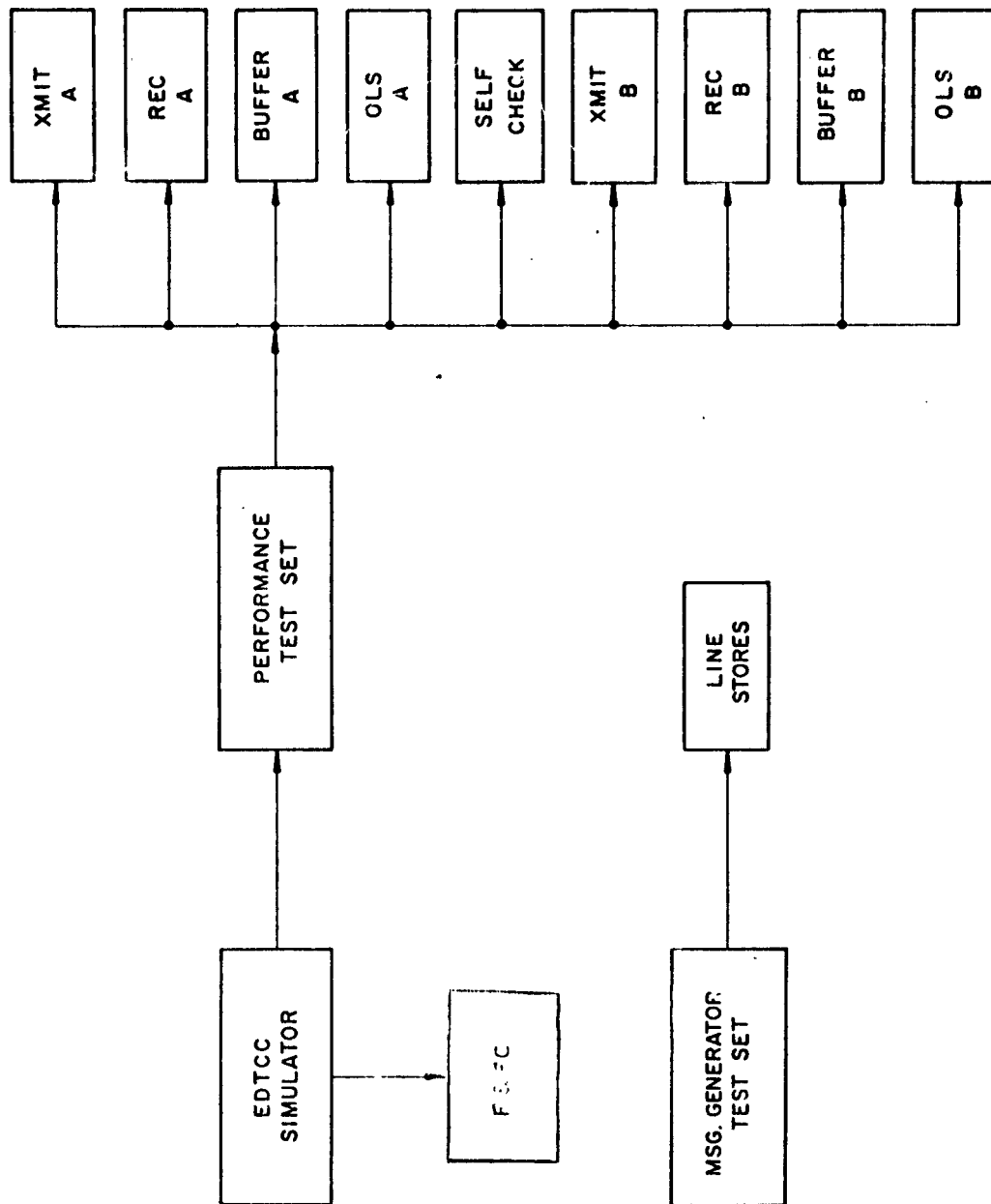
NOTE:

EDTCC SIMULATOR CONTAINS A CLOCK
SIMULATOR AND ALERT RECEIVE
CONSOLE SIMULATOR

FIGURE 4 INTERCONNECTION BLOCK DIAGRAM OF THE RCC EQUIPMENT

```
00    AMA02
X B
 ABCDEFGH JKLMNOPQRSTUVWXYZ)-+<=>X4<("=9.XB123-56789'3/.X
X B
 ABCDEFGH JKL MNOPQRSTUVWXYZ)-+<=>X4<("=9.XB123-56789'3/.X XX B
 ABCDEFGH JKLMNOPQRSTUVWXYZ)-+<=>X4<("=9.XB123456789'3/.X
```

FIGURE 5

TYPICAL PRINTOUT

```
00x ANH02
M B
ABCDEFGHIJKLMNOPQRSTUVWXYZ)-+<=>ESX("x?!,@0123456789'J/_M
M B
ABCDEFGHIJKLMNOPQRSTUVWXYZ)-+<=>ESX("x?!,@0123456789'J/_M  MM B
ABCDEFGHIJKLMNOPQRSTUVWXYZ)-+<=>ESX("x?!,@0123456789'J/_M  ◊
```

FIGURE 6

TYPICAL PRINTOUT AFTER LINE SWITCH

```
+00    AMA00
THIS IS THE ADDRESS
THIS IS TEXT 00◊
+01
THIS IS TEXT 01◊
+02
THIS IS TEXT 02◊
+03
THIS IS TEXT03◊
  04    AMA00
THIS IS THE ADDRESS
THIS IS TEXT 04◊
```

FIGURE 7

PRINTOUT OBTAINED IN TEST A-5

```
+00    AMA02
  B
 ABCDEFGHIJKLMNOPQRSTUVWXYZ)-+<=>SM("?1.0123456789')/.
  B
 ABCDEFGHIJKLMNOPQRSTUVWXYZ)-+<=>x("?1.0123456709')/.  B
 ABCDEFGHIJKLMNOPQRSTUVWXYZ)-+<=>x("?1.0123456789')/. 
+01
  B
 ABCDEFGHIJKLMN PQRSTUVWXYZ)-+<=>x("?1.0123456789')/.  B
 ABCDEFGHIJKLMNOPQRSTUVWXYZ)-+<=>x("?1.0123456789')/. 
```



```
+99
  B
 ABCDEFGHIJKLMNOPQRSTUVWXYZ)-+<=>SM("?1.0123456789')/.  B
 ABCDEFGHIJKLMNOPQRSTUVWXYZ)-+<=>SM("?1.0123456789')/. 
+00
  B
 ABCDEFGHIJKLMNOPQRSTUVWXYZ)-+<=>SM("?1.0123456789')/.  B
 ABCDEFGHIJKLMNOPQRSTUVWXYZ)-+<=>x("?1.0123456789')/. 
```



```
 14    AMA02
  B
 ABCDEFGHIJKLMNOPQRSTUVWXYZ)-+<=>SM("?1.0123456789')/.
  B
 ABCDEFGHIJKLMNOPQRSTUVWXYZ)-+<=>SM("?1.0123456789')/.  B
 ABCDEFGHIJKLMNOPQRSTUVWXYZ)-+<=>SM("?1.0123456789')/. 
```

FIGURE 8

SUMMARY OF 114 PRINTOUTS OBTAINED IN TEST A-5

```
| 00M  AMA02
 X BXXXXXXXXXGHIJKLXXXXXXXXXXWXYZ)-+<XXXXXXXXX?!,X0123XXXXXXXXXX/.X
 X BXXXXXXXXGHIJKLMNXXXXXXXXWXYZ)-+<XXXXXXXXX?!,X0123XXXXXXXXX/.X XX BXXXXXX
 XXGHIJKLMNXXXXXXXXXXWXYZ)-+<XXXXXXXXX?!,X0123XXXXXXXXXX/.X ♦
```

FIGURE 9

PRINTOUT OBTAINED IN STEP 8.h OF TEST B-4

```
00 -XXXMA02
X B
- ABCDEFGHIJKLMNOPQRSTUVWXYZ)-+<=>X$<("?.J#0123456789'J.X
X B
- ABCDEFGHIJKLMNOPQRSTUVWXYZ)-+<=>X$<("?.J#0123456789'J.X XX R
X ABCDEFGHIJKLMNOPQRSTUVWXYZ)-+<=>X$<("?.J#0123456789'J.X
```

FIGURE 10

PRINTOUT OBTAINED IN STEP 12 OF TEST C-22

c. The original data sheets have been certified by the AFQCR, ITTK, IEC and Air Force Joint Task Force representatives, and are available at IEC upon request.

5. **TEST SUMMARY.** - The following types of tests were performed in accordance with the appropriate appendices of IEC TS 51200B.

    a. Normal Operation - Appendix A
    b. Message Error Detection - Appendix B
    c. Equipment Failure Detection - Appendix C
    d. Voice Communications - Appendix F
    e. Mechanical/Visual Inspection - Appendix H

5.1 TEST RESULTS. - NORMAL OPERATION - Appendix A

5.1.1 TEST DESCRIPTION. - Appendix A includes the acceptance test objectives, implementation, procedures and results for testing the normal operation of a Remote Communications Central (RCC).

5.1.1.1 TEST A-1, TURN-ON PROCEDURES. - The RCC was activated from a Standby Status to an Operational Status. The equipment was turned on and operated in a back-to-back Mode of Operation using the MGTS to send a message and have it printed out on the Output Printer. This test was successfully performed following the steps outlined in the test specification. Due to the unavailability of Cryptos it was necessary to patch out the Cryptos on the Fault and Facility Control panel. At the conclusion of Test A-1 it was noted that the Input Device Indicator Alarm was illuminated on the Fault Indicator Panel because Line Store 02 had no input device. Line Store 02 will be used at a later date for the Format Message Composer.

5.1.1.2 **TEST A-2, FAULT LAMP CHECK.** - The Fault Lamp Check pushbutton on the Fault Control Panel was depressed and all Lamps on the Fault Control Panel illuminated, indicating that the lamps were in an operable condition. The Facilities Lamp Check pushbutton on the Facilities Control Panel was depressed and all the lamps on the Facilities Panel illuminated, indicating that the lamps were in an operable condition. This test was successfully performed. After step 5 the Modem went out of sync causing an alarm on the Fault and Facility Control Panel. Step 5 (Depress the Reset pushbuttons on the Drawers and F&FC was repeated and the test progressed with no other faults.

5.1.1.3 **TEST-3, NO MESSAGE CHARACTER.** - The No Message Character was measured on an oscilloscope to demonstrate that No Message Characters were being transmitted between messages on the data line, and continuously on the stand-by line. This test was performed successfully.

5.1.1.4 **TEST A-4, COMPLETE MESSAGE.** - The interface signals between the RCC, Input Keyboards, and the Output Printers were measured on an oscilloscope to determine whether they met the requirements of IEC 51225 (Concentrator Performance Specification). The Input Keyboard Keys were operated and tested, and the Output Printer was exercised. The RCC was operated at bit rates of 2400, 1200 and 600 bps. The Buffer Unload Rate was tested at 300, 150 and 75 words per minute.

This test was performed successfully. A portion of the test required re-runs. Step 20 - (Clear signal from the Keyboard) for Keyboard 00 read 2 micro seconds where the Required Results specified a reading of $\geq$ 25 micro seconds. An investigation revealed that card A-68 in Logic Drawer of Console 00 was not seated properly in its socket. After seating the card properly the test was re-run and the waveshape measured 29 micro seconds which was now within the tolerance of the

specification. Another problem encountered during this test was a Repeat Request indication on the Fault Panel when a message was sent from the MGTS. The Repeat Request indication was found to occur only when the Data Rate switch was changed from 2400 to 1200, and from 1200 to 600. In checking the Modem characteristics it was found that a normal re-syncing of the Modems is required whenever the clock rate is changed. This re-syncing is automatic within the Modem and requires a maximum time of one minute. During testing, the Modems were not given sufficient time to re-sync and thus an error occurred on the Fault Control Panel. When the message was initiated the second time, it was processed normally and no errors occurred.

5.1.1.5 TEST A-5, PARTIAL MESSAGE. - The Send Partial signal from the Keyboard to the Line Store was measured on the oscilloscope and a total of 114 Partial Messages were transmitted and received using the MGTS as an Input Device. The Printout on the Printer was observed to show that the Message Part Number advance from 00 to 99 and then back to 00. A new page was used after the 43rd line of text. The Printout also demonstrated that the Address Line, was only printed at the Start and Completion of a Partial Message.

This test was successfully performed using Keyboard 01 in place of Keyboard 00. When Keyboard 00 was used, the HIGH ERROR RATE lamp on the F&FC and OUTPUT PARITY ERROR lamp on Line Store 00 illuminated. This malfunction was isolated to the Space Bar on the Keyboard. The Space Bar linkage was jammed with the cabling coming from the cover of the Keyboard to the body of the Keyboard. When the cable was rerouted to clear the Space Bar linkage, the malfunction was corrected and Keyboard 00 performed successfully. During Step 18, in the processing of 114 Partial Messages, the REPEAT REQUEST lamp on the F&FC illuminated for one message. This may have been caused by the MGTS or a Parity Error in the RCC. It occurred only once and therefore could not be isolated as to its origin.

5.1.1.6 **TEST A-6, ALERT MESSAGE.** - The EDTCC Simulator sent Alert Messages to the RCC; the Alert Receive Portion of the EDTCC Simulator received the Alerts. An Alert Receive lamp flashed and Bell lamp illuminated on the EDTCC Simulator. The test demonstrated the capability of the RCC to receive, process and acknowledge an Alert Message. This test was successfully performed.

5.1.1.7 **TEST A-7, KLAXON MESSAGE.** - The EDTCC Simulator sent a Klaxon Message to the RCC; the Klaxon Receive portion of the EDTCC received the Klaxon message. The Klaxon and Bell lamp illuminated on the EDTCC Simulator. The test demonstrated the capability of the RCC to receive and process Klaxon messages normally received from the EDTCC. The test was successfully performed. In steps 7 and 15 (Activate the MESSAGE CONT/SINGLE switch on the MTGS to the SINGLE position) the audible alarm sounded on the F&FC. This was found to be normal.

5.2 **TEST RESULTS, MESSAGE ERROR DETECTION.** - Appendix B.

5.2.1 **TEST DESCRIPTION.** - This appendix includes the acceptance test objectives, implementation, procedure and results for testing the message error detection capabilities of a Remote Communications Central (RCC).

5.2.1.1 **TEST B-1, LINE STORE INPUT PARITY ERROR.** - The MGTS sent a message with a parity error to the RCC; the Input Device Output Parity lamp on the Line Store drawer illuminated. This test demonstrated the capability of the RCC to detect and indicate parity errors in data received from the Input Device. This test was successfully performed. Step 9 (Steps 4 through 8 shall be repeated for settings D1 through D7 of the MGTS ERROR selector Switch) of the procedures required clarification since cabling from the MGTS had to be interchanged at the Line Store cabinet in order to test all three Line Store Drawers.

5.2.1.2 **TEST B-2, LINE STORE MEMORY ERROR.** - While the Line Store loaded a character from the MGTS, the MGTS changed the input data after it was stored in the Line Store Memory. The Line Store Storage lamp of the F&FC illuminated. This test demonstrated the capability of the RCC to detect and indicate a Line Store Memory error. Step 10 (Steps 1 and 4 through 9 shall be repeated for each Line Store Drawer) required clarification since cabling from the MGTS had to be interchanged at the Line Store cabinet in order to test all three Line Store Drawers. When steps 1 through 9 were repeated for Line Store 02, the OPERATIVE Lamp and the OUTPUT lamp on the Line Store would not illuminate. It was found that a loose cable on the rear of Line Store cabinet kept the OPERATIVE lamp from illuminating, and the OUTPUT PARITY lamp was defective. After the cable was tightened, and the OUTPUT PARITY lamp replaced, this test was successfully performed.

5.2.1.3 **TEST B-3, LINE STORE OUTPUT PARITY ERROR.** - The MGTS loaded a message into the Line Store and while the transmitter was transmitting the message, the Performance Test Set simulated a change in data at the Line Store Output. The Output Parity lamp on the Line Store and the F&FC illuminated. This test demonstrated the capability of the RCC to detect and indicate a parity error in the Output Data of the Line Store.

Observed Results in step 3 (Momentarily depress the MTGS CON/SINGLE switch to SINGLE) were not in accordance with Required Results. This was found to be caused by the EDTCC Simulator ACK/OFF switch being in the ACK position. The procedures were changed to insure that the EDTCC Simulator ACK/OFF switch was placed in the OFF position prior to step 3. In step 3 the FORMAT CONTROL lamp on the F&FC for Receiver B illuminated. This was caused by a defective (pushed in) connector pin "B" in J-5 of the Logic B cabinet. The pin was re-seated and the test was then successfully performed.

5.2.1.4 TEST B-4, TAKE OVER MESSAGE. - The MGTS loaded a message into the Line Store and the Performance Test Set introduced vertical parity errors in the received serial data. The RCC sent three (3) Repeat Requests and then a Take Over Message. The RCC switched lines and sent three (3) additional Repeat Requests and a Take Over Message. The RCC switched back to its original line and then printed an X message (Last Resort). This test demonstrated the capability of the RCC to detect transmission errors, switch lines automatically and to receive and process a Last Resort message. In step 8 (Momentarily actuate the MGTS CONT/SINGLE switch to SINGLE) the Format Control Indicator alarm for Receiver B on the F&FC illuminated. This was caused by a defective connector pin "B" in J-5 of the Logic B cabinet. The pin was re-seated and the test was then successfully performed.

5.2.1.5 TEST B-5, TIME OUT. - While a message was being transmitted, the Performance Test Set inhibited the Transmit Acknowledge gate in Buffers A and B, and introduced errors at the Standby No Message Receiver in the Self Check drawer. The RCC transmitted three times and went into a WAIT condition after each transmission. The message was transmitted a fourth time as a Last Resort Message. This test demonstrated the capability of the RCC to Time Out while it awaits an Acknowledge, to respond to errors on the Standby Line, and to receive and process a Last Resort message. This test was successfully performed.

5.2.1.6 TEST B-6, DATA HIGH ERROR RATE. - Wile the RCC was in standby, the Performance Test Set introduced errors into the received data. The RCC detected the errors and automatically switched to the Alernate line. The High Error lamps illuminated and a Take Over Message was transmitted prior to the line switch, This test demonstrated the capability of the RCC to detect and switch lines automatically whenever a Data High Error Rate occurs. In step 6 (Depress the PTS Test pushbutton) the FORMAT CONTROL lamp for Receiver B on the F&FC illuminated. This was the same problem as in Test B-3. This was caused by a defective connector

pin "B" in J-5 of the Logic B cabinet. The pin was re-seated and the test was then successfully performed.

5.2.1.7 TEST B-7, ILLEGAL ADDRESS. - While a message was being transmitted the Performance Test Set introduced an illegal address at Transmitter II A and B. The message was printed out on Printer 01, which was designated as the spill out printer. This test was successfully performed.

5.3 TEST RESULTS, EQUIPMENT FAILURE DETECTION. - Appendix C.

5.3.1 TEST DESCRIPTION. - This appendix includes the acceptance test objectivies, implementation, procedures and results for testing the equipment failure detection capabilities of a Remote Communications Central (RCC).

5.3.1.1 TEST C-1, LINK SERIAL DIGIT ERROR. - While the RCC was transmitting a message, the Performance Test Set inhibited the Link Serial Digit generator in the on-line transmitter. The RCC switched to the standby transmitter and the LSD Error lamp on Transmit IA illuminated. This test demonstrated the capability of the RCC to detect and indicate an error in the Link Serial Digit Circuit. This test was successfully performed.

5.3.1.2 TEST C-2, LINK SERIAL DIGIT COMPARE. - While the RCC transmitted a message, the Performance Test Set changed the output of the Link Serial Digit Generator in Transmit IIA or B, whichever was not on line. The RCC detected the error and illuminated the LSD Compare lamp on the Self Check drawer and the F&FC. This test demonstrated the capability of the RCC to detect and indicate an LSD comparison error as the result of the two LSD generators being out of step. This test was successfully performed.

5.3.1.3 TEST C-3, TRANSMIT VERTICAL PARITY ERROR. - While the RCC was transmitting a message, the Performance Test introduced an error at the data input line of Transmit IIA or B, whichever was on line. The Vertical Parity Error lamp on the Transmit IA illuminated and Transmit IIA was automatically switched on line. The Receiver received a Repeat Request and Transmit IIB repeated the message and it was printed on the Output Printer. This test demonstrated the capability of the RCC to detect and indicate a Vertical Parity Error in each Transmitter and to automatically switch transmitters.

This test was successfully performed. The FORMAT CONTROL lamp for Receiver B on the F&FC illuminated in steps 6 and 11 (Momentarily actuate the MGTS CONT/ SINGLE switch to SINGLE). This was the same problem as in Tests B-3 and B-6. This was caused by a defective connector B in J-5 of the Logic B cabinet. The pin was re-seated and the test was then successfully performed. Between steps 6 and 7 of this test, Keyboard 00 printed as shown in Figure 11. At the time of the Keyboard printout nothing was being transmitted or received. A possible explanation of the Keyboard printout is as follows:

The output printer function of the IBM typewriter is controlled by magnets, which control the encoding of the characters to be printed. The magnet driver circuits have been designed so that a "zero" at its input will cause the magnet to be picked. As a result, a loss of -12V to the typewriter will cause a "zero" to appear at the inputs to the magnet driver circuits. The IBM rotate/tilt code indicates the character"B" will be printed when all magnets have been picked.

The reason two "B's" were printed nearly superimposed was that a print function occurs every 180° during the rotation of the main shaft, while LF/CR can occur every 360°. Hence, two "B's" for every LF/CR.

B
B

FIGURE 11
PRINTOUT ON KEYBOARD 00 DURING TEST C-3 STEP 6   23

5.3.1.4 TEST C-4, TRANSMIT HORIZONTAL PARITY ERROR. - While the RCC was transmitting a message, the Performance Test Set inhibited the Horizontal Parity Generator in Transmit IIA or B, whichever was on line. The message was not printed out until the RCC switched Transmitters and transmitted a Repeat Request. This test demonstrated the capability of the RCC to detect and indicate a Transmit Horizontal Parity Error. This test was successfully performed.

5.3.1.5 TEST C-5, TRANSMIT FAIL. - While the RCC transmitted a message, the Performance Test Set inhibited the Read Character Generator in Transmit IA or B whichever was on line. Transmit IA indicated an error along with the Line Store and the RCC switches to Transmit B. A message was retransmitted and Transmit B remained on line. This test demonstrated the capability of the RCC to detect and indicate the failure of the transmitter to unload a message from the Line Store, and to automatically switch the failed transmitter off-line. In step 6(a) 1 and step 9 "Required Results" the OUTPUT GATE lamp on Transmit II should have read OUTPUT GATE lamp on Transmit I. Also in steps 6 and 15 (Momentarily actuate the MGTS CONT/SINGLE switch to SINGLE) the FORMAT CONTROL Indicator lamp for Receiver B illuminated on the F&FC due to a defective connector pin "B" in J-5 on the Logic B cabinet. This was the same problem as in tests B-3, B-4, B-6 and C-3. The pin was re-seated and the test was then successfully performed.

5.3.1.6 TEST C-6 DATA CONVERSION ERROR. - While the RCC was transmitting a message, the Performance Test Set changed the Output Data in Transmit IIA or B whichever was on line. This test simulated an error in conversion from parallel data to serial data. The transmitter on line indicated an error and automatically switched transmitters and retransmitted the message. This test demonstrated the capability of the RCC to detect and indicate a Data Conversion Error, and to automatically switch from the on-line transmitter to the standby transmitter. In

steps 10 and 17 (Momentarily actuate the **MGTS CONT/SINGLE** switch to **SINGLE**) "Required Results" the **FORMAT CONTROL** lamp for Receiver B on the **F&FC** illuminated due to a defective connector pin "B," on the Logic B cabinet. This was the same problem as in Tests B-3, B-4, B-6, C-3 and C-5. The pin was re-seated and the test was then successfully performed.

5.3.1.7 TEST C-7, TRANSMIT DATA LINE CLOCK FAIL. - With the Concentrator in Standby, the Performance Test Set inhibited the Data Line Clock in Transmit IIA and B. A line switch occurred from Primary to Alternate and a Take Over Message was transmitted. This test demonstrated the capability of the RCC to detect and indicate a Modem Data Transmit Clock failure and to automatically switch lines. This test was successfully performed.

5.3.1.8 TEST C-8, TRANSMIT STANDBY LINE CLOCK FAIL. - With the Concentrator in standby, the Performance Test Set inhibited the Standby Line Clock in Transmit IIA and B. At the F&FC Cabinet the Standby Clock failures illuminated, and the Standby-High Error lamp illuminated. This test demonstrated the capability of the RCC to detect and indicate a Modem Transmit Standby Line Clock Signal failure. This test was successfully performed.

5.3.1.9 TEST C-9, TRANSMIT TIMING CIRCUIT ERROR. - With the Concentrator at standby, the Performance Test Set inhibited the Transmit Data Line Clock in Transmit IIA or B, whichever was on line. The Timing Circuit fault lamp on the F&FC cabinet and Transmit I illuminated and the standby Transmitter was switched on line. This test demonstrated the capability of the RCC to detect and indicate a failure in the Transmit Timing Generator and to automatically switch the operable Transmitter on line. This test was successfully performed. In 11(d) "Required Results" Transmit IB should have read Transmit I A.

5.3.1.10 TEST C-10, SCANNER COMPARE ALARM. - With the Concentrator at standby, the Performance Test Set reset the Scanner in Transmit A or B. The Scan Comparison lamps and the Logic A or B on the F&FC and the Self Check illuminated. The MGTS sent a message and was processed. This test demonstrated the capability of the RCC to detect and indicate a Scanner Compare failure, and to automatically restore both scanners in-step operation. This test was successfully performed.

5.3.1.11 TEST C-11, LINE SELECTOR ERROR (TRANSMIT). - While the Concentrator was at standby, the Performance Test Set caused the Line Selector in Transmit IIA or B, whichever was on line, to indicate that both Primary and Alternate lines were handling data. The Line Selection fault lamp illuminated on the F&FC and Transmit II and the standby operable Transmitter was automatically switched on line. This test demonstrated the capability of the RCC to detect and indicate a Transmit Line Select failure and to switch transmitters. In step 5 (Depress the PTS TEST pushbutton) a Vertical Parity Error and Timing Error occurred on Transmit B. In step 11 (Depress the PTS TEST pushbutton) the SCANNER COMPARE lamp on the Self Check illuminated. Both these problems were attributed to a Modem sync problem. These steps were re-run and the test was successfully performed.

5.3.1.12 TEST C-12, DATA LINE SELECTOR ERROR (SELF CHECK). - While the Concentrator was at standby, the Performance Test Set inhibited the Data Line Selector in the Self Check. The Transmitter transmitted a Take Over Message and the EDTCC Simulator Acknowledged the Take Over Message. The Standby High Error lamp illuminated along with the Line Select lamp on the F&FC and the Self Check.   This test demonstrated the capability of the RCC to detect and indicate a Data Line Selection Error. This test required a complete re-run due to a problem in the "Required Results" for step 7. After analysis it was confirmed that Required Results a. (3), (4), (5) and (6) in step 7 were in error and the test was re-run successfully.

5.3.1.13 **TEST C-13, TRANSMIT TIMING CIRCUIT ERROR.** - While the Concentrator was at standby, the Performance Test Set reset the Transmit Timing Check circuit in the Self Check drawer. The Transmit Timing Circuit lamp on the F&FC and Self Check illuminated. This test demonstrated the capability of the RCC to detect and indicate a Self Check Transmit Timing Circuit failure. This test was successfully performed.

5.3.1.14 **TEST C-14, LINK SERIAL DIGIT DETECTOR ERROR.** - While the RCC was transmitting a message, the Performance Test Set inhibited the Link Serial Digit detector in Receiver Unit A or B, whichever was on-line. While the message was being received, the LSD lamp on the F&FC and Receiver illuminated and the Standby Receiver was automatically switched on-line. This test demonstrated the capability of the RCC to detect and indicate a Link Serial Digit detector failure in the receiver, and to automatically switch the failed on-line receiver to the standby receiver. This test was successfully performed.

5.3.1.15 **TEST C-15, VERTICAL PARITY DETECTOR FAIL.** - While the RCC was transmitting a message, the Performance Test Set inhibited the Vertical Parity Detector at the Receiver A or B, whichever was on-line. While the message was being received, the Vertical Parity lamp on the F&FC and Receiver illuminated and the standby receiver was switched on line. This test demonstrated the capability of the RCC to detect and indicate a Vertical Parity Error, and to automatically switch receivers. This test was successfully performed.

5.3.1.16 **TEST C-16, HORIZONTAL PARITY DETECTOR.** - While the RCC was transmitting a message the Performance Test Set inhibited the Horizontal Parity detector in Receiver A or B, whichever was on line. The Horizontal Parity lamp illuminated on the F&FC and the Receiver, and the standby receiver was switched on line. This test demonstrated the capability of the RCC to detect and indicate a Horizontal

Parity Detector failure in a receiver, and to automatically switch to the operable standby receiver. This test was successfully performed.

5.3.1.17 TEST C-17, RECEIVER FORMAT ERROR. - While the RCC was transmitting a message, the Performance Test Set stopped the Receive Format Generator in Receiver A or B, whichever was on line. The Format Control Lamp on the F&FC cabinet and the Receiver illuminated and the standby receiver was switched on line. This test demonstrated the capability of the RCC to detect and indicate a Receive Format Generator failure in the receiver, and to automatically switch to the standby operable receiver. This test was successfully performed.

5.3.1.18 TEST C-18, RECEIVE DATA LINE CLOCK FAIL. - While the Concentrator was at standby, the Performance Test Set inhibited the Receive Data Line Clock in Receiver A and B. The Transmitter transmitted a Take Over Message which was Acknowledged by the EDTCC Simulator and a Line Switch occurred, which switched to the Alternate line. The Receive Data Line Clock Fail lamp illuminated on the F&FC cabinet along with the Line Transfer Lamp and the Data High Error lamp. This test demonstrated the capability of the RCC to detect and indicate a Modem Data Line Clock signal failure and to automatically switch to the standby line. This test was successfully performed. Step 7a. 5 should have read Transmitter II A and B rather than just Transmit II.

5.3.1.19 TEST C-19, RECEIVE STANDBY LINE CLOCK FAIL. - While the Concentrator was at standby, the Performance Test Set inhibited the Receive Standby Line Clock in Receivers A and B. The Standby Line Receive Clock on the Receiver and the Standby Clock Selector lamps on the Self Check and the F&FC cabinet illuminated. This test demonstrated the capability of the RCC to detect and indicate a Modem Receiver Standby Clock signal failure and to automatically interrupt the Standby Line Data signals. This test was successfully performed.

5.3.1.20 TEST C-20, RECEIVE TIMING CIRCUIT. - While the Concentrator was at standby, the Performance Test Set momentarily inhibited the Receive Data Line Clock in Receiver A or B, whichever was on line. The Receiver Timing Circuit lamp on the F&FC and the Receiver illuminated, and the standby receiver switched on line. This test demonstrated the capability of the RCC to detect and indicate a Receive Timing Circuit error and to automatically switch to the standby receiver. This test was successfully performed. Steps 2, 3, 4, 5, 19, 20, 23 and 24 pertaining to the Cryptos were not performed.

5.3.1.21 TEST C-21, RECEIVE TIMING CIRCUIT ERROR. - While the Concentrator was at standby, the Performance Test Set inhibited the Receive Timing Circuit in the Self Check Drawer. The Receive Timing Circuit on the Self Check and F&FC cabinet illuminated. This test demonstrated the capability of the RCC to detect and indicate a Receive Self Check Timing circuit error. This test was performed successfully.

5.3.1.22 TEST C-22, BUFFER OUTPUT PARITY ERROR. - While the RCC was transmitting a message, the Performance Test Set introduced errors in the Received message and inhibited the Vertical Parity Detector in Receive Units A and B. Prior to transmitting the message, two manual line switches took place by depressing the Primary, then the Alternate, and then the Primary Channel On Line pushbuttons. When the message was transmitted it was printed as a Last Resort Message, and printed with errors in the address portion of the message. The Output Parity lamp and the Buffer Fail lamp illuminated and the failed Buffer was kept off line. This test demonstrated the capability of the RCC to detect and indicate an Output Parity Error in the Receive Buffer, to automatically switch the failed Buffer off line and to operate in a single Buffer Mode. This test was performed successfully.

5.3.1.23 TEST C-23, OUTPUT LINE SELECTOR FAIL. - While the RCC was transmitting a message, the Performance Test Set inhibited the Printer Address Load Control in Output Line Selector unit A or B, whichever was on line. The Output Line Selector Fail lamp and the Buffer Fail lamp illuminated, and the Repeat Request lamp illuminated on the F&FC. The message was retransmitted, acknowledged and printed on the Output Printer using the alternate Buffer. This test demonstrated the capability of the RCC to detect and indicate an Output Line Selector failure and to automatically switch the failed Buffer off line and to operate in a Single Buffer mode. This test was successfully performed.

5.3.1.24 TEST C-24, OUTPUT PRINTER FAIL. - While RCC was at standby, the printers were disabled and the F&FC cabinet indicated a printer failure. This test demonstrated the capability of the RCC to detect and indicate an Output Printer failure. This test was successfully performed.

5.4 TEST RESULTS, VOICE COMMUNICATION. - Appendix F.

5.4.1 TEST DESCRIPTION. - This appendix includes the acceptance test objectives, implementation, procedure and results for testing the Voice Communications for a Remote Communications Central (RCC).

5.4.1.1 TEST F-1, MAINTENANCE VOICE COMMUNICATIONS. - The operator at the Input Keyboard signaled the F&FC operator by depressing the Voice Communications Signal pushbutton on the Input Logic Drawers. The Input Device lamp on the associated Line Store and F&FC illuminated. The Headset was plugged into the jacks at the Console and the F&FC and Voice Communications was established. This test demonstrated the capability of the RCC to establish Voice Communications between the F&FC and any of his Input/Output Devices. This test was successfully performed and the Voice Communications was utilized throughout testing of the RCC.

5.5 TEST RESULTS, MECHANICAL INSPECTION. - Appendix H.

5.5.1 DESCRIPTION. - This appendix covers the visual inspection and the mechanical operation inspection of a complete RCC.

5.5.1.1 TEST H-1, VISUAL INSPECTION. - The Visual Inspection was rejected for the following reasons:

    a. Step 3a.   The intercabinet cables were not terminated properly.

    b. Step 3d.   Nameplates were missing on all cabinets except the Modem, and the Modem had the wrong nomenclature.

5.5.1.2 TEST H-2, MECHANICAL OPERATION OF SWITCHES, DIALS, CONTROLS AND CONNECTORS. - This test was successfully performed.

5.5.1.3 TEST H-3, CONSTRUCTIONAL, MOUNTING AND PACKAGING TESTS. - This test was rejected for the following reasons:

    a. Step 1.   Intercabinet cabling was not properly clamped.

    b. Step 3.   Rear doors cannot be installed because of interference by intercabinet cabling. (See Figures 12 and 13.)

5.5.1.4 Test H-4, CONFIGURATION INSPECTION TESTS. - This test was rejected because the Serial Numbers of Power Supply 4580915G1 and Power Supply 4580916G1 did not agree with the configuration log.

6. CONCLUSIONS AND RECOMMENDATIONS. - The RCC successfully completed all the required Performance Tests in Appendices A, B, C, and F. Appendix H - Mechanical Inspection - was rejected due to cabling, configuration and nameplate problems. These items are listed as Open Items on the DD250 form and will be corrected at a later date.

During Test A-5, a problem with the Keyboard 00 was encountered which was isolated to a jammed cable within the Keyboard.

During Test C-3 an erroneous printout on the Keyboard 00 (ref. Figure 11) occurred. Since Test C-3 was run prior to Test A-5 it can be concluded that the same trouble found in Test A-5 may have been the cause of the problem that occurred during Test C-3. This erroneous printout occurred only once.

The defective pin (pin B on J-5) of the Logic B cabinet is one of the two-tang variety which had caused difficulty in a previous installation. Beginning with the twenty-first RCC in production a three-tang type pin will be substituted for the present two-tang type. This new type will provide better seating in the connector. For the first twenty RCC's, this change will be made on an as-need basis.

Throughout the Performance portion of TS51200B, it was noticed that the Print-outs were not properly referenced in the Test Procedures. Change Notice No. 1, dated 12 November 1962, was issued to incorporate the corrected printouts and the changed procedures or results, discovered at the Amarillo tests. These changes will be incorporated into future RCC Acceptance Tests. Further evaluation of the items contained in CN No. 1 will be fully accomplished during subsequent testing of the RCC at Lowry AFB, and any necessary revisions will be reflected in the formal test report issued for the testing at that site. Change Notice No. 1 is illustrated in Attachment I.

FIGURE 12

REAR VIEW OF CONTROL-INDICATOR GROUP OA-3701/FYQ-4 CABINET,
ILLUSTRATING THE CABLE INTERFERENCE PROBLEM ENCOUNTERED IN
TEST H-3

FIGURE 13
REAR VIEW OF CONTROL-INDICATOR GROUP OA-3701/FYQ-4 CABINET,
ILLUSTRATING IMPROPER CLAMPING OF CABLES AND CABLE INTERFER-
ENCE ENCOUNTERED IN TEST H-3

ATTACHMENT I
CHANGE NOTICE NO. 1 DATED 12 NOVEMBER 1962 TO
IEC TS 51200B

1. Page 12

    a. Add to paragraph 6.4.2:

    "........ RCC's. Wherever the Results Required column of a test
    step contains a statement enclosed in parenthesis, the asterisk
    applies only to that enclosed statement."

    b. Add paragraph 6.4.5:

    "6.4.5. In all cases where the Results Required columns on the
    data sheets indicates that a message shall be processed normally
    and when no specific figure is referenced, the printout shall be as
    shown in Figure A-1."

2. Page A-6, Paragraph 30.2.1 - Change to read:

    "a. OSCILLOSCOPE - Tektronix 545 or equivalent with Type CA plug-
    in unit."

3. Test A-4

    a. Step 3 - Change to read:

    "Depress and hold the Voice Comm. signal pushbutton on Keyboard
    00.
            NOTE: Observe the scope."

3 (Cont'd) b. Step 6 - Change to read:

"Depress the character keys on Keyboard 00 in any sequence.
   NOTE: While depressing the keys, observe the scope."

c. Step 13 - Change to read:

"Depress the character keys on Keyboard 00 in any sequence.
Insure that each character key is depressed at least once."

d. Step 17g. - Change to read:

"g. Ignore printout."

e. Step 19 - Change to read:

"Depress the character keys on Keyboard 00 in any sequence."

f. Step 23 - Add to Required Results:

"e. The message shall be processed normally."

g. Step 31 - Add:

".......... P1-k (Demand on the Buffer).........."

h. Step 32 - Add to Required Results:

"e. The message shall be processed normally."

i. Step 36 - Add at beginning of Required Results:

"The message shall be processed normally and ...."

37

3 (Cont'd) j.   Steps 46 and 47 - Change:

".......... on Receiver." to ".......... on Transmit II."

4.   Test A-5

a.   Step 5 - Add to Required Results:

"Disregard printout."

b.   Step 6 - Change to read:

"Repeat steps 2, 3, 4 and 5. Disregard NOTE and scope readings in Step 5."

c.   Step 16. a - Change:

"...... and ADDRESS lamp ......" to "...... and TEXT lamp ....."

d.   Step 16. h - Change:

".......: Fig. A-4" to "........ Fig. A-2."

e.   Step 21 - Add:

"........ Refer to Figure A-3."

5.   Test A-6

a.   Step 7 - Delete:

"and the ALERT RECEIVE switch to the ON position."

5 (Cont'd) b.   Steps 8c and 16c - Change:

"........ A-5" to "........ A-1."

6.   Test B-1, Step 9 - Add:

"Reconnect cables as required."

7.   Test B-2, Step 10 - Add:

"Reconnect cables as required."

8.   Test B-3, Step 2 - Add:

"Insure that the ACK/OFF switch on the EDTCC Simulator is in the OFF position."

9.   Test B-4

a.   Step 8.h - Delete:

"........ as shown in Figure B-2."

b.   Step 12. j - Delete:

"........ as shown in Figure B-9."

10.   Test C-2, Step 8.a - Add:

"(no printout)"

11.   Test C-5, Steps 6.a(1) and 9 - Change:
"..... Transmit IIA ...." to "........ Transmit IA..............."

12. Test C-7, Step 8 - Delete asterisk by step 8.b.

13. Test C-9, Step 11.d - Change:

    "...... Transmit IB ...."to " ....Transmit IA........."

14. Test C-12, Step 7 - Delete a(3), (4), (5) and (6) in Required Results.

15. Test C-18, Step 6 - In Required Results (5) Change:

    "....... The Transmitter and the ...." to
    ".......Transmit IIA and B and ...."

16. Test C-22, Step 26 - In Required Results (5) Change:

    "........ NEXT TO UNLOAD lamp on Buffer A......... " to
    "........ NEXT TO UNLOAD lamp on Buffer B..........."

17. Attached Figures A-1, A-2 and A-3 Printouts supersede Figures A-1, A-2, and A-3 presently in TS 51200B. All other printouts in Appendices A, B, and C are no longer applicable for In-Plant or On-Site testing.

Figure A-1 Printout

(1) Character 1 of header (first line of text) shall be a Blank or a + sign, depending on whether message is partial or complete.

(2) Characters 2 and 3 of header are the Message Part Number, which shall be advanced each time a portion of a continued message is sent and shall be used to identify the parts of a continued message.

(3) Character 4 of header shall be blank or an asterisk, indicating whether the message was transmitted normally or was previously transmitted over the Alternate line.

(4) Characters 7, 8, 9 are the Address for originating RCC/EDLCC which is different for each site.

(5) Characters 10 and 11 identify the originating Line Store, 00-31.

Figure A-2 Printout

```
HDH)    KSS06
THIS IS THE ADDRESS
THIS IS THE TEXT 00)
)01.
THIS IS THE TEXT 010
·02
THIS IS THE TEXT 020
03
THIS IS THE TEXT 030
04.  KSS00
THIS IS THE ADDRESS
THIS IS THE TEXT 040
```

Figure A-3 Printout

```
+00    AMA02
W B
 ABCDEFGHIJKLMNOPQRSTUVWXYZ)-+<=>WSM("s?l,W0123456789'J/.W
W B
 ABCDEFGHIJKLMNOPQRSTUVWXYZ)-+<=>WSM("s?l,W0123456709'J/.W WW B
 ABCDEFGHIJKLMNOPQRSTUVWXYZ)-+<=>WSM("s?l,W0123456789'J/.W ♦
+01
W B
 ABCDEFG:  JKLMNOPQRSTUVWXYZ)-+<=>WSM("s?l,W0123456789'J/.W WW B
 ABCDEFGH.JKLMNOPQRSTUVWXYZ)-+<=>WSM("s?l,W0123456789'J/.W ♦
```

```
+99
W B
  ABCDEFGHIJKLMNOPQRSTUVWXYZ)-+<=>WSM("s?l,W0123456789'J/.W WW B
  ABCDEFGHIJKLMNOPQRSTUVWXYZ)-+<=>WSM("s?l,W0123456789'J/.W ♦
+00
W B
  ABCDEFGHIJKLMNOPQRSTUVWXYZ)-+<=>WSM("s?l,W0123456789'J/.W WW B
  ABC..E..,JKLMNOPQRSTUVWXYZ)-+<=>WSM("s?l,W0123456789'J/.W ♦
```

```
14    AMA02
W B
 ABCDEFGHIJKLMNOPQRSTUVWXYZ)-+<=>WSM("s?l,W0123456789'J/.W
W B
 ABCDEFGHIJKLMNOPQRSTUVWXYZ)-+<=>WSM("s?l,W0123456789'J/.W WW B
 ABCD.  .JKLMNOPQRSTUVWXYZ)-+<=>WSM("s?l,W0123456789'J/.W ♦
```

INFORMATION NOTE

The following information has been transmitted to the Air Force. IEC has been requested by Air Force (Col. Bernard) to pass this information to all RCC Sites.

NOTE: In the event that Cryptos are not available during the performance of tests outlined in TS 51200B, the following procedure is to be used.

A) Test A1 - Add Step 16 a. - Insert special patch cords between:

    1) Primary Modulator In Jack and Concentrator Primary Channel Out Jack.

    2) Primary Demodulator Out Jack and Concentrator Primary Channel In Jack.

    3) Alternate Modulator In Jack and Concentrator Alternate Channel Out Jack.

    4) Alternate Demodulator Out Jack and Concentrator Alternate Channel In Jack.

B) Test A1 - Step 18 - Ignore Required Results b1 and b2.

C) Throughout TS-51200B, ignore direction to "Sync or Resync Cryptos."

The following tests are to be performed when cryptos are available following performance of TS-51200B tests on RCC equipment minus Cryptos:

A) Test A1 - Steps 14 - 18 - Step 18 should read: Enter a normal message into the RCC via the Input Keyboard. Repeat several times.

B) Test A4 - Steps 38-58 - Steps 52 and 56 should read: Enter a data message into the RCC via the Input Keyboard.

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Electronic Systems Division,
L. G. Hanscom Field, Bedford, Mass.
Report No. ESD-TDR-63-127
Test Report for On-Site Acceptance
Tests of the Remote Communications
Central AN/FYQ-4, Conducted at
Amarillo AFB, Texas. Final Report
1 March 1963. 45 p. incl. illus.
Tests Conducted at Amarillo, Texas
on 20 and 21 October 1962.
(Unclassified)

1. Remote Comm.
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2. SACCS 465L
I. SAC 465L
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CATALOG CARD

Detailed results are pre- ◯
sented for the On-Site
Acceptance Tests for the Remote
Communications Central AN/FYQ-4
of the Strategic Air Command Con-
trol System 465L. All performance
requirements were met. Several
items in Mechanical/Visual Inspec-
tion were rejected and will be cor-
rected. Cryptos were not available
for these tests. The Remote Com-
munications Central will be tested
for Crypto compatability when the
Crypto is installed in the facility at
Amarillo, Texas.

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