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1.0.0 INTRODUCTION

1.0.0.1 This volume consists of all the test procedures of the NRA II Test Program. It should be noted, however, that the contents of this volume will be added to and revised during the test program.

1.0.0.2 The complete description of the NRA Program Plan is outlined in document D2-13405, Network Resolution Area (NRA) Test Program Plan, Block Change I. This document describes the purpose and scope of the NRA program. A detailed description of test organization, test configuration and test objectives is given.

1.1.0 Level of Testing

1.1.0.1 This series of tests will be of a single thread nature only. They will verify the operational compatibility of the NRA LF and LCF equipment to perform correctly on NRA Power. For trouble-shooting, test points will be available at module inputs and outputs.
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<th>Part Number</th>
<th>Serial Number</th>
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<td>P/N 25-24172-11</td>
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<td>1213A</td>
<td>Command Message Processing Group</td>
<td>P/N 8323614-501</td>
<td>S/N 0000005</td>
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<tr>
<td>1213B</td>
<td>Status Message Processing Group</td>
<td>P/N 8323615-500</td>
<td>S/N 0000004</td>
</tr>
<tr>
<td>1265</td>
<td>Digital Data Group</td>
<td>P/N 8323562-501</td>
<td>S/N 0000004</td>
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<tr>
<td>1338</td>
<td>Communications Control Console</td>
<td>P/N 25-27095-2</td>
<td>S/N 0000005</td>
</tr>
<tr>
<td>1302</td>
<td>Telephone Connecting and Switching Set</td>
<td>P/N 1274180-501</td>
<td>S/N 0000006</td>
</tr>
<tr>
<td>1303</td>
<td>Repeater Telephone Set</td>
<td>P/N 1274176-501</td>
<td>S/N 0000012</td>
</tr>
<tr>
<td>1304</td>
<td>Jack Box (4 each)</td>
<td>P/N 1273048-501</td>
<td>S/N 0000196 thru 0000199.</td>
</tr>
<tr>
<td>1306</td>
<td>Telephone Ta-466/GTC-8</td>
<td>P/N 1274025-501</td>
<td>S/N 0000007</td>
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<td>Telephone Ta-462/GTC-8</td>
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<td>S/N 0000007</td>
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<td>P/N 8323617-501</td>
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<td>1251</td>
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<td>S/N 0000005</td>
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<tr>
<td>1279</td>
<td>Repeater Telephone</td>
<td>P/N 8318749-501</td>
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<tr>
<td>1201</td>
<td>Programmer Group</td>
<td>P/N 25-22036-970</td>
<td>S/N 0001</td>
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<tr>
<td>604</td>
<td>G&amp;C Coupler</td>
<td>P/N 55078-107</td>
<td>S/N A002B</td>
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<tr>
<td>695</td>
<td>G&amp;C Coupler Test Set</td>
<td>P/N 55064-107</td>
<td>S/N CPD0003</td>
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<tr>
<td>1268</td>
<td>Electro-Mechanical Decoder</td>
<td>P/N 1801400-1</td>
<td>S/N 0000007</td>
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<tr>
<td>1300</td>
<td>Handset (2 each)</td>
<td>P/N 1270069-2</td>
<td>S/N 0000003 and 0000004</td>
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<tr>
<td>1301</td>
<td>Headset-Microphone (2 each)</td>
<td>P/N 1270074-2</td>
<td>S/N 0000005 &amp; 0000006</td>
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<td>1337</td>
<td>Distribution Box</td>
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<td>1341</td>
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1412 VESA (Preprototype) EM-1
A00 100 Startup Unit P/N 25-28001-3 S/N 001
A00 102 Missile Electronics Simulation Kit

1.2.0.2 Test Support Equipment
Patch Panel P/N 25-29327-2
Patch Panel P/N 25-29327-3
Message Simulator 25-29584-1
Digital Data P/N 25-29584-1
EIA Cables P/N 25-34198-5
SAM Signal Simulator P/N 25-25085-1
DC Power Panel P/N 25-24959-33
AC Switch Panel 25-35766-1
Cable Simulator P/N 8318157-503
Cable Simulator P/N 8318157-504
Target Command Decoder 25-33032-1
Auxiliary Launcher, Simulator 25-34197-1
TEST 2.1.1.1

1. **Title**
   LCF Power Startup on Lab Power

2. **Objectives**
   To startup the LCF on Lab power for system operation.

3. **Description**
   3.1 Connect the LCF equipment per Figure 2.1.1.1-1.
   3.2 Verify that cooling is on. Reset the Cooling Safe Unit if necessary.
   3.3 Verify that the Main Power Control is on at the AC Switch Panel.
      Reset if necessary.
   3.4 Verify that the breakers on the SCN racks are open.
   3.5 Turn on the Perkins Power Supplies. Reset the voltage trip on each power supply.
   3.6 Turn on the battery switch for the LCF power supply.
   3.7 Close the SCN breakers at the DC Power Panel.
   3.8 Close the breakers at the SCN racks. Verify that the Lamp Test functions are operative.
   3.9 Close the LCC breaker at the DC Power Panel.
   3.10 Reset the status lamps on the LCC by using the Lamp Test function.
   3.11 Close the breakers at the DC Power Panel for the MS/CTE and CCC.
   3.12 Close the LCC breaker at the AC Switch Panel.
   3.13 Close the LCF SIX/TTE breaker at the 60 cycle AC Power Panel.
   3.14 Power startup complete.
4. Equipment in Test
   4.1 Refer to Figure 2.1.1.1-1.

5. Test Equipment Required
   5.1 None

6. Data Requirement
   Record all observations in the Test Log.
TEST 2.2.1.1

1. Title
   LF Power Startup on Lab Power.

2. Objective
   To startup the LF on Lab Power for system operation.

3. Description
   3.1 Connect the LF equipment per Figure 2.1.1.1-1.
   3.2 Verify that cooling is on. Reset the Cooling Safe Unit if necessary.
   3.3 Open the breakers to the P/G and Coupler at the AC Switch Panel.
   3.4 Verify that the Main Power Control lamp at the AC Switch Panel is On.
      Reset if necessary.
   3.5 Verify that the P/G ON Facility Power and Coupler ON Facility Power
      lamps at the AC Switch Panel are on.
   3.6 Place all switches on the Launcher Auxiliary Simulator, Missile Simulator,
      Startup Unit and G&C Coupler Test Set to the Off or Normal position.
   3.7 Verify that the Emergency Power Test lamp on the AC Switch Panel
      is OFF. If ON, manually reset relay K6.
      CAUTION: Dangerous voltages are present in the
      proximity of this relay.
   3.8 Verify that the Power Test lamp on the AC Switch Panel is off.
   3.9 Close the SCN breakers at the DC Power Panel.
   3.10 Close the breaker at SCN Rack 402.
   3.11 Close the breaker at SCN Rack 401.
3.12 Close the Ordnance Power breaker at the Perkins Power Supply.
3.13 Close the P/G and Coupler breakers at the AC Switch Box.
3.14 Close the LF SIN/TTE breaker at the 60 cycle AC Power Panel.
3.15 Turn on the Power switch at the Startup Unit. The Power On lamp
illuminates.
3.16 Place the Missile Simulator Power switch ON.
3.17 Place the Remote/Local switch to Local at the Startup Unit.
3.18 Place the Disable Discrete and Halt Prime switches to the ON position
at the Startup Unit.
3.19 Place the C&C Coupler Test Set power switch to the ON position. If
the Malfunction lamp is On, depress the Malfunction Reset button.
3.20 Depress the P/G and Coupler Power On button at the Startup Unit.
3.21 Depress the C&C System Power On button at the Startup Unit.
3.22 Startup complete.

4. **Equipment in Test**
4.1 Refer to Figure 2.1.1.1-1.

5. **Test Equipment Required**
5.1 None

6. **Data Requirements**
Record all observations in the Test Log.
Title
Single Thread, LF Startup

Objectives
To perform a single thread startup of the LF on Lab Power.

Description
3.1 Connect the equipment per Figure 2.11.1-1.
3.2 Perform the LF power startup per Test 2.2.1.1.
3.3 Place the Timer Speed-Up Inhibit switch to the OFF position.
3.4 Place the Halt Prime and Disable Discretes switches at ACO 100 to the OFF position.
   (a) The Disable Discretes and Halt Prime True lamps at ACO 100 shall be OFF. The Alignment in Process lamp shall come ON.
   (b) At 6 min. 10 sec. the ACO 100 Test in Process and Calibrate in Process lamps shall come ON.
   (c) At 6 min. 40 sec. the ACO 100 Alignment in Process lamp shall go OFF.
   (d) At 6 min. 58 sec. the ACO 100 Alignment In Process and Start Calibrate lamps shall come ON.
   (e) At 7 min. 10 sec. the ACO 100 Test in Process lamp shall go OFF.
   (f) At 8 min., depress the Calibrate button on the ACO 100. The Alignment in Process and Start Calibrate lamps shall go OFF and the Calibrate in Process lamp shall come ON at the ACO 100.
(g) At 28 min. the Calibrate in Process lamps at the ACO 100 and the Coupler Test Set shall go OFF. The Strategic Alert lamp at the ACO 100 shall come ON.

3.5 To reach Strategic Alert without performing steps 3.4b through 3.4g, perform the following steps:

(a) Make the Program Advance switch at the Coupler Test Set True.

(b) Make the Program Advance False when the Test in Process lamp illuminates at the ACO 100.

(c) When the Start Calibrate lamp comes on at the ACO 100, depress the Calibrate Command button.

(d) Make the Program Advance True until the Strategic Alert lamp illuminates at the ACO 100.

(e) Make the Program Advance False.

3.6 Test Complete.

4. Equipment in Test

See Figure 2.1.1.1-1.

5. Test Equipment Required

None

6. Data

Record all observations in the Test Log.
TEST 2.3.1.2

1. Title
Single Thread Remote Test From the Strategic Alert Mode.

2. Objectives
To initiate a Test Sequence from the LCF to the LF.

3. Description
3.1 Connect the equipment per Figure 2.1.1.1-1.
3.2 Start the LF System to Strategic Alert per Test 2.3.1.1.
3.3 Place the ACO 100 Local/Remote Switch to Remote. The Remote lamp shall come ON.
3.4 Initiate a Test Command from the Launch Control Console and verify the correct system responses per Table 2.3.1.2-1.
3.5 Test Complete.

4. Equipment in Test
See Figure 2.1.1.1-1.

5. Test Equipment Required
None

6. Data Requirements:
Record all observations in the Test Log.
<table>
<thead>
<tr>
<th>Equipment</th>
<th>Test Response to Test Command</th>
</tr>
</thead>
</table>
| Launch Control Console | 1. (a) Strategic Alert indicator extinguishes.  
|                        | (b) Standby indicator illuminates.  
|                        | (c) After 60 seconds the Strategic Alert indicator illuminates and the Standby indicator extinguishes. |
| Missile & Silo Simulator (ACQ 114) | 2. (a) After 41 seconds, the NCU Power On indicator illuminates.  
|                        | (b) When response 2(a) occurs, the F/C Electronics indicators illuminate.  
|                        | (c) 11 seconds after response 2(a) occurs, the NCU Power On indicators extinguish.  
|                        | (d) When response 2(c) occurs, the F/C Electronics indicators extinguish. |
| Startup Unit (ACQ 100)  | 3. (a) The Strategic Alert indicator extinguishes.  
|                        | (b) The Test in Process indicator illuminates.  
|                        | (c) After 60 seconds the Strategic Alert indicator illuminates and the Test in Process indicator extinguishes. |
TEST 2.3.1.3

1. Title
Single Thread Remote Calibrate from the Strategic Alert Mode.

2. Objectives
To initiate a Calibrate Sequence from the LCF to the LF.

3. Description
3.1 Connect the equipment per Figure 2.1.1.1-1.
3.2 Startup the system to Strategic Alert per Test 2.3.1.1.
3.3 Place the ACO 100 Local/Remote switch to Remote. The Remote lamp shall come ON.
3.4 Place the Timer Speedup Inhibit switch to the OFF position.
3.5 Initiate a Test Command from the Launch Control Console and verify the correct system responses per Table 2.3.1.3-1.
3.6 Test complete.

4. Equipment in Test
See Figure 2.1.1.1-1.

5. Test Equipment Required
None.

6. Data Requirements
Record all observations in the Test Log.
Table 2.3.1.3-1

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Test Response to Calibrate Command</th>
</tr>
</thead>
<tbody>
<tr>
<td>Launch Control Console</td>
<td>1. (a) Strategic Alert Indicator extinguishes.</td>
</tr>
<tr>
<td></td>
<td>(b) Standby Indicator illuminates.</td>
</tr>
<tr>
<td></td>
<td>(c) After 20 minutes the Strategic Alert indicator illuminates and the Standby indicator extinguishes.</td>
</tr>
<tr>
<td>Startup Unit (AOQ 100)</td>
<td>2. (a) Strategic Alert indicator extinguishes.</td>
</tr>
<tr>
<td></td>
<td>(b) Calibrate in Process indicator illuminates.</td>
</tr>
<tr>
<td></td>
<td>(c) After 20 minutes the Strategic Alert indicator illuminates and the Calibrate in Process lamp extinguishes.</td>
</tr>
</tbody>
</table>
1. Title
   Single Thread Remote SCN Test.

2. Objectives
   To initiate an SCN Test Sequence from the LCF to the LF.

3. Description
   3.1 Connect the equipment per Figure 2.1.1.1-1.
   3.2 Startup the system to Strategic Alert per Test 2.3.1.1.
   3.3 Initiate an SCN Test Command from the Launch Control Console and verify the correct system responses per Table 2.3.1.4-1.
   3.4 Reset the SCN Test Received indicator by depressing the SCN Test Reset button.
   3.5 Reset the Inner and Outer Security Violated indicators by depressing the Security Reset button in conjunction with the button on the Missile Status Indicator panel.
   3.6 Test complete.

4. Equipment in Test
   See Figure 2.1.1.1-1.

5. Test Equipment Required
   None

6. Data Requirements
   Record all data observations in the Test Log.
<table>
<thead>
<tr>
<th>Equipment</th>
<th>Test Response to the SCN Test Command</th>
</tr>
</thead>
</table>
| Launch Control Console | 1. (a) Launch in Process indicator illuminates.  
(b) SCN Test Received indicator illuminates.  
(c) Standby Indicator illuminates after 0.4 seconds.  
(d) Inner and Outer Security Violated indicators illuminates.  

**NOTE:** This condition only will occur when the Security System is connected.  
(e) After 10 seconds the Launch in Process and Standby indicators extinguish. |
1. Title
   Single Thread, One Launch Vote and Inhibit.

2. Objective
   To perform a single thread Launch Vote and Inhibit from the LCF to the LF.

3. Description
   3.1 Connect the equipment per Figure 2.1.1.1-1.
   3.2 Startup the equipment to Strategic Alert per Test 2.3.1.1.
   3.3 Arm LF 2 at the OCC by activating Launch Enable switch LF 2.
   3.4 Verify that the Armed status indicator at the OCC illuminates and
      Alarm #1 activates. Depress the Alarm Reset button.
   3.5 Initiate a Launch Command at the LCF. Verify that the Strategic
      Alert lamp extinguishes, the Launch Commanded and Launch in Process
      lamps illuminate and Alarm #2 activates. Depress the Alarm Reset
      button.
   3.6 Initiate an Inhibit launch command from the OCC.
   3.7 Verify that the Launch Commanded indicator immediately extinguishes
      and the Strategic Alert lamp illuminates; after 205 seconds the
      Launch Enable unit resets.
   3.8 Perform 3.5 through 3.6 and initiate a Launch command from the
      Message Simulator within 205 seconds.
   3.9 Verify that a Launch Sequence is completed and verify system response
      per Table 2.3.1.6-1.
   3.10 Test Complete.
4. Equipment in Test
   See Figure 2.1.1.1-1.

5. Test Equipment Required
   None.

6. Data Requirements
   Record all observations in the Test Log.
<table>
<thead>
<tr>
<th>Equipment</th>
<th>Test Response to Two Launch Votes and One Inhibit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Launch Control Console</td>
<td>1. (a) The Strategic Alert indicator extinguishes, the Launch Commanded and Launch In Process lamps illuminate. Alarm #2 shall activate. Reset audible alarm.</td>
</tr>
<tr>
<td></td>
<td>(b) After 20 seconds the Inner Security and Outer Security lamp shall illuminate. Alarm #1 shall activate. Reset audible alarm.</td>
</tr>
<tr>
<td></td>
<td>(c) After 30.5 seconds the Missile Away and Fault indicators shall illuminate. Alarm #1 shall activate. Reset audible alarm.</td>
</tr>
<tr>
<td>Startup Unit ACO 100</td>
<td>2. (a) After 6 seconds (± 3 seconds) the Strategic Alert indicator extinguishes.</td>
</tr>
<tr>
<td></td>
<td>(b) 11 seconds (± 2 seconds) after 2 (a) occurs, the GAC System Power On indicator extinguishes.</td>
</tr>
<tr>
<td></td>
<td>(c) 31 seconds (± 2 seconds) after response 2 (a) occurs, the No-Go indicator illuminates.</td>
</tr>
<tr>
<td></td>
<td>(d) 35 seconds (± 2 seconds) after response 2 (a) occurs, the SAM and Coupler Power On indicators extinguishes.</td>
</tr>
<tr>
<td></td>
<td>(e) When 2 (d) occurs, the Alignment In Process and GAC Error indicator illuminate.</td>
</tr>
<tr>
<td>Equipment</td>
<td>Test Response to Two Launch Votes and One Inhibit</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Missile Downstage and Auxiliary Launcher Simulator ACO-114</td>
<td>(a) The NCU Power indicators shall illuminate.</td>
</tr>
<tr>
<td></td>
<td>(b) After 4 seconds the NCU Power indicators and F/G Electronics indicators shall extinguish.</td>
</tr>
<tr>
<td></td>
<td>(c) 2 seconds after 3 (b) occurs, NCU Power indicators and F/G Electronics shall illuminate.</td>
</tr>
<tr>
<td></td>
<td>(d) 3 seconds after 3 (b) occurs, activate Missile Battery indicators shall illuminate.</td>
</tr>
<tr>
<td></td>
<td>(e) 7 seconds after 3 (b) occurs NCU Power, Guidance Electronics and F/G Electronics indicators shall extinguish. The G&amp;C System Power-Off indicator shall illuminate.</td>
</tr>
<tr>
<td></td>
<td>(f) 14 seconds after 3 (b) occurs, Critical Leads Disconnect, Release G&amp;C Umbilical, G&amp;C Umbilical Released, Arm Ordnance Devices and Extract G&amp;C Umbilical indicators illuminate. The Ordnance Devices Safe indicator extinguishes.</td>
</tr>
<tr>
<td></td>
<td>(g) 15 seconds after 3 (b) occurs, Remove Closure indicators illuminate.</td>
</tr>
<tr>
<td></td>
<td>(h) 22 seconds after 3 (b) occurs, the Ignite 1st Stage Engine and Missile Away indicators shall illuminate.</td>
</tr>
</tbody>
</table>
6. Title
   Single Thread, Two Launch Votes.

7. Objective
   To perform a single thread launch by initiating two votes from the LCF and Message Simulator to the LF.

8. Description
   3.1 Connect the equipment per Figure 2.1.1.1-1.
   3.2 Startup the equipment to Strategic Alert per Test 2.3.1.1.
   3.3 Arm LF 2 at the CCC by activating Launch Enable switch LF 2.
   3.4 Verify that the Armed status indicator at the CCC illuminates and Alarm #1 activates. Depress the Alarm Reset button.
   3.5 Initiate two Launch votes from the LCF and Message Simulator.
   3.6 Verify that a Launch Sequence is completed and that the system response occurs according to Table 2.3.1.6-1 of Test 2.3.1.6.
   3.7 Adjust the mode-time counter for 12.6 ± 0.1 seconds.
   3.8 Initiate two Launch votes and War Plan B. Verify that a Launch sequence is initiated after the preset time period of the mode-time counter in paragraph 3.7 has elapsed.
   3.9 Adjust the long-time counter for 54 minutes.
   3.10 Initiate one Launch vote from the LCF and verify that a Launch Sequence is initiated after the preset time period of the long-time counter in paragraph 3.9 has elapsed.
   3.11 Test Complete.
4. Equipment in Test
   See Figure 2.1.1.1-1.

5. Test Equipment Required
   None

6. Data Requirements
   Record all observations in the Test Log.
TEST 2.3.1.8

1. Title
   Single Thread Missile Away.

2. Objective
   To simulate a Missile Away to determine system response.

3. Description
   3.1 Connect the equipment per Figure 2.1.1.1-1.
   3.2 Startup the system to Strategic Alert per Test 2.3.1.1.
   3.3 Initiate a Launch Sequence per Test 2.3.1.7.
   3.4 When the Critical Leads Disconnect indicator at the Missile Downstage
      and Auxiliary Launcher Simulator illuminates, disconnect the G&C
      Umbilical cable to obtain a loss of signal ground.
   3.5 Compare the system response to that of Test 2.3.1.7.
   3.6 Test complete.

4. Equipment in Test
   See Figure 2.1.1.1-1.

5. Test Equipment Required
   None

6. Data Requirements
   Record all observations in the Test Log.
TEST 2.3.2.1

1. Title
   File Alarms and VERSA Reporting.

2. Objectives
   To simulate Alarm conditions to the LF Monitoring System to verify correct system response and VERSA reporting.

3. Description
   3.1 Connect the equipment per Figure 2.1.1.1-1.
   3.2 Place the system into Strategic Alert per Test 2.3.1.1.
   3.3 Activate the appropriate alarm per Table 2.3.2.1-1 by placing the alarm switch to the Test position. After the Alarm lamp illuminates, interrogate VERSA. Remove the alarm condition after each test and reset VERSA.
   3.4 Verify the correct system response to each alarm per Table 2.3.2.1-1.
   3.5 Test complete.

4. Equipment In Test
   See Figure 2.1.1.1-1.

5. Test Equipment Required
   None

6. Data Requirements
   Record all observations in the Test Log.
<table>
<thead>
<tr>
<th>Fault</th>
<th>Location</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Primary Power Alarms</td>
<td>AC Switch Panel switch</td>
<td>(a) After 64 seconds the Alarm lamp at the Startup Unit and the Fault lamp at the LCC shall illuminate.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(b) Alarm #1 at SSC.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(c) VRSA Channel #21</td>
</tr>
<tr>
<td>2. Launch Tube Flood</td>
<td>Launcher Aux. Sim. switch</td>
<td>(a) Same as (1 a &amp; b) above.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(b) VRSA Channel #18</td>
</tr>
<tr>
<td>3. Launch Temperature Alarm</td>
<td>Launcher Aux. Sim. switch</td>
<td>(a) Same as (1 a &amp; b)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(b) VRSA Channel #25</td>
</tr>
<tr>
<td>4. Equipment Inlet Air Humidity</td>
<td>Launcher Aux. Sim. switch</td>
<td>(a) Same as (1 a &amp; b)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(b) VRSA Channel #24</td>
</tr>
<tr>
<td>5. Equipment Inlet Air Temp. &amp; Flow</td>
<td>Launcher Aux. Sim. switch</td>
<td>(a) Same as (1 a &amp; b)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(b) VRSA Channel #23</td>
</tr>
<tr>
<td>6. Seismic Alarm</td>
<td>Coupler Test Set switch</td>
<td>(a) Same as (1 a &amp; b)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(b) VRSA Channel #22</td>
</tr>
<tr>
<td>7. G&amp;C Comp. Temp. Alarm</td>
<td>Launcher Aux. Sim. switch</td>
<td>(a) Same as (1 a &amp; b)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(b) VRSA Channel #11</td>
</tr>
<tr>
<td>Fault</td>
<td>Location</td>
<td>Response</td>
</tr>
<tr>
<td>------------------</td>
<td>---------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>8. LEU Fault</td>
<td>Connect 401A5J1-S to ground at 401A7J2-0</td>
<td>(a) The Fault lamp at the LOU shall illuminate.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(b) Alarm #1 at the LOU.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(c) VERSA Channel #29</td>
</tr>
<tr>
<td>9. MSU Fault</td>
<td>Connect 402A4J1-S to CV 1254</td>
<td>(a) Same as (8 a &amp; b)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(b) VERSA Channel #31</td>
</tr>
<tr>
<td>10. LSU Fault</td>
<td>Connect 402A3J1-T to ground at CT22.</td>
<td>(a) Same as (8 a &amp; b)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(b) VERSA Channel #26</td>
</tr>
<tr>
<td>11. Loss of Tone</td>
<td>Remove tone at P2R1 from Receive Line #1</td>
<td>(a) Same as (8 a &amp; b)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(b) VERSA Channel #32</td>
</tr>
<tr>
<td>12. Command Network Fault</td>
<td>Send an invalid message to the LF.</td>
<td>(a) Same as (8 a &amp; b)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(b) VERSA Channel #33</td>
</tr>
<tr>
<td>13. NDU Fault</td>
<td>Remove the Decoder drawer</td>
<td>(a) Same as (8 a &amp; b)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(b) VERSA Channel #30.</td>
</tr>
</tbody>
</table>
TEST 2.3.2.2

1. Title
No-Go Tests and VRSA Reporting.

2. Objectives
To simulate No-Go conditions to the IF to verify correct system response and VRSA reporting.

3. Description
3.1 Connect the equipment per Figure 2.1.1.1-1.
3.2 Place the system into Strategic Alert per Test 2.3.1.1.
3.3 Activate the appropriate switch necessary to initiate the desired No-Go condition. After the system shuts down, interrogate VRSA.
Remove the No-Go by de-activating its associated switch and perform the IF Startup per Test 2.3.1.1. Depress the Reset switch on VRSA.
3.4 Verify the correct system response to each No-Go per Table 2.3.2.1-1.
3.5 Place the system into Strategic Alert.
3.6 Initiate Launch Sequences per Test 2.3.1.1 followed by No-Go's per Table 2.3.2.2-2.
3.7 Verify the correct system response to each No-Go per Table 2.3.2.2-2.
3.8 Initiate Launch Sequences per Test 2.3.1.1 followed by No-Go's per Table 2.3.2.2-3 when the Armed Ordnance Devices indicator at the Missile Downstage Simulator illuminates.
3.9 Verify the correct response to each No-Go per Table 2.3.2.2-3.
3.10 Test Complete.
4. Equipment in Test
   See Figure 2.1.1.1-1.

5. Test Equipment Required
   None.

6. Data Requirements
   Record all observations in the Test Log.
<table>
<thead>
<tr>
<th>Fault</th>
<th>Location</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ordinance Devices Safe Inhibit No-Go</td>
<td>Missile Downstage Simulator</td>
<td>(a) P/G &amp; Coupler Shut-down</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(b) Alarm #1 and Fault indicator activated at LCC.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(c) VRESA Channel #6</td>
</tr>
<tr>
<td>2. W/H No-Go</td>
<td>Missile Downstage Simulator</td>
<td>(a) Same as (1 a &amp; b)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(b) VRESA Channel #6</td>
</tr>
<tr>
<td>3. H/V Arming and Fusing No-Go</td>
<td>Missile Downstage Simulator</td>
<td>(a) Same as (1 a &amp; b)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(b) VRESA Channel #7</td>
</tr>
<tr>
<td>4. G&amp;C Compartment Temperature No-Go</td>
<td>Auxiliary Launcher Simulator</td>
<td>(a) Same as (1 a &amp; b)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(b) VRESA Channel #11</td>
</tr>
<tr>
<td>5. P/G Shut-down</td>
<td>Programmer Group</td>
<td></td>
</tr>
<tr>
<td>Fault</td>
<td>Location</td>
<td>Response</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>---------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>1. Ordnance Devices Safe Inhibit</td>
<td>Missile Downstage Simulator</td>
<td>(a) P/G &amp; Coupler shutdown &lt;br&gt;(b) Alarm #1 and Fault indicator activated at LCC. &lt;br&gt;(c) VBSA Channels #6, 16 &amp; 17</td>
</tr>
<tr>
<td>2. W/H No-Go</td>
<td>Missile Downstage Simulator</td>
<td>(a) Same as (1 a &amp; b) &lt;br&gt;(b) VBSA Channels #6, 16 &amp; 17</td>
</tr>
<tr>
<td>3. P/V Arming &amp; Fusing No-Go</td>
<td>Missile Downstage Simulator</td>
<td>(a) Same as (1 a &amp; b) &lt;br&gt;(b) VBSA Channels #7, 16 &amp; 17</td>
</tr>
<tr>
<td>4. P/G Shut-down</td>
<td>Programmer Group</td>
<td>(a) Same as (1 a &amp; b) &lt;br&gt;(b) VBSA Channels #6 &amp; 17</td>
</tr>
<tr>
<td>5. Umbilical Release Inhibit</td>
<td>Missile Downstage Simulator</td>
<td>(a) Launch Sequence completed per Test 2.3.1.7. &lt;br&gt;(b) VBSA Channels #6, 7, 8, 16 &amp; 17</td>
</tr>
<tr>
<td>6. Arm Ordnance Devices Inhibit</td>
<td>Missile Downstage Simulator</td>
<td>(a) P/G and Coupler Shut-down within 30 seconds. &lt;br&gt;(b) Same as (1 b) &lt;br&gt;(c) VBSA Channels #6, 7, 8, 16 &amp; 17</td>
</tr>
<tr>
<td>Fault</td>
<td>Location</td>
<td>Response</td>
</tr>
<tr>
<td>-------</td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td>1. Ordnance Devices Safe Inhibit</td>
<td>Missile Downstage Simulator</td>
<td>(a) Launch completed per Test 2.3.1.7. (b) VHSA Channels #6, 7, 8, 16 &amp; 17.</td>
</tr>
<tr>
<td>2. W/H No-Go</td>
<td>Missile Downstage Simulator</td>
<td>(a) Same as (1 a &amp; b)</td>
</tr>
<tr>
<td>3. R/V Arming &amp; Fusing No-Go</td>
<td>Missile Downstage Simulator</td>
<td>(a) Same as (1 a &amp; b)</td>
</tr>
<tr>
<td>4. Arm Ordnance Devices Safe Inhibit</td>
<td>Missile Downstage Simulator</td>
<td>(a) P/G &amp; Coupler shut-down. (b) Alarm #1 and Fault indicator activated at LCC. (c) VHSA Channels #6, 7, 8, 16 &amp; 17.</td>
</tr>
<tr>
<td>5. P/G Shut-Down</td>
<td>Programmer Group</td>
<td>(a) Same as (4 a, b &amp; c)</td>
</tr>
</tbody>
</table>
TEST 2.5.2.5

1. Title
   Single Thread Security Violations.

2. Objective
   To simulate Security violations to determine system response.

3. Description
   3.1 Connect the equipment per Figure 2.1.1.1-1.
   3.2 Start up the system per Test 2.1.1.1 and 2.3.1.1.
   3.3 Initiate an Inner Security violation by activating the appropriate
       switch at the S&M Simulator.
   3.4 Verify that Alarm #1 and the Inner Security Violated lamp are activated
       at the LCC. Depress the Alarm Reset button at the LCC.
   3.5 Reset the S&M Simulator, then simultaneously depress the Security
       Reset and Status Indicator buttons at the LCC.
   3.6 The Inner Security indicator shall extinguish.
   3.7 Repeat paragraphs 3.3 through 3.6 for Outer Security Violation.
   3.8 Test complete.

4. Equipment in Test
   See Figure 2.1.1.1-1.

5. Test Equipment Required
   None.

6. Data Required
   Record all observations in the Test Log.
TEST 2.3.2.4

1. Title
   Continuity Loops and Drawer Removals.

2. Objectives
   To verify that the system responds correctly to interruption of the
   No-Go Continuity Loop.

3. Description
   3.1 Connect the equipment per Figure 2.1.1.1-1.
   3.2 Place the system into Strategic Alert per Test 2.3.1.1.
   3.3 Remove Cable W521 from the SCN/CTE rack and verify that the P/O and
       Coupler shut down. Interrogate VERSA and verify that Channel #14 is
       reported. Alarm #1 and the Fault indicator shall activate at the LCC.
       Reset VERSA and Alarm #1. Connect Cable W521 and start up the system
       to Strategic Alert.
   3.4 Repeat paragraph 3.3 for Cable W573 at the P/O.
   3.5 Repeat paragraph 3.3 for Cable W505.
   3.6 Repeat paragraph 3.3 for Cable W531.
   3.7 Repeat paragraph 3.3 for Cable W510 at J05 of the Distribution Box.
   3.8 Repeat paragraph 3.3 for Cable W548 at J02 of the Distribution Box.
   3.9 Remove the LBU Drawer #2 at the SCN/CTE and verify that the results
       of paragraph 3.3 occur. Insert the Drawer and start up the system to
       Strategic Alert.
   3.10 Remove the Mechanical Decoder from the P/O while the system is in
        Strategic Alert and verify that the results of Paragraph 3.3 occur.
        Insert the Decoder and start up the system to Strategic Alert.
3.11 Initiate a Calibrate Sequence per Test 2.3.1.3 and remove the Mechanical Decoder from the P/G. Verify that the system is not affected.

3.12 Test complete.

4. Equipment in Test

   See Figure 2.1.1.1-1.

5. Test Equipment Required

   None

6. Data Requirement

   Record all observations in the Test Log.
TEST 2.3.3.1

1. Title
   SIM Communications LCF to LF.

2. Objective
   To verify that the SIM communications system between the LF and LCF performs correctly.

3. Description
   3.1 Connect the equipment per Figure 2.1.1.1-1.
   3.2 Connect handsets or headsets at both CCP's.
   3.3 Verify the ability of the LCF to ring the LF.
   3.4 Verify the ability of the LF to ring the LCF.
   3.5 Verify the two-way communications path between the LF and LCF.
   3.6 Test Complete.

4. Equipment in Test
   See Figure 2.1.1.1-1.

5. Test Equipment Required
   None

6. Data Requirements
   Record all observations in the Test Log.
TEST 2.3.3.2

1. Title
   LTN Communications, LF Intrasite

2. Objectives
   To verify that the Intrasite communications system of the LF performs correctly.

3. Description
   3.1 Connect the equipment per Figure 2.1.1.1-1.
   3.2 Verify the two-way communications path between LF Intrasite handsets or headsets.
   3.3 Test Complete.

4. Equipment in Test
   See Figure 2.1.1.1-1.

5. Test Equipment Required
   None

6. Data Requirements
   Record all observations in the Test Log.


**TEST 2.3.3.3**

1. **Title**
   
   HVC Communications, LCF to MS/CTE.

2. **Objective**
   
   To verify that the HVC Communications System performs correctly.

3. **Description**
   
   3.1 Connect the equipment per Figure 2.1.1.1-1.
   
   3.2 Patch an audio frequency oscillator into receive line C2VR2.
   
   3.3 Ring the CCP's by adjusting the oscillator to 1250 cps and 2200 cps.
   
   The CCP's shall ring.
   
   3.4 Depress the Operator and Telephone buttons on the CCP and verify two-day communications between the CCP's and the MS/CTE.
   
   3.5 To verify ability of the CCP's to transmit a ring signal, patch an oscilloscope to C2VX2.
   
   3.6 Depress ring buttons A, B, C, D and all at the CCP's and verify receipt of ring signals at the oscilloscope.
   
   3.7 Test Complete.

4. **Equipment in Test**
   
   See Figure 2.1.1.1-1.

5. **Test Equipment Required**
   
   5.1 Audio Oscillator, Hewlett-Packard
   
   5.2 Oscilloscope, Tektronix 545A.

6. **Data Requirements**
   
   Record all observations in the Test Log.
CABLE BLOCK DIAGRAM
NRA II TESTING

FIG. 2111-1