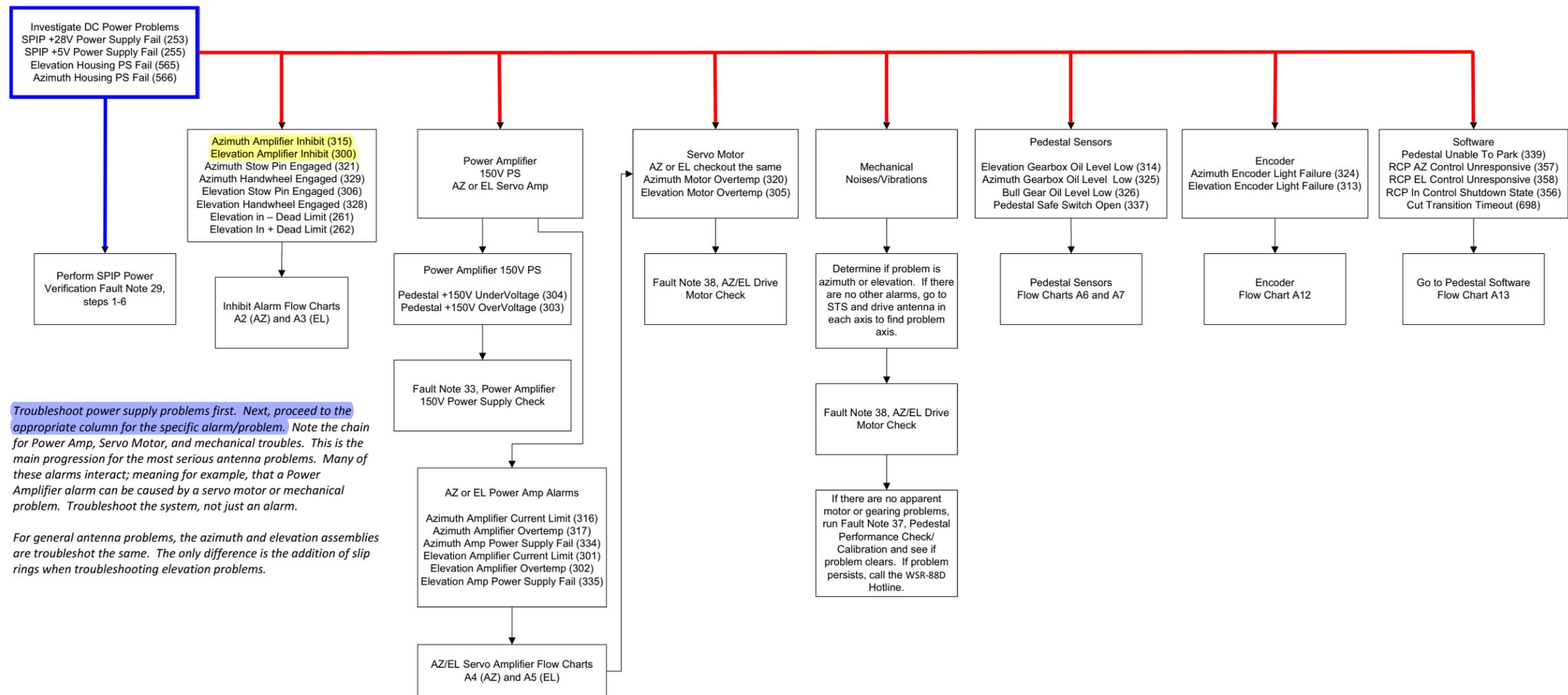


## Antenna Troubleshooting Order Of Precedence

**Note:**

This flowchart provides a fundamental order in which various Antenna Alarms and faults should be resolved. Most alarms have basic troubleshooting in Alarm Table 6-2 (Ped Alarms). Many antenna problems have multiple alarms associated with them, often alarms that appear unassociated with the primary cause. Several antenna problems do not have associated alarms; those symptoms are noted where appropriate.



Troubleshoot power supply problems first. Next, proceed to the appropriate column for the specific alarm/problem. Note the chain for Power Amp, Servo Motor, and mechanical troubles. This is the main progression for the most serious antenna problems. Many of these alarms interact; meaning for example, that a Power Amplifier alarm can be caused by a servo motor or mechanical problem. Troubleshoot the system, not just an alarm.

For general antenna problems, the azimuth and elevation assemblies are troubleshot the same. The only difference is the addition of slip rings when troubleshooting elevation problems.

Figure FO6-2. Antenna Fault Isolation Flowchart (Sheet 1 of 13)

Azimuth Amplifier Inhibit (315)  
 Azimuth Stow Pin Engaged (321)  
 Azimuth Handwheel Engaged (329)

NOTES:

1. The Azimuth Inhibit alarms are commands sent to the Azimuth Servo Amplifier when the SPIP detects certain pedestal alarms. Incorrect azimuth stow pin or handwheel pin position, will cause an inhibit alarm. If there is an inhibit alarm without any of the causing alarms, then there is a failure in either the SPIP or the RSP, most probably the SPIP.
2. Because all these alarms are in the Pedestal, the troubleshooting starts with downstairs checks, even though these are less likely problem sources.
3. Use DVM at the terminal board pins indicated and measure resistance across the switches. Look for an open when the pin is removed and a short when the pin is fully inserted into the operate position. Also, in a properly operating circuit, measure for 5.0 VDC when the pin is removed and 0.00 VDC when the pin is fully inserted into the operate position.

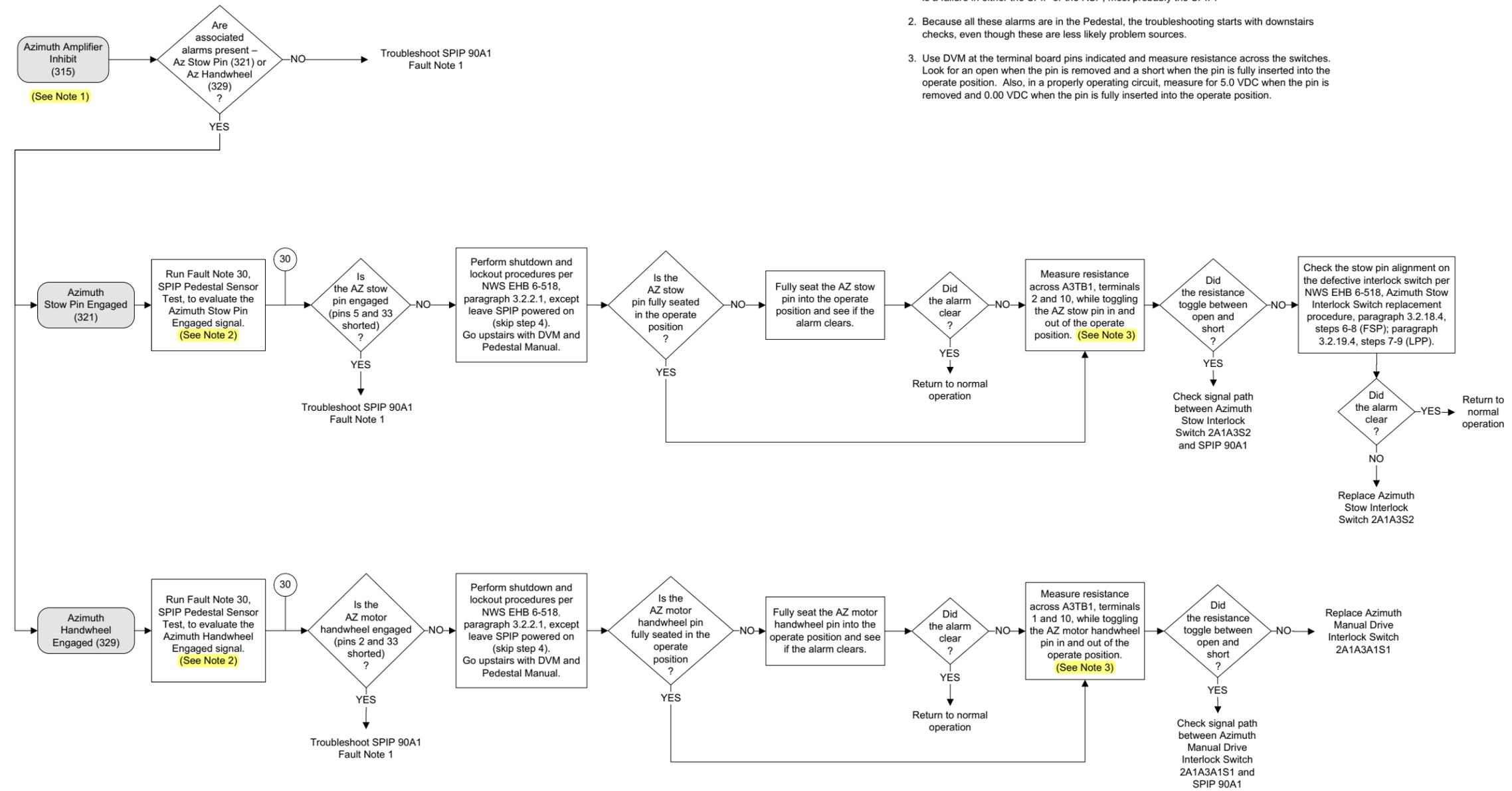
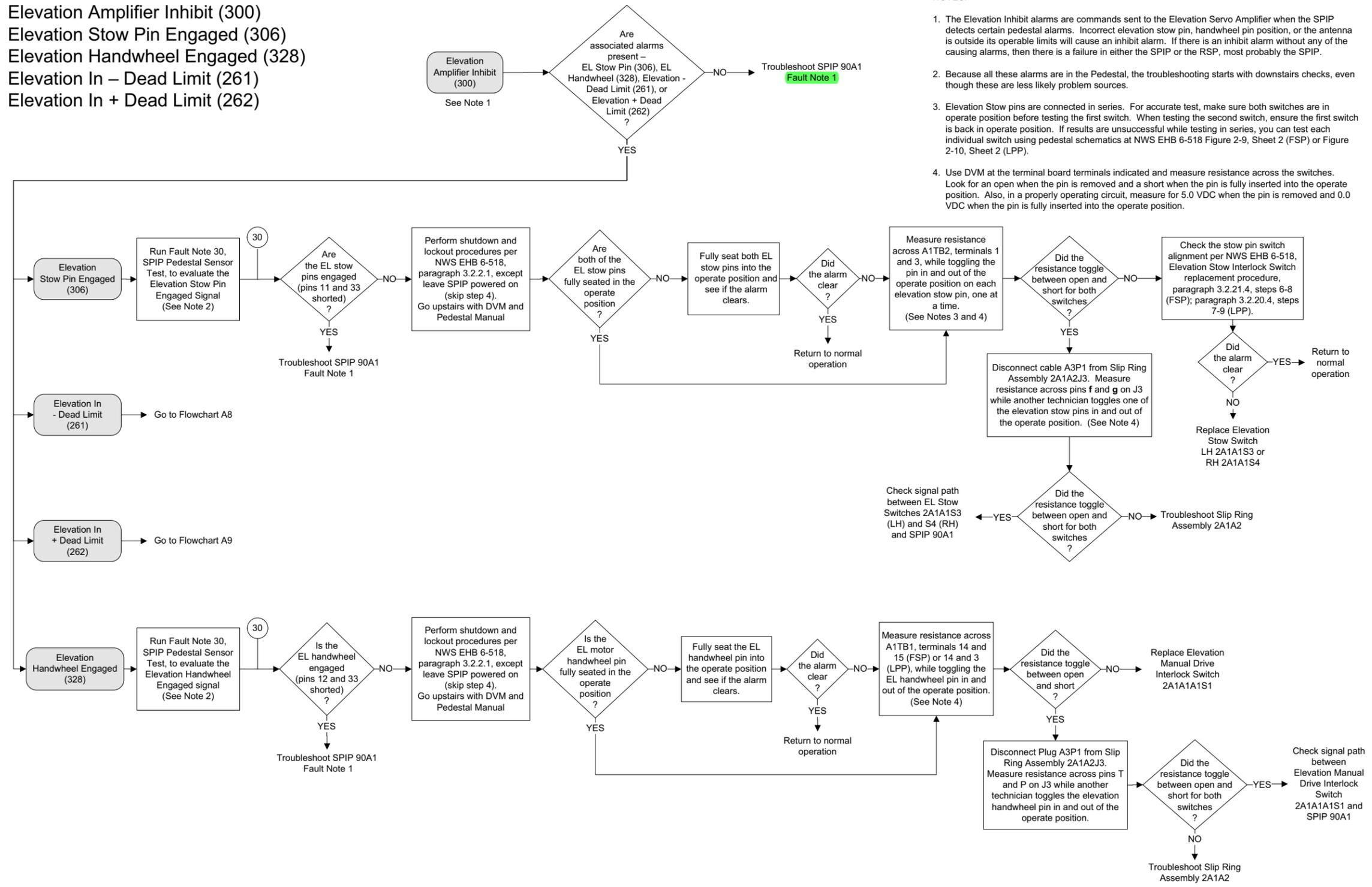


Figure FO6-2. Antenna Fault Isolation Flowchart (Sheet 2 of 13)

Elevation Amplifier Inhibit (300)  
 Elevation Stow Pin Engaged (306)  
 Elevation Handwheel Engaged (328)  
 Elevation In – Dead Limit (261)  
 Elevation In + Dead Limit (262)

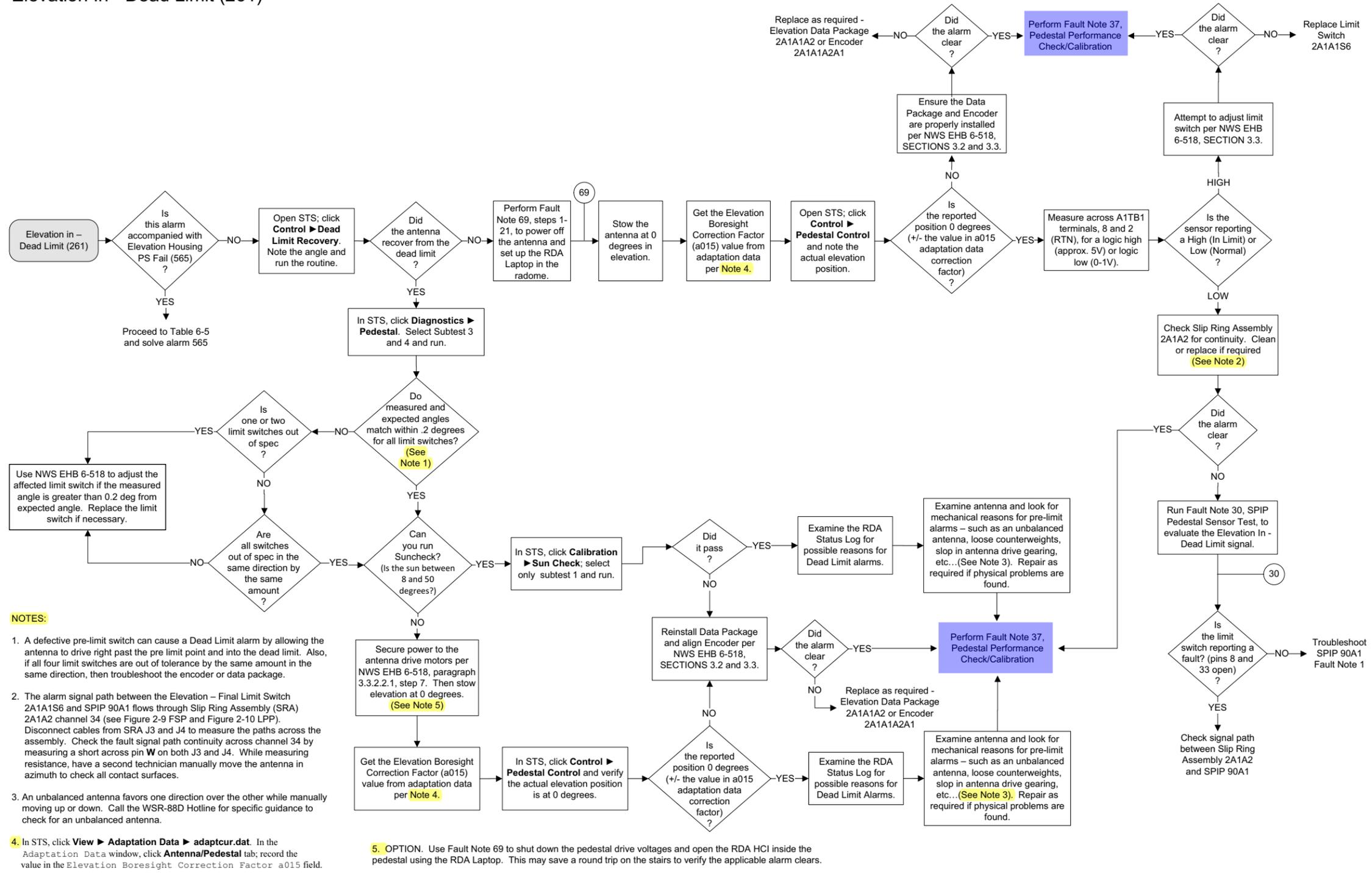


NOTES:

1. The Elevation Inhibit alarms are commands sent to the Elevation Servo Amplifier when the SPIP detects certain pedestal alarms. Incorrect elevation stow pin, handwheel pin position, or the antenna is outside its operable limits will cause an inhibit alarm. If there is an inhibit alarm without any of the causing alarms, then there is a failure in either the SPIP or the RSP, most probably the SPIP.
2. Because all these alarms are in the Pedestal, the troubleshooting starts with downstairs checks, even though these are less likely problem sources.
3. Elevation Stow pins are connected in series. For accurate test, make sure both switches are in operate position before testing the first switch. When testing the second switch, ensure the first switch is back in operate position. If results are unsuccessful while testing in series, you can test each individual switch using pedestal schematics at NWS EHB 6-518 Figure 2-9, Sheet 2 (FSP) or Figure 2-10, Sheet 2 (LPP).
4. Use DVM at the terminal board terminals indicated and measure resistance across the switches. Look for an open when the pin is removed and a short when the pin is fully inserted into the operate position. Also, in a properly operating circuit, measure for 5.0 VDC when the pin is removed and 0.0 VDC when the pin is fully inserted into the operate position.

Figure FO6-2. Antenna Fault Isolation Flowchart (Sheet 3 of 13)

Elevation In - Dead Limit (261)



NOTES:

1. A defective pre-limit switch can cause a Dead Limit alarm by allowing the antenna to drive right past the pre limit point and into the dead limit. Also, if all four limit switches are out of tolerance by the same amount in the same direction, then troubleshoot the encoder or data package.
2. The alarm signal path between the Elevation – Final Limit Switch 2A1A1S6 and SPIP 90A1 flows through Slip Ring Assembly (SRA) 2A1A2 channel 34 (see Figure 2-9 FSP and Figure 2-10 LPP). Disconnect cables from SRA J3 and J4 to measure the paths across the assembly. Check the fault signal path continuity across channel 34 by measuring a short across pin W on both J3 and J4. While measuring resistance, have a second technician manually move the antenna in azimuth to check all contact surfaces.
3. An unbalanced antenna favors one direction over the other while manually moving up or down. Call the WSR-88D Hotline for specific guidance to check for an unbalanced antenna.
4. In STS, click **View > Adaptation Data > adaptcur.dat**. In the Adaptation Data window, click **Antenna/Pedestal** tab; record the value in the Elevation Boresight Correction Factor a015 field.

5. OPTION. Use Fault Note 69 to shut down the pedestal drive voltages and open the RDA HCl inside the pedestal using the RDA Laptop. This may save a round trip on the stairs to verify the applicable alarm clears.

Figure FO6-2. Antenna Fault Isolation Flowchart (Sheet 8 of 13)

There are some alarms that don't have a flow chart to follow. Here are two examples the **SPIP COMM ERROR** and **INTERPANEL LINK FAILED** alarm. They have you run Fault Note 9,10,11 or 1. **Fault Note 9,10 and 11 are new, They used for recycling power on the SPIP.**

Table 6-5. RDA Control (CTR) Alarms  
- Continued

Code #	Alarm	Description	State	Alarm Type	# of Edges	Associated Alarms	Fault Isolation
453	SPIP COMM ERROR	The system has been forced to INOP due to SPIP communication problems. As soon as the alarm is detected, the RSP will automatically power cycle the SPIP in an attempt to clear the alarm. This automatic power cycle only occurs when the radar is in Operate State.  In redundant systems, both SPIPs will be reset simultaneously if the controlling channel detects this alarm. When Channel 1 is controlling, an SPIP COMM ERROR in either channel will cause an automatic reset.	INOP	ED	1	STANDBY FORCED BY INOP ALARM (398)	This alarm can be manually reset from a remote connection (MSCF, dial-in, or RMS) by cycling power to the SPIP. Run Fault Note 9 (Single Channel), Fault Note 10 (NWS Redundant), or Fault Note 11 (FAA) to cycle SPIP power.  If at the RDA shelter, check the lights on the Ethernet connections between RSP 90/190A11 (Eth Mid Bottom) and SPIP 90/190A1 (J16). Run SPIP diagnostics (Fault Note 1).
460	HCI COMMUNICATION ERROR	Errors in the communications to the RDA HCI from the RSP.	SEC	FO	N/A		Check connections, reboot system. Reload software (SECTION 4.6) if this problem continues.
464	REDUNDANT CHANNEL COMM ERROR	An Adaptation Data variable called Redundant Channel Configuration Flag reports whether the RDA is in dual or single channel configuration. Interprocessor channel I/O errors set this alarm. (Redundant Sites Only)	MM	ED	1		Reboot system. If this alarm continues to be a problem, reload software (SECTION 4.6).
469	INTERPANEL LINK FAILED	In a redundant system, the communication link between the two SPIPs has failed.	MM	ED	1	SPIP COMM ERROR (453)	Run SPIP diagnostics per Fault Note 1 on both channels. Check cable connection between the channels. Reboot system. Either channel SPIP being turned off can cause this alarm.
543	RPG COMMAND REJECTED	This alarm is set when an RPG control command was rejected because the RDA is not under RPG control or the RDA is in transition state (such as STARTUP).	SEC	OC	N/A		Re-enter request.
544	RMS COMMAND REJECTED	This alarm is set when an RMS control command is rejected because the RDA is not under RMS control or the RDA is in a transition state (such as STARTUP). (FAA sites only)	SEC	OC	N/A		Re-enter request.
545	RDA COMMAND REJECTED	This alarm is sent from the RDA HCI when the command in the message is not valid.	SEC	OC	N/A		Re-enter request. If this alarm continues to be a problem, reload software (SECTION 4.6).
548	RMS CONTROL COMMAND REJECTED INVALID COMMAND	This alarm is set when the RMS sends an invalid command. (FAA sites only)	SEC	OC	N/A		Re-enter request.

**NWS EHB 6-513**

- Jumper, (2) (20/22 gauge wire with both male and female connectors)
- Cannon plug pliers
- 50 Ohm terminator

In cases where tools or test equipment are unique, they are listed at the beginning of the procedure.

①	<b>PERFORM SP INTERFACE PANEL (SPIP) DIAGNOSTICS</b>
<b>Step</b>	<b><u>Operator Action</u></b>
1	At the Main RDA HCI place the system in Standby. Standby displays in the State: field.
2	Open STS by clicking <b>System Test Software</b> . A Confirm Maintenance Mode pop-up window displays.
3	At the pop-up window, click <b>Yes</b> . The System Test Software window displays.
4	On the menu bar at the top of the window, click <b>Diagnostics</b> . A drop-down menu displays.
5	Click on <b>SP Interface Panel</b> . The SP Interface Panel Diagnostics window displays.
6	<p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Enable the security system prior to running Subtest 2. Enable the system at the exterior key switch and then press the reset button on the Security Panel UD7A12 after the shelter door is closed.</p> <p>All subtests are selected by default. Any subtests can be, deselected by clicking on the box next to the subtest. Subtests to be executed are identified by a check mark. Refer to the RDA User’s Guide, NWS EHB 6-513-1, Section 8.3 for an explanation of each subtest.</p>
7	Click on <b>Run</b> . The diagnostics will run. The Test Progress box at the bottom of the window will display status messages. If an error is present an STS Error Display window will appear with an error message.

8	<p>If Subtest 1 fails, perform steps 8.a through 8.d, then run Subtest 1 again:</p> <ul style="list-style-type: none"> <li>a. Verify SPIP Panel Power button is ON. The green LED is illuminated.</li> <li>b. If the right LED at SPIP LAN port J16 is not lit, check the Ethernet cable connection (90/190W71) between the RSP (ETH MID BOT) and the SPIP (J16). On both the RSP and the SPIP, the right light should be lit; and the left light should be blinking.</li> <li>c. If the RSP and SPIP right light are lit but the left lights are not blinking, cycle power to the SPIP and the RSP.</li> <li>d. If the problem still exists, perform the following tasks until the issue is resolved: Flash the SPIP, reload software on the RSP, replace the SPIP, and replace the RSP.</li> </ul>
9	<p>If Subtest 2 fails, perform steps 9.a through 9.f, then run Subtest 2 again:</p> <ul style="list-style-type: none"> <li>a. If present, troubleshoot associated alarms.</li> <li>b. Ensure all SPIP connections are fully seated and all RDA systems are powered on and ready to operate.</li> <li>c. Ensure the security system is enabled.</li> <li>d. Ensure expected RDA Surge Suppression Assembly UD1A35/135 LEDs are lit. See Figure 4-20 and Table 4-16 for the normal LED illuminated state.</li> <li>e. If Subtest 2 still fails, remove cables associated with the error message in the <code>STS Error Display</code> window and probe the SPIP according to Table 5-5 SPIP-to-RSP Status and run Subtest 2 again.</li> <li>f. If the error message persists, perform the following tasks until the issue is resolved: Cycle power to the SPIP, reboot the RSP, and replace the SPIP.</li> </ul>
10	<p>If Subtest 3 fails, ensure all SPIP connections are in place. Cycle power to the SPIP and run Subtest 3 again.</p>
11	<p>If all of the subtests pass and there are still problems with SPIP performance, perform the following tasks until the issue is resolved: Resolve associated alarms, cycle power to the SPIP, flash the SPIP, and replace the SPIP.</p>
12	<p>Close out of STS.</p>

<p>⑨</p>	<p><b>LOCAL/REMOTE SPIP POWER CYCLE PROCEDURES FOR SINGLE CHANNEL SYSTEMS</b></p> <p>This procedure provides methods for cycling power to the SPIP UD90A1 from either the RDA shelter (local) or from MSCF or dial-in access (remote). In the remote procedure, the STS Control Power Administrator menu function is used to turn off power to the +28V PS that supplies power to the SPIP.</p> <p>Complete step 1 to recycle power at the RDA Shelter, step 2 to recycle power from the MSCF, or step 3 to recycle power from a dial-in connection using the RDA Laptop.</p>
<p><b><u>Step</u></b></p>	<p><b><u>Operator Action</u></b></p>
<p>1</p>	<p><b>Local Procedure (At RDA Shelter)</b></p> <ol style="list-style-type: none"> <li>a. If not already there, at the Main RDA HCI Command Menu Bar, click <b>RDA ▶ Standby State</b>. Standby displays in the State: field.</li> <li>b. At the SPIP UD90A1, press the Panel Power button to <b>OFF</b>. The display and LED's turn off.</li> <li>c. Press the SPIP Panel Power button. The button LED turns green and the SPIP display powers on. Allow approximately 30 - 60 seconds for the SPIP to power up and configure to become operational.</li> <li>d. In the Main RDA HCI, click <b>RDA ▶ Operate State</b>. Operate displays in the State: field.</li> </ol>
<p>2</p>	<p><b>Remote Procedure for Single Channel Systems (At the MSCF)</b></p> <p>This procedure is only performed at the MSCF.</p> <p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">Close any Console Message windows that appear throughout this procedure. They automatically pop-up when logging into the RDA from the MSCF.</p> <ol style="list-style-type: none"> <li>a. If not already opened, at the MSCF desktop top panel, click the <b>MSCF</b> button. The Master System Control Functions (MSCF) window appears.</li> <li>b. If not already opened, at the MSCF window, click the <b>RPG HCI</b> button. The RPG Control/Status window appears.</li> </ol>

- c. In the RPG Control/Status window, click **Control** inside the RDA box. The RDA Control/Status window appears. Click the **Standby** radio button then **Yes** at the Warning Popup. After a few seconds the RDA State field will show STANDBY and RDA Control field will show EITHER.
- d. Close the RDA Control/Status window.
- e. At the MSCF window, click the **RDA HCI** button. The Main RDA HCI window appears.
- f. Login to the Main RDA HCI using *username* and *password*.
- g. In the Main RDA HCI, click **RDA ▶ Request Control**.
- h. On the Main RDA HCI, click on **System Test Software**, and **Yes** to confirm.
- i. In the STS Menu Bar, click **Control ▶ Power Administrator**. The Power Administrator window appears.

### CAUTION

If the SPIP is powered down more than two minutes, a 5X ARC fault will occur at the transmitter and cause an INOP condition at the RDA. This condition will require a trip to the RDA to reset the fault on the Transmitter Control Panel 3A1. Use caution when controlling the power administrator SPIP power outlet port. If the SPIP is powered down using the off command, ensure the port is immediately commanded back on. Using the **Recycle** command at the SPIP port will ensure the SPIP is momentarily powered down and automatically powered back up without causing a 5X fault INOP condition.

- j. In the Power Administrator window, under the Master Unit section, click **SPIP ▶ Recycle** and then **Yes** at the Confirm Port 7 Change pop-up window. Observe the RDA go momentarily INOP as the SPIP reboots. Allow 30 - 60 seconds for the SPIP to power up and configure to become operational.
- k. At the Recycle Command Complete pop-up window, click **OK**.

	<p style="text-align: center;"><b>NOTE</b></p> <p>The STS Error Display pop-up window is for an RSP/SPIP communication error. This is typical behavior when the SPIP recycles power.</p> <ol style="list-style-type: none"> <li>l. Close the STS Error Display pop-up window.</li> <li>m. Exit out of STS.</li> <li>n. In the Main RDA HCI, click <b>RDA ▶ Release Control</b> and then close the Main RDA HCI window.</li> <li>o. In the RPG Control/Status window, click <b>Control</b> inside the RDA box. The RDA Control/Status window appears. Click the <b>Operate</b> radio button then <b>Yes</b> at the Warning Popup. After a few seconds the RDA State field will show OPERATE and RDA Control field will show REMOTE (RPG).</li> <li>p. Close the RDA Control/Status window.</li> </ol>
<p>3</p>	<p><b><u>Remote Procedure for Single Channel System (Dial-In using the RDA Laptop)</u></b></p> <p>This procedure is performed using RDA Laptop.</p> <p>The technician dialing-in must have the username and password for a regular user account (with PPP permissions) on the RDA console server and the site specific telephone number which is dialed. Refer to paragraph 3.3.3.1 for dial-in accounts and Table 3-8 to add a new console server account, if necessary.</p> <ol style="list-style-type: none"> <li>a. Initiate dial-in session using Table 4-37 Remote Dial-In Using RDA Laptop Procedure, steps 1 through 9.</li> <li>b. In the Main RDA HCI, click <b>RDA ▶ Request Control</b>.</li> <li>c. If not already in Standby State, at the Main RDA HCI, click <b>RDA ▶ Standby State</b>.</li> <li>d. On the Main RDA HCI, click on <b>System Test Software</b>, and <b>Yes</b> to confirm.</li> <li>e. In the STS Menu Bar, click <b>Control ▶ Power Administrator</b>. The Power Administrator window appears.</li> </ol>

**CAUTION**

If the SPIP is powered down more than two minutes, a 5X ARC fault will occur at the transmitter and cause an INOP condition at the RDA. This condition will require a trip to the RDA to reset the fault on the Transmitter Control Panel 3A1. Use caution when controlling the power administrator SPIP power outlet port. If the SPIP is powered down using the off command, ensure the port is immediately commanded back on. Using the **Recycle** command at the SPIP port will ensure the SPIP is momentarily powered down and automatically powered back up without causing an INOP condition.

- f. In the `Power Administrator` window, under the Master Unit section, click **SPIP ► Recycle** and then **Yes** at the `Confirm Port 7 Change` pop-up window. Observe the RDA momentarily go INOP as the SPIP reboots. Allow 30 - 60 seconds for the SPIP to power up and configure to become operational.
- g. At the `Recycle Command Complete` pop-up window, click **OK**.

**NOTE**

The `STS Error Display` pop-up window is for an `RSP/SPIP` communication error. This is typical behavior when the SPIP recycles power.

- h. Close the `STS Error Display` pop-up window.
- i. Exit out of STS.
- j. In the Main RDA HCI, click **RDA ► Operate State**.
- k. In the Main RDA HCI, click **RDA ► Release Control**.
- l. Terminate the dial-in session using Table 4-37 Remote Dial-In Using RDA Laptop Procedure, steps 10 through 12.

<p>⑩</p>	<p><b>LOCAL/REMOTE SPIP POWER CYCLE PROCEDURES FOR NWS REDUNDANT SYSTEMS</b></p> <p>This procedure provides methods for cycling power to the SPIP UD90/190A1 from either the RDA shelter (local) or from MSCF or dial-in access (remote). In the remote procedure, the STS Control Power Administrator menu function is used to turn off power to the +28V PS that supplies power to the SPIP. The +28V PS must be turned off on both channels for SPIP power to be removed from an SPIP (therefore both SPIPs will be powered off during this time).</p> <p>Complete step 1 to recycle power at the RDA Shelter, step 2 to recycle power from the MSCF, or step 3 to recycle power from a dial-in connection using the RDA Laptop.</p>
<p><b><u>Step</u></b></p>	<p><b><u>Operator Action</u></b></p>
<p>1</p>	<p><b><u>Local Procedure (At RDA Shelter)</u></b></p> <p style="text-align: center;"><b>CAUTION</b></p> <p style="text-align: center;">Cycling power to Channel 2 SPIP while either channel is controlling will create an INOP condition.</p> <ol style="list-style-type: none"> <li>a. If not already there, at the Main RDA HCI Command Menu Bar, click <b>RDA ▶ Standby State</b>. Standby displays in the State: field.</li> <li>b. At the affected SPIP UD90/190A1, press the Panel Power button to <b>OFF</b>. The display and LED's turn off.</li> <li>c. Press the SPIP Panel Power button. The button LED turns green and the SPIP display powers on. Allow approximately 30 - 60 seconds for the SPIP to power up and configure to become operational.</li> <li>d. If necessary, repeat steps a through c for the opposite channel SPIP.</li> <li>e. In the Main RDA HCI, click <b>RDA ▶ Operate State</b>. Operate displays in the State: field.</li> </ol>
<p>2</p>	<p><b><u>Remote Procedure for Redundant Systems (At the MSCF)</u></b></p> <p>To recycle power at either SPIP in a redundant system, both +28V Power Supplies (90/190PS1) must be momentarily powered down at the same time. In this procedure, Channel 1 SPIP power is shutdown first and then Channel 2 SPIP power is then <u>recycled</u>.</p> <p>This procedure is only performed at the MSCF.</p>

**NOTE**

Close any Console Message windows that appear throughout this procedure. They automatically pop-up when logging into the RDA from the MSCF.

- a. If not already opened, at the MSCF desktop top panel, click the **MSCF** button. The Master System Control Functions (MSCF) window appears.
- b. If not already opened, at the MSCF window, click the **RPG HCI** button. The RPG Control/Status window appears.
- c. In the RPG Control/Status window, click **Control** inside the RDA box. The RDA Control/Status window appears. Click the **Standby** radio button then **Yes** at the Warning Popup. After a few seconds the RDA state field will show STANDBY and RDA Control field will show EITHER.
- d. Close the RDA Control/Status window.
- e. At the MSCF window, select the Channel **1** radio button and click the **RDA HCI** button. The Main RDA HCI: Channel 1 window appears.
- f. Login to the Channel 1 RDA HCI using *username* and *password*.
- g. In the Channel 1 RDA HCI, click **RDA ► Request Control**.
- h. On the Channel 1 RDA HCI, click on **System Test Software**, and **Yes** to confirm.
- i. In the STS Menu Bar, click **Control ► Power Administrator**. The Power Administrator window appears.
- j. In the Power Administrator window, under the Master Unit section, click **CH1 SPIP ► Off** and then **Yes** at the Confirm Port 7 Change pop-up window. Observe the CH1 SPIP button indicator turns red and a SPIP +28V POWER SUPPLY FAIL--SET alarm appears on Channel 1.

**NOTE**

While Channel 1 SPIP +28V power supply (190PS1) is powered down, the SPIP is still energized from Channel 2 via the Interpanel Link W101. The next few steps will recycle power to the Channel 2 SPIP power supply, which will cycle power to both SPIPS simultaneously. Once the Channel 2 SPIP power is recycled, return to Channel 1 to restore +28V power.

- k. At the MSCF window, select the Channel **2** radio button and click the **RDA HCI** button. The Main RDA HCI: Channel 2 window appears.
- l. Login to the Channel 2 RDA HCI using *username* and *password*.
- m. In the Channel 2 RDA HCI, click **RDA ▶ Request Control**.
- n. On the Channel 2 RDA HCI, click on **System Test Software**, and **Yes** to confirm.
- o. In the STS Menu Bar, click **Control ▶ Power Administrator**. The Power Administrator window appears.

**CAUTION**

If the SPIP is powered down more than two minutes, a 5X ARC fault will occur at the transmitter and cause an INOP condition at the RDA. This condition will require a trip to the RDA to reset the fault on the Transmitter Control Panel 3A1. Use caution when controlling power administrator SPIP power outlet ports. If the second SPIP is powered down using the off command, ensure the port is immediately commanded back on. Using the **Recycle** command at the Channel 2 SPIP port will ensure both of the SPIPs are momentarily powered down and automatically powered back up without causing a 5X fault INOP condition.

- p. In the Power Administrator window, under the Master Unit section, click **CH2 SPIP ▶ Recycle** and then **Yes** at the Confirm Port 7 Change pop-up window. Observe both channels momentarily go INOP as both SPIPs reboot. Allow 30 - 60 seconds for both SPIPs to power up and configure to become operational.
- q. At the Recycle Command Complete pop-up window, click **OK**.

**NOTE**

The STS Error Display pop-up window is for an RSP/SPIP communication error. This is typical behavior when the SPIP recycles power.

- r. Close the STS Error Display pop-up window as it occurs throughout this procedure.
- s. Exit out of Channel 2 STS.
- t. In the Channel 2 RDA HCI, click **RDA ▶ Release Control** and then close the RDA HCI window.
- u. At the Channel 1 STS Power Administrator window, under the Master Unit section, click **CH1 SPIP ▶ On** and then **Yes** at the Confirm Port 7 Change pop-up window. Observe the CH1 SPIP button indicator turns green and the SPIP +28V POWER SUPPLY FAIL--SET alarm clears on channel 1.
- v. Exit out of Channel 1 STS.
- w. In the Channel 1 RDA HCI, click **RDA ▶ Release Control** and then close the RDA HCI window.
- x. In the RPG Control/Status window, click **Control** inside the RDA box. The RDA Control/Status window appears. Click the **Operate** radio button then **Yes** at the Warning Popup. After a few seconds the RDA State field will show OPERATE and RDA Control field will show REMOTE (RPG).
- y. Close the RDA Control/Status window.

3

### **Remote Procedure for NWS Redundant Systems (Dial-in Using the RDA Laptop)**

To recycle power at either SPIP in a redundant system, both +28V Power Supplies (90/190PS1) must be momentarily powered down at the same time. In this procedure, Channel 1 SPIP power is shutdown first and then Channel 2 SPIP power is then recycled.

This procedure is performed using the RDA Laptop.

The technician dialing-in must have the username and password for a regular user account (with PPP permissions) on the RDA console server and the site specific telephone number which is dialed. Refer to paragraph 3.3.3.1 for dial-in accounts and Table 3-8 to add a new console server account, if necessary.

- a. Initiate dial-in session using Table 4-37 Remote Dial-In Using RDA Laptop Procedure, steps 1 through 7.
- b. At the Desktop Menu Bar, click on **Applications ▶ ROC ▶ RDA ▶ [site] RDA HCI Channel 1**. Where *[site]* is the site's 4-letter ICAO code.
- c. Login to the Channel 1 RDA HCI using *username* and *password*.
- d. In the Channel 1 RDA HCI, click **RDA ▶ Request Control**.
- e. If not already in Standby State, at the Channel 1 RDA HCI, click **RDA ▶ Standby State**.
- f. On the Channel 1 RDA HCI, click on **System Test Software**, and **Yes** to confirm.
- g. In the STS Menu Bar, click **Control ▶ Power Administrator**. The Power Administrator window appears.
- h. In the Power Administrator window, under the Master Unit section, click **CH1 SPIP ▶ Off** and then **Yes** at the Confirm Port 7 Change pop-up window. Observe the CH1 SPIP button indicator turns red and a SPIP +28V POWER SUPPLY FAIL--SET alarm appears on Channel 1.

**NOTE**

While Channel 1 SPIP +28V power supply (190PS1) is powered down, the SPIP is still energized from Channel 2 via the Interpanel Link W101. The next few steps will recycle power to the Channel 2 SPIP power supply, which will cycle power to both SPIPS simultaneously. Once the Channel 2 SPIP outlet power is recycled, return to Channel 1 to restore +28V power.

- i. At the Desktop Menu Bar, click on **Applications ▶ ROC ▶ RDA ▶ [site] RDA HCI Channel 2**. Where *[site]* is the site's 4-letter ICAO code.
- j. Login to the Channel 2 RDA HCI using *username* and *password*.
- k. In the Channel 2 RDA HCI, click **RDA ▶ Request Control**.
- l. If not already in Standby State, at the Channel 2 RDA HCI, click **RDA ▶ Standby State**.
- m. On the Channel 2 RDA HCI, click on **System Test Software**, and **Yes** to confirm.
- n. In the STS Menu Bar, click **Control ▶ Power Administrator**. The Power Administrator window appears.

**CAUTION**

If the SPIP is powered down more than two minutes, a 5X ARC fault will occur at the transmitter and cause an INOP condition at the RDA. This condition will require a trip to the RDA to reset the fault on the Transmitter Control Panel 3A1. Use caution when controlling power administrator SPIP power outlet ports. If the second SPIP is powered down using the off command, ensure the port is immediately commanded back on. Using the **Recycle** command at the Channel 2 SPIP port will ensure both of the SPIPs are momentarily powered down and automatically powered back up without causing a 5X fault INOP condition.

- o. In the Power Administrator window, under the Master Unit section, click **CH2 SPIP ▶ Recycle** and then **Yes** at the Confirm Port 7 Change pop-up window. Observe both channels momentarily go INOP as both SPIPs reboot. Allow 30 - 60 seconds for both SPIPs to power up and configure to become operational.

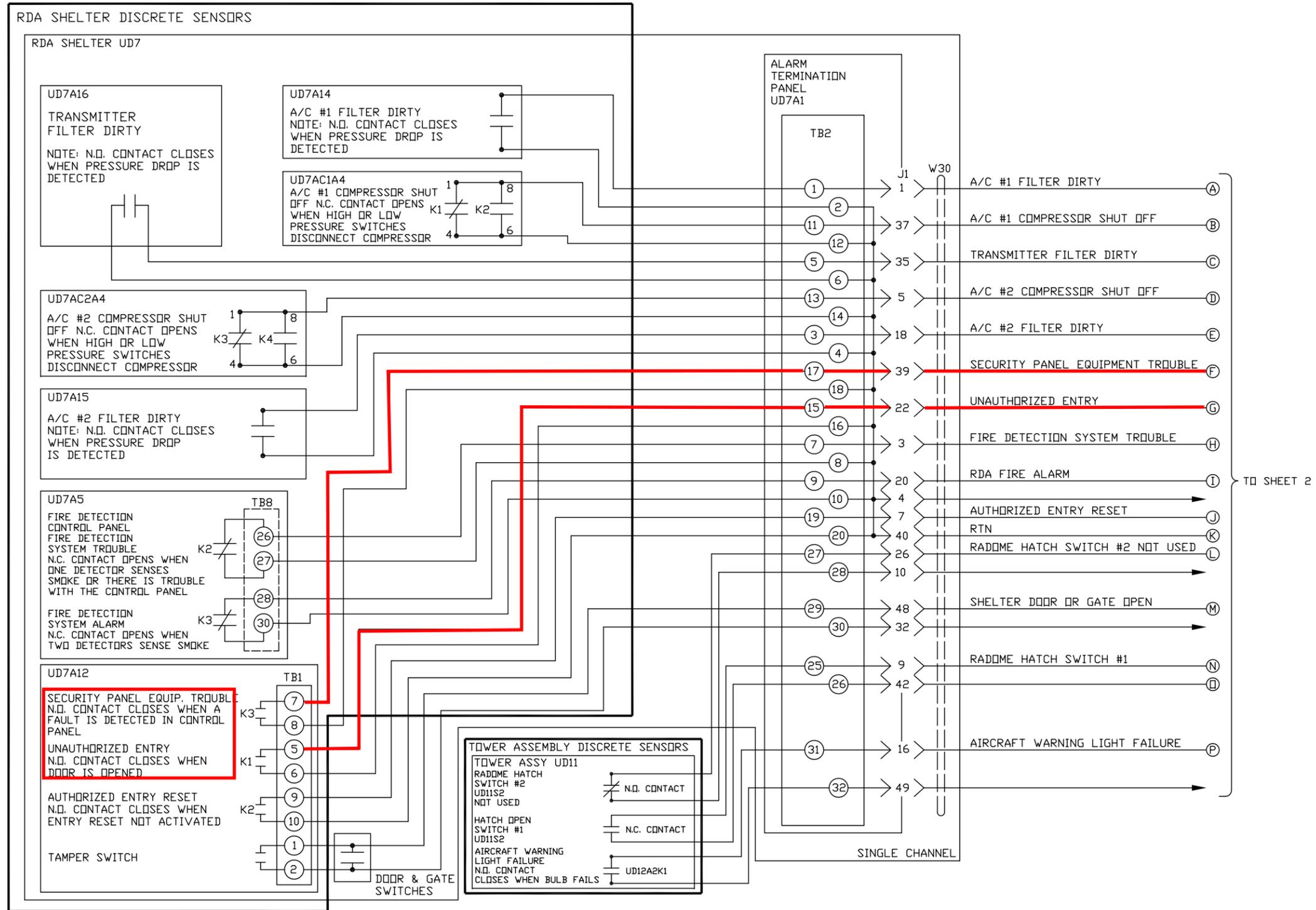
	<p>p. At the Recycle Command Complete pop-up window, click <b>OK</b>.</p> <p style="text-align: center;"><b>NOTE</b></p> <p style="text-align: center;">The STS Error Display pop-up window is for an RSP/SPIP communication error. This is typical behavior when the SPIP recycles power.</p> <p>q. Close the STS Error Display pop-up window as it occurs throughout this procedure.</p> <p>r. Exit out of Channel 2 STS.</p> <p>s. In the Channel 2 RDA HCI, click <b>RDA ▶ Release Control</b> and then close the RDA HCI window.</p> <p>t. At the Channel 1 STS Power Administrator window, under the Master Unit section, click <b>CH1 SPIP ▶ On</b> and then <b>Yes</b> at the Confirm Port 7 Change pop-up window. Observe the CH1 SPIP button indicator turns green and the SPIP +28V POWER SUPPLY FAIL--SET alarm clears on channel 1.</p> <p>u. Exit out of Channel 1 STS.</p> <p>v. In the Main RDA HCI, click <b>RDA ▶ Operate State</b>.</p> <p>w. In the Main RDA HCI, click <b>RDA ▶ Release Control</b>.</p> <p>x. Terminate the dial-in session using Table 4-37 Remote Dial-In Using RDA Laptop Procedure, steps 10 through 12.</p>

# Data Acquisition Fault Example

Table 6-8. RDA Utilities (UTL) Alarms  
- Continued

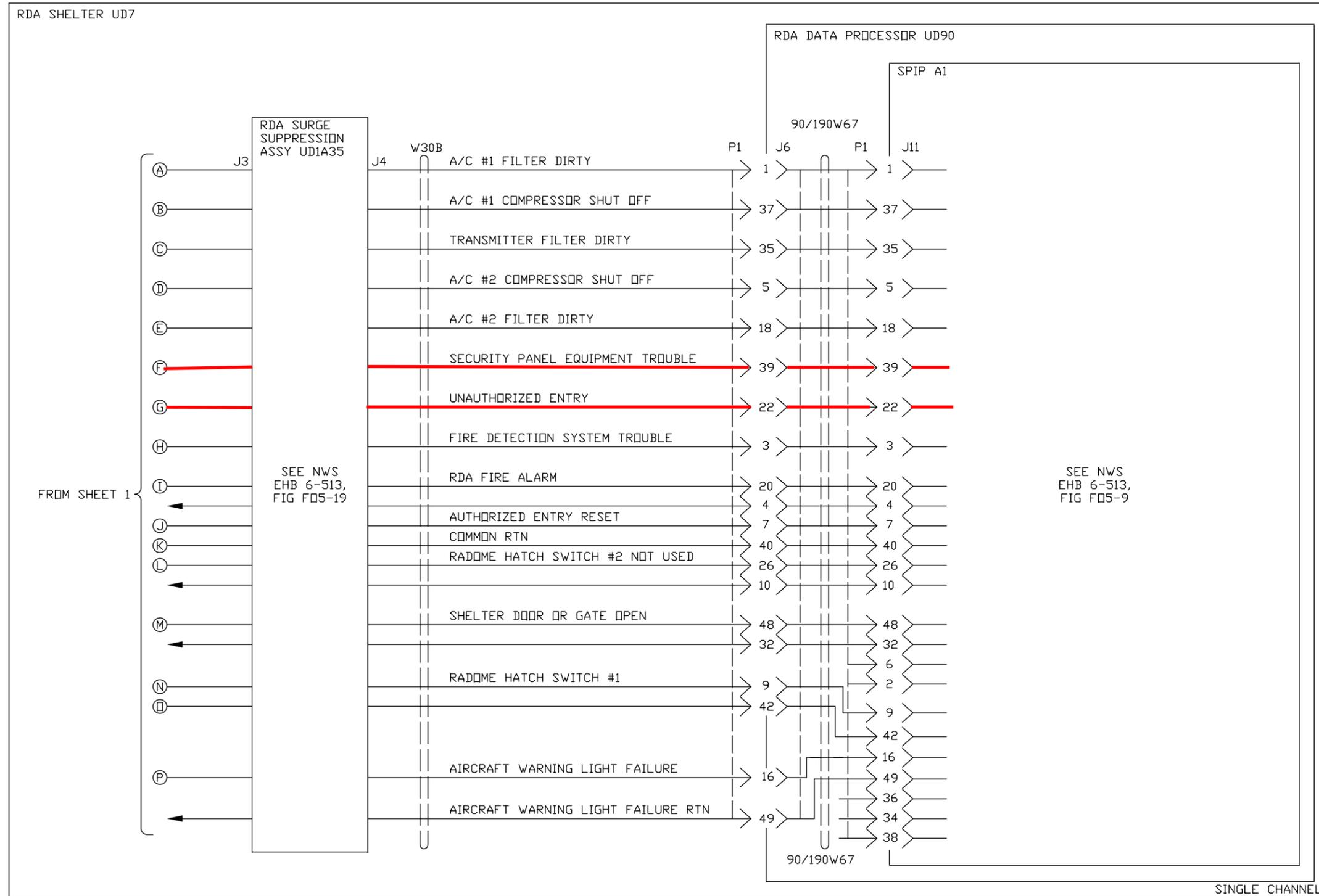
Code #	Alarm	Description	State	Alarm Type	# of Edges	Associated Alarms	Fault Isolation
144	UNAUTHORIZED SITE ENTRY	<p>When the RDA shelter, tower gate, transition power maintenance shelter, or generator shelter door is opened with security system enabled, the associated magnetic switch closes, energizing Security Control Panel Relay UD7A12 K1.</p> <p>The signal travels to the Alarm Termination Panel UD7A1 (TB2 for Single Channel systems or TB4 for Redundant Channel 2 systems), through the RDA Surge Suppressor UD1A35, then to the SPIP UD90A1.</p> <p>For Redundant Channel 1, the signal travels to the Alarm Termination Panel UD7A1TB2, through the Channel 1 RDA Surge Suppressor UD1A135, then to the Channel 1 SPIP UD190A1.</p>	MR	ED	2		See Figure FO5-18, Sheet 1 and Sheet 2 (Single Channel) or Sheet 3 through Sheet 6 (Redundant systems). Refer to NWS EHB 6-550 (NWS and DoD) or NWS EHB 6-553 (FAA), Security Alarm Panel Circuitry Operational Check. Run SPIP diagnostics (Fault Note 1).
145	SECURITY SYSTEM EQUIPMENT FAILURE	<p>Refer to RPIE manual NWS EHB 6-550 (for NWS and DoD Systems) or NWS EHB 6-553 (for FAA Systems), Table 3-11, for operational check procedures.</p> <p>The signal originates from the Security Control Panel Relay UD7A12K3, to Alarm Termination Panel UD7A1 (TB2 for Single Channel systems or TB4 for Redundant Channel 2 systems), through the RDA Surge Suppressor UD1A35, then to the SPIP UD90A1.</p> <p>For Redundant Channel 1, the signal travels to the Alarm Termination Panel UD7A1TB2, through the Channel 1 RDA Surge Suppressor UD1A135, then to the Channel 1 SPIP UD190A1.</p>	MR	ED	2		<p>Troubleshoot any Power Supply alarms if present. See Figure FO5-18, Sheet 1 and Sheet 2 (Single Channel) or Sheet 3 through Sheet 6 (Redundant systems).</p> <p>Run SPIP diagnostics (Fault Note 1) then refer to NWS EHB 6-550 (NWS and DoD) or NWS EHB 6-553 (FAA), Security Alarm Panel Operational Check.</p>

**Notice in both procedure that it is suggested to run SPIP diagnostics Fault Note 1. This diagnostic is similar as the DAU diagnostic Fault Note 1.**



NX2404-L

Figure FO5-18. RDA Discrete Status Data Monitoring Functional Flow Diagram (Sheet 1 of 6)



NX2815-D

Figure FO5-18. RDA Discrete Status Data Monitoring Functional Flow Diagram (Sheet 2 of 6)