

**RRS SOFTWARE NOTE 12**

Operations Division  
W/OPS12: HE

**SUBJECT:** **Installation of RRS Workstation (RWS) Software:  
(1) RWS Software Version (V) 2.2, and  
(2) Offline Maintenance Suite (OMS), Version 2.1**

**PURPOSE:** The purpose of this note is to upgrade RWS software from V2.1 to V2.2 to allow sites to use Vaisala RS92-NGP radiosondes.

**SITES AFFECTED:** Sites that are using or going to use Vaisala GPS radiosondes must use RWS Software V2.2. Other sites will install RWS Software V2.2 as directed by OPS22. See Attachment E for a list of RRS sites.

**AUTHORIZATION:** The authority for this note is Request for Change (RC) 13220 dated March 15, 2012.

**VERIFICATION STATEMENT:** Radiosonde Replacement System (RRS) system tests were performed at the Sterling Field Support Center (SFSC) and NWS Headquarters in Silver Spring by W/OPS24. Operational Test & Evaluation (OT&E) was performed at several RRS operational and continuity sites by region and site personnel.

**ESTIMATED COMPLETION DATE:** Within 10 days following the OPS22 directed installation of RWS V2.2.

**TIME REQUIRED:** Approximately 2.0 hours, excluding the special flight

**ACCOMPLISHED BY:** RWS Site Administrator

**EQUIPMENT AFFECTED:** RWS

**SPARES AFFECTED:** Not applicable (N/A)

**PARTS/MATERIALS REQUIRED:** Vaisala RS92-NGP Radiosondes (J038-1) and Vaisala SPS321AG Assembly (J700-1A3A7-2)  
RWS Software Version (Build) 2.2 (one CD)  
OMS Software, Version 2.1 (included on the RWS V2.2 CD)

**SOURCE OF PARTS/MATERIALS:** OPS22 and National Logistic Support Center (NLSC)

**DISPOSITION OF REMOVED PARTS/MATERIALS:** See RRS V2.2 Software Implementation Plan

**TOOLS AND TEST EQUIPMENT REQUIRED:** None

DOCUMENTS AFFECTED:	<p>RRS Modification Note 8, Vaisala SPS Installation</p> <p>RRS Maintenance Note 9, Vaisala SPS Troubleshooting and Fault Isolation</p> <p>RRS Software Note 12, Installation of RWS Software V2.2 (Use when NOT installing the RWS operating system)</p> <p>RRS System Administration Manual, NWS EHB 9-730, Revision A. Procedure to ghost RWS Operating System V1.09, install RWS Software V2.2, and OMS V2.1 (Use when installing the RWS operating system)</p> <p><a href="#">RRS Workstation User Guide for RWS Versions 2.2, and 2.3</a></p>
SUMMARY OF CHANGES	N/A
PROCEDURE:	Refer to Attachments A, B, C, and D.
TECHNICAL ASSISTANCE:	For questions or problems pertaining to this note, contact the SFSC Direct Field Support staff at (703) 661-1268.
REPORTING INSTRUCTIONS:	<p>Report the completed modification using the Engineering Management Reporting System (EMRS) instructions in EHB-4, Maintenance Documentation, Part 4, and Appendix H. Include the following information on the EMRS report:</p> <p>Maintenance Description (block 5): <b>RRS Software Note 12</b></p> <p>Equipment Code (block 7): <b>RWS</b></p> <p>Serial Number (block 8): <b>Unit serial number</b></p> <p>Maintenance Comments (block 15): <b>Installation of RWS Software V2.2 and OMS V2.1</b></p> <p>Mod No. (block 17a): <b>S12</b></p> <p>A sample EMRS report is provided as Attachment F.</p>

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 Attachment B – Active Directory Site Installation Procedures, V2.2  
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## ATTACHMENT A - Non-Active Directory Site Installation Procedures Version 2.2

This software note does not require the ghosting of the operating system. If, for any reason, Radiosonde Replacement System (RRS) Operating System Version (V) 1.09 needs to be installed, use RRS System Administration Manual EHB 9-730, Revision A, for ghosting the operating system. If installing an operating system, continue to use EHB 9-730, Revision A to back up data and to install RRS Workstation (RWS) Software V2.2.

The purpose of this software note is to upgrade RWS software (under RWS *XP* Operating System) from V2.1 to V2.2 to allow sites to use Vaisala radiosondes.

Sites that are using, or going to use Vaisala global positioning system (GPS) radiosondes, must use RWS Software V2.2. Other sites will install RWS Software V2.2 as directed by OPS22.

Attachment A applies ONLY to NON-ACTIVE DIRECTORY SITES that perform as stand-alone RRS sites. However, RRS continuity sites should also install RWS Software V2.2.

**NOTE:** **Active Directory Sites:** RRS Active Directory sites (either National or Regional) should use Attachment B of this software note to install RWS Software V2.2. RRS continuity sites should also install NWS Software V2.2.

### A.1 Overview

This section provides procedures to replace RWS Software V2.1 with RWS Software V2.2 and Offline Maintenance Suite (OMS).

**NOTE 1:** Software notes and manuals for installing RWS Software V2.2 at Operational Test & Evaluation (OT&E) sites are available on the OPS24 Website at: [http://www.nws.noaa.gov/ops2/ops24/documents/rrs\\_B22-OPS24.htm](http://www.nws.noaa.gov/ops2/ops24/documents/rrs_B22-OPS24.htm), and OPS1 Web site at: <https://www.ops1.nws.noaa.gov>.

**NOTE 2:** The most current RWS Software V2.2 is only available on CDs from the Observing Systems Branch (OPS22, 301-713-2093 x107).

#### A.1.1 RWS Software Version 2.2

Sites that use Sippican GPS radiosondes and Sippican Signal Processing Systems (SPS) may continue to use RWS V2.1, unless otherwise directed. However, sites continuing to use RWS Software V2.1 must use [RRS Software Note 10](#) to install or reinstall Software V2.1. RWS Software V2.2 has been upgraded with the following improvements:

SOFTWARE VERSION	DESCRIPTION	SOFTWARE NOTE
V2.1	Current RWS Software Installation at RRS Sites	10
V2.2	Update of RWS Software to accommodate Vaisala SPS321AG Unit (with Software 1.0.4) and replace V2.1 at RRS Sites	12
V1.09	RWS <i>XP</i> Operating System	RRS System Administration Manual 9-730, Revision A

- Supports new Vaisala radiosondes and SPS
- Added improved Telemetry Receiver System (TRS) tracking software
- Improved software compatibility and sustainability by migrating to C# language
- Added *Microsoft* Structured Query Language (SQL) Server Express 2008
- Improved plot functionality with user configurable plots
- Improved account management with use of Active Directory and connectivity to OPSnet
- Added a HELP function
- Added information for hardware status reporting
- Added parameters to the flight summary

### A.1.2 OMS Version 2.1

OMS Software V2.1 has been updated to accommodate the Vaisala SPS Maintenance Application Program. OMS is contained on the same CD as RWS Software V2.2.

The OMS is accessed through the *RRS Offline Menu* icon that permits the user to select the port and device to test. One of the OMS programs is Offline BIT (OBIT), which is used to test the TRS and Uninterruptible Power Supply (UPS). Other OMS programs test the SPS, Radiosonde Surface Observing Instrumentation System (RSOIS), Precision Digital Barometer (PDB), and Advanced Weather Interactive Processing System (AWIPS)/Local Data Acquisition and Dissemination (LDAD) system. OMS displays device status and enables running device Built-in-Tests (BIT) for hardware status and diagnostics.

### A.1.3 Terms-of-Reference

The following terms-of-reference apply to local stand-alone RRS sites for this software note:

- **RWS Site Administrator:** A site staff member with complete access to the RWS software, including *Windows* administrative privileges for the RWS
- **(Default) Administrator:** *Windows* built-in Administrator account with temporary administrative privileges for the initial installation of the RWS software only
- **RWS Trainee:** A site member being trained as an Observer who can run simulated flights but is not yet permitted to run RRS live flights
- **RWS Observer:** A site member who is a certified RRS flight Observer or Operator who can conduct live flights, transmit coded messages, and run some offline utilities
- **Stand-Alone Site:** RRS sites that communicate directly to AWIPS/LDAD/OPSnet without going through an Active Directory. Stand-alone sites are also not supported by either a National NWS NOAA Active Directory, or a Regional Active Directory.

### A.1.4 Direct Field Support Staff

Contact the Direct Field Support staff (Helpline) at the Sterling Field Support Center (SFSC) for RWS software installation and maintenance support:

- **Direct Field Support (Helpline) Phone:**  
(703) 661-1268 (Primary)  
(703) 661-1293 (if Primary line is busy)
- **Hours of Operation:**  
UTC 1000 to 0200 (6 AM to 10 PM EDT) (5 AM to 9 PM EST)  
(Monday through Friday, excluding Federal holidays)

### A.1.5 RRS Software Build Version 2.2 Implementation Documentation

Software notes and manuals for installing RWS Software V2.2 at OT&E sites are available on the OPS24 Web site at: [http://www.nws.noaa.gov/ops2/ops24/documents/rrs\\_B22-OPS24.htm](http://www.nws.noaa.gov/ops2/ops24/documents/rrs_B22-OPS24.htm), and <http://www.ua.nws.noaa.gov/RRS.htm>.

- **Software Implementation Plan:** Implementation activities and schedule for installing RRS Software V2.2
- **RRS Software Note 12:** Detailed instructions on how to install and use RRS Software V2.2 when not ghosting an operating system
- **User Guide for Software:** [RRS Workstation User Guide for RWS V2.2 and V2.3](#)
- **Training Videos:** Observer training videos on how to use new RRS software

## A.2 Back Up Local Station Data

Local Station Data is erased when the RWS software is installed. Local Station Data and LDAD Data must be restored to support RWS Software V2.2.

**NOTE:** As a precaution, sites may also want to back up other data, such as Flight Data, User Account data, and IP addresses to the external hard drive. See EHB 9-730, Revision A, Section 1.1.2 for precautionary backup procedures.

### A.2.1 Record the Next Ascension Number

The next flight ascension number must be entered during installation of the RWS software. Determine the next ascension number from the last ascension number on the B-29 form and record the number (i.e. Next ascension number: \_\_\_\_\_).

### A.2.2 Back Up Site-Specific Data

The LDAD Information and the Station Data will be used to install the Build Software V2.2. Complete the following sections to print site-specific data.

**NOTE:** Ensure all passwords for the LAN and the dial-up LDAD connections are recorded and stored in a locked safe.

### A.2.2.1 Back Up OMS Station Data

Complete the following steps to print OMS Station Data:

1. Log on to the RWS as **RWS Site Administrator**.
2. For all OMS versions, double-click on the **RRS Offline Maintenance** icon to open the *RRS Offline Maintenance Menu*.
3. Click on the **TRS Maintenance** option to open the *OBIT-Offline BITS* window with the *TRS Offline BITS* window displayed.
4. Close the *TRS Offline BITS* window.
5. Select **Setup** and **Station Data** from the top banner menu to open the *Station Data* window.
6. Press **Alt + Print Screen** to print the OMS Station Data.

**NOTE:** If **Alt + Print Screen** does not print the active window, download and install the *HP* print screen utility, or use **Alt + Print Screen** to copy the screen image to the clipboard, and then use another application, e.g., *Paint*, to print screen images.

7. Click **Cancel** to close the *Station Data* window.
8. Select **File** and **Exit** from the top banner menu to close the *OBIT-Offline BITS* window.
9. Close the *RRS Offline Maintenance Menu*.

### A.2.2.2 Back Up RWS Station Data

Complete the following steps to print the RWS Station Data:

1. Start the **RWS** application and **Enter Offline Mode**.
2. Select **View**, then **Station Info** from the banner menu to open the *Station Data Display*.
3. Press **Alt + Print Screen** or select the **Print** button to print the Station Data.
4. Right-click on the **Station Data Display** window and select the **Save Data in a File** option. The data is automatically saved to `C:\RWS\RWS\DATA FILES\STATION_DATA.TXT`. Also print this screen as a backup record.
5. Click the **LDAD Info** button to open the *LDAD Data Display*. If necessary, adjust the column size so the IP addresses are visible.
6. Press **Alt + PrintScreen** to print the LDAD Data.
7. Click **Cancel** in the *LDAD Data Display* to close the window.
8. Click **Cancel** on the *Station Data Display* to close the window.
9. Select **Flight**, and then **Exit** from the banner menu to close the RWS application.

### A.2.3 Save Station Data to External Hard Drive

Use *Windows Explorer* to copy the C:\RWS\RWS\DATA FILES\STATION\_DATA.TXT file to the USB E:\ drive (external hard drive). If the USB drive is not available, copy the file to a CD.

### A.2.4 Save LDAD Data to External Hard Drive

Use *Windows Explorer* to copy the folder C:\LDAD to the USB E:\ drive (external hard drive and, if desired, to an alternate source (CD or flash drive). If the USB external drive is not available, copy the folder to a CD. (The C:\LDAD folder contains the *PUTTY* keys.)

## A.3 RWS Software Version 2.2 Initial Installation

RWS Software V2.2 is approved for installation at all RRS sites.

**CAUTION**

**Always load RWS application software as a RWS Site Administrator.  
Never load RWS application software as the default Windows Administrator.**

### A.3.1 Remove RWS Version 2.1 Software and OMS Software

**NOTE:** RRS Station and LDAD Data must be backed up prior to removing RWS Software V2.1 to avoid a loss of Site Data.

Prior to installing RWS V2.2 Software, RWS Software V2.1 must be removed.

1. Log on to the RRS Workstation as **RWS Site Administrator**.
2. Select **Start, Control Panel, and Programs**.
3. Select **Programs and Features**.
4. Select **Uninstall Program**.
5. Select **RWS**, and click **Uninstall**.
6. Select **OMS**, and click **Uninstall**.

### A.3.2 Install RWS Software Version 2.2

1. If necessary, log on to the RRS Workstation as **RWS Site Administrator**.
2. Insert the RWS Application Software CD (RWS.NET) into the RWS. The *RWS.NET - InstallShield Wizard* should automatically open (Figure A-1). If the program has not launched after a few minutes, browse the CD and double-click on **setup.exe**.

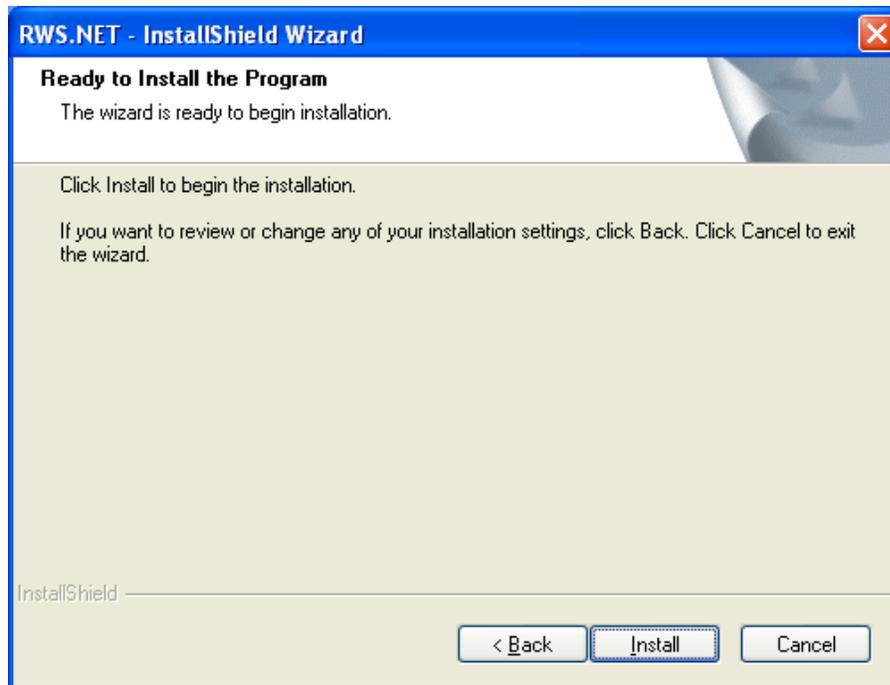


Figure A-1: RWS.NET - InstallShield Wizard

3. Click **Next** to display the *Station Information* window (Figure A-2).

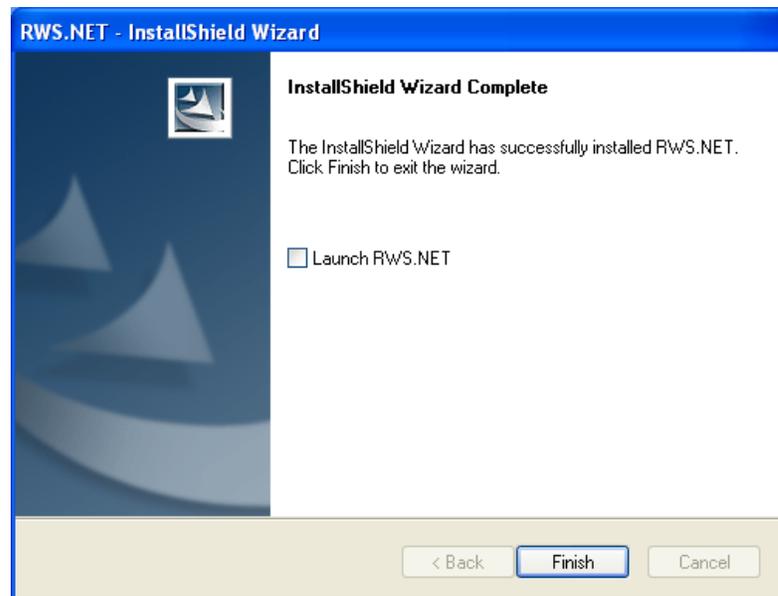
Figure A-2: Station Information Window

4. Enter the **Station WMO Number** and **First Ascension Number** recorded in Section A.2.
5. Click **Next** to display the *Ready to Install the Program* window (Figure A-3).



**Figure A-3: Ready to Install the Program Window**

6. Click **Install** and wait until the *InstallShield Wizard Complete* window indicates the process is complete (Figure A-4).



**Figure A-4: InstallShield Wizard Complete**

7. Uncheck **Launch RWS.NET** (Figure A-4), and then click **Finish** to exit the installation.
8. Remove the RWS Application Software CD and restart the RWS.

### A.3.3 Restore C:\LDAD

Copy the E:\LDAD folder to its proper location on the RWS:

1. Copy the contents of the **E:\LDAD** folder to **C:\LDAD**. The **C:\LDAD** folder contains the *PuTTY* keys required for message transmission.
2. Restart the RWS.

**NOTE:** Do not recreate *PuTTY* files. If these files are missing, contact Direct Field Support staff at (703) 661-1268 for replacements. Recreating *PuTTY* files would require adding the new *PuTTY* files to all LDADs listed as primary, secondary, and tertiary transmission routes.

### A.3.4 Enter Station Data

#### A.3.4.1 Enter Master Station Data

The Master Station Data is automatically entered when RWS.NET is first launched. Complete the following steps to enter Master Station Data. If Master Station Data needs to be manually loaded due to missing or inaccurate data, use Section A.3.4.3.

1. Log on to the RRS Workstation as **RWS Site Administrator**.
2. Double-click on the **RWS.NET** desktop icon to start the RWS application software. The *NOAA Warning* window will appear (Figure A-5).

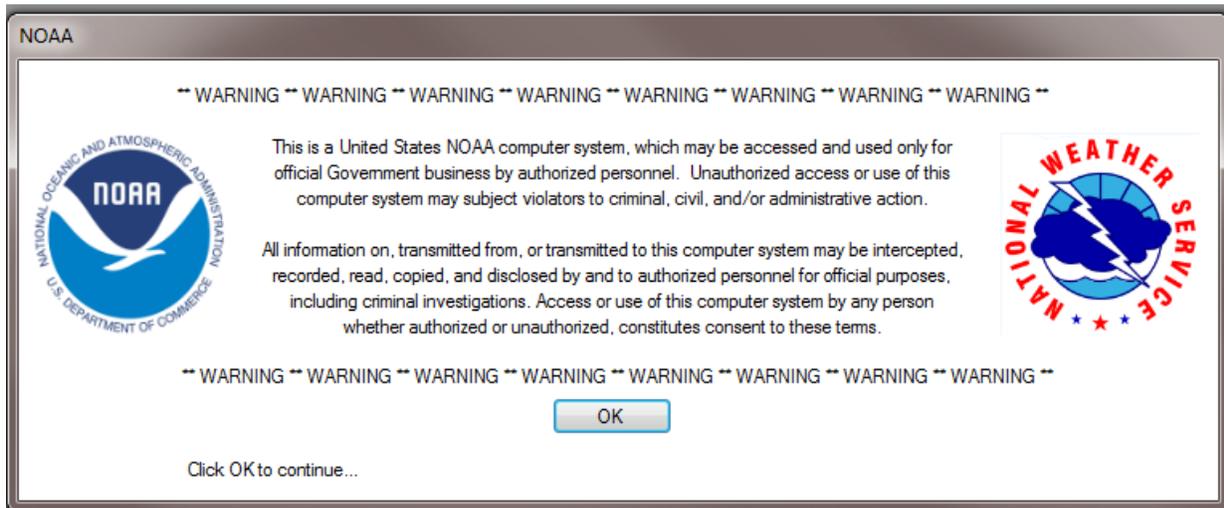
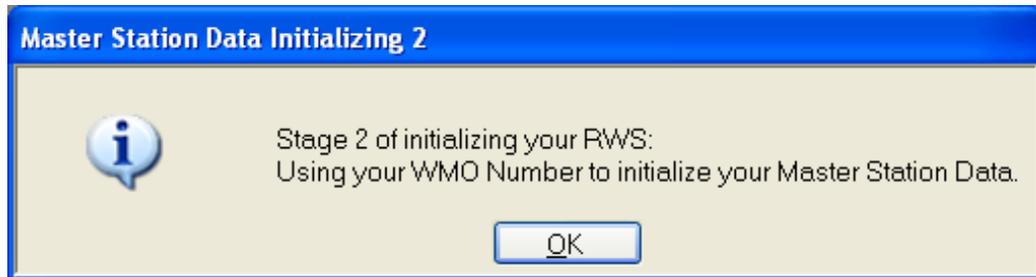


Figure A-5: NOAA Warning Window

3. Click **OK** to dismiss the *NOAA Warning* window. RWS will open with the *Master Station Data Initializing 2* window to indicate the Station WMO Number was used to initialize Master Station Data (Figure A-6).



**Figure A-6: Master Station Data Initializing 2 Window**

4. Click **OK** to proceed. If initialization was successful, the *Master Station Data Initialized* window will display indicating *Master Station Data updated* (Figure A-7).



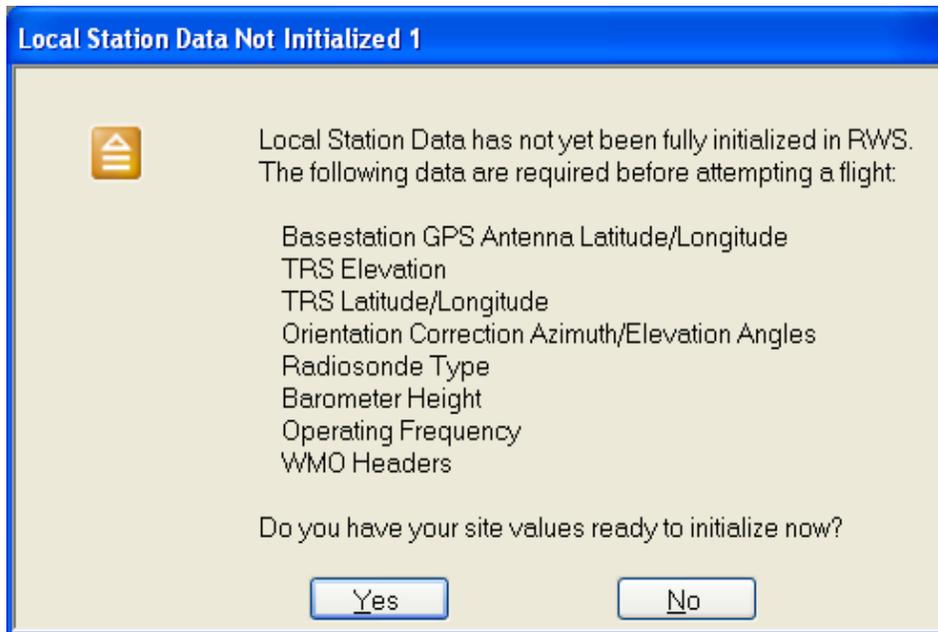
**Figure A-7: Master Station Data Initialized Window**

5. Click **OK** to proceed.

### A.3.4.2 Enter Local Station Data

If the RWS application indicates the Local Station Data has not been fully initialized, complete the following steps to enter Local Station Data:

1. If the *Local Station Data Not Initialized 1* window is displayed (Figure A-8), click **Yes** to open the *Station Data Display* (Figure A-9).



**Figure A-8: Local Station Data Not Initialized 1 Window**

**NOTE 1:** In addition to Station Data saved in Section A.2, Station Data was collected during RRS deployment and cataloged in an RRS site-specific database on the NWS Headquarters Web site (<https://ops13web.nws.noaa.gov/>). Compare the locally saved Station (backup) Data to data from the OPS13 Web site. If there are discrepancies, call the Direct Field Support staff at (703) 661-1268. Once discrepancies are resolved, confirmed Station Data will be entered as a part of the RWS software installation.

**NOTE 2:** All RRS site Electronics System Analysts (ESA) have automatic access to the RRS site-specific database operated by OPS13. Access to others will be granted by the Direct Field Support staff at (703) 661-1268.

2. Enter the following values (recorded in Section A.2.2.2) for any field values missing from the *Station Data Display* (Figure A-9):

Station Data Display			
<b>Master</b>			
Station Name:	HQTest1	Station Latitude (dd:mm:ss):	38:58:48
WMO Number:	69001	Station Longitude (ddd:mm:ss):	-77:28:48
WMO Region:	4	Station Elevation (m MSL):	85
Station ID:	KHQA	Base Pressure (hPa):	850
WBAN:	93734	Release Point Latitude (dd:mm:ss):	38:58:48
Responsible WFO ID:	KHQA	Release Point Longitude (ddd:mm:ss):	-77:28:48
AWIPS XXX (FAA) ID:	HQA	Release Point Elevation (m MSL):	85
		Last Updated:	11/19/2010 19:24:52
<b>Local</b>			
Release Point Pressure Correction (hPa) [derived]:		Radiosonde Type:	
Target Antenna Azimuth Angle (Deg):		Ground Receiving System:	
Target Antenna Elevation Angle (Deg):		Radiosonde Tracking Method:	
SPS GPS Antenna Elevation (m WGS84):		Barometer Height (m MSL):	
SPS GPS Antenna Elevation (m MSL):		Balloon Shelter Type:	
SPS GPS Antenna Latitude (N+/S- dd:mm:ss.ffff):		Balloon Gas:	
SPS GPS Antenna Longitude (E+/W- ddd:mm:ss.ffff):		Operational Frequency (MHz):	
TRS Elevation (m MSL):		Boohtop Release:	No
TRS Latitude (N+/S- dd:mm:ss.f):		WMO Header (FZL):	UXUS97
TRS Longitude (E+/W- dd:mm:ss.f):		WMO Header (MAN):	USUS97
Orientation Correction Azimuth Angle (Deg):		WMO Header (SGL):	UMUS97
Orientation Correction Elevation Angle (Deg):		WMO Header (ABV):	UFUS97
Surface Observation (Obs.) Equipment Type:		WMO Header (ULG):	NXUS97
Surface Obs. Distance from Release Point (m):		WMO Header (DD1):	IUDD01
Surface Obs. Equipment Height (m MSL):		WMO Header (DD2):	IUDD02
Surface Obs. Bearing from Release Point (Deg):		Last Updated:	1/1/2000 00:00:00
<input type="button" value="OK"/> <input type="button" value="Cancel"/> <input type="button" value="Print"/> <input type="button" value="LDAD Info"/>			

**Figure A-9: Station Data Display (Example Only)**

- Release Point Pressure Correction (hPa): The Release Point Pressure Correction is derived and is not entered. The Release Point Pressure Correction is the pressure difference between the baseline point and the release point (i.e., balloon shelter). The value is calculated and cannot be entered. The value is negative if the release point is higher than the baseline point.
- Target Antenna Azimuth Angle (Deg): Enter the azimuth angle of the target antenna in degrees.
- Target Antenna Elevation Angle (Deg): Enter the elevation angle of the target antenna in degrees.
- SPS GPS Elevation (m WGS84): Enter GPS antenna elevation in Earth Ellipsoid Sphere in meters.
- SPS GPS Elevation (m MSL): Enter GPS antenna elevation above mean sea level in meters.
- SPS GPS Antenna Latitude (N+/S- dd:mm:ss.ffff): Enter GPS antenna latitude in the prescribed format.

**NOTE:** South latitudes and west longitudes are preceded by a negative sign.

- SPS GPS Antenna Longitude (E+/W- ddd:mm:ss.ffff): Enter GPS antenna longitude in the prescribed format.

- h. TRS Elevation (m MSL): Enter TRS elevation above mean sea level in meters.
  - i. TRS Latitude (N+/S- dd:mm:ss.f): Enter TRS latitude in the prescribed format.
  - j. TRS Longitude (E+/W- dd:mm:ss.f): Enter TRS longitude in the prescribed format.
  - k. Orientation Correction Azimuth Angle (Deg): Not implemented, enter **0.00**.
  - l. Orientation Correction Elevation Angle (Deg): Not implemented, enter **0.00**.
  - m. Surface Observation (Obs.) Equipment Type: Select appropriate option.
  - n. Surface Obs. Distance from Release Point (m): Enter appropriate value in meters.
  - o. Surface Observation Equipment Height (m MSL): Enter appropriate value in meters.
  - p. Surface Obs. Bearing from Release Point (Deg): Enter appropriate value in degrees.
  - q. Radiosonde Type: Select appropriate option (Sippican or Vaisala).
  - r. Ground Receiving System: Select appropriate option. (This is the SPS type.)
  - s. Radiosonde Tracking Method: Select **GPS**.
  - t. Barometer Height (m MSL): Enter station-specific value in meters.
  - u. Balloon Shelter Type: Select appropriate option.
  - v. Balloon Gas: Select appropriate option.
  - w. Operational Frequencies (MHz): Enter 1680 or the site-specific frequency in MHz used for first releases.
  - x. Rooftop Release: Select appropriate option.
  - y. WMO Header (FZL): Enter station-specific value.
  - z. WMO Header (MAN): Enter station-specific value.
  - aa. WMO Header (SGL): Enter station-specific value.
  - bb. WMO Header (ABV): Enter station-specific value.
  - cc. WMO Header (ULG): Enter station-specific value.
  - dd. WMO Header (DD1): Not implemented, enter **IUDD01**.
  - ee. WMO Header (DD2): Not implemented, enter **IUDD02**.
3. Print the screen and have a second person verify all data entries.

#### A.3.4.3 Manually Enter Master Station Data (Top of Station Data Display Screen)

**NOTE:** Use this section only if Master Station Data is not pre-loaded or is not accurate (i.e. the AWIPS SID may be XXX). Also use this procedure for RRS equipment sighting changes.

The Master Data portion of the *Master Station Edit* screen (not the same as WMO Station Data) is available on the OPS13 Web site.

1. Open the OPS13 Web site using noaa.gov e-mail user name and password ([https://ops13web.nws.noaa.gov/rrsupload/file\\_upload.file\\_upload\\_frame](https://ops13web.nws.noaa.gov/rrsupload/file_upload.file_upload_frame)).
2. Select the **Site Specific Data** (for site X) from the pull-down list. Click **View Site Data**.
3. Print the Site Specific Data (for site X) from the Web site.
4. Using the printed Site Specific Data from the OPS13 Web site, verify the Master Station Data.
5. If the OPS13 Web site is unavailable, use the previously saved and printed data from Section A.2.2 to verify the Master Station Data.

6. Enter the RRS Site Specific Data into the RWS Master Station Data as follows:

**NOTE:** The Station Data, including data to identify the station, and the station and release position data will appear in text. There are edit fields for the new values.

- a. Close the RWS application software.
- b. Insert the CD for RWS Operational Application Software (currently Build 2.0) into the RWS computer.
- c. Browse on the CD to the `\Utilities` folder.
- d. Run **MasterEdit.exe**. The following dialog will appear (Figure A-10).
- e. Enter the new Master Station Data for the station and release positions. The station values reflect the position of the PDB. The release values reflect the position of where the balloons are released.
- f. The version field is helpful to determine if the RWS has loaded and is using the new values. An incremented version will be pre-filled, and does not need to be changed for the installation.

**NOTE:** Do not change the Station Name, WMO Region, Station ID, WBAN, WFO ID or AWIPS (FAA) ID (this information is pre-loaded). Make changes only if a field is not pre-loaded (displays XXXs) or data is inaccurate. This information is critical for successful data transmission.

WMO Number:	72403
Station Name:	Sterling, VA
WMO Region:	4
Station ID:	KIAD
WBAN:	93734
WFO ID:	KLWX
AWIPS (FAA) ID:	IAD
Station Latitude (dd:mm:ss):	38:58:33
Station Longitude (ddd:mm:ss):	-77:28:37
Station Elevation (m MSL):	84
Base Pressure (hPa):	850
Release Point Latitude (dd:mm:ss):	38:58:36
Release Point Longitude (ddd:mm:ss):	-77:28:38
Release Elevation (m MSL):	86
Master Station Data Version:	1.0.0.12

Figure A-10: Master Station Edit (Example)

- g. When the new data is entered, click **OK**. If successful, the following message will appear (Figure A-11).



**Figure A-11: MasterEdit Update Successful**

- h. Close *MasterEdit*. Eject the CD.
- i. To verify the updated Master Station Data was successful, restart the RWS, go to offline mode, and open the *Station Data Display* menu (from the *View Station Info* menu item). (Figure A-12).
- j. Re-check the Master Station Data with the Web site data.

Station Data Display			
- Master			
Station Name:	HQT est4	Station Latitude (dd:mm:ss):	38:58:48
WMO Number:	69011	Station Longitude (ddd:mm:ss):	-77:28:48
WMO Region:	4	Station Elevation (m MSL):	85
Station ID:	KHQQ	Base Pressure (hPa):	850
WBAN:	93734	Release Point Latitude (dd:mm:ss):	38:58:48
Responsible WFO ID:	KHQQ	Release Point Longitude (ddd:mm:ss):	-77:28:48
AWIPS XXX (FAA) ID:	HQK	Release Point Elevation (m MSL):	85
		Last Updated:	10/9/2009 17:17:49

**Figure A-12: Master Station Data Display Menu (Example)**

7. If the RWS Station Data appears to be in error, contact the SFSC Helpline at (703) 661-1268 or (703) 661-1293.

#### A.3.4.4 Enter LDAD Data

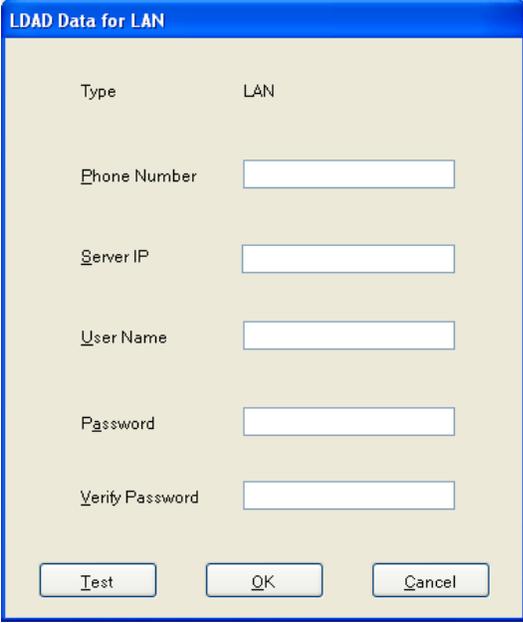
Complete the following steps to enter LDAD data.

1. Click **LDAD Info** on the *Station Data Display* to open the *LDAD Data Display* (Figure A-13).

LDAD Data Display			
Type	Phone Number	Server IP	User Name
LAN			<input type="button" value="Edit"/>
Phone 1	NA		<input type="button" value="Edit"/>
Phone 2	NA		<input type="button" value="Edit"/>
Phone 3	NA		<input type="button" value="Edit"/>
<input type="button" value="OK"/>		<input type="button" value="Cancel"/>	

**Figure A-13: LDAD Data Display**

- Click on the **Edit** button for the LAN Type to open the *LDAD Data for LAN* window (Figure A-14).



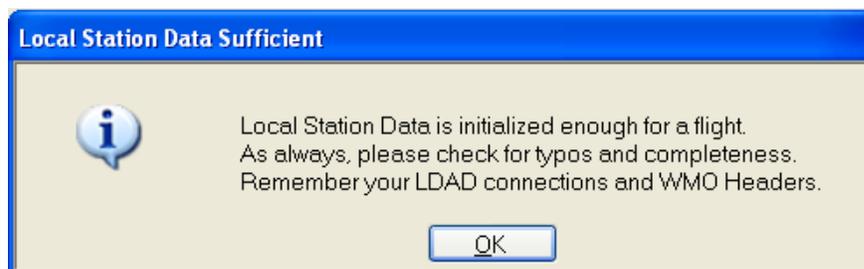
The screenshot shows a dialog box titled "LDAD Data for LAN". The "Type" field is set to "LAN". Below it are six input fields: "Phone Number", "Server IP", "User Name", "Password", and "Verify Password", all of which are currently empty. At the bottom of the dialog are three buttons: "Test", "OK", and "Cancel".

**Figure A-14: LDAD Data for LAN Window**

- Complete the LDAD Data fields using the data recorded in Section A.2.2.2.

**NOTE:** The Phone Number field for the LAN Type should be blank.

- Click **OK** to accept the changes and close the *LDAD Data for LAN* window.
- Edit the Phone 1, Phone 2, and Phone 3 Types.
- Once all LDAD Data has been entered, click **OK** to close the *LDAD Data Display*.
- Click **OK** to close the *Station Data Display*. The *Local Station Data Sufficient* window will display (Figure A-15).
- Click **OK** to dismiss the *Local Station Data Sufficient* window.



**Figure A-15: Local Station Data Sufficient**

#### A.3.4.5 Optional Pre-Flight “No Data” Message Test

This test is optional. After ghosting and prior to a flight, perform an LDAD/communications test to quickly verify that all passwords are correct, *PUTTY* keys are not corrupted, all communication lines are working, and you can transmit flight data.

1. Log on to the RWS Workstation as an **RWS Observer**.
2. Start the RWS Software Program.
3. Send a “**No Data**” message to:
  - The LAN
  - Phone #1
  - Phone #2
  - Phone #3(Deselect all other choices except the one being tested.)
4. View on an AWIPS terminal to ensure the messages were sent all the way through the system.

**NOTE:** When sending the “No Data” messages, select a different product for each test to differentiate between the messages,

#### A.3.5 Install OMS Software

At this time, install OMS Software V2.1 in accordance with Attachment C, before conducting an upper air flight.

### A.4 Verify Software Installation

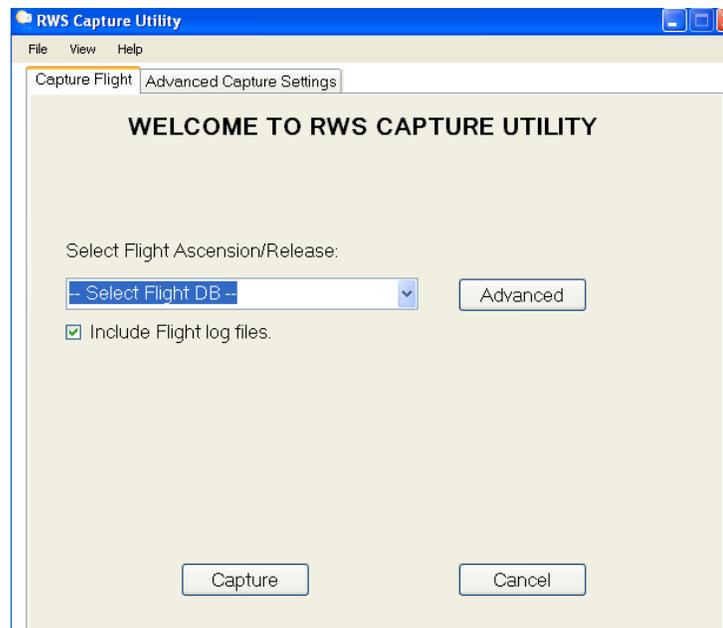
#### A.4.1 Conduct an Upper Air Sounding and Verify Message Transfer

Conduct a live flight following the initial installation of RWS Application Software V2.2. See the RRS Workstation User Guide for RWS Observers, for conducting an upper air sounding (for a copy, go to: <http://www.ua.nws.noaa.gov/RRS.htm>, or use the RWS Help file function).

**NOTE:** Conducting a live flight is not necessary when only an RWS software maintenance release is being installed.

#### A.4.2 Capture the Flight

1. Double-click the **Capture Utility** shortcut to open the *RWS Capture Utility* window.
2. Select the flight from the **RWS Capture Utility** pull-down menu (Figure A-16).



**Figure A-16: RWS Capture Utility**

3. Click the **Capture** button.
4. Click **OK** when the `Capture Successful` message appears.

### A.4.3 Verify Message Transfer

#### A.4.3.1 Verify Message Accuracy in AWIPS

Verify the receipt of the coded messages by logging on to an AWIPS terminal or by viewing the coded messages at <http://www.weather.gov/data/>.

**NOTE:** To verify receipt of Pacific Region coded messages, Log on to:  
<http://www.prh.noaa.gov/data/>.

#### A.4.3.2 Verify Messages to NCDC

Verify the successful reception of archived data to the National Climatic Data Center (NCDC) ftp site. Visit <http://www1.ncdc.noaa.gov/pub/data/ua/RRS/YYYY> (where YYYY is the current year). Once at the Web site, find the log file representing the site by identifying the station ID and the year and month the data was transmitted. For example, `klwx_0801_log.txt` would contain the upload history for LWX for January of 2008.

### A.5 Optimize *Windows* Desktop

When time permits, optimize the *Windows* Desktop to adjust for best performance. Refer to Attachment D to perform this function.



## ATTACHMENT B - Active Directory Installation Procedures Version 2.2

This software note is only for sites with RRS Workstation (RWS) Software Version (V) 2.1 already installed. This note does not require the ghosting of the operating system. If, for any reason, Radiosonde Replacement System (RRS) Operating System V1.09 needs to be installed, use RRS System Administration Manual EHB 9-730, Revision A, for ghosting the operating system. If installing an operating system, continue to use EHB 9-730, Revision A to back up data and to install RWS Software V2.2.

The purpose of this software note is to upgrade RWS software from V2.1 to V2.2 to allow sites to use Vaisala radiosondes.

Sites that are using or going to use Vaisala global positioning system (GPS) radiosondes, must use RWS Software V2.2. Other sites will install RWS Software V2.2 as directed by OPS22.

Attachment B of this software note applies ONLY to ACTIVE DIRECTORY SITES that are RRS sites supported by either a National or a Regional Directory.

**NOTE:** RRS stand-alone **Non-Active Directory** sites should use Attachment A of this software note to install RWS Operating System V1.09 and RWS Software V2.2.

### B.1 Overview

This section provides procedures to update RWS Software V2.1 by installing RWS Software V2.2 and Offline Maintenance Suite (OMS).

**NOTE 1:** Software notes and manuals for installing RWS Software V2.2 at OT&E sites are available on the OPS24 Web site at:

[http://www.nws.noaa.gov/ops2/ops24/documents/rrs\\_B22-OPS24.htm](http://www.nws.noaa.gov/ops2/ops24/documents/rrs_B22-OPS24.htm),  
and the OPS1 Web site at <https://www.ops1.nws.noaa.gov>.

**NOTE 2:** The most current RWS Software V2.2 is available on CDs only from the Observing Systems Branch (OPS22, 301-713-2093 x107).

#### B.1.1 RWS Software Version 2.2

Sites that use Sippican GPS radiosondes and Sippican Signal Processing Systems (SPS) may continue to use RWS V2.1, unless otherwise directed. However, sites continuing to use RWS Software V2.1 must use [RRS Software Note 10](#) to install or reinstall Software V2.1. RWS Software V2.2 has been upgraded with the following improvements:

SOFTWARE VERSION	DESCRIPTION	SOFTWARE NOTE
V2.1	Current RWS Software Installation at RRS Sites	10
V2.2	Update of RWS Software to accommodate Vaisala SPS321AG Unit (with Software 1.0.4) and replace V2.1 at RRS Sites	12
V1.09	RWS XP Operating System	RRS System Administration Manual 9-730, Revision A

- Support for new Vaisala radiosondes SPS
- Added improved Telemetry Receiver System (TRS) tracking software
- Improved software compatibility and sustainability by migrating to C# language
- Added Microsoft SQL Server Express 2008
- Improved plot functionality with user configurable plots
- Improved account management with use of Active Directory and connectivity to OPSnet
- Added HELP function
- Added information for hardware status reporting
- Added parameters to the Flight Summary

### B.1.2 OMS Version 2.1

OMS Software V2.1 has been updated to accommodate the Vaisala SPS Maintenance Application Program. OMS is contained on the same CD as RWS Software V2.2.

The OMS is accessed through the *RRS Offline Menu* icon that permits the user to select the port and device to test. One of the OMS programs is Offline BIT (OBIT), which is used to test the TRS and Uninterruptible Power Supply (UPS). Other OMS programs test the SPS, Radiosonde Surface Observing Instrumentation System (RSOIS), Precision Digital Barometer (PDB), and Advanced Weather Interactive Processing System (AWIPS)/ Local Data Acquisition and Dissemination (LDAD) system. OMS displays device status and enables running device Built-in-Tests (BIT) for hardware status and diagnostics.

### B.1.3 Terms-of-Reference

The following terms-of-reference apply to this software note:

#### NATIONAL:

- **NWS Domain Administrator:** An NWS staff member with NOAA National Active Directory administrative privileges for the `nws.noaa/RRS` domain (not currently implemented)
- **RRS Organizational Unit (OU) Administrator:** An NWS staff member with NOAA National Active Directory administrative privileges for the RRS OU (not currently implemented)

#### REGIONAL:

- **RRS Organizational Unit Administrator:** A Regional staff member with Regional NWS Active Directory administrative privileges for the Region RRS OU

#### LOCAL:

- **RWS Site Administrator:** A site staff member with complete access to the RWS software, including *Windows* administrative privileges for the RWS
- **(Default) Administrator:** *Windows* built-in administrative account with temporary administrative privileges only for the initial installation of the RWS software
- **RWS Trainee:** A site member being trained as an Observer who can run simulated flights, but not yet permitted to run RRS live flights
- **RWS Observer:** A site member who is a certified RRS flight Observer or Operator who can conduct live flights, transmit coded messages, and run some offline utilities

- **Stand-Alone Site:** RRS sites that communicate directly to AWIPS/LDAD/OPSnet without going through an Active Directory. Stand-alone sites are also not supported by either a National NWS NOAA Active Directory, or a Regional Active Directory.

**NOTE:** These Active Directory Site Installation Procedures reflect the National NOAA NWS domain naming convention. Regions may require special domain naming conventions. If required, see Regional instructions for implementing a Regional Active Directory domain.

#### B.1.4 Direct Field Support Staff

Contact the Direct Field Support staff (Helpline) at the Sterling Field Support Center (SFSC) for RWS software installation and maintenance support.

- **Direct Field Support (Helpline) Phone:**
  - (703) 661-1268 (Primary)
  - (703) 661-1293 (if Primary line is busy)
- **Hours of Operation:**
  - UTC 1000 to 0200 (6 AM to 10 PM EDT) (5 AM to 9 PM EST)
  - (Monday through Friday, excluding Federal holidays)

#### B.1.5 RRS Software Build Version 2.2 Implementation Documentation

Software notes and manuals for installing RWS Software V2.2 at OT&E sites are available on the OPS24 Web site at: [http://www.nws.noaa.gov/ops2/ops24/documents/rrs\\_B22-OPS24.htm](http://www.nws.noaa.gov/ops2/ops24/documents/rrs_B22-OPS24.htm), and <http://www.ua.nws.noaa.gov/RRS.htm>.

- **Software V2.2 Implementation Plan:** Implementation activities and schedule for installing RRS software
- **RRS Software Note 12:** Detailed instructions on how to install and use RRS Software V2.2 when not ghosting an operating system
- **User Guide for Software:** [RRS Workstation User \(Operator\) Guide for Software V2.2 and V2.3](#)
- **Training Videos:** Observer training videos on how to use the new RRS software

#### B.2 Back Up Local Station Data

Local Station Data is erased when the RWS software is installed. Local Station Data and LDAD Data must be restored to support RWS Software V2.2.

**NOTE:** As a precaution, sites may also want to back up other data such as flight data, user account data, and IP addresses, to the external hard drive. See EHB 9-730, Revision A, Section 1.1.2 for precautionary backup procedures.

#### B.2.1 Record the Next Ascension Number

The next ascension number must be entered during installation of the RWS software. Determine the next ascension number from the last ascension number on the B-29 form and record the number (i.e. Next ascension number: \_\_\_\_\_).

### B.2.2 Back Up Site-Specific Data

The LDAD information and the Station Data will be used to install the Build V2.2 Software. Complete the following sections to print site-specific data.

**NOTE:** Ensure all passwords for the LAN and the dial-up LDAD connections are recorded and stored in a locked safe.

#### B.2.2.1 Back Up OMS Station Data

Complete the following steps to print OMS Station Data:

1. Log on to the RRS Workstation as **RWS Site Administrator**.
2. For all OMS versions, double-click on the **RRS Offline Maintenance** icon to open the *Offline Maintenance Menu*.
3. Click on the **TRS Maintenance** option to open the *OBIT-Offline BITS* window with the *TRS Offline BITS* window displayed.
4. Close the *TRS Offline BITS* window.
5. Select **Setup** and **Station Data** from the top banner menu to open the *Station Data* window.
6. Press **Alt + Print Screen** to print the OMS Station Data.

**NOTE:** If **Alt + Print Screen** does not print the active window, download and install the **hp print screen utility**, or use the **Alt + Print Screen** to copy the screen image to the clipboard, and then use another application (e.g., Paint) to print screen images.

7. Click **Cancel** to close the *Station Data* window.
8. Select **File** and **Exit** from the top banner menu to close the *OBIT-Offline BITS* window.
9. Close the *RRS Offline Maintenance Menu*.

#### B.2.2.2 Back Up RWS Station Data

Complete the following steps to print the RWS Station Data:

1. Start the RWS application and enter **Offline Mode**.
2. Select **View** and **Station Info** from the banner menu to open the *Station Data Display*.
3. Press **Alt + PrintScreen** or select the **Print** button to print the Station Data.
4. Right-click on the *Station Data Display* window and select the **Save Data in a File** option. The data is automatically saved to C:\RWS\RWS\DATA FILES\STATION\_DATA.TXT. Also print this screen as a backup record.
5. Click the **LDAD Info** button to open the *LDAD Data Display*. If necessary, adjust the column size so the IP addresses are visible.
6. Press **Alt + PrintScreen** to print the LDAD data.
7. Click **Cancel** in the *LDAD Data Display* to close the window.
8. Click **Cancel** on the *Station Data Display* to close the window.
9. Select **Flight** and **Exit** from the banner menu to close the RWS application.

### B.2.3 Save Station Data to External Hard Drive

Use *Windows Explorer* to copy the C:\RWS\RWS\DATA FILES\STATION\_DATA.TXT file to the USB E:\drive (external hard drive). If the USB drive is not available, copy the file to a CD.

### B.2.4 Save LDAD Data to External Hard Drive

Use *Windows Explorer* to copy the folder C:\LDAD to the USB E:\drive (external hard drive and, if desired, to an alternate source (CD or flash drive). If the USB drive is not available, copy the folder to a CD. (The C:\LDAD folder contains the *PuTTY* keys.)

## B.3 RWS Software Version 2.2 Initial Installation

RWS Software V2.2 is approved for installation at all RRS sites.

**CAUTION**

**Always load RWS application software as a RWS Site Administrator.  
Never load RWS application software as the default Windows  
Administrator.**

### B.3.1 Remove RWS Version 2.1 Software and OMS Software

Prior to installing RWS V2.2 Software, RWS Software V2.1 must be removed:

1. Log on to the RWS as **RWS Site Administrator**.
2. Select **Start**, **Control Panel**, and **Programs**.
3. Select **Programs and Features**.
4. Select **Uninstall Program**.
5. Select **RWS**, and click **Uninstall**.
6. Select **OMS**, and click **Uninstall**.

### B.3.2 Install RWS Software Version 2.2

**NOTE:** RRS Station and LDAD Data must be backed up prior to removing RWS Software V2.1 to avoid a loss of Site Data.

1. If necessary, log on to the RRS Workstation as **RWS Site Administrator**.

2. Insert the RWS Application Software CD (RWS.NET) into the RWS. The *RWS.NET - InstallShield Wizard* should automatically open (Figure B-1). If, after a few minutes the program has not launched, browse the CD and double-click on **setup.exe**.



Figure B-1: RWS.NET - InstallShield Wizard

3. Click **Next** to display the *Station Information* window (Figure B-2).

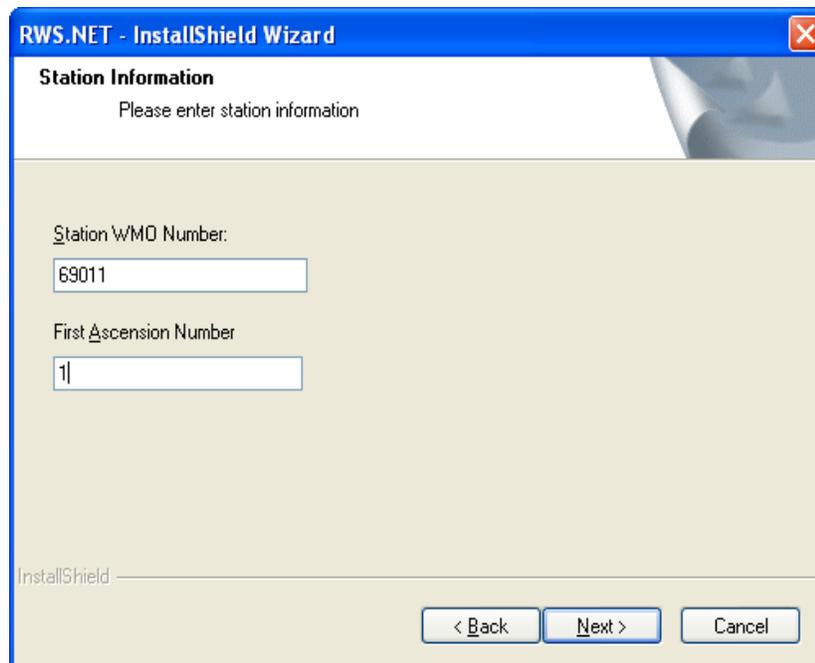
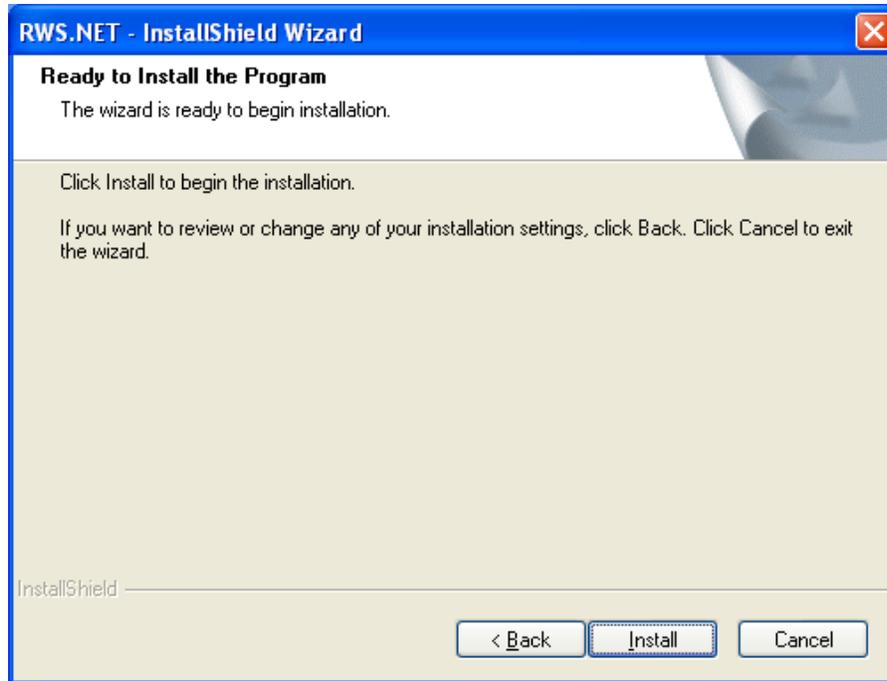


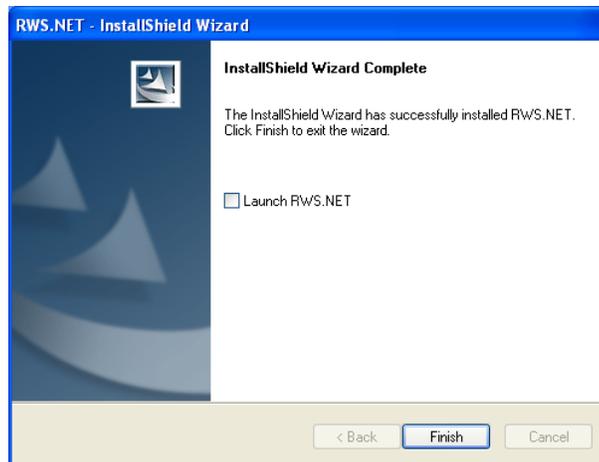
Figure B-2: Station Information Window

4. Enter the **Station WMO Number** and **First Ascension Number** recorded in Section B.2.
5. Click **Next** to display the *Ready to Install the Program* window (Figure B-3).



**Figure B-3: Ready to Install the Program Window**

6. Click **Install** and wait until the *InstallShield Wizard Complete* window indicates the process is complete (Figure B-4).



**Figure B-4: InstallShield Wizard Complete**

7. Uncheck Launch RWS.NET (Figure B-4), and then click **Finish** to exit the installation.
8. Remove the RWS Application Software CD and restart the RWS.

### B.3.3 Restore C:\LDAD

Copy the E : \LDAD folder to its proper location on the RWS:

1. Copy the contents of the E : \LDAD folder to C : \LDAD. The C : \LDAD folder contains the *PuTTY* keys required for message transmission.

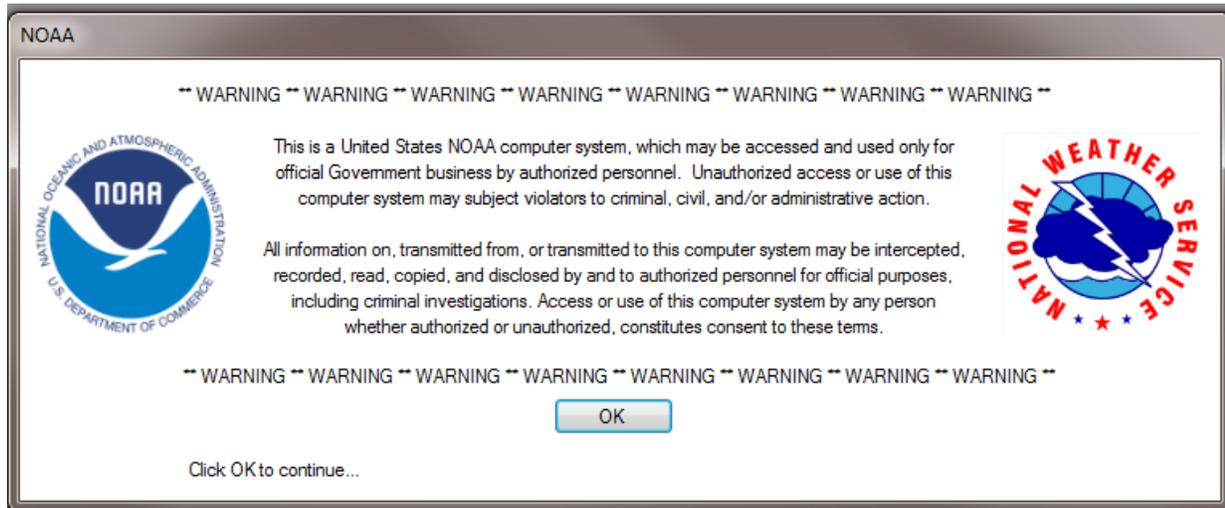
## 2. Restart the RWS.

**NOTE:** Do not recreate *PuTTY* files. If these files are missing, contact the Direct Field Support staff at (703) 661-1268 for replacements. Recreating *PuTTY* files would require adding the new *PuTTY* files to all LDADs listed as primary, secondary, and tertiary transmission routes.

**B.3.4 Enter Station Data****B.3.4.1 Enter Master Station Data**

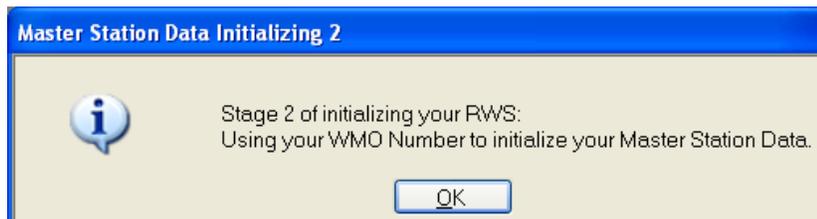
The Master Station Data is automatically entered when RWS.NET is first launched. Complete the following steps to enter Master Station Data. If Master Station Data needs to be manually loaded due to missing or inaccurate data, use Section B.3.4.3.

1. Log on to the RRS Workstation as **RWS Site Administrator**.
2. Double-click on the **RWS.NET** desktop icon to start the RWS application software. The *NOAA Warning* window will appear (Figure B-5).



**Figure B-5: NOAA Warning Window**

3. Click **OK** to dismiss the warning window. RWS will open with the *Master Station Data Initializing 2* window to indicate the Station WMO Number was used to initialize Master Station Data (Figure B-6).



**Figure B-6: Master Station Data Initializing 2 Window**

4. Click **OK** to proceed. If initialization is successful, the *Master Station Data Initialized* window is displayed indicating Master Station data updated (Figure B-7).



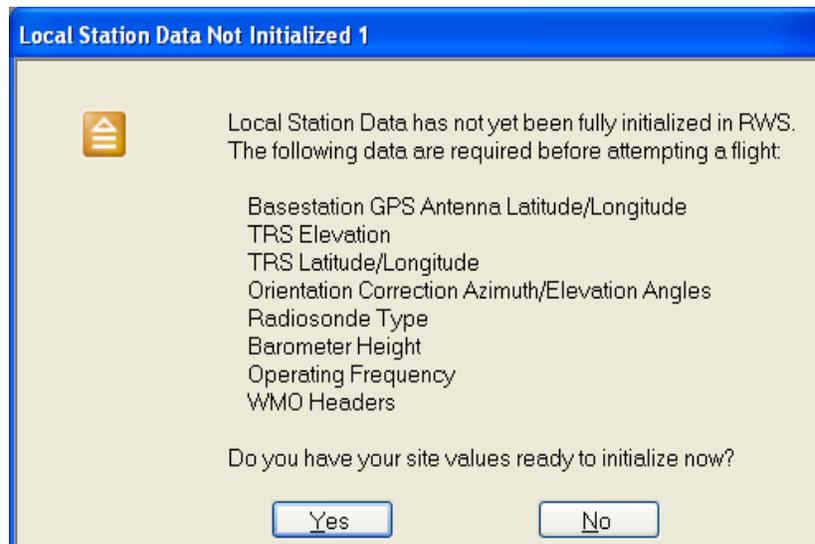
**Figure B-7: Master Station Data Initialized Window**

5. Click **OK** to proceed.

### B.3.4.2 Enter Local Station Data

If the RWS application indicates the Local Station Data has NOT been fully initialized, complete the following steps to enter Local Station Data:

1. If the *Local Station Data Not Initialized 1* window displays (Figure B-8), click **Yes** to open the *Station Data Display* (Figure B-9).



**Figure B-8: Local Station Data Not Initialized 1 Window**

**NOTE 1:** In addition to Station Data saved in Section B.2, Station Data was collected during RRS deployment and cataloged in an RRS Site-specific Database on the NWSH Web site <https://ops13web.nws.noaa.gov/>. Compare the locally saved Station (backup) Data to data from the OPS13 Web site. If there are discrepancies, call the Direct Field Support staff at (703) 661-1268. Once discrepancies are resolved, confirmed Station Data will be entered as a part of the RWS software installation.

**NOTE 2:** All RRS site Electronics Systems Analysts (ESA) have automatic access to the RRS Site-specific Database operated by OPS13. Access to others will be granted by the Direct Field Support staff at (703) 661-1268.

2. Enter the following values (recorded in Section B.2.2) for any field values missing from the *Station Data Display* (Figure B-9).

Station Data Display			
- Master			
Station Name:	HQTest1	Station Latitude (dd:mm:ss):	38:58:48
WMO Number:	69001	Station Longitude (ddd:mm:ss):	-77:28:48
WMO Region:	4	Station Elevation (m MSL):	85
Station ID:	KHQA	Base Pressure (hPa):	850
WBAN:	93734	Release Point Latitude (dd:mm:ss):	38:58:48
Responsible WFO ID:	KHQA	Release Point Longitude (ddd:mm:ss):	-77:28:48
AWIPS XXX (FAA) ID:	HQA	Release Point Elevation (m MSL):	85
		Last Updated:	11/19/2010 19:24:52
- Local			
Release Point Pressure Correction (hPa) [derived]:	<input type="text"/>	Radiosonde Type:	<input type="text"/>
Target Antenna Azimuth Angle (Deg):	<input type="text"/>	Ground Receiving System:	<input type="text"/>
Target Antenna Elevation Angle (Deg):	<input type="text"/>	Radiosonde Tracking Method:	<input type="text"/>
SPS GPS Antenna Elevation (m WGS84):	<input type="text"/>	Barometer Height (m MSL):	<input type="text"/>
SPS GPS Antenna Elevation (m MSL):	<input type="text"/>	Balloon Shelter Type:	<input type="text"/>
SPS GPS Antenna Latitude (N+/S- dd:mm:ss.ffff):	<input type="text"/>	Balloon Gas:	<input type="text"/>
SPS GPS Antenna Longitude (E+/W- ddd:mm:ss.ffff):	<input type="text"/>	Operational Frequency (MHz):	<input type="text"/>
TRS Elevation (m MSL):	<input type="text"/>	Boottop Release:	<input type="text"/>
TRS Latitude (N+/S- dd:mm:ss.f):	<input type="text"/>	WMO Header (FZL):	UXUS97
TRS Longitude (E+/W- dd:mm:ss.f):	<input type="text"/>	WMO Header (MAN):	USUS97
Orientation Correction Azimuth Angle (Deg):	<input type="text"/>	WMO Header (SGL):	UMUS97
Orientation Correction Elevation Angle (Deg):	<input type="text"/>	WMO Header (ABV):	UFUS97
Surface Observation (Obs.) Equipment Type:	<input type="text"/>	WMO Header (ULG):	NXUS97
Surface Obs. Distance from Release Point (m):	<input type="text"/>	WMO Header (DD1):	IUDD01
Surface Obs. Equipment Height (m MSL):	<input type="text"/>	WMO Header (DD2):	IUDD02
Surface Obs. Bearing from Release Point (Deg):	<input type="text"/>	Last Updated:	1/1/2000 00:00:00
<input type="button" value="OK"/> <input type="button" value="Cancel"/> <input type="button" value="Print"/> <input type="button" value="LDAD Info"/>			

**Figure B-9: Station Data Display (Example Only)**

- Release Point Pressure Correction (hPa): The Release Point Pressure Correction is derived and is not entered. The Release Point Pressure Correction is the pressure difference between the baseline point and the release point (i.e., balloon shelter). The value is calculated and cannot be entered. The value is negative if the release point is higher than the baseline point.
- Target Antenna Azimuth Angle (Deg): Enter the azimuth angle of the target antenna in degrees.
- Target Antenna Elevation Angle (Deg): Enter the elevation angle of the target antenna in degrees.
- SPS GPS Elevation (m WGS84): Enter GPS antenna elevation in Earth Ellipsoid Sphere in meters.
- SPS GPS Elevation (m MSL): Enter GPS antenna elevation above mean sea level in meters.
- SPS GPS Antenna Latitude (N+/S- dd:mm:ss.ffff): Enter GPS antenna latitude in the prescribed format.

**NOTE:** South latitudes and west longitudes are preceded by a negative sign.

- g. SPS GPS Antenna Longitude (E+/W- ddd:mm:ss.ffff): Enter GPS antenna longitude in the prescribed format.
  - h. TRS Elevation (m MSL): Enter TRS elevation above mean sea level in meters.
  - i. TRS Latitude (N+/S- dd:mm:ss.f): Enter TRS latitude in the prescribed format.
  - j. TRS Longitude (E+/W- dd:mm:ss.f): Enter TRS longitude in the prescribed format.
  - k. Orientation Correction Azimuth Angle (Deg): Not implemented, enter **0.00**.
  - l. Orientation Correction Elevation Angle (Deg): Not implemented, enter **0.00**.
  - m. Surface Observation (Obs.) Equipment Type: Select appropriate option.
  - n. Surface Obs. Distance from Release Point (m): Enter appropriate value in meters.
  - o. Surface Observation Equipment Height (m MSL): Enter appropriate value in meters.
  - p. Surface Obs. Bearing from Release Point (Deg): Enter appropriate value in degrees.
  - q. Radiosonde Type: Select appropriate option (Sippican or Vaisala).
  - r. Ground Receiving System: Select appropriate option. (This is the SPS type.)
  - s. Radiosonde Tracking Method: Select **GPS**.
  - t. Barometer Height (m MSL): Enter station-specific value in meters.
  - u. Balloon Shelter Type: Select appropriate option.
  - v. Balloon Gas: Select appropriate option.
  - w. Operational Frequencies (MHz): Enter 1680 or the site-specific frequency in MHz used for first releases.
  - x. Rooftop Release: Select appropriate option.
  - y. WMO Header (FZL): Enter station-specific value.
  - z. WMO Header (MAN): Enter station-specific value.
  - aa. WMO Header (SGL): Enter station-specific value.
  - bb. WMO Header (ABV): Enter station-specific value.
  - cc. WMO Header (ULG): Enter station-specific value.
  - dd. WMO Header (DD1): Not implemented, enter **IUDD01**.
  - ee. WMO Header (DD2): Not implemented, enter **IUDD02**.
3. Print the screen and have a second person verify all data entries.

#### **B.3.4.3 Manually Enter Master Station Data (Top of Station Data Display Screen)**

**NOTE:** Use this section only if Master Station Data is not pre-loaded or is not accurate (i.e. the AWIPS SID may be XXX). Also use this procedure for RRS equipment sighting changes.

The Master Data portion of the *Master Station Edit* screen (not the same as WMO Station Data) is available on the OPS13 Web site.

1. Open the OPS13 Web site using noaa.gov e-mail user name and password ([https://ops13web.nws.noaa.gov/rrsupload/file\\_upload.file\\_upload\\_frame](https://ops13web.nws.noaa.gov/rrsupload/file_upload.file_upload_frame)).
2. Select the **Site Specific Data** (for site X) from the pull-down list. Click **View Site Data**.
3. Print the Site Specific Data (for site X) from the Web site.
4. Using the printed Site Specific Data from the OPS13 Web site, verify the Master Station Data.

5. If the OPS13 Web site is unavailable, use the previously saved and printed data from Section B.2.2 to verify the Master Station Data.
6. Enter the RRS Site Specific Data into the RWS Master Station Data as follows:

**NOTE:** The Station Data, including data to identify the station, and the station and release position data will appear in text. There are edit fields for the new values.

- a. Close the RWS application software.
- b. Insert the CD for RWS Operational Application Software (currently Build 2.0) into the RWS computer.
- c. Browse the CD to the **Utilities** folder.
- d. Run **MasterEdit.exe**. The dialog in Figure B-10 will appear.
- e. Enter the new Master Station Data for the station and release positions. The station values reflect the position of the PDB. The release values reflect the position of where the balloons are released.
- f. The version field is helpful to determine if the RWS has loaded and is using the new values. An incremented version will be pre-filled, and does not need to be changed for the installation.

**NOTE:** Do not change the Station Name, WMO Region, Station ID, WBAN, WFO ID or AWIPS (FAA) ID (this information is pre-loaded). Make changes only if a field is not pre-loaded (displays XXXs) or data is inaccurate. This information is critical for successful data transmission.

Field	Current Value	Input Field Value
WMO Number:	72403	
Station Name:	Sterling, VA	Sterling, VA
WMO Region:	4	4
Station ID:	KIAD	KIAD
WBAN:	93734	93734
WFO ID:	KLWX	KLWX
AWIPS (FAA) ID:	IAD	IAD
Station Latitude (dd:mm:ss):	38:58:33	38:58:33
Station Longitude (ddd:mm:ss):	-77:28:37	-77:28:37
Station Elevation (m MSL):	84	84
Base Pressure (hPa):	850	850
Release Point Latitude (dd:mm:ss):	38:58:36	38:58:36
Release Point Longitude (ddd:mm:ss):	-77:28:38	-77:28:38
Release Elevation (m MSL):	86	86
Master Station Data Version:	1.0.0.12	1.0.0.13

Figure B-10: Master Station Edit (Example)

- g. When the new data is entered, click **OK**. If successful, the following message will appear (Figure B-11).



**Figure B-11: MasterEdit Update Successful**

- h. Close *MasterEdit*. Eject the CD.
- i. To verify the updated Master Station Data was successful, restart the RWS, go to offline mode, and open the *Station Data Display* menu (from the *View Station Info* menu item). (Figure B-12).
- j. Re-check Master Station Data with Web site data.

Station Data Display			
- Master			
Station Name:	HQTst4	Station Latitude (dd:mm:ss):	38:58:48
WMO Number:	69011	Station Longitude (ddd:mm:ss):	-77:28:48
WMO Region:	4	Station Elevation (m MSL):	85
Station ID:	KHQK	Base Pressure (hPa):	850
WBAN:	93734	Release Point Latitude (dd:mm:ss):	38:58:48
Responsible WFO ID:	KHQK	Release Point Longitude (ddd:mm:ss):	-77:28:48
AWIPS XXX (FAA) ID:	HQK	Release Point Elevation (m MSL):	85
		Last Updated:	10/9/2009 17:17:49

**Figure B-12: Master Station Data Display Menu (Example)**

- 7. If the RWS Station Data appears to be in error, contact the SFSC Helpline at (703) 661-1268 or (703) 661-1293.

**B.3.4.4 Enter LDAD Data**

Complete the following steps to enter LDAD Data:

- 1. Click **LDAD Info** on the *Station Data Display* to open the *LDAD Data Display* (Figure B-13).

LDAD Data Display			
Type	Phone Number	Server IP	User Name
LAN			<input type="button" value="Edit"/>
Phone 1	NA		<input type="button" value="Edit"/>
Phone 2	NA		<input type="button" value="Edit"/>
Phone 3	NA		<input type="button" value="Edit"/>
<input type="button" value="OK"/>		<input type="button" value="Cancel"/>	

**Figure B-13: LDAD Data Display**

- Click **Edit** for the LAN Type to open the *LDAD Data for LAN* window (Figure B-14).

The screenshot shows a dialog box titled "LDAD Data for LAN". It contains the following fields and controls:

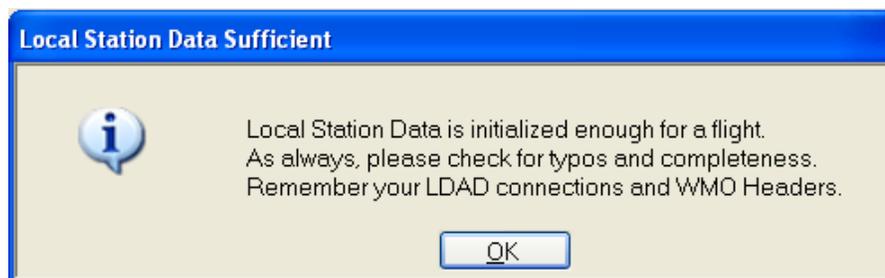
- Type: LAN
- Phone Number:
- Server IP:
- User Name:
- Password:
- Verify Password:
- Buttons: Test, OK, Cancel

**Figure B-14: LDAD Data for LAN Window**

- Complete the LDAD Data fields using the data recorded in Section B.2.4.

**NOTE:** The Phone Number field for the LAN Type should be blank.

- Click **OK** to accept the changes and close the *LDAD Data for LAN* window.
- Edit the Phone 1, Phone 2, and Phone 3 Types.
- Once all LDAD Data has been entered, click **OK** to close the *LDAD Data Display*.
- Click **OK** to close the *Station Data Display*. The *Local Station Data Sufficient* window will display (Figure B-15).
- Click **OK** to dismiss the *Local Station Data Sufficient* window.



**Figure B-15: Local Station Data Sufficient**

### B.3.4.5 Optional Pre-Flight “No Data” Message Test

This test is optional. After ghosting and prior to a flight, perform an LDAD/communications test to quickly verify that all passwords are correct, that *PuTTY* keys are not corrupted, that all communication lines are working, and that you can transmit Flight Data.

1. Log on to the RRS Workstation as **RWS Observer**.
2. Start the RWS Software Program.
3. Send a “NO Data” message to:
  - The LAN
  - Phone #1
  - Phone #2
  - Phone #3(Deselect all other choices except the one being tested.)
4. View on an AWIPS terminal to ensure the messages were sent all the way through the system.

**NOTE:** When sending the “No Data” messages, select a different product for each test to differentiate between the messages,

### B.3.5 Install OMS Software

At this time, install OMS Software V2.1 in accordance with Attachment C, before conducting an upper air flight.

## B.4 Verify Software Installation

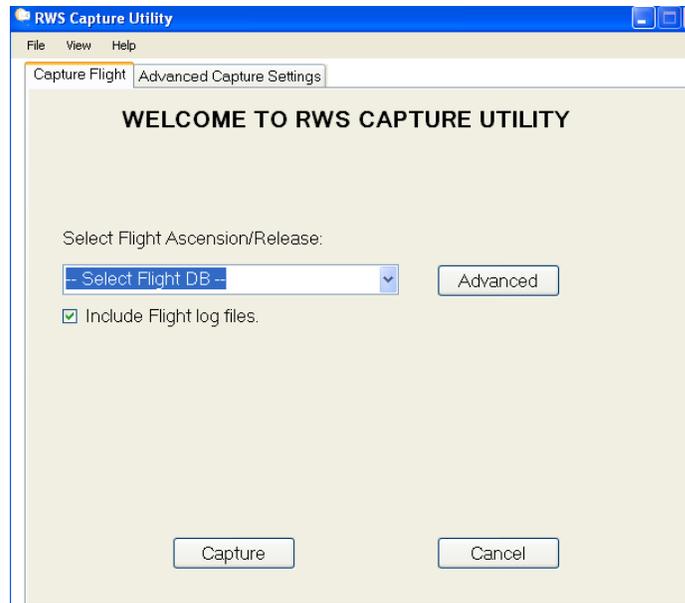
### B.4.1 Conduct an Upper Air Sounding

Conduct a live flight following the initial installation of RWS Application Software V2.2. See RRS Workstation User Guide for RWS Observers to conduct an upper air sounding (For a copy, go to: <http://www.ua.nws.noaa.gov/RRS.htm>, or use the RWS Help File function).

**NOTE:** Conducting a live flight is not necessary when only an RWS software maintenance release is being installed.

### B.4.2 Capture the Flight

1. Double-click the **Capture Utility** shortcut to open the *RWS Capture Utility*.
2. Select the flight from the *RWS Capture Utility* pull-down menu (Figure B-16).



**Figure B-16: RWS Capture Utility**

3. Click the **Capture** button.
4. Click **OK** when the Capture Successful message appears.

### B.4.3 Verify Message Transfer

#### B.4.3.1 Verify Message Accuracy in AWIPS

1. Verify the receipt of the coded messages by logging on to an AWIPS terminal or by viewing the coded messages at <http://www.weather.gov/data/>.

**NOTE:** To verify receipt of Pacific Region coded messages, log on to: <http://www.prh.noaa.gov/data/>.

2. Verify the accuracy of the coded messages.

#### B.4.3.2 Verify Messages to NCDC

Verify the successful reception of archived data to the National Climatic Data Center (NCDC) ftp site. Visit <http://www1.ncdc.noaa.gov/pub/data/ua/RRS/YYYY> (where YYYY is the current year). Once at the Web site, find the log file representing the site by identifying the Station ID and the year and month the data was transmitted. For example, `klwx_0801_log.txt` would contain the upload history for LWX for January of 2008.

### B.5 Optimize Windows Desktop

When time permits, optimize the *Windows* Desktop for best performance. Refer to Attachment D to perform this function.

## ATTACHMENT C - OMS Installation Procedures Version 2.1

### C.1 Overview

This attachment describes the installation of Offline Maintenance Suite (OMS) V 2.1.

OMS V2.1 Software is contained on the same CD as RWS Software V2.2. The software is only available on CD directly from the Observing Systems Branch (OPS22, 301-713-2093 x107).

The RWS is connected to a number of devices (SPS, TRS, RSOIS, PDB), that provide live data feeds. These devices can be tested offline using various programs collectively called the OMS.

The OMS is accessed through a desktop RRS Offline Menu icon that permits the user to select the port and device to test. One of the programs is Offline BIT (OBIT), which is used to test the TRS and UPS. Other non-OBIT programs test the SPS, RSOIS, PDB, and AWIPS/LDAD.

OBIT is both a test program and an RWS Application Software Simulator. OBIT is a simple Graphical User Interface (GUI) built on top of the Radiosonde Protocol eXecutive (RPX) library program. OBIT is essentially a *Windows* user interface display and logger connected to the various RWS device data streams (i.e., their serial ports or the equivalent ports of an external data pump). OBIT displays device status and enables running device Built-in-Tests (BIT) for hardware status and diagnostics.

### C.2 OMS Related Documents

- RRS Offline Maintenance Suite and OBIT Overview
- [RRS Workstation User Guide for RWS](#)
- [RRS Workstation \(RWS\) Manual NWS EHB 9-720](#)

### C.3 Install RWS OMS Version 2.1 Software under *Windows XP*

1. Log on to the RRS Workstation as **RWS Site Administrator**.
2. Insert the RWS Application Software CD (RWS.Net) into the RRS Workstation.
3. The *RWS CD Auto Install* option will appear. Click **Cancel** (Exit the *Setup* screen).
4. Double-click on **My Computer**.
5. Right-click on **CD drive (D:)**.
6. Select **Explore**. The CD File Directory will appear (Figure C-1).

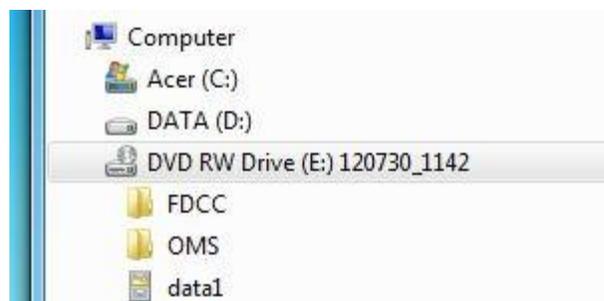
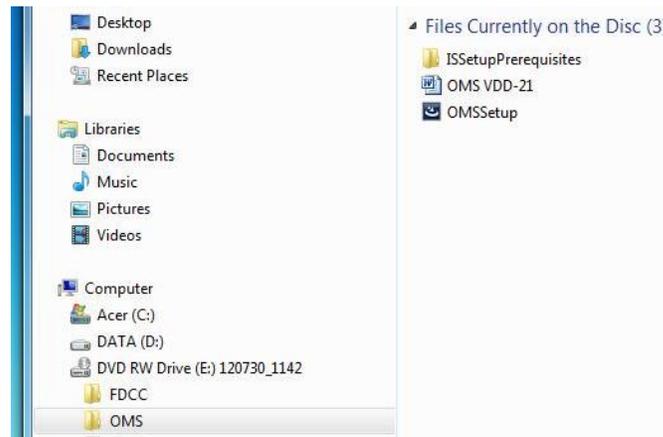


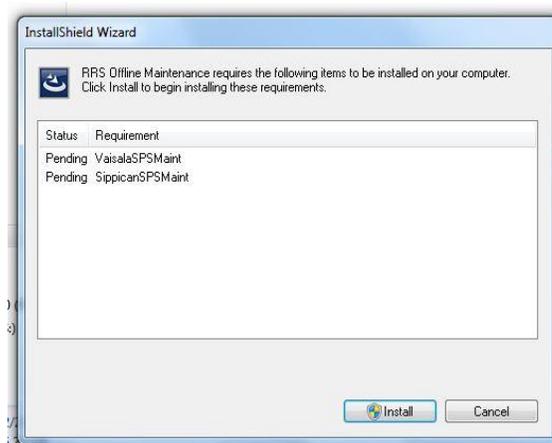
Figure C-1: CD Drive File Directory

7. Double-click on the **OMS** folder (Figure C-2).
8. Double-click on the **OMSSetup** file.



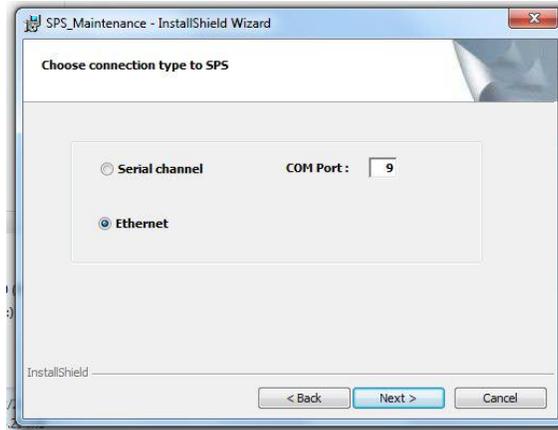
**Figure C-2: OMS Folder and Setup Screen**

9. The *InstallShield Wizard* display will appear. (The program displays and extracts both Vaisala SPS and Sippican SPS Maintenance programs. Vaisala will install first.) Click **Install** (Figure C-3).



**Figure C-3: InstallShield Wizard with Both Vaisala and Sippican Maintenance Displayed**

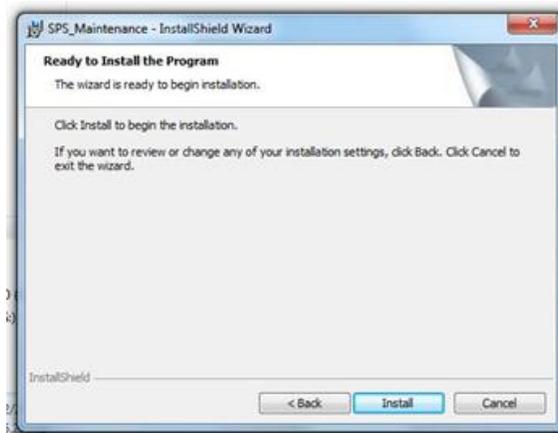
10. The *SPS Maintenance InstallShield Wizard* screen will appear to begin the Vaisala installation. Click **NEXT**.
11. A Vaisala configuration setup screen will appear. Select **ETHERNET**. Click **NEXT** (Figure C-4).



**Figure C-4: Vaisala Configuration Setup**

**NOTE:** For Vaisala SPS Maintenance Software: The software must be uninstalled and then reinstalled to change from *Ethernet* to *Serial channel* or vice versa.

12. The *Ready to Install* screen (for Vaisala) will appear (Figure C-5). Click **INSTALL**.



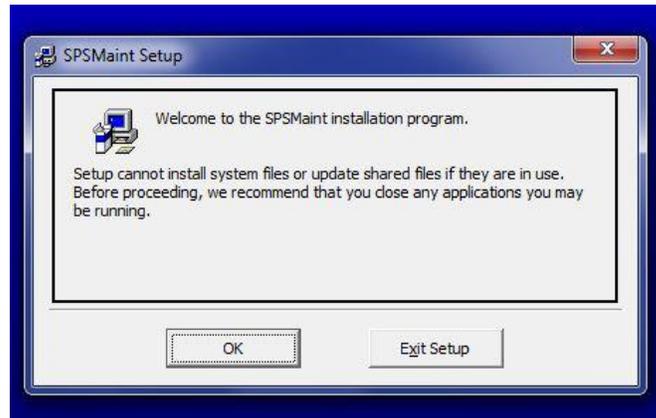
**Figure C-5: Vaisala SPS Maintenance Install**

13. The *InstallShield Wizard Completed* screen will appear. Click **Finish**. This will end the Vaisala Installation (Figure C-6).



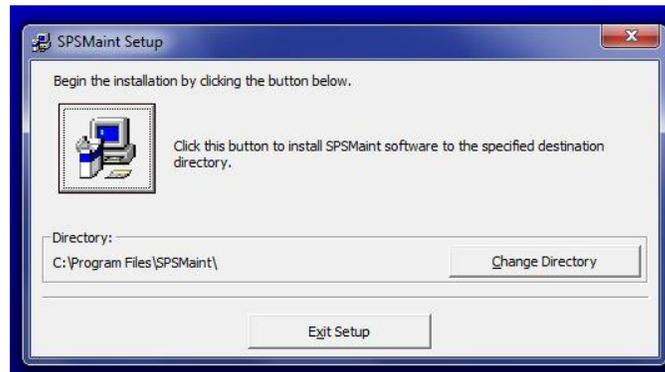
**Figure C-6: Vaisala SPS Maintenance Install Complete**

14. The *SPSMaint Setup* screen will appear for the Sippican installation. Click **OK** (Figure C-7).



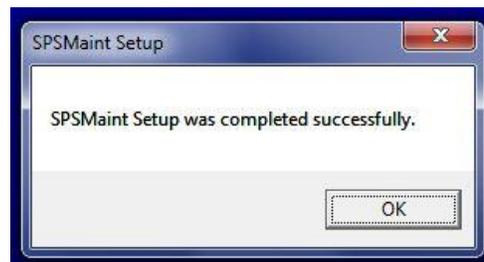
**Figure C-7: Sippican SPS Maintenance Install Begins**

15. The *Begin the Installation* screen will appear (Figure C-8). Click on **computer icon** button. Select **Program Group**. Do not change default settings.



**Figure C-8: Sippican Install**

16. Click **Continue**. The Sippican *SPS Maintenance Program Completion* screen will appear (Figure C-9).



**Figure C-9: Sippican SPS Install Completed**

17. Click **OK**. Set up configuration is complete for starting the OMS installation.

18. The *InstallShield Wizard* for OMS screen will appear. Click **NEXT**.

19. The *InstallShield Wizard* will appear for OMS. Click **Install** (Figure C-10).



**Figure C-10: OMS Installation**

20. The *InstallShield Wizard Completed* screen will appear (Figure C-11).



**Figure C-11: OMS Installation Completed**

21. Click **Finish**. OMS installation is complete.

22. Close all screens. Remove the RWS Application CD from the CD-RW drive.

### C.3.1 Confirm TRS Station Data

After OMS software installation, perform the following steps to confirm the TRS Station Data matches the specific data stored in TRS location files:

**NOTE:** The TRS must be initialized.

1. Double-click **RRS Offline Maintenance** icon to start the OMS.
2. Set up the OMS Com ports by entering the Serial Com port numbers shown in (Table C-1, OMS COM Ports) into the *RRS Offline Maintenance Menu*.

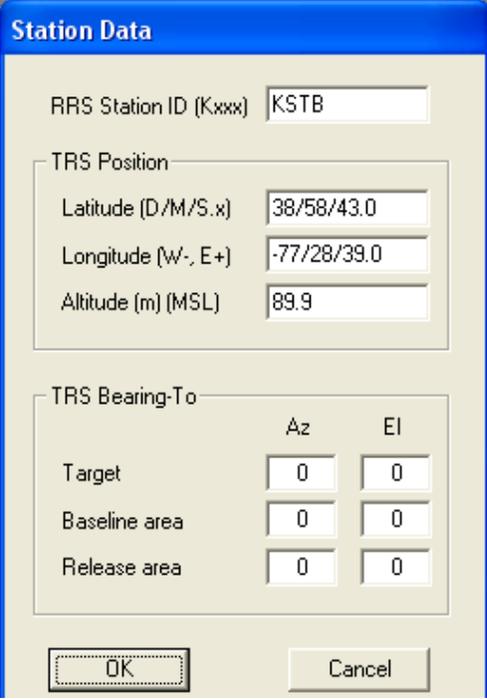
**Table C-1: Default Port Settings**

OMS COM PORTS	
OMS MAINTENANCE	SERIAL COM PORTS
SPS Maint	9
RSOIS	6
PDB	7
TRS	1
UPS	8

3. Select **UPS Maintenance** from the *OMS* menu.
4. Power on the TRS by selecting the **Power On** option. Then close the *UPS Maintenance* window.
5. Select the **TRS Maintenance** option.
6. Click the **Mode** menu and select the **Terminate** option.
7. Click the **Setup** menu and select the **Station Data** option.
8. Load the TRS Station Data (if Station Data menu fields are not correct) by entering the site's station latitude and longitude (to one decimal or second) as well as the applicable TRS Azimuth and Elevation values. See Figure C-12 for an example of TRS Station Data. Use the OMS Station Data recorded in Section A.2.2, or Section B.2.2.

**NOTE:** A complete set of TRS Station Data is available for reinstallation from the Configuration Management database at: <https://ops13web.nws.noaa.gov/>.

**NOTE:** All RRS Site Electronics Systems Analysts (ESA) have automatic access to the RRS Site Specific Database operated by OPS13. Access to others will be granted by the Direct Field Support staff at (703) 661-1268.



The image shows a software window titled "Station Data" with a blue header. It contains several input fields and buttons. The "RRS Station ID (Kxxx)" field contains "KSTB". The "TRS Position" section includes "Latitude (D/M/S.x)" with "38/58/43.0", "Longitude (W-, E+)" with "-77/28/39.0", and "Altitude (m) (MSL)" with "89.9". The "TRS Bearing-To" section has a table with columns "Az" and "El", and rows "Target", "Baseline area", and "Release area", all containing "0". At the bottom are "OK" and "Cancel" buttons.

	Az	El
Target	0	0
Baseline area	0	0
Release area	0	0

Figure C-12: Station Data Window (Example Only)

9. Click **OK**.
10. Close the OBIT. The *Offline Maintenance* screen will return.
11. Click **Exit**.
12. Close the OMS.



## ATTACHMENT D - Optimizing the Windows Desktop for RWS

### D.1 Windows Desktop Set Up for RWS

RRS Workstations (RWS) usually default to the *Windows Classic* theme when added to a domain. The *Windows Classic* theme can cause unexpected behavior when running the RWS application. Execute the following steps for best RWS application performance.

### D.2 Set the Visual Effects Option

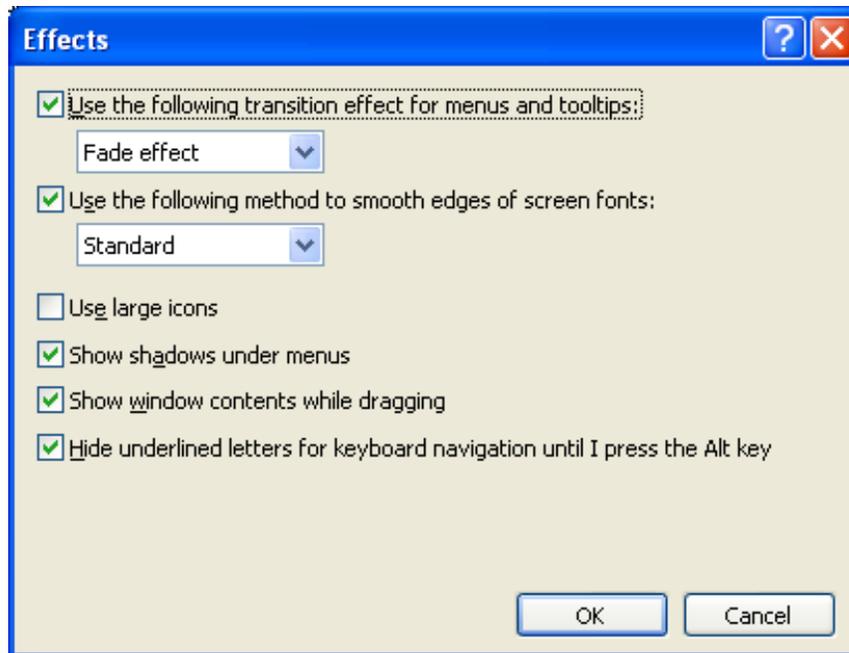
This section must be completed by a RWS Site Administrator. Complete the following steps to set visual effects to adjust for best appearance:

1. Log on to the RRS Workstation as **RWS Site Administrator**.
2. Click **Start**.
3. Right-click on **My Computer** to display a drop-down menu, and then click on **Properties** to open the *System Properties* window.
4. Click the **Advanced** tab, and then click **Performance|Settings** to open the *Performance Options* window.
5. Click the **Visual Effects** tab, and then select the **Adjust for best appearance** option.
6. Click **OK** to accept the change and close the *Performance Options* window.
7. Click **OK** to close the *System Properties* window.
8. Log off of the RWS.

### D.3 Set the Display Options

This section should be completed by all RWS users. Complete the following steps to set visual effects to adjust for best appearance.

1. Log on to the RRS Workstation as a RWS user.
2. Right-click on the **Windows Desktop** to display a drop-down menu, and then click on **Properties** to open the *Display Properties* window.
3. Click the **Themes** tab, and then set the Theme value to **Windows XP**.
4. Click the **Appearance** tab, and set the *Windows* and *buttons* value to **Windows XP** style.
5. Click the **Effects** button to open the *Effects* window (Figure D-1).
6. Select all options except `Use large icons`, and then select the **Fade effect** and **Standard** option.



**Figure D-1: Effects Window**

7. Click **OK** to close the *Effects* window.
8. Click **OK** to close the *Display Properties* window.
9. Log off of the RWS.

**ATTACHMENT E - Commissioned RRS Sites**

REGION	COMMISSIONED SITES	NON-COMMISSIONED SITES		
<b>Eastern Region</b>	Albany	Caribou *		
	Blacksburg			
	Brookhaven			
	Buffalo			
	Charleston			
	Chatham			
	Gray			
	Greensboro			
	Morehead City			
	Pittsburgh			
	Sterling			
	Wilmington			
	<b>Central Region</b>		Aberdeen	
			Bismarck	
Chanhassen				
Davenport				
Denver				
Dodge City				
Gaylord				
Grand Junction				
Green Bay				
International Falls				
Lincoln				
North Platte				
Rapid City				
Riverton				
Springfield				
Topeka				
Valley				
White Lake				
<b>Southern Region</b>	Albuquerque			
	Amarillo			
	Birmingham			
	Brownsville			
	Corpus Christi			
	Del Rio			
	Fort Worth			
	Jackson			
	Jacksonville			
	Key West			
	Lake Charles			

REGION	COMMISSIONED SITES	NON-COMMISSIONED SITES
<b>Southern Region Continued</b>	Little Rock	
	Miami	
	Midland	
	Nashville	
	Norman	
	Peach Tree City	
	Santa Teresa	
	Shreveport	
	Slidell	
	San Juan	
	Tallahassee	
	Tampa Bay	
	<b>Western Region</b>	
Elko		
Flagstaff		
Glasgow		
Great Falls		
Las Vegas		
Medford		
Oakland		
Quillayute		
Reno		
Salem		
Salt Lake City		
San Diego		
Spokane		
Tucson		
<b>Alaska Region</b>	Anchorage	Barrow * Cold Bay Kodiak McGrath Kotzebue
	Annette	
	Bethel	
	Fairbanks	
	King Salmon	
	Nome	
	Saint Paul Island	
	Yakutat	
<b>Pacific Region</b>	(Using RWS Software V1.2)	Guam * Majuro Koror Yap Pohnpei Chuuk Pago Pago Lihue Hilo

\* Continuity Sites

ATTACHMENT F - Sample EMRS Report

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**GENERAL INFORMATION**

NEW RECORD      WFO\* VEF      Document No.\* VEF130205000

1. Open Date: 02/05/2013    Open Time: 08:00 (Local)    2. Op Initials: WSH    3. Response Priority:  Immediate  Low  Routine  Not Applicable    4. Close Date: 02/05/2013    Close Time: 10:00

5. Maintenance Description: 356 characters left    UPPER AIR

RRS Software Note 12 - Installation of RRS Workstation (RWS) Software - RWS Software Version 2.2 and Offline Maintenance Suite (OMS) Version 2.1

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**EQUIPMENT INFORMATION**

6. Station ID\*: VEF    7. Equipment Code\*: RWS    8. Serial Number: 00A    9. TM: M    10. AT: M    11. How Mal: 999

Alert:      Time Remaining: 0:00 (For Block 12 use only)

---

**12. EQUIPMENT OPERATIONAL STATUS TIMES**

a. Fully Operational		Partially Operational				Not Operational			
Hours	Minutes	b. Logistic Delay		c. All Other		d. Logistic Delay		e. All Other	
Hours	Minutes	Hours	Minutes	Hours	Minutes	Hours	Minutes	Hours	Minutes
				2	0				

---

**13. PARTS USAGE and CONFIGURATION MANAGEMENT REPORTING**

ASN	Vendor Part No. (New Part)	Serial Number (Old Part)	Serial Number (New Part)	
				<input type="button" value="New Row"/> <input type="button" value="Delete Row"/>

---

**14. WORKLOAD INFORMATION**

a. Routine		b. Non-Routine		c. Travel		d. Misc		e. Overtime	
Hours	Minutes	Hours	Minutes	Hours	Minutes	Hours	Minutes	Hours	Minutes
						2	0		

---

**MISCELLANEOUS INFORMATION**

15. Maintenance Comments: 645 characters left    [View Status History](#)    [Attachments](#)

Installed RWS Software version 2.2 and Offline Maintenance Suite version 2.1, I.A.W. RRS Software Note 12

16. Tech Initials: JEG

Contract Maintenance Disclaimer      Number of Technicians: 1

---

**17. SPECIAL PURPOSE REPORTING INFORMATION**

a. Mod No.: S12    b. Mod Act/Deact Date: 02/05/2013    c. Block C:    d. Trouble Ticket No.:    e. USOS Outage Doc No.:   

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**18. Work Order Information:**

Work Accomplished by:  Region Headquarters     Electronics     WFO/Office     Facilities

Maintenance Contractor

Est. Cost or Bid: \$    Req. Completion Date:    Contractor Maintenance Time:    Hours    Minutes

Trusted sites    100%