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The following pages detail the periodic maintenance steps recommended by Wxline, LLC for the Strike Guard System, WAVE Transmitter and WAVE Siren Station.

For best long-term service in the field, please perform the following tasks and check the following items for the Strike Guard Lightning Warning System, WAVE Transmitter and WAVE Siren Stations. For best results, the system should be serviced about a month or two before the onset of the thunderstorm season for your region. We recommend that this service checklist be performed at least once per year. The goal of this procedure is to find problems with the system well before the system goes into active seasonal service so that problems can be found and fixed in a timely way.

For additional resources and documentation please consult the Wxline Thumb Drive that was supplied with your Strike Guard system or visit the Wxline Resources page at: www.wxline.com/resources

For additional technical support, sales and service, please contact Wxline at:

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Date: _____

Serial Number: SGS-_____

Serial Number: SGR-_____

Check boxes after completing steps.

- 1** Inspection of Strike View Log file for overall system health.

If your Strike Guard Lightning Warning System includes a personal computer running Strike View Software, check the long-term system health by opening the log file in the Report Manager and look at the hourly sensor self test message string back through recent history.

A healthy system should show an unbroken string of PASS self-test messages approximately every hour. Seeing anything other than the above indicates there may be a problem with your system requiring that you contact a factory service representative to troubleshoot and solve the problem.

- 2** Inspection of Lightning Data Receiver status indications

Your Lightning Data Receiver should show only a blue blinking Power LED under normal non-thunderstorm conditions. If any other status indicator is blinking red, there may be a problem with your system requiring that you contact a factory service representative to troubleshoot and solve the problem.

- 3** Change batteries in the Lightning Data Receiver.

The Lightning Data Receiver cannot function properly in a lightning environment with commercial power fluctuations and outages without a good on-board battery back-up system. Once per year and especially before the system goes into active daily service, replace the 4 alkaline C cell batteries with new batteries from the same manufacturer.

To change the batteries, turn OFF the Lightning Data Receiver, remove the power cable from the DC power supply and remove the cover of the Lightning Data Receiver by unscrewing the 4 brass thumbscrews and lifting the cover off the base plate. Carefully extract all four old batteries noting their polarity in the battery holders and noting the polarity signs printed on the printed circuit board.

Obtain a set of 4 new batteries and without touching the battery terminals, snap in the 4 new batteries in the proper polarity. Reinstall the DC power supply cable and fasten the cover of the Lightning Data Receiver to the base plate.

Turn ON the Lightning Data Receiver and wait for the next Sensor self test message to restore the normal all clear status indications with ONLY the blue power LED blinking. This may take up to one hour depending on when the last Sensor self test occurred. If normal status indications do not return on the Lightning Data Receiver, contact a factory service representative to troubleshoot and solve the problem.

- 4** Inspect the Strike Guard Sensor

Inspect the mounting for the Sensor.

Is the tripod in good working condition and is it fastened securely to a rigid surface?

Is the mast holding the Sensor tight, vertical and secure?

Is the fiber optic cable fully inserted in the fiber optic transmitter and is the ferrule securing

the fiber optic cable lightly tightened?

Is the top surface of the cover of the sensor relatively clean and is the glass diffuser clean? If not, use a soft rag and clean water and gently clean the diffuser surface and the top surface of the sensor. Use only clean water and no solvents for cleaning and do not touch or clean these surfaces unless it is needed.

- 5 Inspect the fiber optic cable.

The fiber optic cable is often exposed and routed along roof and wall surfaces to a penetration of the building housing the Lightning Data Receiver. Carefully inspect the fiber optic cable along its exposed length for abrasions, kinks, tight bends and breaks. If there are any problems noted with the integrity of the fiber optic cable, contact a factory service representative to troubleshoot and solve the problem.



Date: _____ Serial Number: WTR-_____

- Check boxes after completing steps.**

- 1 Inspection of WAVE Transmitter status indications.

Your WAVE Transmitter should show green Power and Status LEDs under normal conditions. If either indicator is illuminated red, there may be a problem with your system requiring that you contact a factory service representative to troubleshoot and solve the problem.

A red Status LED indicates an error and can be viewed via navigating the Transmitter's menu. In the current version firmware, Ver 2.65 the keystrokes for viewing the error are:

[Menu] » [View Error] » [Enter]

Note: viewing will clear most errors, with the exception of a Strike Guard Interface error.

- 2 Change batteries in the WAVE Transmitter.

The WAVE Transmitter cannot function properly in a lightning environment commercial power fluctuations and outages without a good on-board battery back-up system. Once per year and especially before the system goes into active daily service, replace the two, 6 volt gel-cell batteries with new batteries of the same type: 6 volt, 3.5 Amp-Hour.

To remove the batteries, turn OFF the WAVE Transmitter, remove the power cable from the DC power supply and remove the cover of the WAVE Transmitter by unscrewing the 4 brass thumbscrews and lifting the cover off the base plate. Carefully extract the pair of old batteries noting their polarity in the battery channels.

Prior to installing the new batteries, inspect the battery spring terminals in each battery channel for corrosion due to battery leakage. A flashlight and small mirror may be used to inspect the contacts if the Transmitter is left in its mounted position. Minor oxidation may be cleaned with alcohol and Q-tips, but severe corrosion requires replacement of the

spring terminal and should be returned to Wxline for repair.

Install new batteries using the same polarity as observed when removing the old batteries. Place the top cover into position and secure it with the 4 brass thumbscrews. Reconnect the power supply cable to the DC input of the Transmitter.

- 3** Inspect antenna and coax cable.

The antenna and coax cable for the WAVE Transmitter are exposed to the elements of weather and will eventually need replacement. Inspect each for loose connections or hardware. Also inspect each for damage from the sun and wind, etc. Periodic roof maintenance is also a common source of damage to these items.

- 4** Confirm radio transmission.

Manually send radio commands from the Transmitter by selecting the desired horn tone via the Manual Select switch and turning the key-switch to generate Siren tones. Confirm that all Siren Stations respond correctly to each Horn Tone command. Multiple people may be required to complete this task.

Manually send radio commands from the Transmitter to control the Strobe Lamp In the Siren Stations by navigating through the Transmitter menu. Confirm that all Siren Stations respond correctly to the Strobe ON and Strobe OFF commands.

[Menu] » [Set-up & Tests] » [Send Code] » [Strobe on/off] » [Send]



Date: _____ Serial Number: WSS- _____

- Check boxes after completing steps.**

- 1** Inspection of WAVE Siren Station physical condition.

Is the fiberglass enclosure free of cracks, breaks or other damage?

Are the quick-connect cables and connectors for the external power, horns and strobe free of cracks or damage?

Is the antenna and related hardware free of cracks or damage?

Are the horns in good physical condition with no signs of corrosion or other wear?

Is the mount plate and associated hardware sound and free of corrosion?

- 2** Inspection of WAVE Siren Station status indications.

During normal operation, the Siren's external LED should flash green at approximately 1.5 second intervals.

If the external LED flashes red, the Siren's internal diagnostics have detected an error. Please record which of the internal LEDs are also illuminated to better define the error.

The diagnostic LEDs are located on the main PC board of the Siren Station:

<input type="checkbox"/> D3	Communication error; no message received from the Transmitter
<input type="checkbox"/> D4-7	Undefined.
<input type="checkbox"/> D8	Battery test has failed.
<input type="checkbox"/> D9	Undefined.
<input type="checkbox"/> D10	Audio Amp failed during powered-up.
<input type="checkbox"/> D11	Input voltage to the Main Circuit Board is low or the system may be running on battery power.

Note: In the bank of eight internal LEDs, D11 is positioned closest to the battery and D3 is the furthest from the battery (and closest to the external LED).

Note: If the external LED does not flash, the Siren is powered-down, or otherwise inoperative. Contact Wxline if the Siren Station turns off regularly.

- 3** Verify the Battery Recharge voltage.

Use a DMM to measure the Battery Recharge voltage. Disconnect the (-) negative lead from the battery, then measure the (+) positive battery terminal, using the metal chassis of the Electronics Bracket as the (-) negative reference. Acceptable values are: (13.5 – 13.8) VDC.

Note: Solar powered units should be tested on a sunny day, since the solar panel provides the raw DC voltage to the Siren's Main Circuit Board.

- 4** Change the Siren battery.

Disconnect the battery and the external power connection. Loosen the battery strap wing-nuts and remove one wing-nut entirely, setting it aside for the moment. Remove the original battery and install a new 12 Volt, lead-acid battery of the same size and type. Restore the battery and external power connections.

Note: The AC powered Siren requires a 12 Volt, 7 Amp-Hour lead-acid battery, while the Solar powered unit requires a 12 Volt, 12 Amp-Hour battery.

- 5** Verify basic Siren functions via the Manual Test: horns and optional strobe.

On the DIP switch bank labeled Setup Two, toggle Switch Position 8 (right-most position) to initiate a Manual Test. Manipulate the rocker switch on the Audio Amplifier to sound tones, as the test sequences through Horn 1, Horn 2, Horn 3 and Horn 4. The strobe lamp, if connected, flashes during the duration of the Manual Test cycle.

Note: The Manual Test cycle will allow for the test of four horns, regardless of the number actually installed. Thus, a 5-second horn duration will result in a Manual Test cycle of 20 seconds. A Test may be repeated by changing the DIP switch to the opposite setting.

- 6** Verify basic Siren functions via radio commands from the WAVE Transmitter.

Assuming no communication errors, the Siren Stations may optionally be tested via radio commands from the WAVE Transmitter. Radio commands are sent by manipulating the Transmitter menus and via its key-switch and Manual Select switch. The test requires coordination with personnel at the Transmitter's location.

Note: A spare Transmitter with an 8 inch whip antenna and running on fully charged batteries can optionally be carried along during the site maintenance of the Siren Stations to activate Sirens and Strobes in the field.