

# **TEMA/AUXCOMM Exercise, Fall, 2015**

## **Winlink Team – After Action Report**

**Phil Sherrod (W4PHS) and Steve Waterman (K4CJX)**

### **Overview**

Winlink was used heavily during the exercise both for communicating with external sites and for managing message flow at the incident command post. Both operations worked well, and no problems or faults occurred in the Winlink system or software.

### **Communication with External Sites**

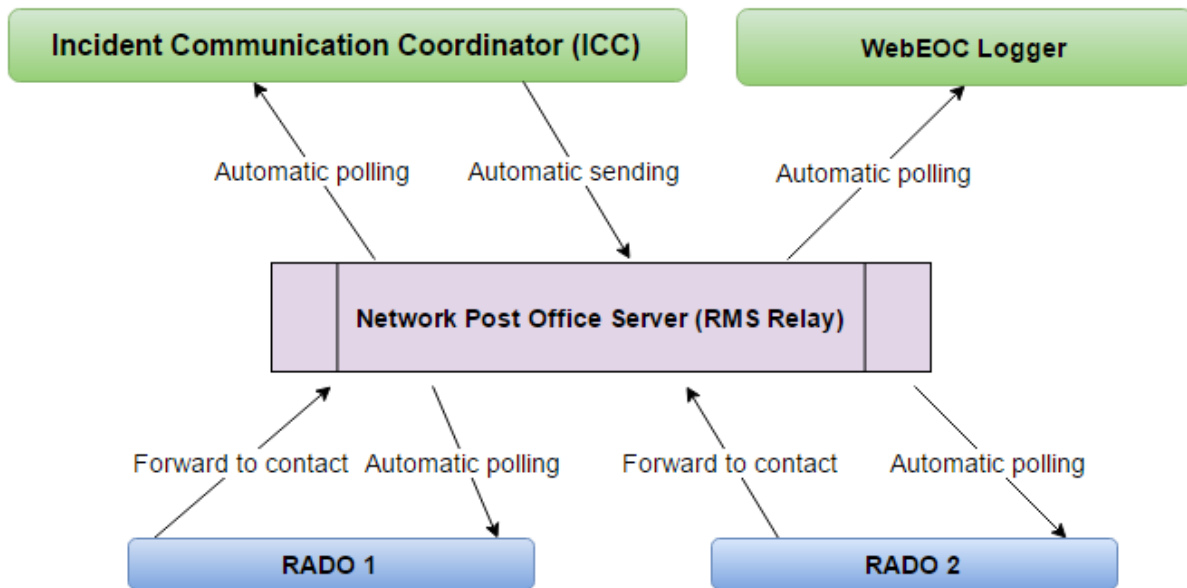
The exercise responded to a simulated incident by using an Area Command organization to coordinate response between the central incident command post located at the Tennessee Fire Academy in Bell Buckle, TN and multiple sites in east and west Tennessee. Each site connected to a Winlink Radio Message Server (RMS) within propagation range and deposited messages on a Common Message Server (CMS) which is the backbone of the Winlink store-and-forward system. This approach allowed each site to select an RMS that was easiest for them to connect to rather than requiring a direct connection to the central site. By using the store-and-forward capability, messages could be exchanged between sites without requiring simultaneous operating times. Winlink operating with SHARES callsigns on SHARES radio frequencies was used for communication with the external sites.

In addition to exchanging messages with the exercise satellite sites, a number of messages were received from out-of-state agencies and individual hams.

### **Use of Winlink within the Central Incident Command Post**

Winlink was used extensively within the central incident command post to manage message flow. This operation was different from communication with external sites in that all message traffic was transferred over a MESH network, and a Winlink Network Post Office Server was used rather than RMS and CMS. The following diagram illustrates the system organization.

## Message Flow



The heart of the system was a Winlink Network Post Office Server consisting of RMS Relay running on a server computer provided by KG4DCI at the central network site. Stations, which were scattered around the campus, had connectivity with this server through the MESH network. In a more localized command post, a conventional, wired LAN could be used.

### RADO Operation

For simplicity, only two radio operator (RADO) stations are shown. Four were in actual operation simultaneously: (1) SHARES Winlink traffic; (2) SHARES voice traffic; (3) ham Winlink traffic; (4) ham voice traffic. Each RADO station had a computer running RMS Express with a connection to the MESH network.

Each RADO computer ran RMS Express configured with an address book contact entry named "ICC" (Incident Communication Coordinator). The contact specified the actual callsign being used by the Incident Communication Coordinator, and it specified that any messages addressed to ICC should be directed to the network post office on the server hosted by KG4DCI. Messages received from external stations by the Winlink RADOs were forwarded to ICC without change. Messages received by the voice RADOs were transcribed into Winlink messages and sent to ICC.

RMS Express provides background tasks for communicating with network post office servers. When a RADO sent a message to the Incident Communication Coordinator, RMS Express recognized that it needed to go to the network post office, and a background task immediately sent it to the post office server automatically without requiring any further action by the RADO.

Within a second or two after a RADO sent a message to the ICC, it was available for access on the post office server.

RADO computers were configured with background tasks to check once a minute for incoming messages on the network post office server. When a reply was received from the ICC, the RADO forwarded the message to the original sender.

### **Incident Communication Coordinator Operation**

RMS Express used by the Incident Communication Coordinator (ICC) was configured to poll the post office server once a minute to check for pending messages. The polling was done by a background task that did not interfere with the work being done by the ICC. As new messages were posted by RADOs, they would appear in the ICC in-box within one minute. This allowed the ICC to focus on analyzing and responding to messages without having to deal with message sending and receiving.

To send a response to a message, the ICC simply replied to the message. Since the message was forwarded to the ICC by a RADO, the RADO's callsign was the sender of the message, and the reply was queued to go back to the RADO that originated the message. These replies were sent automatically to the network post office server.

Some – but not all – messages were appropriate to be posted on the TEMA WebEOC system. When the ICC identified a message that needed to be posted, the message was forwarded to a contact entry named WEBEOC. This contact specified the callsign of the WebEOC logger.

RMS Express was configured so that the network post office was set to handle all messages posted to the ICC's outbox. So, both replies going to the RADOS and messages being forwarded to the WebEOC logger were sent automatically to the network post office as soon as they were posted to the outbox.

### **WebEOC Logger Operation**

The WebEOC logger ran RMS Express configured to poll the network post office every minute to check for incoming messages. Within one minute after the ICC forwarded a message to the WebEOC's contact entry, the message appeared in the inbox on the WebEOC computer. The operator then copied and pasted the message body into the WebEOC system. The WebEOC logger did not send any outgoing messages.

### **Summary and Conclusion**

Winlink was used extensively during the exercise both for external and internal communication. Several new Winlink features were used and tested heavily: (1) network post office server; (2) background tasks; (3) contact entries designating post office servers. All features worked well with no reported problems.

This exercise demonstrated the usefulness of Winlink operating over a MESH network with a network post office to facilitate message flow within an incident command post. The speed and reliability far exceeded what has been previously experienced using manual message

transcription and hand delivery. It is recommended that future exercise continue to use this system.

Additional information about the Winlink features described here can be found at:  
[http://www.philsherrod.com/Winlink/RMS\\_Express\\_background\\_sending.pdf](http://www.philsherrod.com/Winlink/RMS_Express_background_sending.pdf)

## **Suggestions for Improvement**

The network post office server and all RMS Express installations connecting to the post office server were configured by W4PHS. Training on the capabilities and use of this system are a high priority need. Specifically, a training class will be organized to cover the following items:

- Concept and capability of a Winlink Network Post Office Server
- Actual installation, setup and configuration of a Network Post Office Server
- Configuring RMS Express to connect to a Network Post Office Server
- How to configure address book contact entries to direct messages to a post office server
- How to enable and configure background tasks in RMS Express

A goal of the next exercise should be to have the people who complete this training set up the network post office server and RMS Express for the operators.

Training on the deployment of MESH networks is a more complex topic, but if we plan to depend on MESH networks, we need more people trained on setting them up.