



4 October 2016

Tropical Storm Network Standard Operating Guidelines

Distribute to all RRI members nationwide

In preparation for a potentially historic storm, RRI Area Staff, in cooperation with the Hurricane Watch Net have developed response guidelines designed to provide a tiered response to this event.

Tier One: Initial Response

During the period leading up to landfall, RRI members are asked to report weather conditions and storm damage and effects to the National Hurricane Center. This "ground truth" information will be used to better understand the extent of damage and storm effects in order to improve initial response during the early phases of any potential disaster.

We therefore respectfully request that RRI members and affiliated EMCOMM organizations collect and report the following information:

Weather Data: Real-time weather data reports transmitted hourly from locations within the affected area are requested. At the present time, we are unsure of the exact path of the storm. Therefore, we have set criteria for two thresholds, which should trigger the transmission of a weather report. These are:

- Rainfall in excess of 1-inch per hour or storm total precipitation greater than or equal to three inches.
- Sustained wind speed in excess of 40-mph and/or gusts in excess of 50 mph.

A complete weather report will consist of the following data:

1. Storm total rainfall measured to the nearest 100th of an inch.
2. Measured wind speed and maximum gusts observed within 30 minutes of observation.
3. Barometric pressure (submit only if barometer is calibrated and adjusted to mean sea level).

Message Format:

Radiogram format provides all of the necessary accountability and network management data required for this task. An example of a weather report in radiogram format might be:

**22 P W4ABC 8 MYRTLE BEACH SC 1300Z OCT 5
NWS-LTX**

HORRY COUNTY RAIN 6.50 WIND 47/65 PRESSURE 29.34

**WILLIAMS
FIRE CHIEF**

Explanation of above:

1. The message serial number is assigned by the originating station for administrative purposes.
2. Message precedence is "priority"
3. Station of origin is "W4ABC"
4. Group count (check) is "8"
5. The city (or township) in which the observation was made is "Myrtle Beach, SC"
6. The observation was made at 1300Z on October 5 (remember the new radio day starts at 0001Z)
7. The observation was made within the NWS-LTX County Warning Area (CWA) and is addressed only to the National Hurricane Center (NHC)
8. Myrtle Beach is located in "Horry County."
9. Rainfall total is 6.50 inches, sustained winds are at 47 mph with gusts to 65 mph and barometric pressure is 29.34 in HG
10. The data was provided by the Fire Chief ("Williams"). It could have been provided by the radio amateur himself, a nearby cooperative weather observer, or another individual providing the weather data.

When submitting a weather report, please observe these guidelines:

- Messages containing any one element are acceptable. For example, if one's observational capabilities are limited only to rainfall measurements, then the message text should be limited only to a report of storm total precipitation accumulated since the start of the reporting period (to be specified).
- If barometric pressure is to be provided, be sure to calibrate your barometer BEFORE the storm arrives. This can be done by referencing official barometer readings from nearby locations and interpolating as required.
- Ideally, weather instruments are sited in the optimum manner. Because of the short notice, we will not cover this process. Use the best methods possible under the circumstances.

- Even if the Internet is available, please use RF methods. The purpose is two-fold. First, we want to activate networks and facilitate their dynamic response so that the necessary connectivity is already in place to facilitate the transition into operational messaging should the need arise.
- Please follow the above example message format as closely as possible. This makes data logging and transfer easier for all involved.

Essential Elements of Information (EEI): RRI and other EMCOMM members are encouraged to report significant storm damage, disruptions to infrastructure, significant flooding, levy breaches and the like. In order of priority, this data will originate from:

- *Emergency Services Personnel*: This includes data provided by the local EOC, fire service, department of public works or similar responsible agencies/parties.
- *First-hand observations*: In this case, the radio amateur reporting an observed event should exercise discretion. For example, a flooded basement would not meet the reporting threshold, but a river above flood stage, which is inundating a community or blocking a major county, state or federal highway, may be significant. Likewise, one tree uprooted may not meet the reporting threshold, but a large area of heathy, large trees uprooted and/or blocking roadways may be significant.

An example of an EEI report might be:

**23 P W4ABC 30 MYRTLE BEACH SC 2130Z OCT 5
FEMA
NWS-LTX**

**EEI REPORT Horry COUNTY STATE HIGHWAY 23 IMPASSIBLE BETWEEN ROUTE 10
AND US HIGHWAY 23 DUE TO WASHOUT X SAINT JAMES
HOSPITAL EVACUATED DUE TO FLOODING X FIRE STATION THREE EVACUATED**

**WENDEL WILLKE
Horry COUNTY EMERGENCY MANAGER**

Explanation of Above:

1. Message serial number is 23
2. Message precedence is "priority"
3. Group count (check) is 30 groups/words
4. Message drafted and presented for transmission at 2130Z on October 5
5. Message addressed to **both** FEMA and NWS
6. Brief, concise summary of recent events beginning with the phrase "EEI Report"
7. Official source identified and accountable for content

When originating an EEI report, please follow these guidelines:

- Avoid hearsay. Confirm any third-party reports with the source before originating a message to FEMA and NHC. The preferred source of information will be via reliable agencies and vetted individuals at the local level.
- If the report is in response to a first-hand observation, ensure that the event being reported is significant enough to warrant attention. Report significant flooding, damaged/destroyed or blocked roads, damaged or inoperative infrastructure, evacuations, disruption to critical services (hospitals, fire, police) etc.
- Be brief and concise. Avoid abbreviations. Instead, spell out all but the most obvious acronyms or abbreviations. Limit punctuation to the "x-ray" for "period."
- Try to build a relationship in advance with local agencies to collect and forward this data.
- Again; **use RF**. The idea is to not only provide a good quality, accurate data set, but also activate and exercise the network in the process so it can quickly and seamlessly transition into operational message traffic duties.

Network and liaison structure:

This radiogram traffic may be originated via any one of the following methods:

- Section and/or local traffic nets using voice or CW modes may be activated to collect this data from the field. A liaison station may then be assigned to collect the data for transmission to one of the assigned RRI liaison stations, who will be responsible for collecting the reports and delivering them to the National Hurricane Center. Please see the RRI frequency/mode matrix and the latest RRI bulletins for the specific calling frequencies. Generally, the following bands are assigned for this purpose:

0100Z to 1200Z: 40 and 30 meters
 1200Z to 0059Z: 20 and 30 meters

See the latest announcement for these specific liaison/delivery frequencies.

- If one's section or local net is NOT activated to collect data, RRI volunteers may inject their reports directly on the liaison frequencies.
- Messages may be transmitted via DTN (RRI *Digital Traffic Net*) to one of the following target stations. In this case, the target stations are sequenced by schedule, with WAN (Western Area Net) taking reports during the early morning hours, EAN stations taking reports during the late morning and daytime hours, and CAN stations taking reports during the late evening hours. Please note that if a target station should be unavailable, reports may be transmitted to any alternate DTN target.

0300Z to 0900Z = WAN Target: To be identified in RRI activation or update bulletin

0009Z to 2300Z = EAN Target: To be identified in RRI activation or update bulletin
2300Z to 0300Z = CAN Target: To be identified in RRI activation or update bulletin

Again, please note that if the primary target for a given time-period is unavailable, message traffic may be transmitted to one of the alternates, regardless of time-period.

- When originating reports via the manual-mode watch-frequencies, please use the following methods to request assistance:

Radiotelegraph: "CQ RRI QTC ___ (indicate number of messages in file)"

Radiotelephone: "CQ RRI"

Please note that some frequency flexibility may be necessary. The station maintaining the radio watch is encouraged to periodically transmit a net call, particularly if he has moved from the published QSX frequency to avoid interference. For example, a CW operator might transmit "QSX RRI de W0ABC K"

Tier Two Response: Operational Support

At any point, the Tier One operation may transition into a support operation. Priority will be given to any FEMA operational message traffic. When a circuit/net is not being utilized for priority reports or priority operational messages, they may be utilized for welfare message traffic per usual RRI policy.

During the initial 72-hours after land-fall, the origination of disaster welfare inquiries originating *outside* the disaster area and addressed to individuals within the affected area are discouraged. However, when circuit capacity is available and priority traffic has been cleared, welfare messages originating from within the affected area to points throughout the United States and Canada may be originated.

Individual Preparedness

RRI members should prepare now for emergency operations. This includes:

- Prepare and test generators and other standby power sources.
- Ensure adequate message forms are on hand.
- Familiarize oneself with disciplined, structured net procedures.
- Establish contact with one's ARES emergency coordinator (as appropriate)
- Ensure weather instruments are calibrated and secure.

Bulletins:

E-mail broadcasts to RRI leadership and members will announce when operations will commence. If for some reason the hurricane does not make landfall, the operation can be cancelled.

Net Managers should issue concise bulletins using "QNC" techniques as appropriate. This anticipates early Internet outages in the affected area. The "QNC" will indicate mission status and provide additional guidance, particularly at the local and section level.

Target Stations and Others Delivering Messages:

- Radiograms delivered in print (e-mail, FAX, etc.) should display in all capitals when practical. All other message content such as notes, headers and the like can be in mixed case.
- When delivering message traffic received manually via FAX or e-mail, please insert three blank lines between each radiogram listed. Type ten words to a line for message traffic transcribed using a word processor or "mill," or five words to a line for message traffic transcribed by hand. Typewritten or word processor methods are preferred.
- All traffic delivered should be reviewed and checked for completeness.
- DTN methods may make the above methods impractical. Strive to deliver a neat, professional product regardless of the method used.
- All message deliveries should be prefaced with, or otherwise indicate that the reports were received via Radio Relay International.
- All message deliveries should include contact information for the delivering station when appropriate.

Records and Reports:

Net/Node Managers and those stations clearing traffic via one of the "watch frequencies" should file an after-action report with the following station:

WB8SIW: james.wades@radio-relay.org

The report should indicate the total number of messages of each precedence handled during the course of the operation. An example of such a report might be:

**24 R W2ABC 10 PERTH AMBOY NJ OCT 12
WB8SIW
MARION IL 62959
269-650-0215**

HURRICANE JOACHIM REPORT X EMERGENCY 0 PRIORITY 25 WELFARE 7

JOE SMITH W2ABC

All rri members are encouraged to support this operation. We thank you in advance for your assistance and investment in the Radio Relay International program.