Essential Elements of a Severe Weather Report

Observed Conditions that Sullivan Weather Needs for Reports (Criteria)

Reports are needed ***prior to*** and ***during*** severe weather watches and warnings. Reports consist of the conditions outlined below and are in order of importance.

1. Tornado or Waterspout
2. Funnel Cloud
3. Wall Cloud (*indicate if rotating*)
4. Heavy Damage
   - → Parked vehicles blown over/rolled over
   - → Windows blown in by force of wind, not debris
   - → Well-built pole buildings or barns completely flattened or roofs damaged
   - → Groves of large trees flattened - not just a couple trees, but dozens
5. High Winds (*50 mph or higher)* indicate if measured or estimated
6. Large Hail (*1/2 inch or greater)* indicate if measured or estimated
7. Flooding / Flash Flooding
   - → Major Structural Damage/Evacuations
   - → River Banks Broken, Water Out of Bank
   - → Roads, Bridges or Railroads Washed Out

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8. Small Hail *(less than 1/2 inch)* indicate if measured or estimated
9. Minor Damage
   - → Buildings (number, size, and extent)
   - → Trees (health of tree, size, number of limbs)
   - → Roads (type)
   - → Power Lines (due directly to weather conditions)
10. Minor, Inconvenient Urban/Small Stream Flooding
    - → Non Life-Threatening/Non-Damaging Water Over Curb
    - → Some Water Out of Banks
    - → Some Water on the Roads
11. Visibility - less than ½ mile (indicate if due to precipitation or blowing dirt)
12. Rainfall amounts equal to or exceeding the rate of 1" per hour over at least 15 minutes (i.e. a rate greater than 1/4" per 15 minutes)
13. Straight Line Winds 40-49 mph (indicate if measured or estimated)

NOTES

ITEMS 1 THROUGH 7 ARE SEVERE CRITERIA AND TRIGGER/VERIFY THE GENERATION OF A WARNING FOR AN AFFECTED AREA. SEVERE CRITERIA (ALSO KNOWN AS PRIMARY DATA) ARE TO BE FORWARDED IMMEDIATELY VIA THE BACKBONE TO THE FORECAST OFFICE. THEY ARE OF THE UTMOST URGENCY.

ITEMS 8 THROUGH 13 ARE NON-SEVERE CRITERIA (ALSO KNOWN AS RESIDUAL DATA.) NON-SEVERE CRITERIA ARE TO BE FORWARDED TO THE FORECAST OFFICE VIA PACKET RADIO OR E-MAIL UNLESS OTHERWISE REQUESTED.

THE LIST ABOVE WILL BE MODIFIED BASED ON THE EVENT AND IS MODIFIABLE ONLY BY THE WFO MKX METEOROLOGISTS FOR THEIR PARTICULAR NEEDS.

Incoming Data on Backbone (Relay Station to Sullivan Weather)

Report Format for Incoming Data

All incoming reports must contain the following information in the prescribed order:

TIME - "Time" *of the event* (NOT the time of filing of the report) is to be provided in 12-hour format, like one would see on a standard wristwatch.

Example: "6:05pm"

LOCATION - "Location" *of the event* (NOT the location of the observer) is to be provided as a distance (to 1/10 mile, if possible) and direction from established references (see separate documentation for established compass and location references), followed by the county. Map reference details (intersections of major highways), etc. are to follow the distance/direction information.

Example: "5.2 West-NorthWest Jefferson, Jefferson County; 1 mile N of Intersection of Highway xx and Highway yy."

CONDITION - "Condition" is to be provided as one of the items listed on the Criteria Page *using the routing directions indicated on that page.* The only exceptions allowed are cases when Sullivan Weather requests information not on the Criteria Page, or requests re-routing of non-severe criteria as needed.

Example: "Measured 3/4" Hail"

SOURCE - "Source" is to be provided as the callsign of the Amateur Radio Operator *who observed the event.*

Example: "WA9QQQ"

This program does not accept information from unqualified, and/or secondhand sources.

All reports not having the above information are immediately considered invalid.

Communication Procedure on Backbone for a Standard Report

1. The relay station calls the forecast office by using their tactical call sign and one of the criteria to indicate a valid report.

   Example: "(nn) Relay, Hail"

2. The forecast office will reply.

   Example: "(nn) Relay, Go Ahead"

3. The relay station provides the report at longhand dictation speed using the "*TLCS*" message format.

   Example: "6:05 pm, 5.2 West-NorthWest Jefferson, Jefferson County; 1 mile N of Intersection of Highway xx and Highway yy, measured $^{3}/_{4}$ inch hail, WA9QQQ."

4. The forecast office will indicate receipt if the communications are received and the report is valid.

   Example: "Roger, (nn) Relay"

5. Both stations ID per 97.119. At a minimum, the relay station must identify after the exchange of information.*

Here is an example of a *single* standard report:

Relay Station:	"67 Relay, Hail" (1)
Sullivan Weather:	"67 Relay, go ahead" (2)
Relay Station:	"6:05pm, 5.2 West-NorthWest Jefferson, Jefferson County; 1 mile N of Intersection of Highway xx and Highway yy, measured $^{3}/_{4}$ inch hail, WA9QQQ." (3)
Sullivan Weather:	"Roger 67 Relay" (4)
Relay Station:	"WA9XXX" (5)
Sullivan Weather:	"WX9MKX" (5*)

* There will be times where Sullivan Weather receives several reports in immediate succession. Identification can be performed after receipt of all reports, or every ten minutes, whatever is sooner.

Follow up Reports

Occasionally, Sullivan Weather will require follow up on a report received from the field. For example, the met staff may require more information about a spotter's report, or may want to know the current conditions at the location of the original observation. The format for the follow up report is very similar in structure to the format used for the observed report indicated above. In all cases, Sullivan Weather will determine the need for follow up information.

This program does not accept information from unqualified, and / or secondhand sources.

Communication Procedure on Backbone for a Followup Report

1. The relay station calls the forecast office by using their tactical call sign and one of the criteria to indicate a valid report.

   Example: "(nn) Relay, Follow up"

2. The forecast office will reply.

   Example: "(nn) Relay, Go Ahead"

3. The relay station provides the necessary information at longhand dictation speed. Information in the follow-up report will not necessarily have the same content or format as the standard report.

   Example: "Reference 6:05pm observation at 5.2 West-NorthWest Jefferson,....(information requested by Sullivan Weather)..."

4. The forecast office will indicate receipt if the communications are received and the report is valid.

   Example: "Roger, (nn) Relay"

5. Both stations ID per 97.119. At a minimum, the relay station must identify after the exchange of information.*

Here is an example of a *single* standard report:

Relay Station:	"67 Relay, Follow up" (1)
Sullivan Weather:	"67 Relay, go ahead" (2)
Relay Station:	"Reference 6:05pm observation at 5.2 West-NorthWest Jefferson, ... (information requested by Sullivan Weather)..." (3)
Sullivan Weather:	"Roger 67 Relay" (4)
Relay Station:	"WA9XXX" (5)
Sullivan Weather:	"WX9MKX" (5*)

* There will be times where Sullivan Weather receives several reports in immediate succession. Identification can be performed after receipt of all reports, or every ten minutes, whatever is sooner.

Reference Cities
for
Use by Severe Weather Spotters

2004 Sullivan Committee Summer Weather Program

All severe weather reports relayed to NWS meteorologists at the Milwaukee/Sullivan Office by amateur radio operators must utilize the following standards to describe the location of the weather phenomena:

For all fixed and mobile spotters, the distance to within 0.5 miles from the recognized center of a city/village (not the edge or limits of the city/village) is required. Reference cities and their exact locations can be found on separate documentation.

The report must have one of the 16 compass points (N, NNE, NE, ENE, E, ESE, SE, SSE, S, SSW, SW, WSW, NW, NNW). Of course, the county from which the report is originating from is required, because some cities overlap two county lines.

Examples: 2.2 East Jefferson, Jefferson Co.
2.4 NorthEast Waupun, Fond du Lac Co.
0.5 East Cobb, Iowa Co.
5.5 West-SouthWest Madison, Dane Co.

We are making these changes because radar information (pathcasts) in NWS warnings, and associated follow-up statements is based on distance from the geo-political center of cities/villages or airports. In addition, post-storm information written in Local Storm Reports (LSR's) sent to all media outlets, and ***Storm Data*** publications use this notation. In some cases, the geo-political center may be the intersection of two main roads, or the village/city square/courthouse, or where the city hall and administrative buildings are found. For airports, the main terminal/office building is the center of the airport. A separate document showing the references is available at http://www.sulcom.info

Relay Station Check-In

Sullivan Weather will call for check-ins from relay stations based on assigned protocols.

Relay stations should check in by using their Amateur call sign and the local repeater's full frequency. The forecast office will assign tac calls to relay stations if not already assigned.

Example:

Check-in:	"Walworth County, 146.865, N9ABC, check-in."
Sullivan Weather:	"Roger N9ABC. Use tac call 865 Relay."
865 Relay:	"865 Relay, Roger, N9ABC"
Sullivan Weather:	"WX9MKX"

Relay Station Check-Out

Relay stations must check out with Sullivan Weather when their local net secures operation. The check out procedure follows the check-in procedure as defined above.

Any relay station that needs to check out of the backbone must inform Sullivan Weather. The reason why is not important, what is important is that Sullivan Weather knows which relay stations are on line.

Operator Activation – Sullivan Weather

IN ALL CASES, AMATEUR RADIO OPERATIONS AT SULLIVAN WEATHER IS DETERMINED BY THE FORECAST OFFICE METEORLOGICAL STAFF.

1. Sullivan Weather calls or pages the EC or contact person designated by the EC.
2. The EC (or the EC's designee) calls the first operator in the time schedule provided and alerts the operator of the pending requirements.
3. The first operator then calls the second operator in the time slot and communicates the pending requirements. The second operator calls the EC or person designated by the EC to ensure proper staffing requirements. This way, the EC knows that both staffed operators are en-route to Sullivan Weather.
4. The forecast office ops are to call the backbone repeater control operators either en-route to the forecast office or after arrival at the forecast office. Depending on the area of the state affected by the severe weather, the backbone will be activated on any or all of the two 2-meter backbone repeaters.

Operator Activation – Local Nets

IN ALL CASES, AMATEUR RADIO OPERATIONS WITHIN THE LOCAL NETS IS DETERMINED BY THE LOCAL NET MANAGEMENT

Resource Management

Certain events do not necessarily require the use of all backbone repeaters. In fact, the events might not require the use of any backbone repeater at all. Resource management is very important in this program but it can be difficult to assess due to many factors including lead times, storm development, etc.

Net types can be an aid in assisting the relay station in determining the current conditions. The net types and details are covered in the presentation materials and on the Sullivan Committee Website.

Management of Itinerant Sources and Sources Unfamiliar with this Program

If an individual station (source) calls on the backbone during full net operations with a report, Sullivan Weather determines credibility of the source (see 1, below), location of the source, collects the report if the source is deemed credible) and directs the source to the appropriate local net, if possible. If the source cannot be directed to a local net, then Sullivan Weather manages the source on the backbone until the appropriate local net checks in. After that time, Sullivan Weather redirects the source to the appropriate local net.

Some additional guidelines regarding sources unable to access a local net and/or unfamiliar to the program:

1. If the source (itinerant or fixed) has to stay on the backbone for any reason, then Sullivan Weather manages the station on the backbone and educates them on the program as needed as long as it does not interfere with other activity during the event. Immediate "management" of sources would include some basic questions re: previous training, final destination, etc. Notify the EC WFO MKX of any sources that needed to remain on the backbone for any reason after completion of the event. Once the event is finished, the individual will be contacted for follow-up as needed.

2. It is up to Sullivan Weather to determine credibility of the source if the source has to remain on the backbone. If the source can be referred to a local organization's net, or if a potential source (itinerant or fixed) appears on a local net, it is typically up to the local organization to verify the credibility of the source prior to the use of that source.

3. If the verified source is itinerant and needs to be transferred to another local net, then the local net can (and should) provide the location of the next local net to the itinerant source. As a last resort, the verified source can be referred back to Sullivan Weather on the backbone for relocation. Keep in mind, that the information inbound to the office takes precedence.

4. If the qualifying organization (whether it is Sullivan Weather or the local organization) is not comfortable with the source, the qualifying

organization has the latitude to not use the source. If the source is on a local organization's net, then the local organization should notify Sullivan Weather that they are not comfortable with the source.

Stations attempting communications on the backbone who do not have a short-term emergency or are not participating in severe weather operations will be asked to stand by and monitor, or be asked to move off the repeater(s) during full net operations. This will be done with diplomacy.

Management of Short-Term, Real-Time Emergencies

There may be instances when a station will call on a backbone repeater with a short-term, real time emergency (auto accident, house fire, etc.) If this occurs, Sullivan Weather handles the emergency immediately by notifying the appropriate county or state agency. Sullivan Weather manages these stations on the backbone until the issue is resolved, then redirects them to a local net if possible and appropriate.

Management of Relay Stations

Relay stations (or any other stations) are activated by their local net policies. It is up to the local nets to determine policies and procedures for their individual needs. Sullivan Weather is not responsible for management of relay stations beyond the backbone.

If a problem arises with a relay station's performance on the backbone, the EC of WFO MKX will be notified after completion of the event for follow-up.

Outgoing Information

Outgoing information from Sullivan Weather will be sufficient to keep listeners informed regarding the operation and the event. The nature and frequency of this information will be dictated by a number of factors.

NOTE

INCOMING DATA ALWAYS TAKES PRECEDENCE OVER OUTGOING DATA.

NOTE

CLEAR ALL INCOMING DATA BEFORE DISSEMINATING OUTGOING DATA.

eSpotter

(Text in the next paragraph is courtesy of the NWS Central Region Headquarters Website)

eSpotter is an experimental project in the central region area to facilitate the submission of spotter reports online. The system is being developed to enhance and increase timely & accurate online spotter reporting and communications between spotters and their local weather forecast offices.

The use of the system is currently available for trained spotters and emergency managers.

NOTE: eSpotter is not intended to replace existing methods of data collection used by the local forecast offices. eSpotter is being viewed as a supplementary tool.

GUIDELINES

1. If a report is submitted through the backbone, submission of the report SHOULD NOT be duplicated via eSpotter. If a report is sent via phone, it SHOULD be duplicated via eSpotter with a note stating that it was sent via telephone.

2. Severe reports (Items 1 though 7 on the Committee's criteria sheet) should be sent via the backbone if the office is staffed to do so.

3. Non severe reports (items 8 through 13) should be sent via eSpotter or through the digital modes unless otherwise specified. Information is easier to manipulate in this manner.

4. Sullivan Committee team members can promote program and encourage registration among their organizations. Proper function of program needs to be emphasized.

5. Locations of individuals and their city reference need to be in the same county.

eSpotter Address

http://espotter.weather.gov

Useful Web Addresses

NOAA Storm Prediction Center (SPC)

Main Page - http://www.spc.noaa.gov
Convective Outlooks Page - http://www.spc.noaa.gov/products

Useful location for watch and warning updates. convective outlooks, fire weather and other items.

National Weather Service – Milwaukee/Sullivan, WI

Main Page - http://crh.noaa.gov/mkx
Hazardous Weather Outlook - http://www.crh.noaa.gov/mkx/hwo.php

Too much information to specify – NOAA in general does very well with their web sites.

The Sullivan Committee

Main Page http://www.sulcom.info
http://sulcom.org/~sulcom

This is the place to view the Amateur Radio – based summer and wither weather data collection program information for the Milwaukee/Sullivan Weather Forecast Office.

NOAA Weather Radio

Main Page http://www.nws.noaa.gov/nwr/

NOAA weather radio has become more than a weather information network. NOAA Weather Radio is a public safety "all-hazards" network. Like smoke detectors and carbon monoxide detectors, a NOAA weather radio is an appliance that nobody should be without.