

Carroll ARES/WGARS EMCOMM

Weather Net Protocol

Standard Operating Procedures

1. Scope

This document provides specific procedures for activation, escalation, operation, and termination of Weather Nets operating on the West Georgia Amateur Radio Society repeater or alternate frequencies.

2. Definitions

EMA	Emergency Management Agency (Carroll County)
NWS	National Weather Service Office (Peachtree City)
SKYWARN	An NWS/NOAA managed volunteer storm spotter program
ARES	Amateur Radio Emergency Service

3. Activation Levels

Stand-By Net	Operators monitor repeater and other sources in preparation for escalation to a higher level.
Informal Net	Operators monitor repeater and other sources, discussion of current conditions, severe and non-severe weather reporting to the net, and identifying potential severe weather tracks, locations and situations.
Formal Net	Operators report only first-hand observations of severe weather. General discussion and exchange of third-party information is kept to a minimum unless provided directly by the NWS or EMA. Reports of non-severe weather should be avoided unless such report is requested by NWS, EMA, or Net Control.

4. Activation Criteria

- Stand-By Net:** This is less a net than a mindset. All volunteers are requested to self-activate to this mode whenever a significant "Watch" is issued by the NWS; these include, but are not limited to Severe Thunderstorm Watch or Tornado Watch. This level of activation will also be entered when requested by the EMA or NWS. Operators are expected to monitor the WGARS repeater and other sources in preparation for escalation to a higher level.
- Informal Net:** Escalation to this level will occur when the potential for severe weather exists, will soon exist, or when requested by the EMA or NWS. Non-weather related traffic should now be kept to a minimum. Discussion of direct observations, NWS reported conditions, weather tracks, and potential high-risk areas is appropriate. Hearsay and rumors should be avoided.
- Formal Net:** Escalation to a formal net shall occur when there are firsthand reports of weather conditions meeting the National Weather Service's SKYWARN reporting criteria, whenever a significant "Warning" is issued by the NWS, when the local SKYWARN linked repeater net node is activated, or when requested by the EMA or NWS.

5.0 Activation

5.1 Activation and Escalation Authority

- Generally, activation of any net level, escalation to a higher net level, or deactivation shall occur at the request of the NWS, ARES, or EMA or at the discretion of the net control operator.
- Activation or escalation of any net may also be made at the discretion of any qualified amateur radio operator willing to assume net control status when no existing net is in operation.

5.2 Procedure for Net Activation by NWS, ARES, or EMA

- a) Telephone, email, or text message to any contact person listed in Appendix I, providing details of the nature of the anticipated severe weather event and request net activation.
- b) Request any area ARES or other amateur radio operator to make an announcement on the WGARS repeater (146.64-^{131.8}) providing details of the nature of the anticipated severe weather event and request net activation.

6.0 Operational Procedures

6.1. Net Control

The initial Net Control is the person activating the net. It is Net Control's responsibility to manage the traffic level on the WGARS repeater based upon the Net escalation level. Stations checking in should be informed of the net activation level by the Net Control Station.

6.2. Net Operations

A net control station shall ensure smooth operation of the net. NCS duties on an informal net will normally be minimal. NCS should maintain good control of the formal nets, ensuring proper passing of report-worthy information. *The NCS should confirm any weather reports by spotters are first hand accounts of what the spotter himself/herself is seeing before arranging for reporting to the NWS.*

6.2.1 Net Frequencies

The primary repeater is 146.64-^{131.8}. The backup repeater is 444.0750+^{131.8}. In the event of repeater unavailability operators should utilize the primary simplex frequency of 146.565 with 146.550 as the alternate frequency. Local HF nets (if repeater is unavailable) 10-Meter (USB): 28.370mhz or 28.470 mhz; 80-Meters (LSB): 3992.0khz; 40-Meters (LSB) 7180.0khz; 20-Meters (USB): 14.235 mhz or 14.335 mhz.

6.2.2 Net Types And Conduct

Amateur Radio volunteers should distinguish between the three types of severe weather Nets and act in accordance with the level.

6.3. Spotter Reports

6.3.1 Spotter participants should report:

- **Direct** weather observations that meet or exceed the minimum reporting criteria.
- Threats to life and/or property.
- Significant Storm Damage.
- Current conditions if requested by Net Control, EMA, or NWS.

6.3.2 Spotter reports should be *first-hand* and include:

Time, Location, and Conditions (TLC).

- Time that the condition was observed: Specify Local (Lima) or UTC, if other than current.
- Location of reporting station: (using common references) or the relative location of the severe weather condition if different from current location.
- Conditions: If at all possible, this should include the estimated direction and speed of the severe weather condition. Observations should *not* include reports of non-hazardous conditions such as "rain stopped here" or "clear in the west". See Appendix II for additional information.

6.4 Liaisons

6.4.1 NWS Linked Repeater Net

Net Control should identify a liaison to the NWS Linked Repeater Net. The primary repeaters for this net are the Madris repeater on 147.165^{+131.8} and Dallas repeater on 146.895+^{88.5}. Another area alternate repeater is 444.50+ (Soddy Daisy).

6.4.2 ARES HF Weather Net

If circumstances dictate that the Georgia ARES HF net is activated then a liaison to this net should be identified if possible. The primary frequency for the net is 3.975 MHz LSB.

6.4.3 EMA Liaison

There is currently (and for quite some time) no formal relationship with the EMA, this location is present for future expansion as a relationship with local agencies is developed.

7. Termination or de-escalation of Net

The Net will be terminated or de-escalated to a lower level when watches/warnings have expired or been canceled by the NWS or when conditions have devolved to a level where the current level of activity is no longer required. Stations wishing to terminate operations prior to the closure of the net should notify Net Control if traffic levels permit.

8. Safety Considerations

Amateurs wishing to spot from their vehicles or hazardous locations operate at their own risk. None of the organization or entities mentioned in this document in any way promote or recommend spotters placing themselves in hazardous situations. To the contrary, spotters should be discouraged from taking unnecessary risks. Safety first is the rule of the day during any severe weather or emergency situation.

9. Preparedness

Amateur Radio Operators should prepare themselves for Severe Weather Net operation. Such preparations should include, but not be limited to the following:

- Make sure the radio to be used is not in danger of a lightning strike.
- Emergency power for radio equipment in case of commercial power failure.
- Extra charged HT batteries if an HT will be used.
- Keep apprised of the developing weather situation by monitoring:
 - WGARS repeater
 - Local media
 - Weather Channel
 - NOAA Weather Radio
 - NWS Web Site

Appendix I

Net Activation Contact Information

Brian Keahl, WX4BK

925 Old Draketown Trail , Temple, GA 30179 (Carroll County)

Latitude: 33.794614 , Longitude: -84.994271

Emergency Coordinator, Carroll

Cell: 404-697-3948 Email: WX4BK@WX4BK.COM

John Playford, WD8LQT

2535 North Carroll Court, Villa Rica, GA 30180 (Carroll County)

Latitude: 33.731710 , Longitude: -84.917953

Assistant Emergency Coordinator, Carroll

Cell: 912-674-0449 Email: playford@yahoo.com

Blake Raab, N4BWR

566 Preston Place Ct., Carrollton, GA 30117(Carroll County)

Latitude: 33.558712 , Longitude: -85.185660

Assistant Emergency Coordinator & Net Manager, Carroll

PH#:770-834-9309 Email: blake@n4bwr.com

Appendix II

Weather Reporting Information And Procedures

- SAFETY FIRST. Never put yourself or others in danger. Observe from a safe distance. Seek shelter and safety at the first sign of danger to yourself and/or those around you.
- Amateur Radio Operators in the Carroll County Area may utilize the WGARS repeater on 146.64-^{131.8}. Alternatively, the observations can be reported on the nearest SKYWARN linked repeater 146.895+⁷⁷.
- The local net will allow more latitude than the SKYWARN net; non-hazardous weather observations and discussion is allowed during the stand-by and informal nets. Appropriate weather observations will be relayed to the NWS on via the linked repeater net. Observations may also be phoned in to: **1-866-763-4466**, 888-529-5300 or 770-486-9629.
- Use of the repeater during SKYWARN activation should be restricted to emergency, priority, and/or traffic appropriate to the net level.
- Appropriate weather traffic for SKYWARN **does not include reports of second-hand or inconsequential weather** (light rain, thunder, etc), but does include the following:
 - Tornadoes, funnel clouds, and wall clouds
 - Hail
 - Damaging winds or hazardous flooding
 - Heavy rain, Significant snowfall, sleet & freezing rain
- When reporting, use What, Where, When. And Details.
 - **What:** The weather event you are observing (tornados, hail, etc.)
 - **Where:** Location of the event, relative to well-known landmarks when possible.
 - **When:** Time of observation.
 - **Details:** Direction, velocity, intensity, any damaging effects.
- When reporting observations a consistent method should be employed. NWS recommends the following references:

Hail Size Estimates			
Pea	.25 in.	Marble, Mothball	.50 in.
Penny, Dime	.75 in.	Nickel	.88 in.
Quarter	1.00in.	Half Dollar	1.25 in.
Ping Pong Ball	1.50 in.	Gold Ball	1.75 in.
Pool Ball	2.00 in.	Tennis Ball	2.50 in.
Baseball	2.75 in.	Grapefruit	4.00 in.

Wind Speed Estimates	
25-31	Large branches in motion, whistling in telephone wires.
32-38	Whole trees in motion
39-54	Twigs break off of trees; wind impedes walking
55-72	Damage to chimneys and TV antennas; pushes over shallow rooted trees
73-112	Peels surface off roofs; windows broken; mobile homes overturned
113+	Roofs torn off houses; weak buildings and mobile homes destroyed; large trees uprooted

Snowfall Reporting

The National Weather Service has a particular interest in snowfall reporting. Unlike public safety, the NWS is primarily interested in snowfall rate, snowfall depth, and temperature. They prefer you report the information along with an easy reference point such as a nearby intersection or a State Highway and mile-marker.

Here are some tips for measuring snowfall should you choose to do so:

- Find an open location with good exposure to take your snowfall measurements. It should be away from any trees, buildings, or obstructions that may cause blowing and drifting snow to interfere with your measurements.
- Find a flat and level surface for you to take your snowfall measurements on. This location should be easily accessible to whoever will be taking the measurements.
- A snowboard (clean, white board (about 2 x 3 ft.)) is the preferable method for measuring snowfall, but any flat and level location with good exposure will do.
- Have a ruler and/or yard stick handy to measure your snowfall amounts.

Two specific types of reporting are requested:

New Accumulation:

The new snowfall accumulation is the amount of snow that has fallen since your last observation. If using a snowboard, the board should be cleared after each observation. Use a ruler or yardstick to measure the new snowfall to the nearest tenth of an inch. For example, 4.25" of new snow would be reported as 4.3". When measuring, be sure to look at eye level because looking at an angle will result in inaccurate measurements. After the snow has fallen and temperatures begin to rise, the affects of melting and settling can significantly change your observations. To get the most accurate measurements, try to measure as close to the end of the storm as possible. Along with heavy snow, winter storms often bring very strong and gusty winds, which can also have major impacts on your snowfall amounts. In the event that you find very high snow drifts along with areas of significantly lesser amounts, it may be necessary to take an average of several snowfall measurements in order to come up with the most accurate amount.

Total Depth

The total snow depth is the total amount of old and new snow on the ground. Use a yardstick to measure the total snow depth, and round the amount to the nearest whole inch. For example, 2.5 inches of snow depth would be reported as 3 inches. In the case of blowing and drifting snow, it may also be necessary to take an average of several measurements to get the most accurate depth. For example, if *more than half of the ground* is covered with 4 inches of snow and other areas are completely bare, you would report an average of 2 inches. If more than half of the ground is bare, you would report a trace of snow on the ground. If possible, measure ice accumulation (both top and bottom).

When To Report

- **Whenever possible!** The NWS REALLY appreciates frequent updates on snowfall amounts.
- When there is a change in precipitation type (example...rain changing over to snow, freezing rain, sleet, etc...).
- If current snowfall amounts differ significantly from your local forecast.
- **HOWEVER**, if current snowfall amounts are on track with your local forecast, this is also very valuable information for the NWS to know!

Hazards To Life And Property

While the local Public Safety organization may concern itself with the above information their interest is for the purpose of ensuring the safety of the citizenry during an emergency. Therefore, hazardous road conditions, fallen power lines, and damaged structures should be reported to the local Public Safety organization and not the NWS. The NWS will pass our reported weather conditions along to the local EMA, so we should keep snowfall measurement reporting to a minimum unless the local EMA requests we do so.

Appropriate Reporting

First, report only what you know first hand. Do not pass along rumor or 2nd hand reports. False reports damage the credibility of the ARES, Amateur Radio, and SKYWARN communities. Both Public Safety and the general public may be monitoring our repeater; passing along inaccurate hearsay could distract Emergency Management from responding to actual emergencies or cause unnecessary panic to scanner listeners.

We should be sure our reporting is appropriate to the served agency. Snowfall measurements, rate, and other weather related data should be passed along to the National Weather Service while information regarding ice on roads and bridges, downed power lines, and other hazardous situations resulting from the snowfall should be reported to the local Public Safety Organization.

The net control station can help direct your reports to the proper destination. However, this can be done more efficiently if the weather conditions and hazards are reported separately, so try to do so should you have both types of information to report.

Appendix III

West Georgia Amateur Radio Society Severe Weather Net

Carroll County Weather Net Script For Net Control Stations

Calling all stations, calling all stations ... Calling all stations, calling all stations ... This is __Your Call Sign__, my name is ____Your Name____, I am opening a Severe Weather Net for Carroll County and will be your Net Control Station. <Let repeater drop carrier>

This net will operate on the WGARS repeater at 146.640mhz with a negative offset and a 131.8hz sub-audible tone until severe weather conditions diminish. <Let repeater drop carrier>

The purpose of this net is to collect and relay severe weather information to the National Weather Service and other agencies tasked with responding to significant weather events. <Let repeater drop carrier>

This is __Your Call Sign__, Net Control for the Carroll EMCOMM/ARES Severe Weather Net. This net is currently operating in <announce mode: **informal** or **formal**> mode. <Let repeater drop carrier>

<If FORMAL Net>

While in formal mode please restrict repeater traffic to reports of significant or severe weather or other dangerous conditions. Please do not report inconsequential weather conditions or second-hand weather reports unless requested to do so by Net Control or a served agency requesting such reports. <Let repeater drop carrier>

This is a directed net. Please direct all traffic through net control. All stations are requested to remain on frequency until the end of the net if possible. You may secure at anytime, but please inform Net Control when you do so. As always, Priority or Emergency Traffic will take precedence and will be handled immediately. <Pause, let repeater drop carrier>

<If INFORMAL Net>

While in informal mode any first-hand weather reports are invited and appreciated. This mode of operation is intended to allow us to be better poised to report severe weather conditions should they occur, and first-hand reports of current conditions assist in that mission. Please refrain from reporting hearsay or reports from third-parties unless they are a reputable information gathering and reporting resource such as the NWS, ARES, EMA, or local news service. Also, *third party reports should only be made if it directly contributes to our ability to provide first hand storm spotting reports.* <Let repeater drop carrier>

We ask that anyone not wishing to participate in this net please keep the frequency clear for Net operations. This is __Your Call Sign__, Net control for the Carroll County Severe Weather Net. <Let repeater drop carrier>

If you wish to pass emergency or priority traffic during the net, please say the word "BREAK" twice, and the frequency will be turned over to you for the duration of the emergency. I will now stand by for anyone with emergency or priority traffic. <Let repeater drop carrier>

This is __Your Call Sign__, my name is ____Your Name____, Net Control for the Carroll County Severe Weather Net, operating in <announce mode: **informal** or **formal**> mode. Any station wishing to check into the net please call now. <Let repeater drop carrier> <Repeat every five minutes of net inactivity and periodically during net operations>

Optional Changing Of Net Operating Mode

This is __Your Call Sign__, my name is ____Your Name____, Net Control for the Carroll County Severe Weather Net, We are now changing this net to a <announce mode: **informal** or **formal**> net as a result of changing weather conditions. <Repeat Script at faded gray line following net open portion of the script>

Closing The Net

All indications are that weather conditions have diminished below the threshold where a weather net is necessary. We'd like to thank WGARS for the use of the repeater during this significant weather event. There were [# of stations] including net control. We will now close the Carroll County Severe Weather Net at [Time/Date] and turn the frequency back to normal amateur use. All stations may secure at this time. Please continue to monitor conditions and this repeater in the event circumstances require calling a future Severe Weather Net. This is __Your Call Sign__, Net control for the Carroll County Severe Weather Net. Clear.