

National Weather Service – Jackson, KY East Kentucky SKYWARN/Amateur Radio Program (WX4JKL)

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Welcome to the Jackson, Kentucky National Weather Service (NWS-JKL) SKYWARN™ program page for East Kentucky. SKYWARN™ is not any type of organization but rather we are a group of trained volunteer severe weather spotters that report directly to the National Weather Service.

The effects of severe weather are felt every year by many Americans. To obtain critical weather information, NOAA's National Weather Service (NWS), part of the U.S. Department of Commerce, established SKYWARN™ with partner organizations. Nationwide, SKYWARN® is a volunteer program with nearly 290,000 trained severe weather spotters. These volunteers help keep their local communities safe by providing timely and accurate reports of severe weather to the National Weather Service. Spotters generally report significant events such as damaging winds, heavy rain, tornadic activity, ice and snow, along with other events that have an impact on the forecast or the safety of the community. Additional information can be found on the national SKYWARN™ [page](#).

The ground truth reports that come from SKYWARN™ spotters are a vital link in using advanced radar data and meteorological skills to carry out our mission. Their observations also provide us with information in compiling documentation of severe weather events and verification of warnings. These reports become part of the United States Storm Data publication, which is used by researchers and also provides climatological data on a wide variety of unusual weather phenomenon, including statistics on death, injuries, and property and crop damage.

At the NWS-JKL year after year, reports from SKYWARN™ observers have assisted the NWS in issuing timely warnings based on REAL-TIME reports throughout our 33 County Warning Area (CWA) covering Eastern Kentucky. The NWS's primary mission is to issue warnings to protect life and property.

Over half of our spotters in East Kentucky are also licensed amateur radio operators (a.k.a hams). The hams throughout many of our counties meet (either in person or over the air on weekly nets) and organize their spotter efforts on one radio frequency (or network of frequencies, if covering a wide area), when severe weather threatens. Amateur Radio Emergency Services (ARES®), an extension of the Amateur Radio Relay League (ARRL®) provides communication support for the SKYWARN™ program.

Interested in becoming a SKYWARN™ spotter?

There are two ways you can become a trained SKYWARN™ spotter for NWS Jackson, KY, either by the preferred method of attending a class in person or by taking a series of online training modules.

Training Method #1: NWS Jackson, KY, in cooperation with county Emergency Managers, will typically hold several weather spotter classes across eastern Kentucky throughout the year. Unless otherwise stated, these classes are open to the public, are free of charge, and require no registration. Upcoming classes can be found at www.weather.gov/jkl/spotter.

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Training Method #2: Prospective weather spotters that cannot make it to an in-person spotter class can take a series of online training modules. These modules provide baseline training for all spotters by covering the procedures for spotting (including communication and spotter report criteria) and safety considerations for all weather hazards. You can access these courses at www.meted.ucar.edu/training_course.php?id=23. Within a few weeks of your completion of these online modules, we will contact you with additional locally prepared training required to complete the process. Completing the online training typically takes between 2 and 3 hours of combined time.

Send your comments, questions or any additional information you would like posted on this page to [Jonathan Guseman \(WCM\)](#)

What is SKYWARN?

More on amateur radio SKYWARN NET for locations within County Warning Area (CWA) of NWS-Jackson.

- [The Goals of Amateur Radio Skywarn](#)
- [Activating the Network](#)
- [Criteria for Reporting](#)
- [Net activation to STANDBY \(Condition WHITE\)](#)
- [Net activation to Condition GREEN](#)
- [Net activation to Condition YELLOW](#)
- [Net activation to Condition RED](#)

An effective **SKYWARN** net usually follows some form of guide or outline. This is especially helpful in making it through the rougher times that occasionally occur. Usually it is in these tough times that your communications to the **NWS** have the utmost value.

Remember, **SKYWARN** is **NOT** a club. By putting aside any differences that do not support the goals of **SKYWARN**, you'll find your **SKYWARN** net to be at its most effective level.

A great amount of the work is done by the amateur radio community in fulfilling the goals of **SKYWARN**. The **NWS** appreciates your assistance. The Jackson National Weather Service office has over 2600 trained spotters in our 33-county warning area that covers East Kentucky. We rely on you in assisting in goals number 2, 3 and 4.

THE GOALS OF AMATEUR RADIO SKYWARN

- 1) TO HAVE A NETWORK OF SPOTTERS IN PLACE TO REPORT SEVERE WEATHER
- 2) TO ACTIVATE THIS NETWORK AS NEEDED
- 3) TO COORDINATE REPORTS FROM THE SPOTTERS IN A PROFESSIONAL MANNER
- 4) TO RELAY THESE REPORTS TO THE NWS IN A TIMELY MANNER

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ACTIVATING THE NETWORK

Methods of initial awareness of severe weather and the need to activate the network include:

- Receive a call from NWS requesting reports (or request in Hazardous Weather Outlook).
- NOAA Weather Radio, local TV or radio, if your county is under a Severe Thunderstorm/Flash Flood and/or Tornado Warning, there is no doubt that the NWS needs your reports.
- NWSChat (for amateur radio operators and other people with access. See <https://nwschat.weather.gov/create.php> for details. (Use “ham radio” as your affiliation.)
- Tune to your local repeater, where SKYWARN nets are held. Others may have begun to activate the net.
- If you are hearing reports on the repeater that meet the criteria set by the NWS or,
- Request by EMA or by another county official (Judge Executive, Sheriff, Magistrate, etc.)

Please note: The need for activation occurs when only one of these criteria are met.

CRITERIA FOR REPORTING

- TORNADOS
- FUNNEL CLOUDS
- WALL CLOUDS
- ROTATING THUNDERSTORMS
- WIND GUSTS (ESTIMATED OR MEASURED 35 MPH OR MORE)
- WIND DAMAGE (TO LIMBS, TREES, ROOFS, ETC.)
- HAIL $\frac{3}{4}$ ” OR GREATER (WITH DIAMETER OF LARGEST STONES MEASURED)
- FLOODING (BASEMENTS, EXTENSIVE STREET FLOODING, SMALL STREAMS)
- HEAVY RAIN (0.75 INCHES OR GREATER IN 1 HOUR OR LESS OR 3 INCHES IN ANY TIME FRAME LESS THAN 24 HOURS)
- CONTINUOUS LIGHTNING and/or FIRE/DAMAGE CAUSED BY LIGHTNING
- SNOW/ICE MEASUREMENTS
- ANY DEATH OR INJURY DUE TO ANY OF THE ABOVE

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KEY POINTS: Remember to always give the three most important parts of a report

1. TIME - TIME OF OCCURRENCE

2. EVENT - HAIL, TORNADO, FUNNEL CLOUD, ETC.

3. LOCATION - COUNTY AND DIRECTION/DISTANCE FROM NEAREST TOWN

Often severe storms strike quickly and are isolated in our area. There will be times when there is no radio operator at the NWS to make direct contacts to you. This is when your main link to the NWS is via the 800 Severe Weather Hotline. One person, often the Net Control Station or Alternate NCS, should be delegated to using the HOTLINE to relay severe weather reports. This will avoid duplication and keep the 800 lines free. Whenever calling the Severe Weather Hotline identify yourself as a SKYWARN member either for the county you are relaying severe weather information for or, if applicable, in your county.

If available, the radio operator at the NWS can provide information on the current watch/warning status for your county and a brief radar synopsis. It is up to the net control operator to determine what level of net activation is required given certain circumstances. The degree of need varies but could be effectively arranged in a four-tier system.

Net activation to STAND BY (CONDITION WHITE)

When used: When a Severe Thunderstorm Watch has been issued, but no weather activity is occurring in the area. Note the expiration time of the watch.

A net control station will then be established to take and log check-ins. Now is the best time to establish where potential observers are located for the upcoming event, not when the severe weather is hitting. *(Note that the use of APRS by both spotters and the net control station on 145.390 may be a useful tool in tracking spotter locations.)*

The net control station will also relay watch information frequently. Normal use of the repeater will continue, however, please leave a pause between transmissions should net control need to break in to take the net to a higher level.

As the storms approach your area, the net may need to be fully activated. There are three levels of full activation.

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Net Activation to **CONDITION GREEN**

When used: Used during ALL Tornado Watches and during Severe Thunderstorm Watches when active weather is occurring.

Nets for Flood/Flash Flood Watches are normally not required. There may be exceptions when the NWS would request additional spotter reports, ex. remnants of a tropical storm moving through the area.

The first priority, during condition **green**, would be taking and relaying weather reports to the NWS. Second would be check-ins. The Net Control Station takes control of frequency and gives frequent updates on net status and weather watches. Prepare for further upgrade as storms approach or if severe weather reports begin coming in.

Net Activation to **CONDITION YELLOW**

When used: If a SEVERE THUNDERSTORM WARNING and/or FLASH FLOOD WARNING has been issued for your county.

Priority must be given to collecting and relaying weather reports, No check-ins or checkouts at this time. Net Control will announce warning information frequently. Only reports meeting the criteria mentioned earlier should be requested. "It's not raining here" reports are not needed, unless requested.

Net Activation to **CONDITION RED**

When used: If a TORNADO WARNING has been issued for your county.

Net Control Station takes total control of frequency. Net Control requests tornado, funnel cloud and wall cloud reports. If there are no tornadic reports, Net Control will request reports meeting the above condition yellow criteria. Stations without one of the above reports should maintain radio silence. Net control will relay Tornado Warning information frequently.

Condition **RED** events are rare. However, real emergency organization in these instances is what will make the NWS, trained spotters and all licensed amateurs involved with ARES® fulfill their missions and shine.

Often, if one waits until a warning is issued, it is too late to organize spotters, collect reports and relay them to the NWS in a timely manner. Spotters are also requested to check-in/check-out during Condition White (Stand-by) and Condition Green only. This will help net control know where available spotters are before the storm moves through a particular county or area.

Details concerning future changes will be announced by WX4JKL or your Net Control Station during the following nets:

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- Central and Southeast Kentucky, East Tennessee and Southwest Virginia SKYWARN Net every Sunday at 8 PM on the KY ARES District 9 Network of Stations (145.3700 (-) PL 192.8, 146.835 (+) CSQ and 147.180 (+) PL 74.4). These stations are also connected with other repeaters in the KY-TN-VA Wide Area Repeater Network via IRLP at Node #9613 (see this [link](#) for details).^[9]
- Region 11 Skywarn Net Sundays at 8 PM on 146.925 (-) PL 79.7
- Lake Cumberland Area Weather Net (for South Central Kentucky) at 8:30 PM every Sunday on 146.880 (-) PL 77.
- District 7 ARES Net (Northeast Kentucky) Mondays at 8:00 PM on 146.9100 (-) PL 123
- Lake Cumberland Area Emergency Net (ARES District 10) every Tuesday at 8:30 PM on 146.8800 (-) PL 77.
- District 8 ARES Net (East Kentucky) Tuesdays at 9:00 PM on 147.2250 (+) PL 127.3 and on 147.390 (+)
- District 9 ARES Net Thursday at 7:15 PM on 145.3700 (-) PL 192.8, 146.835 (+) CSQ and 147.180 (+) PL 74.4 ([link](#))^[9]
- And on other ARES and SKYWARN/Weather Nets that take place throughout the week within the Jackson CWA. I will keep you up-to-date with the pluses and minuses of the new operations. Granted, what works well for one county might not for another. Many counties conduct two-meter radio Skywarn nets. If a County ARES® EC/AEC or DEC would like to share information in future newsletters on how they conduct their nets, let me know.

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NWS-JKL CWA – ARES® & SKYWARN™ 2-Meter Net Frequencies

SKYWARN frequencies that our counties use during severe weather events.

| Kentucky Counties (ARES Dist.) | Primary Frequency & PL Tone | Alternate Frequency or Frequencies & PL Tone |
|-----------------------------------|---|--|
| Bath (7) | 146.9100 (-) pl 123 | 147.0750 (+) pl 123 |
| Bell (9) | 146.8350 (+) CSQ† | 146.5500 (S1) |
| Breathitt (8S) (NWS-JKL) | 146.6700 (-) pl 103.5 (Hazard) | 146.8800 (-) pl 77 (Somerset); 146.9100 (-) pl 123 (Morehead); 147.1800 (+) pl 74.4 (London); 147.2250 (+) pl 127.3 (Paintsville); 146.9250 (-) pl 79.7 (Manchester) |
| Clay (9) | 147.1800 (+) pl 74.4†; | 146.9250 (-) pl 79.7; 146.5500 (S1) |
| Elliott (7) | 146.9100 (-) pl 123 | 147.0300 (+) pl 107.2; 147.1350 (+) pl 107.2 |
| Estill (9) | 145.3700 (-) pl 192.8†* | 146.8200 (-) pl 192.8; 147.0150 (+) pl in & out 100; 146.5500 (S1) |
| Fleming (7) | 146.9100 (-) pl 123 | 146.9550 (-) pl 107.2 |
| Floyd (8) | 147.2250 (+) pl 127.3 | 145.3100 (-) pl 127.3 |
| Harlan (9)* | 146.7600 (-) pl 103.5 147.1050 (+) pl 103.5 (Co. ARES) | 147.2100 (+) pl 103.5; 146.5500 (S1) |
| Jackson (9) | 147.1800 (+) pl 74.4† | 145.3700 (-) pl 192.8†; 146.7150 (-) pl 100; 146.9250 (-) pl 79.7; 146.5500 (S1) |
| Johnson (8E) | 147.2250 (+) pl 127.3 | |
| Knott (8S) | 146.6700 (-) pl 103.5 | 145.3500 (-) pl 186.2 |
| Knox (9) | 147.1800 (+) pl 74.4† | 146.8350 (+) CSQ†; 146.5500 (S1) |
| Laurel (9) | 147.1800 (+) pl 74.4† | 147.2850 (+) pl 77†; 146.9250 (-) pl 79.7 146.5500 (S1) |
| Lee (9) | 145.3700 (-) pl 192.8†* | 146.8200 (-) pl 192.8 147.2700 (+) pl 103.5; 146.5500 (S1) |
| Leslie (8S) | 146.6700 (-) pl 103.5 | |
| Letcher (8S) | 146.6700 (-) pl 103.5 | 145.3500 (-) pl 186.2 |
| Magoffin (8E) | 147.2250 (+) pl 127.3 | 146.6250 (-) pl 127.3 |
| Martin (8E) | 147.2250 (+) pl 127.3 | 145.2700 (-) pl 127.3 |
| McCreary (10) | 146.8800 (-) pl 77 | 146.5500 (S1) |
| Menifee (7) | 146.9100 (-) pl 123 | |
| Montgomery (7) | 146.9100 (-) pl 123 | 442.0500 (+) pl 100 |
| Morgan (7) | 146.9100 (-) pl 123 | |

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| | | |
|-----------------|---|---|
| Owsley (9) | 145.3700 (-) pl 192.8†♦ | 146.8200 (-) pl 192.8; 147.2700 (+) pl 103.5; 146.5500 (S1) |
| Perry (8S) | 146.6700 (-) pl 103.5 | 146.8500 (-) pl 77; 147.3750 (+) pl 103.5 |
| Pike (8E) | 147.2250 (+) pl 127.3 | 146.8950 (+) pl 127.3; 145.1500 (-) pl 127.3; 147.0900 (+) pl 100 |
| Powell (9) | 145.3700 (-) pl 192.8†♦ (D9 ARES); 145.2900 (-) CSQ (Co. ARES) | 146.8200 (-) pl 192.8 146.5500 (S1) |
| Pulaski (10) | 146.8800 (-) pl 77 | 146.8800 (S) & 146.5800 (S) |
| Rockcastle (10) | 146.8800 (-) pl 77 146.7150 (+) pl 100 (Co. ARES) | 146.5500 (S1) |
| Rowan (7) | 146.9100 (-) pl 123 | |
| Wayne (10) | 146.8800 (-) pl 77 | 145.1500 (-) pl 100 |
| Whitley (9) | 147.1800 (+) pl 74.4† | 147.2850 (+) pl 77†; 146.5500 (S1) |
| Wolfe (8) | 147.2250 (+) pl 127.3 | 146.6700 (-) pl 103.5 |

Frequencies listed courtesy of Repeaterbook.com and the ARES web pages from KYHam.net.

† ARES District 9 Network of Stations covering parts of East Central, South Central and Southeast Kentucky as well as parts of East Tennessee and Southwest Virginia

(S) = Simplex (S1) = Statewide ARES Simplex Frequency

* District 9's Harlan County for SKYWARN purpose to the use the Perry County frequency

♦ Repeater located within the NWS – Louisville (LMK) CWA

| KY ARES DISTRICT | # of Counties in the CWA | County Names |
|--------------------------|---------------------------------|---|
| 7 | 7 | Bath, Elliott, Fleming, Menifee, Montgomery, Morgan, Rowan |
| 8 | 11 | Breathitt, Floyd, Johnson, Knott, Leslie, Letcher, Magoffin, Martin, Perry, Pike, Wolfe |
| 9 | 11 | Bell, Clay, Estill, Harlan, Jackson, Knox, Laurel, Lee, Owsley, Powell, Whitley |
| 10 | 4 | McCreary, Pulaski, Rockcastle, Wayne |
| Total KY Counties | 33 | |

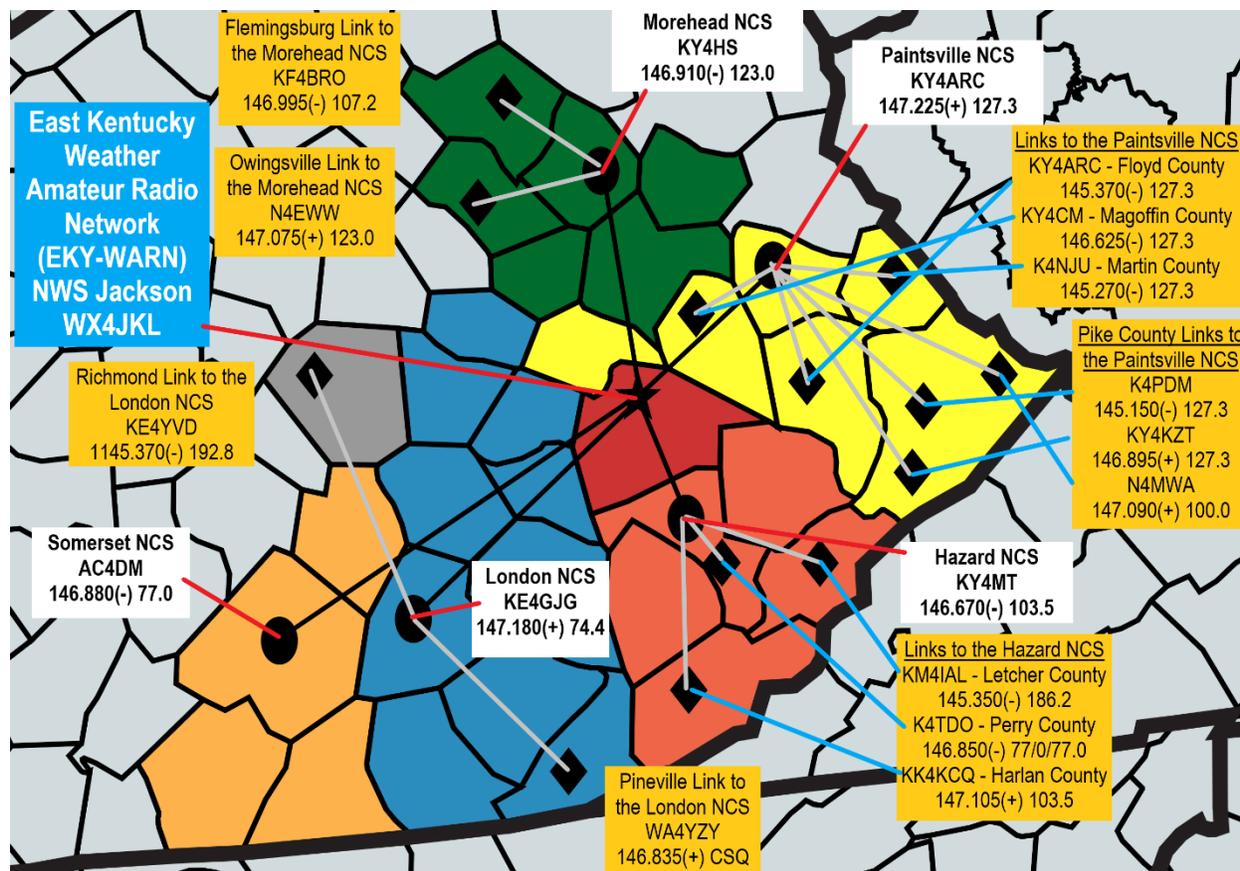
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East Kentucky Weather Amateur Radio Network

To help facilitate this process of observing and reporting on severe weather conditions in the East Kentucky County Warning Area (CWA) for the National Weather Service in Jackson, a plan has been implemented as of April 1, 2019, to establish five regional net control stations (RNCS) for the 33 counties located within our CWA. The purpose behind establishing these RNCS is to better help the Jackson Weather Office with issuing timely severe weather watches, advisories and warnings to the public based on spotter reports received through amateur radio from each regional net control station.

If you recall your ICS/NIMS training on “span of control”, each RNCS would be generally divided along the current Kentucky Emergency Management Areas and ARES Districts with an exception made for District 8 counties as noted on pages 10 – 11.



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**East KY WARN Main Hub # of counties in each region These counties include:
 Information**

| | | |
|--|-----------|---|
| Morehead KY4HS – 146.910 (-) pl 123 | 7 | Bath, Elliott, Fleming, Menifee, Montgomery, Morgan, Rowan |
| Paintsville† KY4ARC – 147.225 (+) pl 127.3 | 6 | Floyd, Magoffin, Martin, Johnson, Pike, Wolfe |
| Hazard† KY4MT – 146.670 (-) pl 103.5 | 6 | Breathitt, Harlan*, Knott, Leslie, Letcher, Perry |
| London♦ KE4GJG – 147.180 (+) pl 74.4 | 10 | Bell, Clay, Estill, Jackson, Knox, Laurel , Lee, Owsley, Powell, Whitley |
| Somerset AC4DM – 146.880 (-) pl 77 | 4 | McCreary, Rockcastle, Pulaski , Wayne |
| Total JKL CWA Counties | 33 | |

Location of the county where a hub is listed is in bold print.

† ARES District 8 counties (divided into East and South sectors – see page 11.)

* An ARES District 9 county ♦ Central hub for Richmond and Pineville repeaters (see below).

Using span of control, you can see from the map and chart above:

- The Morehead (*Rowan County*) RNCS, with *7 counties total*, includes those counties of ARES District 7 that are within the Jackson CWA (*Bath, Elliott, Fleming, Menifee, Montgomery, and Morgan counties*) uses the KY4HS repeater [146.910(-) PL 123.0], Included are two linked repeaters which are:
 - N4EWW in (Owingsville) Bath County [147.075(+) PL 123.0]
 - KF4BRO in (Flemingsburg) Fleming County [146.995(-) PL 107.2]
- Given the mountainous terrain found in ARES District 8, it was determined to establish two separate RNCS, one in the south with the other to the east:
 - The southern part includes five ARES District 8 counties (*Breathitt, Knott, Leslie, and Letcher*) with the RNCS located in Hazard (*Perry County*) for spotters using the KY4MT repeater [146.670(-) PL 103.5] and include these links:
 - KM4IAL in (Whitesburg) Letcher County [145.350(-) PL 186.2]
 - K4TDO in (Hazard) Perry County [146.850 PL 77.0/77.0], and
 - KK4KCQ in (Harlan) Harlan County [147.105(+) PL 103.5] from ARES District 9 for six counties total.
 - The eastern part also includes the remaining six ARES District 8 counties (*Floyd, Magoffin, Martin, Pike, and Wolfe*) with the RNCS located in Paintsville (*Johnson County*) for spotters using the KY4ARC repeater [147.225(+) PL127.3] and include these links:
 - KY4ARC in (Prestonburg) Floyd County [145.310(-) PL 127.3]
 - KY4CM in (Salyersville) Magoffin County [146.625(-) PL 127.3]

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- N4KJU in (Inez) Martin County [145.270(-) PL 127.3]
 - K4PDM in (Pikeville) Pike County [145.150(-) PL 127.3]
 - KY4KZT in (Dorton) Pike County [146.895(+), PL 137.3], and
 - N4MWA in (Phelps) Pike County [147.090(+), PL 100.0]
- The London (*Laurel County*) RNCS is the ARES District 9 central hub used for ten counties in the NWS-JKL CWA during SKYWARN activations. This RNCS, established on the KE4GJG repeater [147.180(+), PL 74.4], is in use by spotters located in *Clay, Jackson, central and western Knox, and Whitley counties* [4 – 5 counties]. KE4GJG along with two other 2-Meter repeater links provide primary coverage for this area. These repeaters include:
 - WA4YZY in Pineville [146.835(+), CSQ] for use by spotters for *Bell and in the central and eastern parts of Knox county* [1 – 2 counties], and
 - KE4YVD in Richmond (Madison County[†]) [145.370(-), PL 192.8] for use by spotters located in *Estill, Lee, Owsley, and Powell counties*. [4 counties]
 - Additionally, KI4FRJ in London [147.285(+), PL 77] can be linked in as a back-up repeater in the event KE4GJG is out of service.
 - Note: a repeater which has opted out of the London hub, KG4LKY in Manchester (Clay County) [146.925(-), PL 79.7], may be also be in use by spotters within its transmission footprint that may overlap parts of the RNCS located in London and Hazard.
- [†] KE4YVD located in ARES District 9 is within the NWS-Louisville CWA.
Also included the London RNCS are several Internet Radio Relay Project (IRLP) 70-cm band repeater connections located across Central and Southeast Kentucky, East Tennessee, and Southwest Virginia (see this [link](#) for details).
- Spotters in three ARES District 10 counties that are a part of the Jackson CWA, (*McCreary, Rockcastle and Wayne*), along with the RNCS located in Somerset (Pulaski County) uses the AC4DM repeater [146.880(-), PL 77]. [4 counties total]

If you have any questions about the NWS SKYWARN program or the East Kentucky Weather Amateur Radio Network, don't hesitate to contact us at (606) 666-8000 or write: National Weather Service – Jackson, 1329 Airport Road, Jackson, KY 41339

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