

# PRINTED CIRCUIT

NOVEMBER 2003

Newsletter of the Joplin Amateur Radio Club

Vol. 13 Issue No. 10

## The End of an Era... Joplin's Queen of CW Dies at 93

### NWS/ARRL SKYWARN RECOGNITION DAY SET FOR DECEMBER 6

**A**mateurs across the midwest awakened on All Saints day to discover that their favorite old gal, Letha Dangerfield, WØOUD, had joined the ranks of Silent Keys the night before.

### Letha A. Dangerfield

Letha A. Dangerfield, 93, of Joplin, passed away Friday afternoon, Oct. 31, 2003 at a local hospital.

Letha was a life member of the JARC, an active ham, and friend to everyone she

Letha was born Dec. 4, 1909 in San Francisco, Calif., the daughter of Frank and Elizabeth Allendorf. The family moved to Seattle, Wash. when Letha was four years old, shortly after a severe illness resulted in blindness. The family moved to Missouri when Letha was 10 and a small portion of her eyesight returned. She graduated from Joplin High School, ranking 3rd in her class, an achievement she was very proud of. Soon after graduation her eyesight failed completely.



Dale Bagley KØKY presents Letha, WØOUD one of two awards when she was honored at the 2003 Joplin Hamfest

Letha was a member of St. Peter's Catholic Church, the Joplin Ham Radio Club, the Joplin Service Club of the Blind and the board of directors for the Joplin Association for the Blind. She served as secretary for many years taking the minutes on a brailed typewriter. Letha was an accomplished poet. She had a hard back book of poems published in 1975.

met. She operated mainly on the 80m Missouri Traffic Net (CW) almost nightly. It has been said of Letha, that she was one of the fastest CW ops around.

At the Joplin Hamfest this year, she was honored by the club with a Certificate of Lifetime Achievement. She will be missed by all those who were privileged to have know her.

The Obituary Published: 2003-11-02 in the Joplin Globe is reprinted here.

She married Alfred H. Dangerfield on Aug. 27, 1943 in Joplin. He preceded her in death on June 6, 1969 as well as her parents; a sister, Ida Allendorf; and a brother, Frank Allendorf Jr. Letha outlived all her relatives, but leaves a great number of friends to miss her.

A funeral mass will be said at 10:30 a.m. Tuesday at St. Peter's Church. Rev. Father Raymond O'Connor, CMF, will officiate.

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The fifth annual SKYWARN Recognition Day will take place Saturday, December 6, 2003, 0000 UTC to 2400 UTC. During the special event, Amateur Radio operators visit National Weather Service (NWS) offices and contact other operators around the world. The purpose of the event is twofold: to recognize Amateur Radio operators for the vital public service they perform during times of severe weather and to strengthen the bond between radio amateurs and their local NWS office. The event is cosponsored by the American Radio Relay League and the National Weather Service.

Traditionally, hams have assisted the National Weather Service during times of severe weather by providing real-time reports of severe events and storm evolution. "You simply can't put a price tag on it," said Scott Mentzer, NØQE, organizer of the event and Meteorologist-In-Charge at the NWS office in Goodland, Kansas. "The assistance that radio amateurs provide to the NWS throughout the year is invaluable."

This year, radio amateurs once again proved their worth. On May 4, after tornadoes knocked out all communications in Stockton, Missouri, portable ham radio stations were set up and staffed by volunteers, with licensed NWS employees forwarding specific forecasts to hams at the Stockton Emergency Operations Center (EOC). In August, an Amateur Radio storm spotter in Iowa tracked a tornado until it lifted, providing the local NWS office in the Quad Cities with "ground truth." This resulted in more

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inside...

"CW - THE WAY IT WAS" Part IV ...

Upcoming Events / Hamfest Calendar/Classifieds

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# CW - The Way It Was - Part IV

**H**aving covered some of the types of traffic the NPTN dealt with, and the general composition of the Network as to stations involved, it may be appropriate to go into a bit more detail on the latter.

Different states took different approaches to the use of the Network and the handling of their police traffic on it. I mentioned that WI. used the WPRN to deliver the traffic via FM radiotelephone on a station

to station or a general broadcast mode. The States of MO., IL., and IN. had a CW network within their own state that they utilized, in addition to their voice networks, for the handling of their police traffic. The Illinois system was based on the State Police Station at Springfield being the

main control point, again, due to the fact they were the State Police Headquarters and source of the state motor vehicle files, operator licenses and records, and other data of that type. There was an almost continual exchange of that kind of message between the City of Chicago station and Springfield. Other IL. State Police CW stations were located in Rockford, Bloomington, Joliet, and Peoria. Indiana had 4 or 5 State Police CW stations with the main one at Indianapolis. Missouri came into the NPRN with the Kansas City PD station and Mo. Highway Patrol CW stations at Jefferson City, Rolla, and Lees Summit. I seem to recall Springfield having a station, at one time, but it was dropped for some reason or other. You will have to bear with me on some of this as there does not seem to be much of a record back in WI. on it and my last close contact with it was in 1960. A quite detailed record of the WI. State Patrol Communications system has been made with practically no mention of the CW part. I have been asked to present them with information that I have regarding the CW history and will do so. Quite a few of the other states had more than one CW station on the Network. The Ohio State

Police station at Columbus was connected to a network that was both teletype and voice dispatch that served about 11 of the Eastern states. The New York State Police had 2 stations, one at Albany and I believe the other in Buffalo. Having radio contact with 41 of the 48 Continental states in those years was much appreciated by those trying to exchange information between the various states. I hope the explanation I have given of the set up was clear enough for you to understand it and to, if possible,



put yourself into one of those stations back then and see what some of the conditions were. They were extremely busy and provided a very valuable service, somewhat slow when compared to later communication modes, but at the time were indispensable. I think the importance of the NPRN has been established and it did do a creditable job considering the state of the art of communications, radio and landline, back then.

I mentioned that we had a teletype link that served the WPRN between Baraboo and Madison. I erred in labeling it as an AT & T service. It was a BELL SYSTEM service and the BELL System continued to press for landline connections for the control of their machines AND the control of radio base transmitters in our WI. State Patrol System. We felt it extremely important to be able to control our system without relying on private services and components of systems we had no control of. WI. was the first state in the United States to have a working microwave relay control system - put in service in 1955. Other states followed suit and like WI. kept their CW station operating for a time even after the advent of the LAW

ENFORCEMENT TELETYPE SERVICE that the BELL SYSTEM pioneered. This was the Network ahead of the NATIONAL LAW ENFORCEMENT TELETYPE SERVICE which signaled the end of CW and the National Police Telegraph Network.

There were continual changes in the FCC licenses issued and our Network procedures that I would like to cover here. In 1949 the FCC issued licenses with 4

letters as their call sign designation. States East of the Mississippi had, for the most part, the letter W and 3 additional letters. States West of the Mississippi, again, for the most part, had the letter K and 3 additional letters. As in all things, there were exceptions, however, it was a general rule you would find

on licenses. When you as a CW operator wanted to call one of the other stations in the NPRN you would have to use their complete 4 letter call, de, your 4 letter call (Baraboo was WIZR) with a K and hope for a reply. This licensing system was changed early in 1953 to differentiate between a CW station and a Voice station license. CW stations had 3 letters and 2 numerals, voice fixed stations had 3 letters and 3 numbers, and mobile voice stations (squads, etc.) had 2 letters and 4 numbers. Our Baraboo CW station was KSA56, Milwaukee was KSA57, Chicago PD was KSB47, IL. SP Springfield was KSA24, Kansas City PD was KAB60, MO. SP Jefferson City was KAB72, and we still had to use the formal call up procedure to initiate a contact. What an improvement, from a 4 letter call to a combination of 3 letters and 2 numbers. HELP,...!!! In operation though, what we often did was to

*(Continued on page 3)*

## CLUB COAX AT COST TO CLUB MEMBERS

RG8X - \$0.31/ft. LMR400 - \$0.71/ft.  
Contact Jim NØZSQ at the meetings.

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monitor one of the frequencies that we figured the station we wanted would be on, and if so, when they finished the traffic they were on, we would send the BREAK abbreviation. They would come back with de their call, we would then advise them of what kind of traffic we had and de our call. We would proceed to handle the traffic and sign off normally. This was really cumbersome, time consuming, and like you would imagine, operators would omit all but the last 2 numbers of their calls to speed up the situation. Not legal but done. By some kind of agreement with the FCC the NPRN was allowed to use a 2 letter designator instead of the 5 digit call for all but signing off (end of the contact). This was a great help and much easier for the operators to initiate a contact. The stations that I mentioned above with their 5 digit calls were now simplified to Baraboo - MA, Milwaukee - MK, Chicago - PC, Springfield IL - PS, Kansas City - KC and Jefferson City - JC. Required a learning process but really a big help in traffic handling.

On the subject of traffic handling and procedures, we should cover abbreviations and accepted signals. I am not sure why the NPRN used "Z" signals instead of "Q" signals.

Over the years in my radio operating career I switched from Q to Z a couple of times. Phonetic alphabets were used by the voice dispatchers as well as TEN SIGNALS. We had standard accepted abbreviations for certain words and phrases. Examples would be those I mentioned earlier as WPPA, WPPB, WAREX, and ATL. RUNAWAY, MISSING/FOUL PLAY SUSPECTED, TAKEN WITHOUT OWNERS CONSENT were some of the phrases that were used and became familiar aiding in traffic handling. A voice message asking for the owner of a motor vehicle license plate would be seen as: 10-28 MO ABC123. The CW message that would ask the same thing would be as follows: DATA MO ADAM BOY CHARLES ONE

TWO THREE. A voice request for a drivers license and record would look like this: 10-29 and RECORD John Doe DOB 8/16/1953. When sent as a CW message it would be: DATA/RECORD JOHN DOE DOB AUGUST ONE SIX ONE NINE FIVE THREE. When a message was received by the CW operator it would be typed as received, a line would be drawn below the text, he would then type the message as it would be dispatched by voice using the TEN Signals and approved voice abbreviations. True, it seems very time consuming to spell out numbers in the text, however, our operating conditions were far from perfect and any help that we could get in assuring the data was copied correctly was a must. It would be quite simple to have a typing error when a digit was involved but not so easy to get it wrong when spelled out. Like I said much of this traffic was critical to the individual involved and to be without error was the name of the game. Sure, in practice, especially with good signals, good fists, and it a simple license plate information check, we would often revert to the single number digit.

I am sure that the stations that were funded by a single entity, say the MO. Highway Patrol, or IL. State Police would have quite a bit of similarity of equipment. I visited the MO. Highway Patrol stations at Lees Summit and Rolla in the middle 50's and their equipment was modern and the operating positions were commercially built. As you would suspect it depended upon the entity budget and interest as to what you had for your system.

Covering the frequencies used and the type of equipment that we in WI. had will be presented in Part V.

73 de Mac/W9NLA

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Burial will be in the Mount Hope Cemetery with Jim Wisdom, Tom Martin, James DeNeen, Elliot Morse, Tom Cusack and Russ Shedelbower serving as pallbearers. A rosary will be recited at 7 p.m. Monday at the Thornhill-Dillon Mortuary Chapel.

Contributions may be made to Joplin Area Catholic Schools or the Joplin Association for the Blind. ¶

(Continued from page 1)

specific information and earlier warnings being disseminated to the public.

The story doesn't stop there. Deployed during a winter storm last March, hams in Fairbanks, Alaska reported pinpoint locations of freezing rain and snow. The information was relayed on 2 meters, which allowed the local NWS office to sharply define the warning area and provide detailed statements of ice accumulation. In Wisconsin, a volunteer operator reported to the NWS office at early one spring morning and solicited snowfall reports from amateurs across the region, allowing the NWS to produce a detailed snow graphic and make a public statement summarizing the storm. Amateur Radio success stories such as these occur every year, all across the country.

In 2002, participants logged nearly 23,000 QSOs during the 24 hour event. Last year nearly 70 countries were contacted. To learn more, check out the NOAA Web site. -- Thanks to David Floyd, N5DBZ, Warning Coordination Meteorologist, NWS Goodland, Kansas.

### A LITTLE ELECTRONICS QUIZ

You have available a 12.6VDC supply, but need to operate a couple of parts at 9V. Searching through the junkbox you find a 1N4739A (9.1V/1W Zener Diode).

- 1) Assume the Zener diode requires a minimum current of 10 mA, what is the maximum no-load current you can safely handle?
- 2) What value and wattage of resistor is needed to deliver this maximum current?

HOPE YOU SUCCEEDED, BUT IF NOT, THE ANSWERS ARE ON PAGE 4.

**Don't forget! The meetings have moved!**

**The JARC now meets at the Southwest Missouri Bank at Hwy.43 & 171 (N. Main Street at Stone's Corner).**

# BUY - SELL - TRADE

# Area HAMFESTS and EVENTS

NOTE: INDIVIDUAL LISTINGS ARE FREE TO THE AMATEUR COMMUNITY, AND SPACE IS ALLOCATED ON A FIRST COME BASIS.

NOTE: LISTINGS ARE PROVIDED AS THEY BECOME AVAILABLE AND ARE NOT VERIFIED FOR CORRECTNESS. SEE BACK PAGE FOR SUBMISSIONS.

**For Sale - Radio Shack HTX-252** - 2 Meter FM Transceiver. Selectable 2.5 or 25 Watts. Generates PL Tones for repeaters, etc. Very good working condition. Normal wear on the case and DTMF microphone but no frayed cables, cracks, etc. Operator's manual available from the RS web site. Exact age unknown. Picture available. \$50 shipped in the US. Tim McDonough, N9PUZ, email: n9puz@arrl.net

**WTB - Working decent Heathkit HW-8** for a reasonable price. I want to buy one for a friend. Mike Sanders, KØAZ, 18169 Highway 174, Mt. Vernon, MO 65712-9171 Email: k0az@arrl.net

**For Sale - Several Items** that I need to sell to make more room in the shack.

**1. Bencher Paddle BY-1** \$50.00

**2. Argonaut 505 with 210 power supply, 208 CW filter and 206 crystal calibrator.** In good condition. Just picked up a 509 so this is surplus to my needs. \$200.00

**3. Autek Research QF-1 Active filter** \$20.00

**4. ICOM 718 HF with DSP option.** Retail: \$579.00. In mint condition. Price: \$425.00

All prices shown above plus shipping.

Gene Sailsbury, NØMQ gsailsbury@mobil1.net

**Wanted - Free Advice, Military Gear BC-348, Command Sets T-17, FT-243 XTALs, SP600-Trim Pros-Vibroplex Key, Tube Tester, Frequency Counter, etc..** - Lloyd Williams KAØZCX (620) 856-3462. 8560 S.E. Star Road, Baxter Springs, KS 66713

**For Sale - MFJ-986 Differential Tuner, 3KW** MFJ-986 Differential tuner covers 1.8 through 30 MHz continuously. Cross needle meter. Outputs for two coaxial, one balanced line, and one dummy load. Excellent condition.

John, N3JM (918) 786-8135.

Email: n3jm@arrl.net

**For Sale - NYE VIKING 3KW Antenna Tuner MB-II-V-A** Here's your chance to own a REAL high-power tuner with optional internal balun & SWR meter. Covers 1.8 through 30 MHz continuously. It will match just about anything you can hook up to it.

John, N3JM (918) 786-8135.

Email: n3jm@arrl.net

**For Sale - HEATHKIT SA-2040 Antenna**

**Tuner 2KW.** Covers 1.8 through 30 MHz.

John, N3JM (918) 786-8135.

Email: n3jm@arrl.net

**For Sale - DIAMOND Antenna SX-1000 SWR and POWER METER.** For 1.8 through 160 MHz, and 430 MHz through 1,300 MHz. John, N3JM (918) 786-8135.

Email: n3jm@arrl.net

**For Sale - 12V Sealed Lead-Acid Batteries**

Stock closeout 12V/4.5AH 3.5"x2.75"x4"LWH Used for EXIT and security lighting systems \$5 (417) 781-2211, Email: wb0iyc@arrl.net

**For Sale - Rohn 25G Tower Sections - Used**

Serviceable condition. 15 pieces available at \$50 each. Hal WBØLJF (417) 781-6739

**For Sale - Complete Station - ICOM 756**

with voice board installed for visually impaired. Also included: power supply, Telex-Hygain DF-88 vertical antenna, coax, Vibroplex keyer, manuals, and other misc items. \$1500 firm.

This complete station is in very good condition. Call B.J. KC7WDD (417) 781-2309 days.

**For Sale - Resistors Kits - 1/4W 5% (600 pcs)**

Handy for the bench! Nice selection of 60 values of 10 pieces each on tape. The value multipliers within a range: 1.0, 1.5, 2.2, 2.7, 3.3, 3.9, 4.7, 5.6, 6.8, 7.5, 8.2, 9.1. Ranges included: 10-91 Ohm, 100-910 Ohm, 1k-9.1k, 10k-91k, 100k-910k. Includes First Class S&H - \$12.00. Email: wb0iyc@arrl.net

**For Sale - Kenwood TS-520** HF Transceiver

5 band 80-10m rig Very Good Rcvr - SSB,CW,AM, 120W transmitter (6146 Finals). 120VAC/12VDC. Includes manual. Ask \$275 (417) 781-2211, Email: wb0iyc@arrl.net

**For Sale - Several Items**

**1. ALINCO DR-570 - 2/440 FM**

12VDC mobile rig w/20 memories. Good shape w/orig OP manual, mt. bracket, and mic. Asking \$150.

**2. ALINCO DRM-06H 6m 20W FM**

FM rig w/100 memories. Recieves 40-60MHz Very good shape w/original manual, and mic. Ask \$150. Ray KBØSTN (417) 781-4967

Email: kb0stn@arrl.net

**1 Nov. 2003 - Enid, OK,** Enid Hamfest Group <http://enidhamfest.com>

For info: Tom Worth, N5LWT, 580-233-8473

Email: enidhamfest@yahoo.com

**8 Nov. - Springfield, MO,** Southwest Missouri ARC presents: 2003 Ozark Regional Hamfest at the Oasis Convention Center - 2610 N.

Glenstone Ave. Adm. \$5; Tables \$10;

Open: 08:00 - 13:00; VE Testing 09:45

Talk-In 146.91-, <http://www.smarc.org>

Contact: Erik Weaver, NØEW, 417-869-4947

Email: n0ew@arrl.net

**8 Nov. - Azle, TX,** Tri-County ARC of North Texas. Adm. \$4. BJ Clark Meeting Hall, 10

Miles NW of Loop 820 on Hwy 199.

<http://www.qsl.net/tcarc-ntx/nctech.html>

David Johnson, KB5YLG 817-444-5165

Email: kb5ylg@arrl.net

**9 Nov. - Davenport, IA** Davenport Radio

Amateur Club Hamfest held at the Iowa

National Guard Hanger. Open 8am - 2pm

Sunday. Tickets \$5/adv. \$6/door. Tables \$12.

<http://www.arcsupport.com/drac/hamfest.html>

Info: Frank Baker, KWOL Ph: 563-386-3369

Email: hamfestchairman@arcsupport.com

## Answers to the Quiz

- 1) The Zener diode is rated at one Watt, therefore the maximum current that can be handled by the diode is  $I=P/E \Rightarrow 1/9.1=110\text{mA}$ . The circuit can supply up to 100mA and still regulate assuming it needs 10mA to operate.
- 2) Since the supply delivers 12.6V and the Zener regulates to 9.1V, the voltage across the resistor will be the difference of these voltages, or 3.5V. The maximum current that can be handled in this circuit is 110mA (from above). Thus the resistor is found from Ohms Law  $R=E/I \Rightarrow 3.5/0.110=31.9$  Ohms. The resistor power dissipation is found for the maximum also,  $P=I^2R \Rightarrow (0.110)^2 \times 31.9=385\text{mW}$ .

As a practical matter, you would probably use a 33 Ohm 1/2Watt resistor, and live with a slightly lower current limit.

# NOVEMBER 2003

## Joplin Amateur Radio Club Meetings and Events

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
						<b>1</b>  09:00 BREAKFAST -
<b>2</b>  14:30 -16:00 JARC SLOW SCAN NET	<b>3</b>  19:30 JARC MON NITE NET NET CONTROL - WØJRP	<b>4</b>	<b>5</b>	<b>6</b>  17:30 THURSDAY NITE OUT -	<b>7</b>	<b>8</b>  09:00 BREAKFAST -
<b>9</b>  14:30 -16:00 JARC SLOW SCAN NET	<b>10</b>  19:30 JARC MON. NITE NET NET CONTROL - NØZPD	<b>11</b>   19:30 JARC ELECTIONS - BUSINESS MEETING	<b>12</b>	<b>13</b>  17:30 THURSDAY NITE OUT -	<b>14</b>	<b>15</b>  09:00 BREAKFAST -
<b>16</b>  14:30 -16:00 JARC SLOW SCAN NET	<b>17</b>  19:30 JARC MON NITE NET NET CONTROL - NØKMP	<b>18</b>	<b>19</b>	<b>20</b>  17:30 THURSDAY NITE OUT -	<b>21</b>	<b>22</b>  09:00 BREAKFAST -  VE- TESTING 12:30 P.M.
<b>23</b>  14:30 -16:00 JARC SLOW SCAN NET	<b>24</b>  19:30 JARC MON NITE NET NET CONTROL - WD6FIC	<b>25</b>  19:30 JARC PROGRAM MEETING	<b>26</b>	<b>27</b> 	<b>28</b>	<b>29</b>  09:00 BREAKFAST -
<b>30</b>  14:30 -16:00 JARC SLOW SCAN NET						

## Meeting Times, Testing, and other Club Information

**T**he Joplin Amateur Radio Club, Inc., a Missouri *not-for-profit* organization, meets on the second and fourth Tuesdays of each month at the South West Bank Meeting Room at Stone's Corner at Hwy 43 (North Main St.) and Hwy 171. The facility is accessible to the handicapped.

The club supports and promotes annual operating events, assists area agencies with communications when requested, and offers training classes for advancement in amateur radio. It also sponsors the JARC Hamfest each year in April, and maintains a wide area coverage OPEN 2m repeater on 147.21 MHz (+).

Point your browser to the club website to get the latest information on upcoming events, photos of past events, and links to other ham sites.  
<http://www.joplin-arc.org>

Saturday mornings, members gather for breakfast around 9:00 a.m. at the restaurant next to Smitty's Grocery located at 1820 Maiden Lane in west Joplin. For details contact Dave, NØKMP on 147.21+, or land line at 417.781.3154.

### 2003 CLUB OFFICERS:

President: Dave Ferguson	NØKMP
V. P. JC Alexander	K5DMI
Treasurer: Jim Johannes	NØZSQ
Secretary: Mark Mitchelson	NØZPD

### VE TESTING SCHEDULE

License testing by volunteer examiners takes place on the 4th Saturday in February, May, August, and November at the SW Missouri Bank building located at 7th and Duquesne, in Joplin. Sign up at 12:30 PM, testing begins promptly at 1:00 PM. For more information contact Dave Hill KIØPP 782-8762.

### ABOUT THE NEWSLETTER

This club newsletter offers an open forum for the Four-State area amateur radio community, and *your* comments and contributions are always invited. Items for publication, including classified ads and amateur radio related articles, may be sent to the **JARC Printed Circuit**, P.O. Box 2983, Joplin, MO 64803-2983, or send email to: [wb0iyc@arrl.net](mailto:wb0iyc@arrl.net)

Deadline for submissions is the 20th of the month preceding the month of publication. Non-Commercial Classified ads are free and will be run on a space available basis whenever requested. Submissions may be typed, handwritten, ASCII text files attached with email, or on disks formatted for IBM. *All items* are subject to editing for spelling, content, and space limitations as required.

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