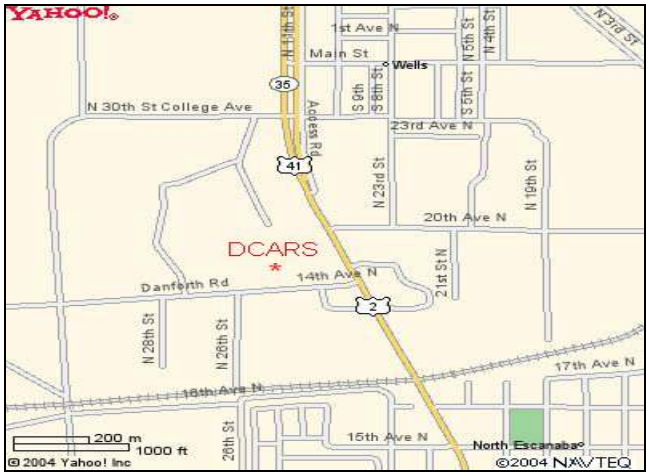
# Air Scoop

*The monthly Newsletter of the Delta County Amateur Radio Society, Inc. October 2007*

**Air Scoop Monthly – is the official newsletter for "The Delta County Amateur Radio Society Inc"**

**The Delta County Amateur Radio Society, will hold** a monthly meeting on **Monday, October 15th 2007.** Our meeting will start promptly at 7 P.M., at Bay-De-Noc Community College, Room, 963, Building 900.Located in the glassed in area at the Joseph Heirman Center adjacent to Danforth Road. Enter to the right lot going West on Danforth Road into the large parking lot. Just watch for antennas on vehicles where to park.




**NOTE: ALL NEWSLETTERS ARE UPLOADED MONTHLY TO OUR WEBSITE – BY OUR NEWSLETTER EDITOR ON OR ABOUT THE FIRST WEEK PRIOR TO MONTHLY MEETINGS HELD ON THE 3RD MONDAY OF EACH MONTH YEARLY UNLESS CIRCUMSTANCES CHANGE DUE TO OTHER COMMITMENTS BY OUR EDITOR, WA8LE, OR A SPECIAL MEETING IS CALLED BY OUR PRESIDENT – DAVE – N8DP**

**DCARS** – **WWW.DCARS.ORG**
*Joe Thompson – Webmaster*

**LOCAL REPEATERS**

147.150 + now on the air – tone 107.2
Recent installation at the Wells water tower in Wells township, Escanaba, (Covers Delta County)
145.130 – Escanaba
147.240 + Gladstone
IRLP – simplex link 147.550 tone 107.2
146.700 – Cooks, MI
147.030 + Trenary, MI
APRS DIGI 144.390
146.640 – Gwinn Mi linked to Mqt 147.27 -100.0

**2007 DCARS – OFFICERS**

President - Dave Palmgren – N8DP
V. President -Tony Marietta – KC8NUR
Treasurer - Rich Thompson – N8OYR
Secretary - Joe Thompson – W8JRT
Newsletter Editor - Les Elder – WA8LE
Club Librarian - Tony Marietta - KC8NUR
HamFest Chairman – Richard Thompson – N8OYR

**Future Testing Schedule – Upper Peninsula**

**V.E. TESTING**:

Please arrive one-half hour early for test sessions to give time to process applications.

**10/20 *Iron River*:** 7:00pm central time, Iron River Lutheran Church (after club meeting) NOTE: Pre-registration is required, contact Dan Waters, AA9JG, at 906 265-4240 or e-mail: dmwaters@ironriver.tv

**10/13 *Escanaba*:** 9:00am arrival time with testing beginning at 9:30am, at the Gladstone Library, same as last month. Enter Front door turn right into room set up for testing. Contact person – Les Elder, wa8le 906-789-1543, or Howard St.John, w8hsj@dcars.org or call 906 428-9476

**11/05 *Iron Mountain*:** 9:00am central time, (arrive by 8:30am) Dickinson County Library (conference room), contact Mark J. Lewis N8UKD, 412 Fairmount St. Kingsford, MI 49802

**12/10 Marquette:** 8:30am eastern time, (arrive by 8:00am) Marquette County Health Dept. Bldg, U.S. 41 just east of the Michigan State Police Post. Contact Rich Schwenke, N8GBA at 906 249-3837or e-mail: n8gba@chartermi.net

## Notice

Please arrive one-half hour early for test sessions to give time to process applications. Testing applicants should bring the following items with them: Two pieces of I.D. **one being a photo I.D., Original license and one clear copy.** If applicable, Completed form 605 (one will be provided if you don't have one), pencils, calculator and the test fee of $14.00. Please have the correct fee as examiners do not carry change.

Please contact the individual(s) listed to confirm date(s), location(s), etc.

**U.P. News in Brief:** KB0P, Paul Racine Member and President of HARA in Marquette Recently (October 8th 2007) completed the first of its kind linking the Marquette and the Gwinn 2-meter repeater system together. Testing was completed this evening and all ham radio operators are urged to use this system. Area wide coverage will give operators constant coverage from the Northern Upper Peninsula all the way to the Southern area around Escanaba. Many thanks to the technicians that put this system together. Use either the 147.27 with a tone of 100.0 or the Gwinn repeater 146.64 – no tone needed. For your communication needs, plug these frequencies into your mobile or base unit.

## President's Message – DCARS – N8DP

Things are progressing well on many fronts. The club house is doing well, Project night has returned and we've been having a good turn out. If you missed the last meeting, Mike – KD8DKA has been elected as club house trustee. Although it's been a hectic several months with the building project, the rewrite of DCARS constitution, field day, Ham exams etc., maybe now we can back to normal with programs and show & tell at the Monthly meetings. **This month** I plan on talking about **power supplies**, please look for opportunities to bring something interesting to our meetings.

73, Dave – N8DP

## It Seems to Us: Interoperability

By David Sumner, K1ZZ
October 1, 2007

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*"Interoperability" is a big word with many different definitions depending on the context. In radio it means, broadly, the ability of operators or devices to communicate (that is, to exchange information) with one another.*

*Interoperability normally refers to the characteristics of equipment rather than to operators although language and jargon also can be barriers to communication.*

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Public safety communicators have been grappling with the problem of interoperability for decades. When everyone used analog FM voice it was possible, in principle, to solve the problem simply by designating a common frequency. In practice it wasn't always that easy. Different agencies used different frequency bands, and even when they could get on the same frequency they couldn't talk very far and often used different jargon. The emergence of a variety of trunked and digital systems exacerbated the situation. Today there are technical solutions to the public safety interoperability problem -- but they depend on the availability of specific hardware, training, and a willingness on the part of agencies to relinquish control.

By comparison, Amateur Radio scores well in terms of interoperability. All CW stations built in the past 80 years are able to communicate with one other, assuming they have a frequency in common. The same is true of all SSB stations built in the past 60 years. (Historical note: The first amateur SSB transmission was made on September 21, 1947 from the Stanford University Radio Club, and the first two-way SSB contact was established on 20 meters between club station W6YX and W0TQK in Missouri on November 3 of that year.) On VHF FM, a newly minted operator with a brand new handheld transceiver can communicate with an old-timer who has used the same tube-type rig for the past 40 years.

Things get more complicated with digital modes. Codes and protocols become as important as hardware. As we move from the realm of hardware to software, maintaining interoperability becomes a greater challenge and does not occur automatically. A modern computer-based RTTY station can communicate with the old mechanical marvels, but only because they both use the venerable Baudot code. AMTOR stations can only communicate with other AMTOR stations. PSK31 is a remarkable development and a great improvement over Baudot-based RTTY for keyboard-to-keyboard communication, but its devotees can only communicate among themselves. With a few exceptions (the three versions of PACTOR are backward compatible and G-TOR is structured to be compatible with HF Automatic Link Establishment, or ALE) the HF data modes are independent islands in the digital stream. The story is much the same with regard to digital voice, which is developing more slowly except with regard to Internet-based internetworking such as IRLP and EchoLink.

For routine amateur operations, this is of no great consequence. We would like to be able to identify other stations that we encounter in the amateur bands and sometimes are frustrated by our inability to decode their transmissions, but this is a relatively minor issue most of the time. However, in emergencies we must be able to communicate with one another. If we do not maintain our interoperability within the Amateur Radio Service as we branch out in different digital directions, a call for help could go unheeded even if other stations are in range -- with potentially tragic consequences. In addition, the agencies we serve in responding to emergencies *expect* us to be able to communicate with one another, because we have done it so well for so long. Interoperability is one of Amateur Radio's distinguishing features; losing it would be a giant step backward.

This aspect of digital development has been a concern for some time, so it was reassuring to hear a series of presentations at the Third Global Amateur Radio Emergency Communications Conference (GAREC-07), held in Huntsville on August 16-17 just before the ARRL National Convention. In explaining how they are applying specific advanced technologies to emergency communications, speaker after speaker identified interoperability with other technologies and networks as a key objective.

It was a pleasure to hear how the VoIP Hurricane Net, **www.voipwx.net**, is utilizing both EchoLink and IRLP to provide "ground truth" reports to the National Hurricane Center.

It was encouraging to hear the proponents of D-STAR, Winlink 2000, and ALE all address the need to ensure that communication can take place between their platforms.

It was enlightening to hear how Army MARS is pursuing its mission of providing an auxiliary communications conduit for military, civil, and disaster officials during periods of emergency, and the steps already being taken to increase collaboration among the Army, Air Force and Navy-Marine Corps MARS organizations.

It was instructive to learn how disaster response organizations such as the American Red Cross, the Salvation Army, and Southern Baptist Disaster Relief meet their communications requirements using a variety of tools -- including Amateur Radio when appropriate -- and what they need from us now, which is quite different from just a few years ago. "Please send this spreadsheet to our headquarters" is an example.

Tying much of this together is the Internet. By its very nature, the Internet is able to survive a lot of disruption -- but connections to it from a disaster area may be non-existent at first and woefully inadequate, even via satellite, for hours, days, and possibly even weeks afterwards.

So it was a joy to share the GAREC experience with nearly 100 dedicated, committed Amateur Radio volunteers who were as intent on cooperating as on explaining and advocating their

favorite technologies. This spirit of cooperation and the recognition of the need to preserve our interoperability bode well for the future of Amateur Radio emergency communications, and for our ability to continue to serve our local, national and global communities.

## SPECIAL EVENTS DURING OCT/NOV

**Oct 13-Oct 14, 1600Z-2000Z**, Seney, MI. Lake Effect Amateur Radio Club, W8W. National Wildlife Refuge Week: 104 Years of Service. 14.250 14.070 7.250 7.060. QSL. Lake Effect ARC / NWR2007, 36 Southfork St, Marquette, MI 49855. **www.pilgrimriver.com/nwr2007**

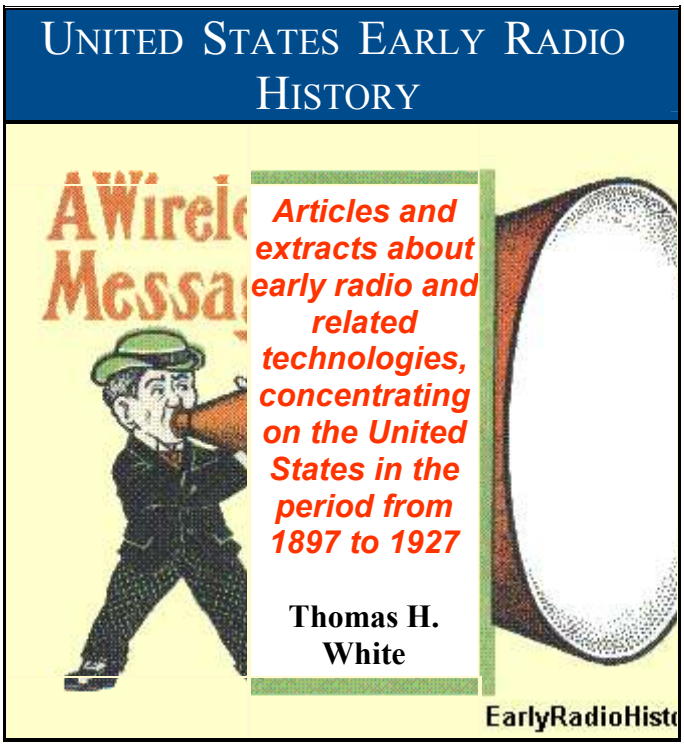
**Oct 13, 1500Z-1800Z**, Onalaska, WI. Mississippi Valley Amateur Radio Association, W9FCC. Onalaska Fire Department Open House. 28.330 21.330 14.330. Certificate. Terry Miller, 1926 Loomis St, La Crosse, WI 54603-2061. **www.mvara.net**

**Nov 1-Nov 5, 1700Z-1700Z**, Whitefish Point, MI. Stu Rockafellow Amateur Radio Society, N8F & K8F. Remembering the Edmund Fitzgerald. 18.160 14.260 7.260 3.860. Certificate. Richard Barker, 264 N East St, Brighton, MI 48116. **www.qsl.net/w8njh**

**Nov 2-Nov 5, 2100Z-1900Z**, Split Rock, MN. Stillwater Amateur Radio Association, WØJH. Stations operating at Split Rock Lighthouse (ARLHS USA 783). 21.360 14.260 7.260 3.860. Certificate. Shel Mann, NØDRX, 1618 West Pine St, Stillwater, MN 55082. *This event also marks the 32nd anniversary of the sinking of the iron ore tanker ship* The Edmund Fitzgerald *on Lake Superior.* **www.radioham.org**

**Nov 3, 1500Z-2000Z**, Detroit, MI. Livonia Amateur Radio Club, W8F. Commemorating the loss of the Edmund Fitzgerald. 10 15 20 40 m (80 m if conditions allow). Certificate. Livonia Amateur Radio Club, PO Box 51532, Livonia, MI 48151-5532. **livoniaarc.5gbfree.com**

**Nov 10-Nov 12, 1300Z-2100Z**, Iron Mountain, MI. Mich-A-Con Amateur Radio Club, K8V. UP Veterans Memorial atop Pine Mountain, Veterans Day. 14.280 14.060 7.230 7.060. Certificate. Thomas Martin, 812 West B St, Iron Mountain, MI 49801. **www.qrz.com/k8v**




**http://www.earlyradiohistory.us/index.html**

*An assortment of highlights -- plus a few lowlifes -- about early U.S. radio history. Over time more articles will be added, to cover additional topics and expand on the existing ones. (This webpage was begun September 30, 1996, and was located at www.ipass.net/~whitetho/index.html until March 11, 2003).*

### Sections

1. Period Overview (1896-1927) - General reviews of the individuals, activities and technical advances which characterized this era.

2. The Electric Telegraph (1860-1914) - The electric telegraph revolutionized long-distance communication, replacing earlier semaphore communication lines. In addition to its primary use for point-to-point messages, other applications were developed, including printing telegraphs ("tickers") used for distributing stock quotes

and news reports.

3. News and Entertainment by Telephone (1876-1925) - While the telegraph was mainly limited to transmitting Morse Code and printed messages, the invention of the telephone made distant audio communication possible. And although the telephone was mostly used for private conversations, there was also experimentation with providing home entertainment. In 1893 a particularly sophisticated system, the *Telefon Hirmondó*, began operation in Budapest, Hungary -- one of its off-shoots, the *Telephone Herald* of Newark, New Jersey, did not meet with the same financial success.

4. Personal Communication by Wireless (1879-1922) - After Heinrich Hertz demonstrated the existence of radio waves, some were enchanted by the idea that this remarkable scientific advance could be used for personal, mobile communication. But it would take decades before the technology would catch up with the idea.

5. Radio at Sea (1891-1916) - The first major use of radio was for navigation, where it greatly reduced the isolation of ships, saving thousands of lives, even though for the first couple of decades radio was generally limited to Morse Code transmissions. In particular, the 1912 sinking of the Titanic highlighted the value of radio to ocean vessels.

6. Early Radio Industry Development (1897-1914) - As with most innovations, radio began with a series of incremental scientific discoveries and technical refinements, which eventually led to the development of commercial applications. But profits were slow in coming, and for many years the largest U.S. radio firms were better known for their fraudulent stock selling practices than for their financial viability.

7. Pioneering U.S. Radio Activities (1897-1917) - Marconi's demonstration of a practical system for generating and receiving long-range radio signals sparked interest worldwide. It also resulted in numerous competing experimenters and companies throughout the industrialized world, including a number of important figures in the United States, led by Reginald Fessenden and Lee DeForest.

8. Alternator-Transmitter Development (1891-1920) - Radio signals were originally produced by spark transmitters, which were noisy and inefficient. So experimenters worked to develop "continuous-wave" -- also known as "undamped" -- transmitters, whose signals went out on a single frequency, and which could also transmit full-audio signals. One approach used to generate continuous-wave signals was high-speed electrical alternators. By 1919, international control of the Alexanderson alternator-transmitter was considered so important that it triggered the formation of the Radio Corporation of America.

9. Arc-Transmitter Development (1904-1921) - A more compact -- although not quite as refined -- method for generating continuous-wave radio signals was the arc-transmitter, initially developed by Danish inventor Valdemar Poulsen. Because arc-transmitters were less complicated than alternator-transmitters, a majority of the early experimental audio transmissions would use this device.

10. Audion and Vacuum-tube Receiver Development (1907-1916) - Lee DeForest invented a three-element vacuum-tube detector which he called an Audion, but initially it was so crude and unreliable that it was little more than a curiosity. After a lull of a few years, more capable scientists and engineers, led by AT&T's Dr. Harold Arnold, improved vacuum-tubes into robust and powerful amplifiers, which would revolutionize radio reception.

11. Pre-War Vacuum-tube Transmitter Development (1914-1917) - AT&T initially developed vacuum-tubes as amplifiers for long-distance telephone lines. However, this

was only the beginning of the device's versatility, as various scientists and inventors would develop numerous innovations, including efficient continuous-wave transmitters, which would eventually replace the earlier spark, arc, and alternator varieties.

12. Pioneering Amateurs (1900-1917) - Radio captured the imagination of thousands of ordinary persons who wanted to experiment with this amazing new technology. Until late 1912 there was no licencing or regulation of radio transmitters in the United States, so amateurs -- known informally as "hams" -- were free to set up stations wherever they wished. But with the adoption of licencing, amateur operators faced a crisis, as most were now restricted to transmitting on a wavelength of 200 meters (1500 kilohertz), which had a limited sending range. They successfully organized to overcome this limitation, only to face a second hurdle in April, 1917, when the U.S. government shut down all amateur stations, as the country entered World War One.

13. Radio During World War One (1914-1919) - Civilian radio activities were suspended during the war, as the radio industry was taken over by the government. Numerous military applications were developed, including direct communication with airplanes. The war also exposed thousands of service personnel to the on-going advances in radio technology, and even saw a few experiments with broadcasting entertainment to the troops.

14. Expanded Audion and Vacuum-tube Development (1917-1924) - The wartime consolidation of the radio industry under government control led to important advances in radio equipment engineering and manufacturing, especially vacuum-tube technology. Still, some would look toward the day when vacuum-tubes would be supplanted by something more efficient and compact, although this was another development which would take decades to be realized.

15. Amateur Radio After World War One (1919-1924) - Although there was concern that amateur radio stations would not be allowed to return to the airwaves after the war, in 1919 the wartime restrictions were ended. And the next few years would see tremendous strides, as amateurs adopted vacuum-tube technology and began to explore transmitting on shortwave frequencies, which resulted in significant increases in range and reliability.

16. Broadcasting After World War One (1918-1921) - Although still unfocused, scattered broadcasting activities, taking advantage of the improvements in vacuum-tube equipment, expanded when the radio industry returned to civilian control.

17. Big Business and Radio (1915-1922) - Once the radio industry finally became profitable, major corporations -- including the American Telephone & Telegraph Company, General Electric, and Westinghouse -- moved into the field. Meanwhile, in 1919, due to pressure from the U.S. government, American Marconi's assets were sold to General Electric, which used them to form the Radio Corporation of America.

18. Broadcasting Becomes Widespread (1922-1923) - Led by Westinghouse's 1920 and 1921 establishment of four well-financed stations -- located in or near Pittsburgh, Boston, Chicago and New York City -- there was a growing sense of excitement as broadcasting activities became more organized. In December, 1921, the Department of Commerce issued regulations formally establishing a broadcast service. Then, in early 1922, a "broadcasting boom" occurred, as a sometimes chaotic mix of stations, sponsored by a wide range of businesses, organizations and individuals, sprang up, numbering over 500 by the end of the year.

19. The Development of Radio Networks (1919-1926) - The introduction of vacuum-tube amplification for telephone lines allowed AT&T to experiment with sending speeches to distant audiences that listened over loudspeakers. The next step would be to use the lines to interconnect radio stations, and in December, 1921 a memo written by two AT&T engineers, J. F. Bratney and H. C. Lauderback, outlined the establishment of a national radio network, financially supported by advertising. General Electric, Westinghouse and RCA responded by forming their own radio network, however, unable to match AT&T's progress, in 1926 they bought out AT&T's network operations, which were reorganized to form the National Broadcasting Company.

20. Financing Radio Broadcasting (1898-1927) - Soon after Marconi's groundbreaking demonstrations, there was speculation about transmitting radio signals to paying customers. However, there was no practical way to limit broadcasts to specific receivers, so for a couple decades broadcasting activities were largely limited to experiments, plus a limited number of public service transmissions by government stations. During the 1922 "broadcasting boom", most programming was commercial-free, and entertainers, caught up in the excitement of this revolutionary new invention, performed for free. Meanwhile, a few people wondered how to pay for all this. In early 1922, the American Telephone & Telegraph Company began promoting the controversial idea of using advertising to finance programming. Initially AT&T claimed that its patent rights gave it a monopoly over U.S. radio advertising, but a 1923 industry settlement paved the way for other stations to begin to sell time. And eventually advertising-supported private stations became the standard for U.S. broadcasting stations.

21. Fakes, Frauds, and Cranks (1866-1922) - Unfortunately, some "misunderstood geniuses" are actually crazy, or dishonest, or both.

22. Word Origins - Reviews of the history of the words "radio", "broadcast" and "ham".

23. Early Government Regulation (1903-1946) - Documents covering early international and national control of radio.
    - 1903 Berlin Conference
    - 1904 "Roosevelt Board"
    - 1906 Berlin Convention
    - 1910 Ship Act (Amended in 1912)
    - 1912 London Convention and 1912 Radio Act
    - Selected Radio Service Bulletin Announcements (1915-1923)
    - Early Government Station Lists (1906-1946)
    - Radio Regulation by the Department of Commerce (1911-1925)

24. Original Articles - Writings about United States radio history, emphasizing the early AM broadcast band (mediumwave).
    - Mystique of the Three-Letter Callsigns
    - Three-Letter Roll Call
    - K/W Call Letters in the United States
    - United States Callsign Policies
    - U.S. Special Land Stations: Overview
    - U.S. Special Land Stations: 1913-1921 Recap
    - Building the Broadcast Band
    - United States Pioneer Broadcast Service Stations
    - U.S. Pioneer Broadcast Service Stations: Actions Through June, 1922
    - United States Temporary Broadcast Station Grants: 1922-1928
    - Early Commerce Department Records: Examples
    - Kilohertz-to-Meters Conversion Charts
    - Washington D.C. AM Station History
    - Extraterrestrial DX Circa 1924: "Will We Talk to Mars in August?"
    - The International Radio Week Tests

## HAM RADIO EQUIPMENT FOR SALE

## EQUIPMENT FOR SALE FROM N8MAK ESTATE

1. **KENWOOD TS440 TRANSCEIVER NO POWER PLUG**
2. **MOSLEY TA33-M BEAM**
3. **ALFA DELTA OUTBACKER / HF MOBILE ANT W/O MT**
4. **5/8 MAG MT 2 METER ANTENNA**
5. **40 MHZ OSCILLASCOPE**
6. **MFJ MODEL 259 ANALYZER**
7. **50FT CABLEXPERTS 9913 W/CON**
8. **PRO-VISION CMP-56**
9. **MXG 9802 FUNC GENERATOR – FREQ COUNTER**
10. **2 ARRL HANDBOOKS**
11. **AVIATION HANDI TALKIE**
12. **EARPHONES**
13. **YAESU FT50R W/2ND UNIT FOR PARTS 1997 VINTAGE 2M/440 BOX CHARGERS FOR HT'S**
14. **2M/440 BEAM 4 ELEMENT**
15. **DIAMOND X50A DUEL VERT 2M/440 NEW IN PACKAGE**

ALL ITEMS CAN BE VIEWED AT THE TELEGRAPH BUILDING -- BID ON ANY ITEM, BIDS CASH EXCEPTED AT OUR OCTOBER MONTHLY MEETING. CALL MIKE KD8DKA OR DON K8GMW ON THE **147.15 REPEATER FOR ACCESS TO BLDG.**

**D.C.A.R.S.**
**DELTA COUNTY AMATEUR RADIO**
**C/o Richard Thompson - Treasurer**
**9560 Chaison – N. Road**
**Gladstone, Mi.**
**49837**

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