

# The Open Feed Line

A Publication of the Michigan Amateur Radio Alliance (MARA)

Volume 14, Issue 2 - Friendship, Community Service & Advancement of the Hobby - Apr. - June 2005

## Our busy time.....summer!

*By Wayne Dowling KB8VOZ*

This past Saturday, May 21, 2005, we held our first Fox Hunt of the year. It also was the start of our clubs' busiest time of the year. This coming weekend, we're holding the first Operation Care Coffee Stop of the year. The Memorial Day public service event will start with set-up at noon Saturday 28<sup>th</sup>, and commence with 4-hour shifts until we close down on Monday, May 30<sup>th</sup> at 8:00PM. This year we're continuing with the two person slots per shift. If you would like to volunteer your valuable time for a very worthy event, go check out the available openings on the MARA web site, <http://www.w8usa.org>. You can make a difference and meet some wonderful people in the process.

The next weekend, I.R.A. will hold their great Ham swap. For more information, see the bulletin in this newsletter. The last full weekend of June will bring with it, "Field Day 2005". Followed by the 4<sup>th</sup> of July Operation Care Coffee Stop. Some where in there, we'll have two club meetings and start planning for our August club meeting and end of the season picnic. Oh, we also have the Labor Day weekend Operation Care Coffee Stop and our special event station we're holding in the Veterans Home on "Remembrance Day". More on that in our next issue.

This is one exciting club and it is going places. Join us in having fun.

## Editor's Corner

Richie K8JX asked several ARRL officials for an article explaining what they do in their position. In this newsletter, you will find some of the responses we received from them.

**Don't forget the IRA swap on June 4<sup>th</sup>.**

## Official Observers

We've all heard about the Official Observers, but what do they actually do? Does the term, "Repeater Police" really describe what they do? According to Don Sefcik, The Official Observer Coordinator for Michigan, the general objectives are:

- ...Foster a wider knowledge or and better compliance with the FCC rules.
- ...Extend the concepts of self-regulation and self-administration in the Amateur Service.
- ...Enhance the opportunity for individual amateurs to contribute to the public welfare
- ...Enable the compliance and information bureau of FCC to efficiently and effectively utilize its limited manpower and resources.

Their task is not to find fault or lay blame, but to identify cause and effect and to find ways to achieve solutions to promote good amateur operating and engineering practice on our bands.

*Continued on page 4*

## What the Heck Is an Affiliated Club Coordinator?

*By Dan Romanchik, KB6NU, Michigan Section Affiliated Club Coordinator  
734-930-6564, kb6nu@arrl.net*

There are many positions within the ARRL Field Organization, and generally people are unaware of them. Some of us may have gotten a notice from an Official Observer (OO), or know the Emergency Coordinator because they are part of an ARES or RACES group. Many, however, are not familiar with the Affiliated Club Coordinator, or ACC.

*Continued on page 4*

## **The Open Feed Line**

The Open Feed Line is published quarterly. It is the official journal of the Michigan Amateur Radio Alliance, or MARA for short.

MARA, an American Radio Relay League affiliated club, was created to provide opportunities for friendship, community service, increasing technical knowledge, and upgrading our skills in the hobby of Amateur Radio.

You may freely reprint any material in the Open Feed Line, but please credit the Open Feed Line, the original author, and the original publication, if given.

Everybody is encouraged to submit original articles on topics relevant to the hobby of Amateur Radio to the editor. The deadline for submission is the end of January, April, July, and October, and the newsletter will be published within the following month.

### **Publisher**

Michigan Amateur Radio Alliance  
Post Office Box 670

Comstock Park MI 49321-0670

Visit our website- <http://www.w8usa.org>

E-mail us at- [w8usa@arrl.net](mailto:w8usa@arrl.net)

### **Editor**

James M Cordes KI8JD

1235 Morgan NW

Grand Rapids MI 49504

616-459-1195 or 459-5415

E-mail- [jcordes@iserv.net](mailto:jcordes@iserv.net)

### **Editor's Assistant & Printer**

Richard M. Ranta K8JX

812 Graceland NE

Grand Rapids, MI 49505

E-mail- [rranta@sbcglobal.net](mailto:rranta@sbcglobal.net)

### **Membership Information**

Annual dues to MARA are \$20. Family memberships are an additional \$5. Persons aged 70 and over - \$5.00. Membership is free to students under 21. Memberships expire on December 31<sup>st</sup>, and club dues are due on January 1<sup>st</sup>. MARA membership is open to all interested persons.

Please send change of address information and membership applications to the club secretary.

### **Great Lakes Award**

Send inquiries regarding the Great Lakes Award to the Awards Manager  
Larry Dells KC8KVR c/o

MARA

P.O.Box 670

Comstock Park MI 49321-0670

E-mail- [LLDGRD@netscape.net](mailto:LLDGRD@netscape.net)

## **MARA Club Officers**

### **President**

Wayne Dowling KB8VOZ  
2442 West Collier Ave.  
Kentwood MI 49546  
616-957-4641

[waynedowl0207@sbcglobal.net](mailto:waynedowl0207@sbcglobal.net)

### **Vice President**

Larry Dells KC8KVR  
4317 Willow Dr. NE  
Grand Rapids MI 49525  
616-363-8235

[LLDGRD@netscape.net](mailto:LLDGRD@netscape.net)

### **Secretary**

Richard M. Ranta K8JX  
812 Graceland NE  
Grand Rapids, MI 49505  
616-361-5975

[rranta@sbcglobal.net](mailto:rranta@sbcglobal.net)

### **Treasurer**

Jerry Wittkoski W8MSK  
1025 Kendalwood St. NE  
Grand Rapids MI 49505  
616-363-6146

[jeromeW551@aol.com](mailto:jeromeW551@aol.com)

## **Appointed Positions**

### **Awards Manager**

Larry Dells KC8KVR  
4317 Willow Dr. NE  
Grand Rapids MI 49525  
616-363-8235

[LLDGRD@netscape.net](mailto:LLDGRD@netscape.net)

### **Club Trustee**

Richard Douglas KC8NKA  
3903 Oriole Ave. SE  
Wyoming MI 49509  
616-531-6218

[kc8nka@arrl.net](mailto:kc8nka@arrl.net)

### **Membership Director**

Larry Dells KC8KVR  
4317 Willow Dr. NE  
Grand Rapids MI 49525  
616-363-8235

[LLDGRD@netscape.net](mailto:LLDGRD@netscape.net)

### **Education Director**

James Cordes KI8JD  
1235 Morgan NW  
Grand Rapids MI 49504  
616-459-1195 or 459-5415

[jcordes@iserv.net](mailto:jcordes@iserv.net)

### **Bereavement Director**

Jerry Wittkoski W8MSK  
1025 Kendalwood St. NE  
Grand Rapids MI 49505  
616-363-6146

[jeromeW551@aol.com](mailto:jeromeW551@aol.com)

### **Field Day Chairperson**

Mike Eilers K8OOK  
3565 4-Mile Rd. NE  
Grand Rapids, MI 49505  
616-363-4998

[k8ook@iserv.net](mailto:k8ook@iserv.net)

### **Operation Care**

#### **Chairperson**

Wayne Dowling KB8VOZ  
2242 West Collier Ave.  
Kentwood, MI 49546  
616-957-4641

[waynedowl0207@sbcglobal.net](mailto:waynedowl0207@sbcglobal.net)

### **Net**

#### **Director**

Chris Anderson N6CWA  
1484 12-Mile Rd NW  
Sparta, Mi. 49345  
616-887-5772

[N6CWA@aol.com](mailto:N6CWA@aol.com)

### **Webmaster -- Richard M. Ranta K8JX**

812 Graceland NE, Grand Rapids, MI, 49505 616-361-5975

[rranta@sbcglobal.net](mailto:rranta@sbcglobal.net)

\* Some of these positions become open occasionally. If you'd like to volunteer, contact one of the board members and let them know what your interested in. \*

## **Club activities**

MARA holds their weekly 2-meter Net, every Thursday, at 8 PM on the MARA W8USA repeater, 145.230 MHz -600Khz PL. 94.8. MARA holds their monthly meetings on the 2nd Wednesday of the month at 7:30PM, at the Steepletown Building, located on the SW corner of 5th street and Davis NW, in Grand Rapids. This site is handicap accessible, with additional parking on the West side of the building. All are welcome to attend our meetings.

## **The Fox Hunt**

*By Richie K8JX*

This past Saturday, May 21st, MARA held their first Fox Hunt of the Season. K8OOK, the latest Fox, was found in less than 2 hours 30 minutes. The Hunting team of Pam KC8VUB and Chris N6CWA found the furry critter, sitting in front of K8JX's QTH. The second team of Larry KC8KVR and Peg, and Wayne KB8VOZ and Marion were in a close second, followed by Jack AB8ND a very close third. They ended the hunt at K8OOK's, where Nancy N8IPG and Mike provided a nice repast for all of the hunting party. What better way to spend a Saturday afternoon, than chasing down one of your friends. Next up. Pam KC8VUB and Chris N6CWA become the Fox.

## **Field Day 2005**

*By Richie K8JX*

Field Day 2005 will once again be held at the nice, open field we've been using these past 3 years or so. We have one club meeting before the event itself, so if you have any questions, please either come to the meeting or contact one of the board members and tell them your needs.

## **Spring Cleaning**

*By Richie K8JX*

The Repeater site clean-up crew was hard at work. Larry, KC8KVR, Wayne KB8VOZ, Richard KC8NKA, Dal KB8MFH and our club photographer, Carl, WA8AAT, spent a few hours on a cool Monday evening, cleaning up the repeater site. We have a little more painting to do, some more raking and maybe even planting flowers, but soon, the site will be really something to behold. (Not that it isn't now, but a lot of hands make for short work!) We'll be adding the photos to the web site shortly.

## **A Triple Crown Winner**

*By Richie K8JX*

Last fall, The Michigan DX Association, awarded Al Eckman, WW8WW, their first ever achievement award, "The Pillar of Society Award". This was for the outstanding work Al accomplished with young hams in the Lowell area. This past January, those same young people Al worked with, nominated Al for MARA's "Ham of the Year" award. He received MARA's first ever plaque, presented at the New Hams Dinner. Two weeks later, Al was nominated and was awarded "The ARRL Great Lakes Division, Ham of the Year Award". Now Al is really a very humble guy, and this article is probably embarrassing him. My intention is to show how one person can make a difference with a lot of people, by just caring, sharing and taking the time to help others. This doesn't have to be about Amateur Radio, (but that would be nice!) it could be anything of interest that you either know something about, or know others are interested in and are willing to research it. Remember when somebody helped you out, and how to this day, you still remember them and what they taught you? Perhaps its time to be that "Elmer" for another person.

Let's really spread that Amateur Radio spirit around by helping others.

## **M.M.O.T.Y.A.**

*By Richie K8JX*

The Mara, Member Of The Year Award is up and running. Time for you to see if you know of any present MARA member who is deserving of recognition for their contribution. For further information on this award and how to submit it, go to the MARA web site <http://www.w8usa.org> and click on MARA member of the year. We'll nominate and vote on candidate at the August club meeting.

## Official Observers

*Continued from page 1*

But doesn't that mean enforcement? No! Enforcement is a function reserved exclusively by the FCC. For the OO's to be viable and effective, they must avoid the appearance of enforcement. OO's also do not deal with RFI problems. They are designed to deal ONLY with amateur-to-amateur interference and improper on the air operations by amateurs.

The OO's also do not deal with non-amateur intruders or bootleggers. If it is a foreign broadcaster, the ARRL has a monitoring system that covers that and bootleggers are turned over to the FCC system.

OO's can issue an Advisory Notice card. But don't worry if you get one. They are not citations and do not have to be answered. They are simply a friendly note to alert you to possible equipment factors or operating practices that might have contributed to an apparent departure from a rule or the good amateur practice standard.

OO's are basically, helper-advisors, not the "Radio Police". They concentrate on the Right and Wrong areas. To this end, they avoid the grey areas of between black and white rule violations. They will not notify you if you fail to identify your station at 10 minutes and 12 seconds. If you receive a card and feel the notice violates the principles of the program, send a copy to your section manager.

OO's also emphasize the positive nature of operating by issuing "Good Operator Reports". These are sent to operators whose radio signals and operating practices are consistent with highest standards and are a model for others to follow.

Currently in Michigan, Don said he has 22 OO's and could use more. They listen from anywhere between HF to UHF. Remember that a lot of time is spent just listening and not doing anything else.

So are you interested in joining? All OO's must pass a comprehensive examination based on a set of study materials before they can be certified as members of the Amateur Auxiliary (OO's). These materials include an extensive training manual, The FCC Rule Book

and the ARRL Handbook. Many folks do not make it. This is not a job for everybody. But if you have the time and willing to invest yourself, please contact,

N8NJE  
Donald G Sefcik  
4486 American Heritage Road  
Grand Blanc MI 48439  
Or call 810-694-3823

(Part of this information was taken from an interview with Don over the phone on July 16<sup>th</sup>, 2002 and from OO pamphlets. Reprinted by permission. Don would like to have many more willing people become involved. Give him a call today.)

## What the Heck Is an Affiliated Club Coordinator?

*Continued from page 1*

According to the ARRL, the ACC is the primary contact and resource person for Amateur Radio clubs in a section. The ACC is appointed by, and reports to, the Section Manager, and must be a full member of the ARRL. The ARRL's official job description includes the following:

1. Get to know the Amateur Radio clubs' members and officers in his or her section. Learn their needs, strengths and interests and work with them to make clubs effective resources in their communities and more enjoyable for their members.
2. Help clubs get started and encourage new clubs to become ARRL affiliated.
3. Encourage clubs in the section to become more active and, if the club is already healthy and effective, to apply for Special Service Club (SSC) status.
4. Approve SSC application forms and pass them to the SM.

*Continued on page 5*

## What the Heck Is an Affiliated Club Coordinator?

*Continued from page 4*

5. Work with other section leadership officials (Section Emergency Coordinator, Public Information Coordinator, Technical Coordinator, State Government Liaison, etc.) to insure that clubs are involved in the mainstream of ARRL Field Organization activities.
6. Ensure that clubs file annual reports (updates officers, liaison mailing addresses etc.) and keep their information up to date.

Basically, my job is to do whatever I can to make clubs stronger in our state.

I got interested in becoming ACC about four years ago. At that time, ARROW Communications Association ([www.w8pgw.org](http://www.w8pgw.org)), our club here in Ann Arbor was going through some tough times. Aside from running a repeater—and that was really the job of a single person—ARROW was nearly inactive. In fact, we didn't really know how many members we had because the guy who was treasurer at the time wasn't processing membership applications and cashing membership checks! To be honest, I don't know how ARROW stayed in business.

Fortunately, we somehow attracted some new blood into the club. I became the treasurer, and I convinced my bicycling buddy, Mark, W8FSA, to join the club. He became the first elected president in many years. Sam, KC8QCZ, became our activities coordinator. We joined Tim, KT8K, the club trustee, and Tom, N8AMX, the technical coordinator, and were able to breathe some new life into ARROW. We began sponsoring interesting meetings and activities and attracted a bunch of new members. My

experience with ARROW led me to believe that I could also help other clubs in Michigan. I believe that clubs are a very important part of amateur radio. Clubs are where the action is. Good clubs bring people into the hobby and turn them into active amateur radio operators. Bad clubs turn people away from amateur radio and foster bad stereotypes about amateur radio and amateur radio operators.

I also think that the amateur radio community must provide better support for clubs. For example, one program I am working on is a seminar on leadership training for club officers. The model for this seminar is the training that the Institute of Electrical and Electronic Engineers (IEEE) makes to its section officers. Since it's nearly summertime already, I'm shooting to hold this seminar sometime in the fall.

Another thing I'm working on is collecting information that will make it easier for a club to obtain 501c3 status, should they decide to do so. Here in Ann Arbor, there is an organization called Nonprofit Enterprise at Work (NEW). They publish a manual that includes all the forms an organization needs to file for 501c3 status. My idea is to loan this manual to interested clubs and then help them fill out and file them.

A third program that we've started to discuss is a website specifically for clubs in the Michigan section. There are a number of things we could do with such a website, including posting PDFs of club newsletters, list club events all around the state, and share information among clubs in our section. If any of you might be interested in working on this website, please feel free to call me or e-mail me.

Finally, here's a partly-baked idea that we've been tossing around—

*Continued on page 6*

## What the Heck Is an Affiliated Club Coordinator?

*Continued from page 4*

-----establishing District Club Coordinators (DCCs) in the same way that we have District Emergency Coordinators. Michigan is a big state, and it's really impossible for me to cover it by myself. The idea would then be to have DCCs that would do many of the same things that I do, but specifically for their district. I'd like to hear what you think about this idea, especially if you'd be interested in becoming a DCC.

Well, that's the story. I hope this article has given you some insight into what an Affiliated Club Coordinator is supposed to do, and specifically what I'm doing here in Michigan. Comments, compliments, questions, and complaints are always welcome.

---

*(Joe K8CQF, ARRL Michigan Section Traffic Manager, was kind enough to respond to our inquiry with a 10-page letter. Unfortunately, I had to "hack up" his letter to fit it into the available space below. His letter could really be used for a class about traffic management. I will see if Richie will upload the entire letter to the club website. Maybe it will even be there by the time you read this. Look in the "Club Library", as that would be the most sensible place for it, in my opinion. -Editor's note.)*

### Dear Members of the Michigan Amateur Radio Alliance:

*By Joe K8CQF, ARRL Michigan STM*

Thank you for the invitation to describe my duties as a member of the Michigan Section ARRL team. Mr. Ranta's e-mail was quite a surprise. I attended my first amateur radio club meeting in 1959, was licensed in 1961 and have held various ARRL appointments since 1989, and I don't think I've ever seen any group ask ARRL officials to explain their jobs.

My job as Michigan's ARRL *Section Traffic Manager* (STM) is to oversee the continuing existence and readiness of a number of communication networks that have developed to assist in times of emergency. These networks are specifically affiliated with a national readiness plan known as the National Traffic System (NTS). Part of my job is to ensure that liaison (regular communication) is maintained between each of the various communication networks comprising Michigan's NTS system. It is also to assure to the best of my ability that a communication network administrator (Net Manager) is active at all times. I attempt to document the value of amateur radio service to the public by gathering statistics, which reflect the contribution. We've used \$10 per hour as the value of the time contributed by communication network members since about 2001. The aggregated, regular monthly contribution to Michigan's economy by amateur radio operators participating in NTS within the state is routinely about \$6 to \$8 Million. Multiply the monthly numbers by 12 and you'll find a range of monetary contributions lying between \$72 Million and \$96 Million.

That is a lot of volunteer effort. As large as the number is though, it does not reflect the value of equipment, manuals and other items donated to public service by these generous ham radio operators. Nor does it reflect the value of ARES and RACES volunteer time. Those hours are being put in every month by hundreds of dedicated NTS volunteers keeping circuits alive and practice levels up.

The job of NTS affiliated networks is to maintain routine liaison with other networks. By doing so, the individual networks create a much larger system of networks. Together all these networks create a number of "circuits" or communication paths for passing messages.

# Battery Ratings

By Jim ki8jd

*(I realize that anyone could look this info up, but I have saved you the effort. The following is written for 12-volt batteries. In the case of 6-volt batteries, any voltage given should be halved. Much of the info given regards lead-acid batteries, but can also be applied to other types)*

Two standard ratings are used to measure a battery's storage capacity.

The "Amp-Hour" rating tells you how much amperage is available when discharged evenly over a 20-hour period. Amp-hours = amps X 20 hours, so in order to know how many constant amps the battery will output for 20 hours, you have to divide the amp hour rating by 20. Example: If a battery has an amp hour rating of 75, dividing by 20 = 3.75. Such a battery can carry a 3.75 amp load for 20 hours before dropping to 10.5 volts. (10.5 volts is the fully discharged level, at which point the battery needs to be recharged.) A battery with an amp hour rating of 55 will carry a 2.75 amp load for 20 hours before dropping to 10.5 volts.

Conversely, you can divide the amp-hour rating by the amount of amps needed to find out how many hours the battery will last before it drops to 10.5 volts. Example: an 80 amp-hour battery will output 20 amps for 4 hours (80 divided by 20 amps = 4 hours). This formula does not work for extreme cases, such as when the amp draw is so high that it causes the battery to heat up, or so low that the battery's own reverse resistance becomes an issue. "Self Discharge Rate" is a measure of reverse resistance.

"Reserve minutes" is the number of minutes a battery at 80 degrees Fahrenheit will carry a 25-amp load before dropping to 10.5 volts. (10.5 volts is the fully discharged level, at which point the battery needs to be recharged.)

Even though this does not involve Amateur Radio, maybe I should mention "Cold Crank Amps", and "Crank Amps", which are both a measure of how many amps a battery will deliver in an almost-shorted situation, sometimes called cranking capacity.

"Cold Cranking Amps", or "CCA", is the number of amps a new fully charged battery can deliver at 0 degrees Fahrenheit, for 30 seconds, without dropping below 7.2 volts.

"Cranking Amps", or "CA", or "Marine Cranking Amps", or "MCA", are identical to CCA except the battery is at 32 degrees Fahrenheit. A battery will deliver much more amperage at this higher temperature.

If you are purchasing a battery for your vehicle, be careful to look at the CCA rating, not the CA rating. In my opinion, the CA rating was someone's clever plan to fool people into thinking they were getting a better battery, when they weren't.

The best thing for a lead-acid battery is to keep it fully charged, but not overcharged. Many people think that you should fully discharge a battery before recharging. This is completely false, except in the case of Ni-Cads. Ni-Cads have a "memory" problem due to the cadmium. This is why there is no cadmium in nickel-metal-hydride batteries, and no memory problems.

# **GRAND RAPIDS, MICHIGAN I.R.A. ANNUAL HAMFESTIVAL**

## **West Michigan's Largest Hamfest & Computer Fair**

**Saturday, June 4, 2005.....8 a.m. until 2 p.m.**

Convenient location with great facilities at the spacious Hudsonville Fairgrounds. It's bigger and better every year! 14 miles west of Grand Rapids, two miles north of I-196 exit 62.

HUGE INDOOR FACILITIES with CONVENIENT ACCESS and FREE PARKING.  
OVER 22,000 SQUARE-FEET INDOORS, 8' tables for sellers and dealers, \$8 ea.  
Friday night set-up available after 7 P.M. or 6:00 A.M. start on Saturday.  
Trunk sales spaces, 10' @ \$6 ea. CAMPING available, \$10 fee. Showers and electricity available for camping. Plenty of electrical outlets available inside and outdoors.  
Camping, table and space rental not an admission to Hamfest; tickets are required.  
All reservations with SASE please. Reservations held until 8 A.M. Saturday.  
Food and drinks available in comfortable indoor sit-down eating facilities.  
Children under 12 years admitted free accompanying an adult.  
Handicapped parking and access provided.

### **- FAMOUS "ROADKILL-CHILI" POTLUCK FRIDAY EVENING**

Bring a dish to pass and join-in the fun @ 7:00 P.M. after helping with setup.  
Have fun camping. Hamfest tickets will be available for purchase.

### **- FOUR MAJOR PRIZES PLUS DOZENS MORE!**

### **- VINTAGE EQUIPMENT AND ALTERNATIVE ENERGY EXHIBITS**

### **- MICHIGAN - FLORIDA HAMS - 9 A.M.**

### **- W. - MICH. TRAFFIC NET FORUM - 9:30 A.M.**

### **- VE AMATEUR EXAMS - 10:30 A.M. START**

All walk-ins. Technician, General and Extra Class. Please bring original and a copy of your license, any C.S.C.E.'s with some form of photo ID and a check made out to "ARRL / VEC".

### **- MICH. REPEATER COUNCIL QUARTERLY MTG. - 1 P.M.**

Write for table reservations to:  
Independent Rptr. Assoc., Inc.  
562 92nd Street S.E.  
Byron Center, MI 49315

TICKETS: \$6.00 ea.  
Tables: \$8.00 ea.  
10' Trunk spaces: \$6.00 ea.  
Camping fee: \$10.00

**DEALERS: BRING YOUR  
HAM EQUIPMENT, COAX,  
COMPUTER EQUIPMENT,  
SOFTWARE, ALTERNATIVE  
ENERGY EQUIPMENT, WIRE,  
BOOKS, PARTS, JEWELRY,  
SWEAT-SHIRTS, CAPS, ETC,  
TO SELL.....BE THERE!**

**HAMS: BRING YOUR USED  
EQUIPMENT TO TRADE OR  
SELL.....BE THERE!**

**COMPUTER HOBBYISTS:  
BRING YOUR EXCESS  
HARDWARE, SOFTWARE,  
BOOKS, ETC., TO TRADE  
OR SELL.....BE THERE!**

INFO: Call Kathy at (616) 698-6627 after  
4 P.M. (E.D.S.T.) for info / reservations.  
Check out the IRA Web-site at:  
[www.w8hvg.org](http://www.w8hvg.org) for more info.

**TALK-IN ON THE 147.160 LINK SYSTEM**