THE INDEPENDENT REPEATER ASSOCIATION, INC.
562 92nd Street S.E.
Byron Center, Michigan 49315

BULK RATE
U.S. POSTAGE
PAID
GRAND RAPIDS, MI.
PERMIT NO. 232

W8RNQ
ELGEN WALT
121 N. SPRUCE ST.
TRAVERSE CITY, MI 49684

2-M REPEATERS AROUND WESTERN MICHIGAN

OUTPUT	INPUT	LOCATION
145.130	144.530	PORTLAND
145.150	144.550	BATTLE CREEK LINK TO G.R.
145.170	144.570	KALAMAZOO
145.210	144.610	DOWAGIAC
145.270	144.670	GRAND RAPIDS
145.290	144.690	W.CLD/BIG RPDS LINK TO G.R.
145.310	144.710	CENTERVILLE
145.390	144.790	LANSING
145.410	144.810	GRAND RAPIDS
145.450	144.850	WHITE CLOUD
145.470	144.870	LDGTN, BTN HRBR LNK TO G.R
145.490	144.890	GRAND HAVEN
146.620	146.020	LUDINGTON
146.640	146.040	HART
146.660	146.060	BATTLE CREEK
146.680	146.080	PELLSTON
146.700	146.100	LANSING
146.720	146.120	PLEASANT VALY, ST.JOSEPH
146.740	146.140	BIG RAPIDS
146.760	146.160	GRAND RAPIDS
146.780	146.180	MANISTEE
146.800	146.200	EDMORE
146.820	146.220	MUSKEGON, GAYLORD, BERRIEN CENTER
146.840	146.240	PINE LAKE/PLAINWELL
146.860	146.260	TVS CTY, LANSING LNK TO G.R
146.880	146.280	CEDAR SPRINGS
146.900	146.300	EAST JORDAN (CHARLEVOIX)
146.920	146.320	FREMONT
146.940	146.340	MUSKEGON, LANSING
146.980	146.380	CADILLAC
147.000	147.600	KALAMAZOO
147.040	147.640	KALAMAZOO
147.060	147.660	HOLLAND, HILLSDALE
147.080	147.680	HOUGHTON LKE, CHARLOTTE
147.120	147.720	MARSHALL, GAYLORD
147.160	147.760	GRAND RAPIDS AND CADILLAC WITH 147.760 RECEIVE LINKS IN GRAND RAPIDS, BELDING, GRAND HAVEN AND KALAMAZOO
147.180	147.780	NILES, GLADWIN
147.200	147.800	PAW PAW, FARWELL
147.240	147.840	ALLEGAN
147.260	147.860	GRAND RAPIDS
147.280	147.880	BATTLE CREEK
147.300	147.900	S. HVN, CLDWTR, WLMSBURG.
147.320	147.920	HOLTON
147.360	147.960	BANGOR
147.380	147.980	FRUITPORT/MUSKEGON

W8HVG/R

INDEPENDENT REPEATER ASSOCIATION
LINKED REPEATER SYSTEM

147.160--GRAND RAPIDS/CADILLAC
145.290--WHITE CLOUD/BIG RAPIDS
145.150--BATTLE CREEK
146.860--LANSING

SUPPORT DONATIONS MAY BE SENT TO:
I. R.A., 562 92nd St., S.E.,
BYRON CENTER, MI. 49315

EMERGENCY AUTOPATCH
(USE 3 STARS + 1-DIGIT NUMBER)

***0.....OTTAWA COUNTY SHERIFF
***1.....KENT COUNTY SHERIFF
***2.....STATE POLICE-ROCKFORD POST
***3.....AREA FIRE
***4.....KENTWOOD POLICE
***5.....WYOMING POLICE
***6.....EAST GRAND RAPIDS POLICE
***7.....POISON CENTER
***8.....GRAND RAPIDS POLICE
***9.....911 EMERGENCY

STANDARD AUTOPATCH
(USE 1 OR 2 STARS AS INDICATED + NO.)

* + 7-DIGIT PHONE NUMBER WITH TX KEYED
**4 SAVES LAST NUMBER FOR AUTOREDIAL
** .....RE-DIALS LAST NUMBER SAVED
* + AUTODIAL CODE NO. WITH TX KEYED
# (POUND).. HANG-UP COMMAND

USER COMMANDS

80....TIME OF DAY ANNOUNCEMENT
5....THEN ANY SEQUENCE UP TO 32 DIGITS, ALL KEYS AFTER 5 WILL BE READ BACK.

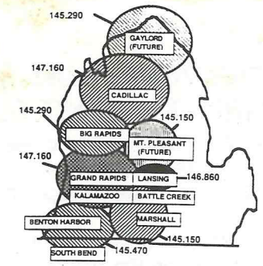
PLEASE IDENTIFY WHEN USING THE SYSTEM

COMPLIMENTS OF THE
INDEPENDENT REPEATER ASSOCIATION, INC.

THE PURPLE CRYSTAL

No. 31 March 1992

A BULLETIN OF THE INDEPENDENT REPEATER ASSOCIATION, INC.
562 92nd St., S.E. -- Byron Center, MI 49315



WHAT IS THE INDEPENDENT REPEATER ASSOCIATION?

The Independent Repeater Association, Inc. is a tax exempt non-profit corporation registered in the state of Michigan and is responsible for managing the technical and financial aspects of its repeater systems. It is not a club and there are no dues. Fund raising is via the yearly sponsored Grand Rapids Hamfestival and donations.

The Association maintains a network of 2-meter repeaters covering western Michigan from the Indiana border to the northern part of the lower peninsula. Everyone is welcome to use and enjoy the system.

IRA EXECUTIVE BOARD FOR 1992

As a result of elections held in December 1991, the IRA Board of Directors for 1992 are as follows. On the executive board are Tom Werkema KA8YSM, President; John Knoper KC8KK, Vice-President; John Rittenhouse WB8VOJ, Secretary, and Steve Stutzman WB8NCD, Treasurer. Ray Abraczinskas W8HVG, is Trustee.

Directors are Fred Heileman, WB8HKD; Paul Gardner, WD8IZB; Dave Stutzman, WD8SAC and Jeff Ansley, N8NII.

IRA PLANS IN 1992

Continuing with the goal of having a linked repeater system covering Western Michigan from the Indiana border to the Mackinac bridge, the IRA is planning in 1992, to install linked repeaters in the Gaylord-Petosky area, the Mt. Pleasant area and the Jackson area. There are no plans to go outside the lower peninsula.

The Gaylord-Petosky link repeater will be operating on 145.29 MHz and fill in the coverage area from Gaylord north to the Mackinac bridge.

The Mt. Pleasant link repeater will be operating on 145.15 MHz and fill in the coverage area from Alma to Clare in the central part of the state.

In November 1991, the Jackson Amateur Radio Club voted to link their 147.36 MHz repeater into the W8HVG/R system. It will cover the area between Ann Arbor and Marshall.

LINKED REPEATER SYSTEM.... HOW DOES IT BENEFIT YOU?

The benefits of the IRA sponsored W8HVG/R, linked repeater system, have been discussed and described many different ways by the many hams who use the system. Providing 2-meter repeater coverage along the major highways from southern Michigan to the Gaylord area, it has been a great asset to travelers "going north" or "traveling south". People on vacation, on hunting treks, or going boating, camping, fishing, skiing, snowmobiling or for whatever reasons people travel in Michigan's lower peninsula, find the linked repeater system a great benefit.

During the 1991 deer hunting season, it was fun listening to the hunting stories being relayed from the north to wives and family at home. Morale boosting, while being separated, was prevalent. Then there was the situation involving the search for the hunter from Indiana who had a death in the family. He got the message over the repeater.

Many people that travel are concerned about the weather and road conditions. What better way is there than to get on-the-spot weather and road condition reports during severe weather happenings from someone on the repeater either by listening and/or asking? How does the W8HVG linked repeater system benefit you? Drop the IRA a line and let them know.

MICHIGAN STATE POLICE SAYS NO MORE ROAD REPORTS ON THE PHONE

A recent newspaper article indicated that many Michigan State Police posts have been affected by a decision that they will no longer be able to give out road condition reports over the telephone. This means that Michigan travelers must pay more attention to travel alerts broadcast over public radio and TV stations during severe winter weather.

Radio amateurs can easily exchange weather and road condition reports, especially when communicating on repeaters. Even non-hams can obtain weather info by listening to repeaters with scanners. Everyone is invited to listen to and exchange weather information on the W8HVG linked repeater system.

THE VIEW FROM THE HILL..... GREAT SUPPORT....THANKS!

As the new President of the IRA for 1992, I would like to take this opportunity to express to you all my best wishes for a happy and prosperous New Year.

In writing this, I thought it'd be quite appropriate for me to go up on the "hill" for some inspiration on subject matter for this column. That is where my problems began.

To go to "the hill" is not that much of an effort for me as I only live four and one-half miles from it, but when I got there and thought for awhile while listening, it hit me. Could I have come to the wrong "hill"? There was a conversation involving someone in Battle Creek. Is there a "hill" there too? I keyed my HT and asked what frequency they were on? Sure enough, they were on the 145.15 repeater. This added to my problem. How could I be going to "the hill" in Battle Creek 50 miles from where I stood?

Just then, another ham from Benton Harbor made a call. This further added to my problem, and then he was answered by a ham in Cadillac, WOW! Now a ham in Benton Harbor was talking to a ham in Cadillac on 2-meters, WOW-O-WOW! This is really something!

This gave me an idea to pen some words of thanks to all the supporters from "the other hills" in the IRA repeater system. From the main site just south of Grand Rapids, to Lansing, Battle Creek, Benton Harbor, Big Rapids/White Cloud and Cadillac, as well as link receiver sites in Grand Haven, Kalamazoo,Belding and Grand Rapids, they all require someone going to "the hills". To everyone who participates in these endeavors, using and maintaining the linked repeater system, you are the IRA. THANKS FOR YOUR SUPPORT, IT'S REALLY BEEN GREAT!

As for my visiting "all the hills", it occurred to me as I drove the four and one-half miles home, that if I talked on the system, I could visit "all the hills" at once. So I tried asking if anyone was listening in Cadillac, in Benton Harbor, in Battle Creek, in Big Rapids and in Lansing. In the time it took me to drive home, I had visited all "the hills". It's truly amazing! Thanks to all of you who support making it possible. You are the IRA.

Also, on behalf of the IRA, my heartfelt thanks to Earl Morse, KZ8E, in Benton Harbor who gratiously donated an IBM compatible computer system to the IRA to facilitate our maintaining meeting records and the gigantic Purple Crystal mailing list. It contains over 2,500 addresses and our job is a lot easier now. Thanks again Earl, people like you are the IRA.

73 de Tom, KA8YSM
IRA President

CONGRATULATIONS HARC FOR A FINE HAMFEST

The Holland Amateur Radio Club, HARC, Hamfest held November 24, 1991 at the Holland Civic Center was their first one and it turned out GREAT! Hopefully, there will be many more in the future.

Congratulations to Jack, KA8FQS; Chuck, WB8GCW; Rick, N8GGO; Scott, KF8DX and everyone else that pitched in to make HARC's first "Lakeshore Hamfest" a big success.

Watch for HARC's Lakeshore Hamfest next November.

NEW REPEATER COMING IN THE SPRING FOR THE BIG RAPIDS AMATEUR RADIO CLUB

The Big Rapids Amateur Radio Club (BRARC) will be getting a new (used) GE MASTR Progress Line repeater in the Spring as soon as weather permits. Abe, W8HVG, acquired it to replace the ham-type equipment presently being used.

The BRARC purchased a new programmable controller and Jeff, WD8DLK, and George, W8OWN, mounted it in a nice rack cabinet. It has autopatch capabilities.

The Big Rapids club repeater operates on 146.74 MHz and is located 5 miles northwest of Big Rapids, Michigan. Also, co-located at the same site is the 145.29 receive link for the IRA linked repeater system.

DID YOU GET ANY UNUSUAL CHRISTMAS PRESENTS?

What did Santa bring you for Christmas? We hope that you got that new rig or antenna you wanted. Aside from ham radio, there were a few interesting presents recently heard about on the ham bands that people received last Christmas. We should be so lucky!

One guy was heard describing his new "glow-in-the-dark" boxer shorts with bright printed designs of "killer butterflies", "viscious frogs", and "yes-no" signs. Wonder if he was concerned about possible radiation hazards?

Then there was the guy in Arizona who received a "Sun Watch" with an ultra-violet limit detector and automatic alert alarm. Now there's a product for Michigan winters!

Lastly, we heard about the ham whose wife got him a luxurious transparent bathrobe for Christmas. Hmmnnn! I can just see it! Chesnuts roasting by the fireplace, Jack Frost nipping at your nose.....it was a great Christmas!

WHEN THUNDERSTORMS COME.....SO DOES LIGHTNING

When winter ends and spring arrives, the thunder-storms come. Thunderstorms mean lightning and lightning can be bad for radio equipment. What do you do with your radio equipment to protect it from the effects of lightning?

What is lightning? Why does it occur? Where does it come from and where does it go? What happens to that enormous power in a bolt of lightning? Here is some talk about lightning.

Simply, the thing we call lightning is a flash of light in the sky caused by a very large electrical current. The current may flow between parts of the same cloud, between different clouds, or between clouds and the earth. The electrical current flows as a result of the immense electrical charge (difference of potential) breaking down the insulation between.

Clouds are the result of an immense number (billions and billions) of tiny water droplets. Each droplet has a charge on its surface. Thus a cloud may have an immense electrical potential or charge on it's surface. When a cloud comes near an opposite electric charge, a huge spark may occur called lightning.

The discharge or equalization of charges produces very high current flow which burns the air making a flash of light. The current flow during the energy discharge produces radio frequencies predominantly in the low Megahertz range. That's why the 160 and 80 meter bands get extremely noisy during thunderstorm activity.

Since lightning is radio frequencies, the current flow is on the surface of metal conductors. This is commonly known as the "skin effect" with radio frequencies. It's a very important phenomena which helps allow our safety from lightning strikes by being inside metallic structures. A car can be a safe place during a storm.

Lightning blasts through the earths atmosphere at an estimated rate of 2-billion flashes a year. There generally is a lightning storm going on somewhere on the earth everyday of the year. Again, this explains why varying static levels exist (and vary) on our HF bands even when we can't see the storm.

Encyclopedia's tell us that there are several forms of lightning, that is how it appears to the observer. There is "forked", "zig-zag" or "chain" lightning which looks like a river with many branches or forks. Then there is "sheet" and "ball" lightning. Sheet lightning is really light seen from chain lightning occuring very far away over the horizon. That's why you can't hear the thunder. It's too far away.

THINGS WE CAN DO TO HELP PROTECT OUR EQUIPMENT FROM LIGHTNING DAMAGE

We all have heard about grounding our ham antennas and equipment to protect them from lightning damage. What is a "ground"? Where does lightning current go? Is a ground all that's required? Certainly not. There are several things that need attention to help protect you from damaged equipment.

One thing to remember is that a direct lightning strike (if it occurs) is most likely to cause some damage. Therefore it's a very good idea to insure your equipment with ARRL insurance. It's very reasonable especially if you have expensive equipment that may cost a lot to repair.

Since lightning is RF energy, it doesn't like impedance or resistance as it seeks an equi-potential. Therefore, you should have impedance to your equipment while facilitating direct flow (a low impedance) to ground. Yes, ground is the place we want to divert lightning to while keeping it away from our radios.

Coax cable shield's should be grounded to the tower base before they run into the house. A common ground point assembly is desired. This can be a bar clamp or a metal plate that each coax runs through via a coax feed-thru barrel. The bar clamp or metal plate should be grounded to the same heavy duty ground system the tower base is grounded to.

The ground system should be several ground rods placed around the tower base. Burying heavy bare copper wires to several 2 or 4 foot ground rods around the tower is better than one 8 foot ground rod. The lightning can be distributed to ground this way. The conductors from the tower legs and the common point ground for the coax should be low inductance. That is, large solid (preferably flat stock) or heavy duty stranded copper wire. It should be straight and not coiled or bent. Avoid using open copper braid (like coax shield) because over the years, it will collect moisture, oxidize or corrode and become a poor conductor. Avoid using your water pipes as they can be high impedances to helping the cause. Run seperate grounds to the above described heavy duty ground system.

Another way for lightning to damage equipment is via voltage surges on the power or phone lines. Disconnecting antenna coax and unplugging every-thing during storms is a good precaution. There are surge protection devices to put on your coax (available at Radio Shack) and your power and phone lines. A small disc shaped device called a MOV for Metal Oxide Varistor, is available to put across your power lines to limit the surge voltage. Use several. Look in the ham magazines for protection devices for your rotor cable and phone lines. GOOD LUCK!.....Abe, W8HVG

NEXT GENERATION WEATHER RADAR BEING INSTALLED

The National Weather Service recently dedicated it's first WSR-88D Next Generation Weather Radar, called NEXRAD, at its new forecasting facilities located at Sterling Virginia. Ten limited production radars will be installed by mid-1992 said Dr. Elbert W. Friday, assistant director of the NWS. Full-scale production is to begin in July 1992 and continue through completion of the program in late 1995. By late 1993, NEXRAD's will be installed at a rate of one site per week. Eventually all radars will be tied together in a coordinated data network.

A network of NEXRAD systems will be the cornerstone of a new weather forecast and warning service for both standard meteorological forecasting, air traffic control and safety, as well as military flight operations. The overall system plan calls for 175 NEXRAD's at National Weather Service sites, military installations, and FAA facilities in the Continental US, Alaska, Hawaii and the Caribbean.

"The new Doppler radar and processor will provide vastly improved astmospheric data to the new NWS forecasting facilities," said Jim Belville, Meteorologist in charge of the new forecasting facility located on the edge of Washington Dulles International Airport. NEXRAD's are replacing old radars which at best, are worn out. "Maintenance downtime on the old systems, many still using vacuum tubes, is a major problem," Mr. Bellville said. Repairs can be difficult and time consuming. In one incident, technicians had to order tubes from the Soviet Union to get systems back on the air.

The Doppler radar techniques and advanced processing algorithms make it possible to detect phenomena not yet possible with earlier systems. This includes dry air circulation and mesocyclones which spawn tornadoes and wind shear. During checkout and test of the prototype system at Norman, Oklahoma, NEXRAD detected a variety of severe weather developments and provided forecasters with reliable prediction of tornadoes and wind shear. It increased the lead time on damaging tornado activity from the current 2 minutes to 18 minutes. It also exhibited a near doubling of the probability of detection rate to 96% over present techniques.

Checking with Grand Rapids National Weather Service at the Kent County International airport, they are scheduled to get NEXRAD in 1996.

(Information taken from World Aerospace Weekly artice 11/91, "NEXT GENERATION WEATHER RADAR DEDICATED").

PRESENTATION ON REPEATERS.....WOULD YOUR CLUB LIKE TO HEAR IT?

Abe, W8HVG, can provide your club a very interesting 20 to 30 minute view-foil presentation on repeaters and their purpose, how they operate, problems with repeaters and a very interesting description of the IRA W8HVG linked repeater system.

Presentations have been made in latter 1991 to amateur radio clubs in Battle Creek, Kalamazoo Holland, Jackson and Benton Harbor.

If your club would like to hear it, just contact Abe, W8HVG, at (616) 455-3915 and make the necessary arrangements. You will need to provide an overhead view-foil projector and screen to see the presentation.

W8HVG REPEATER FACTS..... SUMMARY INFO

Here are some interesting summary facts about the W8HVG linked repeater system. It consists of:

- 6 repeaters
- 17 transmitters
- 13 receivers
- 17 vertical antennas
- 13 beam antennas
- over 3000' of coax
- 13 different operating sites
- Covers 80% of Michigan's lower peninsula

Presently, if you would drive from site to site, covering every repeater, all the remote receivers and transmitters via the most direct highway route, you would drive over 500 miles.

When you key your transmitter, it takes a little over one second to bring up the repeater system. Remember, when "you kerchunk" the repeater, you should say your call sign.

REPEATER OPERATION PET PEEVES HEARD.....SOUND FAMILIAR?

- Always the same person talking.
- Tieing up the repeater for hours.
- Talking and talking and saying nothing.
- Blowing and sighing after every sentence.
- Talking too close to the microphone.
- Continually clearing throat while talking.
- Giving callsign for "ID"....Why else?
- Breaking-in before listening for awhile.
- Not turning it over to someone, ie., just throwing it up in the air for anyone to grab.
- Giving all callsigns during every turnover.
- Using "destinated" vs "arrived".

IRA HAMFESTIVAL COMING, MARK YOUR CALENDARS, MAKE YOUR RESERVATIONS!

The annual Grand Rapids IRA Hamfestival for 1992 will be held at the Wyoming National Guard Armory on May 30, 1992. The facility is conveniently located one-half mile west of the U.S. 131 expressway on 44th Street. Exit 131 and turn westbound. Drive one-half mile to the armory which is located on the south side of 44th Street.

Chairman for this years event is Tom Werkema, KA8YSM. He and his committee's are working and planning very hard to make this year's event even more successful than years past.

If you can help the IRA out with setting up tables in the facility, taking tables down, selling tickets at the entrance doors, working in the kitchen, or any other needs, please let Tom know. Donating an hour or so of your time can really be a great help, making it easy on everybody.

As you probably already know, the IRA relies very heavily on the Hamfestival for gaining funds to maintain the IRA linked repeater system. It's the only source of income besides donations which can be made to the IRA with the enclosed envelope. All donations are acknowledged with a handsome QSL card and your name and address will automatically be added to the Purple Crystal mail list.

TELE-MARKETING SCAMS

There are many types of tele-marketing scams which you should be aware of. They can cost you a few bucks or hundreds and even thousands of dollars if you are not careful. Basically, it begins with you receiving a telephone call with the caller telling you that you either won a prize or are in the final competition for the prize. The prize may be cash such as $2,500 or even $25,000, or it could be a giant screen TV or video-camcorder, or it could be a free vacation trip.

The caller will probably ask you for a credit card number so that your prize can be released to you, or they may say that you must pay the tax on your "giant prize" and they are the collection agency. Generally, the tax must be sent within 24 or 48 hours by Federal Express because they cannot hold your prize.

When you receive calls such as these, don't do anything. Never give your credit card numbers over the phone unless you are absolutely sure you are dealing with a reputable company and you are ordering something. Remember! These sort of things can come to you in the U.S. Mail also, throw them away.

IRA ANNUAL REPORT

OPENING BALANCE-Checking (1/1/91)		$ 401.60
INCOME:		
1) Donations	$2572.00	
2) Transfers from savings	$ 900.00	
3) Swap & Shop	$3784.85	
TOTAL INCOME	$7256.85	
TOTAL INCOME AND OPENING BALANCE:		$7658.45
EXPENSES:		
1) Consumers Power	$ 601.58	
2) White Cloud elec.	$ 120.00	
3) Battle Creek elec.	$ 120.00	
4) Michigan Bell	$ 494.09	
5) Building and Equipment	$1192.87	
6) Site rent	$ 840.00	
7) Ckg. service charges	$ 31.80	
8) QSL Cards	$ 103.48	
9) PC mailing permit	$ 75.00	
10) Liability insurance	$ 157.00	
11) PC postage	$1226.93	
12) Donation envelopes	$ 109.20	
13) Equipment insurance	$ 56.00	
14) Swap tickets	$ 76.34	
15) QSL stamps	$ 57.00	
16) Swap kitchen supplies	$ 254.98	
17) Swap prizes	$ 427.57	
18) Swap GR Press ad	$ 27.20	
19) Armory balance	$ 503.00	
20) PC printing costs	$ 141.44	
21) Annual Report fee	$ 10.00	
22) T-CARS donation	$ 25.00	
TOTAL EXPENSES	$6650.48	
CLOSING BALANCE (12/31/91)		$1007.97
TOTAL EXPENSES AND CLOSING BALANCE:		$7658.45

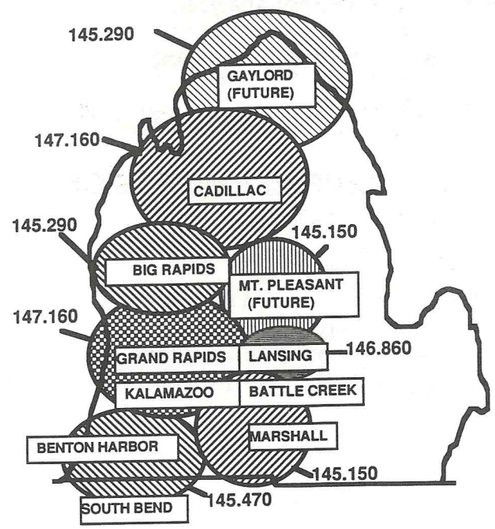
* * * * * * * * * * *

SAVINGS ACCOUNT

OPENING BALANCE (1/1/91)		$1101.11
Deposits	$ -0-	
Interest	$ 36.63	
SUBTOTAL	$1137.74	
Service Charge	[6.50]	
Transfers to Checking	[$ 900.00]	
CLOSING BALANCE (12/31/91)		$ 231.24

Submitted by: _____
Steven C. Stutzman, WB8NCD
Treasurer

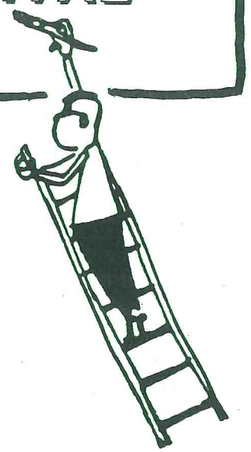
IRA LINKED REPEATER SYSTEM COVERAGE AREA



GRAND RAPIDS MICHIGAN

I.R.A. ANNUAL HAMFESTIVAL

West Michigan's largest



Saturday, May 30, 1992.....8 A.M.- 3 P.M.

Dealer setup starts at 6 A.M.

Wyoming National Guard Armory

44th Street, 1/2 mile west of 131 X-way

HUGE INDOOR FACILITIES with CONVENIENT ACCESS & PARKING
Tables for sellers and dealers, $4 ea. Reservations with SASE please.
Make your table reservations early.....was booked solid last year!
Reservations held until 8 A.M.

MEET YOUR FRIENDS...SWAP YOUR GEAR.
DEALERS, DISPLAYS AND DISCUSSIONS
ON ALL ASPECTS OF AMATEUR RADIO
AND PERSONAL COMPUTERS...BE THERE!
MICHIGAN/FLORIDA HAMS MEET AT 11 A.M.

PRIZES GALORE:

1st-Realistic Model HTX-202 2-M HT.

2nd-MFJ-207 HF SWR Analyzer.

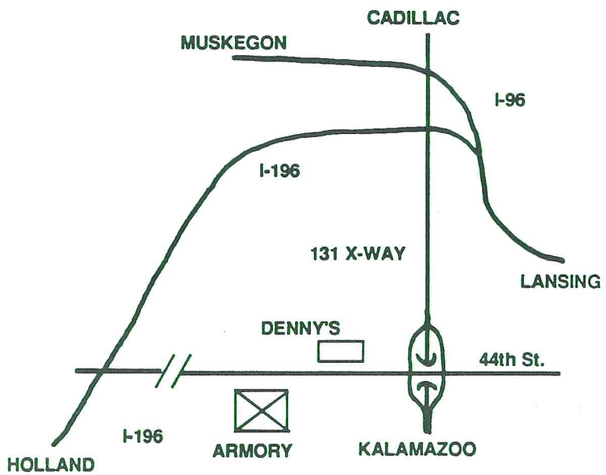
3rd-Diamond D-130J Discone Ant.

4th-Set of 1992 Radio Amateur callbooks.

VE AMATEUR EXAM SESSION

9:30 A.M.....all walkins

NOVICE to EXTRA Class
Please bring original and copy of your license, original C.S.C.E.'s, some form of photo ID and a check made out to "ARRL/VEC" for $5.40.



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

TICKETS: $3.00 before May 15
$4.00 at door
FOOD and REFRESHMENTS
TALK-IN on 147.160 W8HVG/R

INFO: PHONE
TOM, KA8YSM
KATHY, KB8KZH
(616) 698-6627

NEED AN EXCELLENT 2-METER ANTENNA? TRY BUILDING THE HIGH VOLTAGE GENERATOR

If you need a 2-meter antenna for your base station, here is information on how to make a high performance antenna from half-inch copper pipe found in most any hardware store. If you can cut and solder copper pipe, you can build this antenna.

This antenna performs as a vertically polarized omni-directional end fed half-wave folded dipole. The quarter-wave matching section is fed directly with 52 ohm coax, either soldered direcly or fastened with screws and terminal lugs.

The design originated from an article in the Great Britain Amateur Radio Journal, "Out of Thin Air", by F.C. Judd, G2BCX. He named the antenna a "Slim Jim" stemming from it's slender construction and the use of a J-type Integrated Matching stub. The "JIM" stub facilitates feeding the antenna at the base, thus overcoming any problems of interaction between the feed and the antenna. The antenna was originally built with half inch aluminum angle and bolted together. It could also be built from heavy aluminum ground wire as long as it's supported to something like one inch PVC pipe.

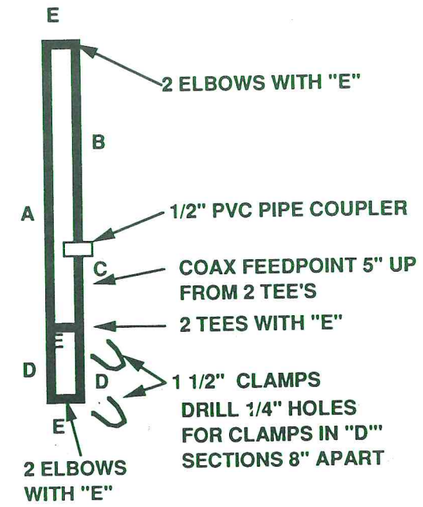
To build the antenna, you'll need about 12 feet of half-inch copper pipe, four half-inch copper elbow's, two half-inch copper tee's and one half-inch PVC pipe coupler. Also purchase two, 1 and 1/2 inch U-clamps with their cross straps. Stainless steel U-clamps are best but not necessary.

Polish the copper pipe with emery paper or steel wool and then cut the following pieces using a tubing cutter:

A=57 1/2 inches, one piece.
B=38 1/2 inches, one piece.
C=18 1/2 inches, one piece.
D=10 inches, two pieces.
E=1 inch, three pieces.

Deburr all the cut pieces. Assemble the pieces as shown in the following diagram. Lay the antenna on the floor or a table where you can safely solder it all together with a propane torch or what have you. Keep everything straight and level. Pieces "B" and "C" should jam into the PVC coupler.

Jam all the long pieces together. But make sure that the center to center spacing of the long elements is such to match the U-clamps you have (about 1 and 1/2 inches center-to-center). Holes for the clamps will be drilled in the "D" sections after soldering the antenna together. These will make provisions for mounting the antenna to a mast using the U-clamps.



Recheck everything and when everything is straight, solder it all together. USE CAUTION AND CARE WHEN SOLDERING WITH A FLAME. BE CAREFUL AND DON'T TOUCH THE HOT COPPER PIPES.

When things cool down, using the U-clamps, mark, center punch and then drill four holes for the U-clamps about eight inches apart in the "D" sections. Be careful not to overdrill the holes and weaken the copper tubing. Use a drill bit slightly larger than the U-clamps, probably 1/4 inch will do. The clamps should fit snugly into the holes.

Drill two 1/8 inch holes five inches up from the TEE cross piece towards the inside of the antenna. One hole should be five inches up the "C" section towards the PVC coupler measured from the cross piece. The other hole would be five inches up the "A" section, directly across from the hole in the "C" section. Strip your coax such to put the center conductor into the hole in the "C" section and the braid into the hole in the "A" section. You may have to enlarge the hole for the braid. Carefully solder the holes securing the coax.

If you don't like soldering the coax, you can use terminal lugs fastened to the coax and stainless sheet metal screws to fasten the terminal lugs to the copper pipe. When finished, weatherproof everything with Coax Seal TM. Use a "tie-wrap" to secure the coax to the antenna. You may want to spray coat your polished antenna with some clear Krylon spray but it doesn't hurt it if it oxidizes, it'll still work.

Mount the antenna on your mast pipe and check it out, you'll be amazed. We use several of these antenna's on our link repeater system remote receivers. Let us know how it works for you.....Abe, W8HVG