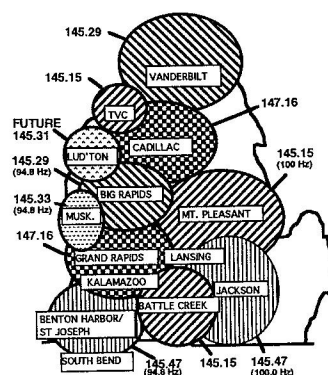


THE PURPLE CRYSTAL

No. 46

February 1999

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



GRANDS RAPIDS IRA SPONSORED HAMFESTIVAL IS JUNE 5, 1999 AT THE HUDSONVILLE FAIRGROUNDS DON'T MISS IT!

The IRA Hamfestival, the largest hamfest in Western Michigan, is again being held at the Hudsonville Fairgrounds this year. The fairgrounds are 2 miles north off I-196 Exit 62, midway between Grand Rapids and Holland. Overnite camping is available with showers and electricity or if preferred, motels are available at Exit 62 (Rest-All Inn, (800) 866-4322).

Friday night camping and setup is available by reservation (camp in your trunk sale space). Bring a dish to pass and join in the potluck dinner at 7 P.M.

The huge facilities at the Hudsonville Fairgrounds provides convenient parking (including handicapped parking next to the gate), three large exhibit buildings of exhibit space including handicapped access. Hundreds of 8' tables are available along with trunk sale spaces. All tables and trunk sale spaces are available by reservation. Plenty of electrical outlets are available both inside and outside (free). For information, call Kathy, KB8KZH at (616) 698-6627 between 4 P.M. and 7 P.M. E.D.S.T. Table and/or trunk sale space rental does not constitute admission to the Hamfestival. All attendees must have admission tickets. Children under 12 years of age do not require a ticket if accompanied by an adult.

VE exams will be given starting at 12-noon. Bring the original and a copy of your license, any C.S.C.E.'s and some form of photo ID and a check made out to "ARRL/VEC" for \$6.45.

WE NEED YOUR HELP!

The IRA Hamfestival is a BIG EVENT. It's the primary activity that generates funds for the IRA to support the link repeater system. If you can donate some time to help set up Friday evening, or sell tickets, or help tear down and clean up on Saturday, it would be very much appreciated and it's a lot of fun if everyone pitches in! If you can help, let it be known on the link repeater or get in touch with Randy, N8KQX, at (616) 532-5450. He is keeping the master schedule. You can also catch him on the link system on Monday nights after the Newline broadcast at 8 P.M.

TECH SEMINARS, Y2K FORUM, VE EXAMS AND THE MICHIGAN REPEATER COUNCIL MEETING ALL AT THE IRA HAMFEST- Y'ALL COME!

Do you know what the Decibel is? Find out in simple terms what it is and how it's used. How about learning some helpful information about antennas, repeaters, duplexers and the IRA linked repeater system? How does the link work so well? If you work on repeaters, these seminars will help you. If you enjoy building antennas, come and pick up some hints about putting them up. All this and more, available in the 5 technical seminars being presented FREE at the IRA Hamfest on June 5, 1999.

If you have a family member or friend needing to take their amateur radio license exam, bring them to the IRA Hamfest on June 5th. Sign-in for testing starts promptly at 12-noon. Also bring a picture ID and any prior testing certificates with your original license and a check made out to ARRL/VEC for \$6.45. It's OK to bring your lunch with you to the test session.

The State and District 6 Emergency Coordinators will sponsor a forum entitled "Y2K and Amateur Radio" from 11 A.M. until 12:55 P.M. Knowledgeable experts will speak about Y2K concerns in the Amateur Radio Public Service Corps. There will be lots of information to share and a brief question and answer session.

The Michigan Area Repeater Council (MARC) will be holding their June Quarterly meeting at the IRA Hamfest at 1 P.M. Come and discuss where Michigan's future repeater technology is going? Meet the MARC Boardmembers, the repeater owners and trustees. Make suggestions, update your Michigan repeater coordination information, and share your repeater operational problems and experiences in what could be the largest gathering of Michigan area repeater hams in many years! Refreshments will be served.

NOTE: Anyone requesting to specifically attend only the MARC meeting or the VE testing will be admitted free after 12-noon, otherwise all attendees require a ticket. Don't miss the giant hamfest or the 5 technical seminars and the Y2K Forum available earlier in the morning. There will be some great things there so don't miss out! Support your organization!

THE VIEW FROM THE HILL.....

.....A GREAT NEW YEAR!

Hard work plus cooperation and support equals a great link repeater system! Thanks to your support the IRA has continued to deliver on our goals and promises. From expanded coverage in the southeast area of the state, to improved performance in many other areas, you can enjoy nearly uninterrupted 2-M coverage while traveling around Michigan. Our goal has been, and still is, to provide western Michigan hams with 2-M coverage from Indiana to the Mackinac Bridge.

Another goal of the IRA is to help unify Michigan hams through the continued existence of the link system. When link coverage is expanded into a particular club's area it is to give them additional communications resources, not to compete with them. In fact, without the dedicated support from these various groups, the IRA could not have gotten where it is today! In keeping with our goals, this year's IRA Hamfest has been improved with new events to bring clubs and hams together, such as:

VE Tests - Continuing with a long tradition of offering VE tests at the IRA Hamfest, this year is no exception. Seize the opportunity to help your friend or family member get his or her ham ticket. For many years now the same group of VE's have given up their Saturday (and most of the hamfest) to provide this service. Let's really make it worth their while by having a record attendance.

Technical Seminars - This year we have scheduled our technical seminars earlier to facilitate several activities. Much valuable information, most of which you could put to use that very day, will be shared via state of the art multimedia presentations. Also, there's a forum on "Y2K and Amateur Radio" sponsored by the State and District 6 Emergency Coordinators.

Michigan Area Repeater Council Meeting - A special thanks to those involved in repeater coordination and administration for making it possible for us to host one of the MARC quarterly meetings. These people are your advocates and deserve much more recognition than they get. We are very happy to provide them with both a place to meet and a GREAT SWAP! Let's show them how hospitable west Michigan hams can be.

Camping and Eating - These past three years, we have seen a big increase in the number of people camping on Friday night. Along with the convenience of rolling out of bed to the hamfest, there is also the "Pot Luck" dinner Friday night. Plan on bringing something to cook on the grill (furnished). Also, bring a dish to pass and bring your own table service. If tradition is kept, Marc WA8IIK will be cooking up some of his delicious "road-kill chili", so don't miss it. C U there!

73, de Tom, KA8YSM
President, IRA

THE IRA LINK REPEATER SYSTEM

.....STATE OF THE UNION!

It was a banner year for activities on the IRA link repeater system in 1998, ever since the tower at Big Rapids blew down in the high winds on May 31st which severed all four links operating north of Big Rapids for several months! The IRA along with the Big Rapids Club led the efforts to locate, obtain and erect a new 180' tower and antenna systems at the SKE Communications site 5 miles northwest of Big Rapids. Six new antennas and mounts with over 1100' of hardline and PolyPhasers, along with new Micor equipment for the 145.29 link and the BRAAC 146.74 repeater were installed. Practically every summer weekend for 3 months was dedicated to the efforts.

An UHF auxillary link repeater was installed in Oshtemo near Kalamazoo providing a hookup with the 145.47 link in St. Joseph/Bentor Harbor and a 147.16 remote receiver. Four antennas and over 800' of hardline were installed one hot summer weekend.

The 147.16 remote receiver in Grand Haven was removed because the 145.33 link in Muskegon now covers the Grand Haven area very well.

Improvements at the Grand Rapids 147.16 site were made in October by "cleaning" the tower of unnecessary hardware which could cause noise.

The new Jackson link repeater on 145.47 was installed and took much effort to coordinate with clubs and individuals in Lansing and Jackson and also WILX-TV management. Finally, after many months of effort and 3 rainy weekends installing the antennas on the 1000' tower, it became operational just before Christmas and is now serving the Lansing/Jackson area so well that the LCDRA 146.94 repeater in Lansing has been disconnected from the link system and restored as a local Lansing repeater.

A Micor repeater was installed for the 145.15 Battle Creek link to improve the operation and reliability there. Future plans involve replacing the link repeaters at Vanderbilt, Cadillac and Traverse City with Micor equipment and installing a link repeater in the Scottville/Ludington area.

It was a very busy year! Thanks to all who helped (in random order): K8YYC, KA8YSM, K8LZH, N8MJE, KA8HDY, KA8WOW, W8HVG, AA8JR, W8BCI, KB8SXX, N8TNT, WA8GVK, K8WZS, K8XX, N8PMK, WB8VOJ, WB8NCD, KB8YNC, KB8TRL, N8NII, KD8CP, W8BQD, KB8IBY, WB8PLO, KB8ZGU, KC8BAQ, N8KQX, N8DAN, KC8KK, KB8DQQ, N8DOG, WA8CZE, WB8DQO, W18W, KB4CCE, WD8DLK, W8OWN, KC8JOJ, WD8EEQ, KC8CGH, N8SFG, WD8PHX, the LCDRA members, the BRAAC members, the CASCADES members, and Glen Walker who does our tower climbing. Apologies to any missed.

WHO AND WHAT IS THE IRA?

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 has 501C3 status with the IRS. It is not a club and there are no dues. Operating expenses are covered by donations which are tax deductible and fund raising activities such as the yearly sponsored Grand Rapids Hamfestival coming up June 5th at the Hudsonville Fairgrounds.

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

The Vision of the IRA with the link repeater system is to provide:

- Dependable communications
- Opportunity for service
- Technical assistance forum
- Occasion to support
- Widespread ham radio goodwill

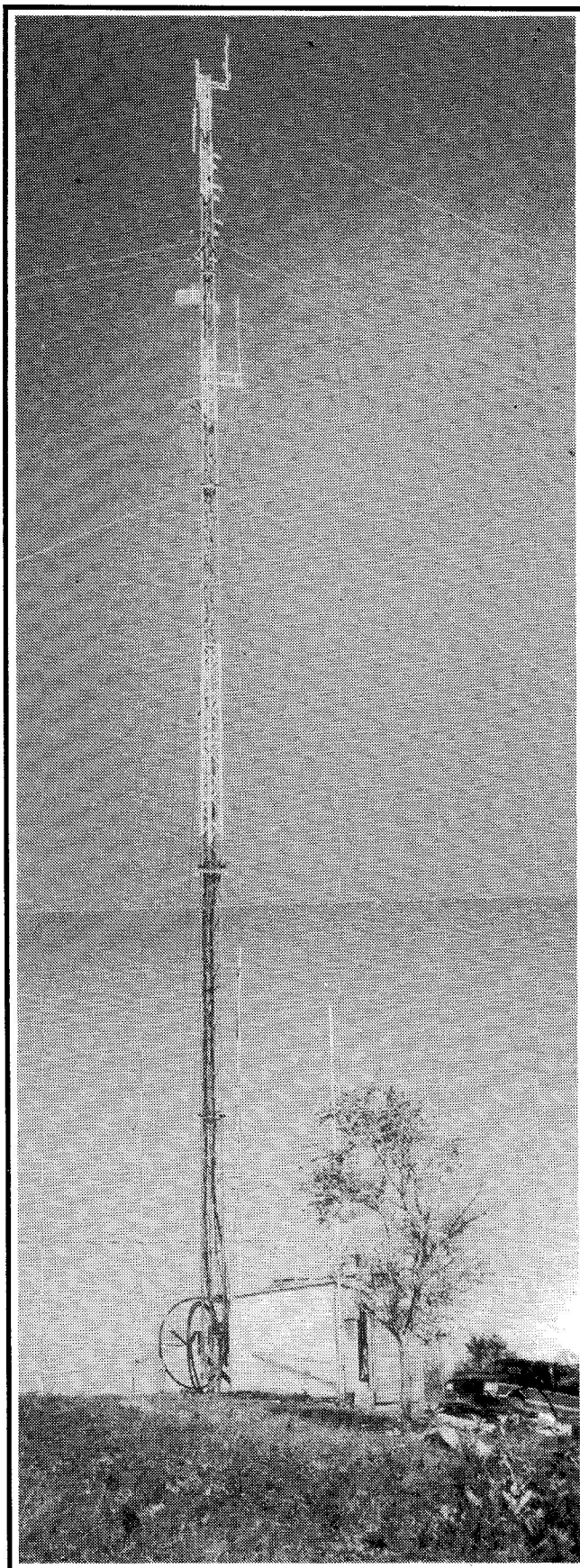
As a result of elections held in December 1998, the IRA Board of Directors for 1999 are as follows. On the executive board are: Tom Werkema KA8YSM, President; John Knoper KC8KK, Vice-President; Randy Chelette N8KQX, Secretary; and Jeff Ansley N8NII, Treasurer. Ray Abraczinskas, W8HVG, is the Trustee and Purple Crystal Editor. IRA Directors are John Rittenhouse WB8VOJ, Steve Stutzman WB8NCD, Rick Dykstra KD8CP, Randy Hofmeyer N8DAN, and newly elected Bob McClymont K8DOG.

IRA Board business meetings are held at 7:30 P.M. on the second Thursday of the month at Russ' Restaurant on Division Avenue in Cutlerville, Michigan. You are all welcome to attend.

Listen on the link repeater system for the Amateur Newsline Report every Monday evening at 8 P.M. There is a "traders net" on the first and third Monday of the month right after Newsline. Also, during severe winter weather, you can usually find out about road conditions or weather conditions around the state by listening on the link system. All hams are welcome to use the link repeater system.

USE COMMON SENSE ON THE LINK SYSTEM - BE CONSIDERATE!

Please communicate, make friends, and enjoy using the link system but try to refrain from 'rag-chewing' longer than 10 or 15 minutes. There are about 2,800 hams available in the link-system coverage area and everyone deserves a turn. The same person(s) rag-chewing on the link system for long periods everyday is not appropriate. Be considerate of those listening.



The new 180' tower at Big Rapids with new antennas, antenna mounts and feedlines thanks to SKE Communications, the BRAAC and the IRA.

HIGH-TECH COFFEE TALK!

Shhh-chunk. "Anyone around? This is N8--- listening on the Soopa-system!" *Shhh-chunk.* "Hi Denny, this is KC8+++ , whatch ya up to?" *Shhh-chunk.* "Hi Hank, we're going for coffee. Want to come along?" *Shhh-chunk.* "Who's all going?" *Shhh-chunk.* "I'm alone, but there's probably some other guy's there around the watering hole." *Shhh-chunk.* "OK, let's go to our secret simplex frequency and free up the repeater, KC8+++ ." *Shhh-chunk.* "OK N8--- ." *Shhh-chunk.*

(Ten minutes later at the 'watering hole')

(Hank) "Hi Denny! What happened to you on simplex, I couldn't hear you?"

(Denny) "Oh, I got a new HT last year and I still don't know how to program the damn thing! These new fangled radios are really hard to operate and I can't find my book."

(Hank) "Yeh! You're right Denny! I'm having trouble with my mobile rig too. Last week I tried to program the link-repeater into my radio and I ended up transmitting out of the band, heh,heh!"

(Denny) "Oh! I thought your radio had out-of-band protection?"

(Hank) "Well, it did! But I modified it so that I can operate it in my boat when I'm out on Lake Michigan fishing. It really comes in handy that way."

(Denny) "Boy! That's really neat Hank. Do you suppose I can do that to my HT also?"

(Hank) "Sure, there's a guy who comes to the club meetings that does it for a small fee. I'll hook you up with him and get you a good deal."

(Denny) "Greeaat!"

(Hank) "Yeh, it's really nice to be able to work both the ham bands and the marine frequencies with these new Japanese radios. It's like having free, non-commercial communications, we don't have to pay anything for using the frequencies."

(Denny) "Speaking of paying, have you paid your dues to the repeater club yet?"

(Hank) "Naw, I barely use the repeater so I don't think I should have to pay."

(Denny) "Yeh, me too! I only use the autopatch once in awhile and I never go to the meetings so I don't feel I should pay the full dues either."

(Hank) "Yeh, some of these repeater organizations are a rip off, they don't give you anything for your money."

(Hank) "Did you hear the conversation on the link-repeater last night? There was a guy up on the upper Peninsula talking to a guy in Indiana who has been a ham for 65 years. It was really interesting and I learned a lot."

(Denny) "No, I never listen to the link system because it's always busy with people talking. I normally listen to the "wishi-washi system" because there's hardly any chatter on it. It's quiet nearly twenty-four hours a day!"

(Hank) "Yeh, some of these repeaters shouldn't even exist, they're always busy. The Repeater Council ought to shut some of them down, then there would be

more frequencies for guys like us to put our own repeater on."

(Denny) "Yeh! I think repeaters are only supposed to be used for providing reliable local communications, not for talking all over the place. Do you know that I heard that most repeaters in Michigan are idle 80% or more of the time? No one talks anymore!"

(Hank) "Geez, if that's the case we'll soon be losing all our frequencies to the commercial services!"

(Denny) "Yeh, I've heard of club meetings where that's been seriously discussed."

(Hank) "Here comes Don N8*** from the Repeater Council. Hi Don!"

(Don) "Hi Hank! Hi Denny!"

(Denny) "Hi Don, whatch ya been up to?"

(Don) "Oh, I was working through the satellite repeater this morning talking to a guy on the the west coast. He lives down the street from my sister and I gave her a quick autopatch. It was really high tech!"

(Denny) "Yeh! Those satellite repeaters are really high tech. I think I'll try to get on and work it. Do ya think when I get my radio modified I can work the satellite?"

(Hank) "I dunno, but we can ask the guy who modifies them at the club meeting next week."

(Don) "Did you hear the latest rumor going around? I heard it on the satellite repeater this morning. The FCC is considering making twenty percent of the questions in our ham license tests a proficiency test on how to operate our radio. It would be administered by the VE's and everyone would be required to demonstrate that they can operate their own radio."

(Denny) "Boy! I think that's a good idea. Then we wouldn't have all these guys bitchin' about not being able to operate their rigs, setting the PL tones and QSYing to simplex and all that stuff."

(Hank) "Yea! Maybe you ought to bring it up at the next Repeater Council meeting, Don?"

(Don) "I don't know about that, the guys have been bitchin' about the meetings being too long now!"

(Denny) "Maybe we could have it put in the club newsletter, that way everyone would get the word. After all, they mail 50 or 60 copies every 4 or 5 months if they get stuff to print."

(Don) "Yeh! There is not enough going on at our Repeater Council meetings to always print something in the newsletter and we sure don't want anyone to know what all the repeater frequencies are and who runs them because of the liability."

(Hank) "Yeh! If hams want to know that stuff they should buy an ARRL Repeater Directory. You probably don't want anyone at the ARRL to get mad at you."

(Don) "Yeh, and we're having problems with all the repeater Trustee's not turning in their data on time every year, so we don't put them in the ARRL Repeater Directory. That gets their attention!"

(Denny) "Yeh! And there are no frequencies available for me to put a repeater on around here. We only have five repeaters here in town!"

CONTINUED ON THE NEXT PAGE.....

HIGH-TECH COFFEE TALK cont.....

(Don) "Hey! Isn't that Sam with some guys from the other club sitting over there?"

(Denny) "Yeh, but we don't want to associate with them guys. They're a bunch of snobs."

(Hank) "Yeh, they just bought a new repeater controller that has a two-million number autopatch capability, a digital voice capability, and a remote base capability for connecting to all the ham bands. It's real hi-tech!"

(Don) "Wow! I don't think there's that many hams in the whole world let alone around here!"

(Denny) "Oh, I don't know about it being so "hi-tech". I can't even make my own auto-dial number work on it so why do we need two-million?"

(Don) "Yeh Denny, some of these radios are really complicated."

(Hank) "They also have the capability to access all kinds of neat tests and messages, literally millions!"

(Denny) "Yeh, that's really high tech!"

(Don) "One thing I can't stand is all those beeps and boops with people accessing all those functions. You can never hold a simple conversation with anyone anymore with people always touch-toning and playing around. The repeater is always busy with un-identified beeps, and controller messages. I get sick of it!"

(Hank) "Maybe you should bring that up at the Repeater Council meeting too."

(Denny) "Yeh! Maybe we could make everyone go to PL on the output of the repeaters, then we wouldn't have to listen to all that noise."

(Don) "Well Denny, if you don't want to listen to all that stuff, why don't you just program the frequency out of your radio, or set your PL tone, or just shut it off?"

(Denny) "Ahh, I like to monitor in case someone calls me. Also, I don't quite know how to program my radio yet. It's got too many bells and whistles."

(Don) "Yeh Denny, some of these new radios are really high tech."

(Hank) "Well, I've got to be going. I'm helping Dave Z8ZZ put up a new antenna today. Their club is adding a remote receiver up north to link into their repeater."

(Don) "OK Hank, me too. I've got to go help Tom Z8\$ install an old Azden 3000 digipeater on "Moonstruck Hill" today. He's tying it into the Detroit node so that he can link up with the guys over there."

(Denny) "Ok, I guess I'll be going too. I haven't got the time now to help youse guys install antennas. I've got to meet Jim for coffee in ten minutes up on the northside, then I have to pick up some munchies and rent a video for tonight. But, let's all meet on the secret simplex frequency in five minutes."

(Don and Hank) "OK Denny!"

(Five minutes later)

"KC8+++!" Shachunk. "N8***!" Shachunk. "Where's Denny, Hank?" Shachunk. "Guess he's having trouble with his radio, Don." Shachunk. "Yeh, it must be a high tech radio! Ketch ya later Hank. N8***." Shachunk. "Bye-bye Don. KC8+++." Shachunk. Hi-tech silence...

A humorous fictional statire by W8HVG with no intended resemblance to any actual real hams or repeaters...

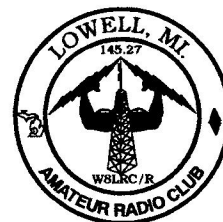
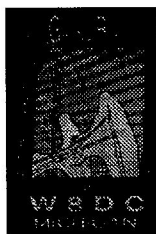
GET OUTTA THE CABIN DINNER ON SATURDAY, FEBRUARY 27TH



Announcing the **FOURTH ANNUAL WELCOME NEW HAMS AND NEW TO THE AREA HAMS**

GET OUTTA THE CABIN DINNER
6PM SATURDAY, FEBRUARY 27, 1999

JOINTLY SPONSORED BY:



At the **PONDEROSA STEAK HOUSE**,

2570 Alpine NW, Walker, South of the I-96 expressway (exit 30)
east side of the road across from Meijer

BRING YOUR SIGNIFICANT OTHER, FRIENDS, and the KIDS can come too! Dress casual. LET THE NEW ONES KNOW WE WELCOME THEM, as unbelievable as this may seem to some of us, we ALL were a new ham at one time!

And you don't want to miss out on the door prizes, nothing spectacular like a new rig, but a prize is a prize. We'll have a good time!

Order from the regular menu/order line, there is no surcharge to GRARA or LARC.

Reservations are not needed, but if you can, please e-mail <lowellarc@juno.com> with the number in your party ahead of time so we have an idea how many to expect.

HAMS HELPING HAMS

The IRA repeater hill located 10 miles south of Grand Rapids is home to several radio towers and repeaters because, being 1000' above sea level, it's an excellent radio site. One thing that is technically unique is three other ham clubs also share the IRA two-meter receive antenna through a receiver multicoupler capability. The Grand Haven North Ottawa Amateur Radio Club (NOARC), the Lowell Amateur Radio Club (LARC) and the Grand Rapids Amateur Radio Association also have remote receivers there with UHF links to their individual repeaters. It all works very well!

IT'S BEEN 20 YEARS!

It was 20 years ago that the IRA started working on the goal of linking repeaters and remote receivers to cover western Michigan. It has come a long way since then. All the typed words in this issue of the Purple Crystal could probably not hold all the names of the people who pitched in and supported making it happen. The link system is very unique and purposeful. It's been built professionally, it's managed professionally, it's supported professionally, and it's used professionally. Out of state hams who visit Michigan and use the link system continually comment positively about the IRA link system, and how nice and helpful people are on it. Feel proud fellow hams, it's justly deserved!

SOME INTERESTING FACTS ABOUT MICHIGAN AND REASONS FOR THE IRA LINK REPEATER SYSTEM!

Michigan has 3,288 miles of shoreline second only to Alaska (including 1,056 miles of inland shoreline), over 36,350 miles of rivers and streams and more than 11,000 inland lakes (hence the many marine mobile hams on the link system).

Michigan is a leading producer of cherries and dry beans. It produces over two-thirds of the U.S. output of red-tart cherries. The link system covers most of Michigan's cherry country.

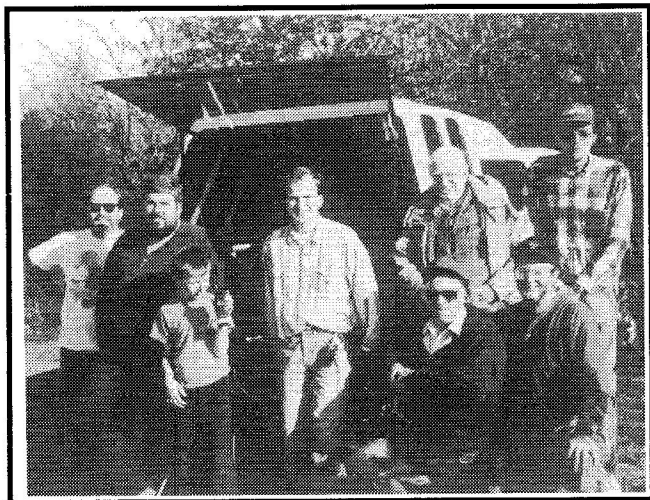
Michigan has more water than any other state in the United States. It's the 'boatiest state' in the U.S.

Michigan leads the nation with registered snow mobiles because it has over 4,000 miles of groomed snowmobile trails.

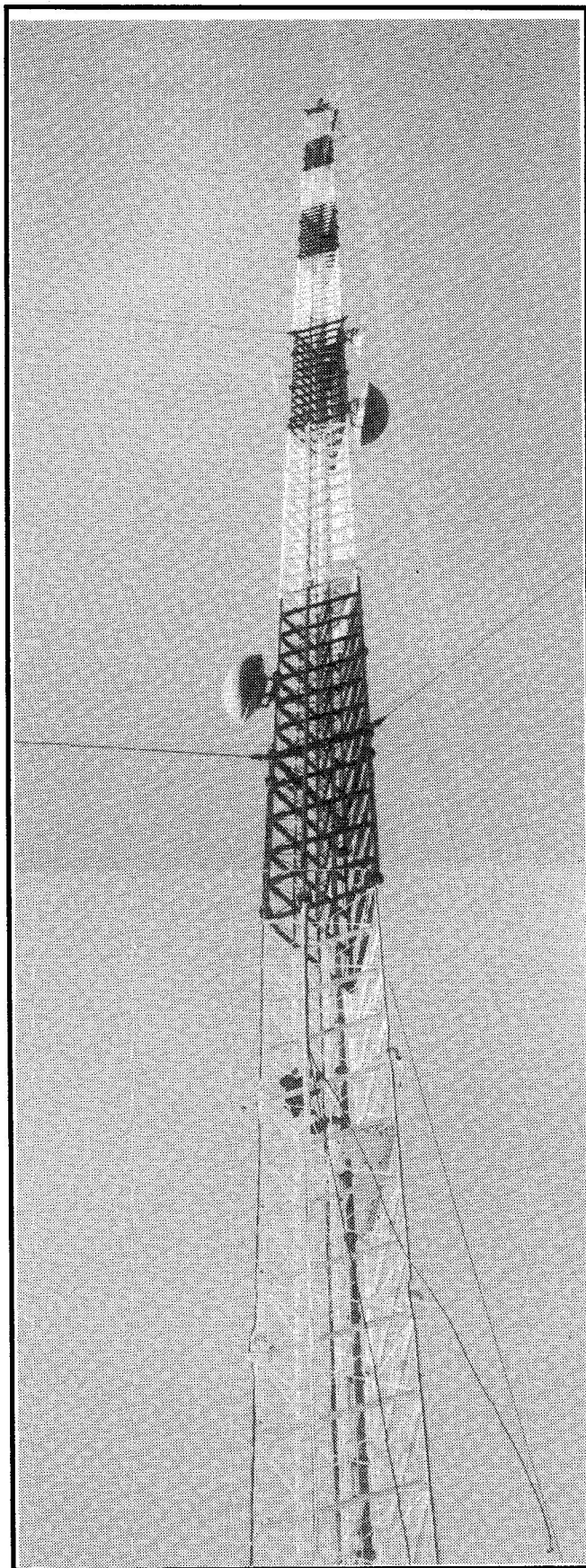
Recreation activities in Michigan include hunting, fishing, boating, camping, hiking, biking, skiing, snowmobiling, sailing, birdwatching, ice boating and mushroom picking (all fun activities while using the link repeater system).

It's 376 miles from Hell to Paradise (in Michigan), about the same distance the link system covers across the lower Michigan peninsula from south to north.

Upper Michigan is connected to lower Michigan by a 5-mile long suspension bridge called the "Big Mac Bridge" and it's also in the coverage area of the link system.



L to R back row. Bob N8ZCX, Dennis KB8ZQZ, Bob N8TNT, Don W8BQD, Ken WD8PHX. L to R front row. Brent, Bob KB8DQQ and Roger KC8CGH. Just some of the hams who helped install the antennas for the Jackson link. It took three week-ends due to rain and high winds. Others who helped are Dan W8BCI, Ken K8YYC, Brent KB8TRL, Bill KB8TTS, Dave KB8YNC and Mark N8VZR.



Glen Walker ties off the 7/8" hardline at the 200' level on the 1000' WILX-TV tower. It was a huge cooperative effort between LCDRA, CASCADES, KA8HDY and the IRA.

2-M REPEATERS AROUND WEST MICHIGAN

OUTPUT	INPUT	LOCATION
145.11.....	144.51.....	GRAND RAPIDS
145.13.....	144.53.....	PORTLAND, GRAYLING
145.15.....	144.55.....	TRAVERSE CITY (TVC) & BATTLE CREEK & PLEASANT VALLEY LINK TO G.R.
145.17.....	144.57.....	KALAMAZOO, GLADWIN
145.21.....	144.61.....	DOWAGIAC, LAKE CITY
145.27.....	144.67.....	LOWELL, TRAVERSE CITY
145.29.....	144.69.....	VANDERBILT & WHITE CLOUD/ BIG RAPIDS LINK TO (G.R.)
145.31.....	144.71.....	CENTERVILLE
145.33.....	144.73.....	MUSKEGON LINK TO G.R.
145.37.....	144.77.....	ALMA, BERRIEN SPRINGS, ADRIAN
145.39.....	144.79.....	LANSING, LELAND TWP.
145.41.....	144.81.....	GRAND RAPIDS, W. BRANCH
145.45.....	144.85.....	WHITE CLOUD, ROSCOMMON
145.47.....	144.87.....	LUDINGTON. ALSO ST. JO- SEPH & JACKSON / LANSING LINK TO G.R.
145.49.....	144.89.....	GRAND HAVEN
146.62.....	146.02.....	LUDINGTON
146.64.....	146.04.....	HART
146.66.....	146.06.....	BATTLE CREEK
146.68.....	146.08.....	PETOSKEY
146.70.....	146.10.....	LANSING
146.72.....	146.12.....	PLEASANT VALLEY, ST. JOS.
146.74.....	146.14.....	BIG RAPIDS, CHEBOYGAN
146.76.....	146.16.....	GRAND RAPIDS
146.78.....	146.18.....	MANISTEE
146.80.....	146.20.....	EDMORE
146.82.....	146.22.....	MUSKEGON, GAYLORD, BERRIEN CENTER
146.84.....	146.24.....	PINE LAKE / PLAINWELL
146.86.....	146.26.....	TRAVERSE CITY, WACOUSTA
146.88.....	146.28.....	CEDAR SPRINGS, JACKSON
146.92.....	146.32.....	FREMONT, LAKE LEELANAU
146.94.....	146.34.....	LANSING, MUSKEGON
146.98.....	146.38.....	CADILLAC
147.00.....	147.60.....	KALAMAZOO
147.04.....	147.64.....	KALAMAZOO, BENZONIA
147.06.....	147.66.....	HOLLAND, HILLSDALE
147.08.....	147.68.....	HOUGHTON LK., CHARLOTTE
147.10.....	147.70.....	MANCELONA
147.12.....	147.72.....	MARSHALL, GAYLORD
147.16.....	147.76.....	G. R. AND CADILLAC WITH 147.76 RECEIVE LINKS IN BELDING AND KALAMAZOO.
147.18.....	147.78.....	NILES, GLADWIN
147.20.....	147.80.....	PAW PAW, FARWELL
147.24.....	147.84.....	ALLEGAN, PETOSKEY
147.26.....	147.86.....	GRAND RAPIDS
147.28.....	147.88.....	CHARLEVOIX, JACKSON
147.30.....	147.90.....	COLDWATER, TVC

W8HVG/R

INDEPENDENT REPEATER ASSOCIATION, INC.
LINK SYSTEM REPEATERS (PL TONE) ARE:

145.15--BATTLE CREEK (94.8), TRAVERSE CITY
(OPEN), AND PLEASANT VALLEY (100)
145.29--BIG RAPIDS (94.8) AND VANDERBILT
(OPEN)
145.33--MUSKEGON (94.8)
145.47--ST. JOSEPH / BENTON HARBOR (94.8)
AND JACKSON / LANSING (100)
147.16--GRAND RAPIDS (OPEN) AND CADILLAC
(OPEN)

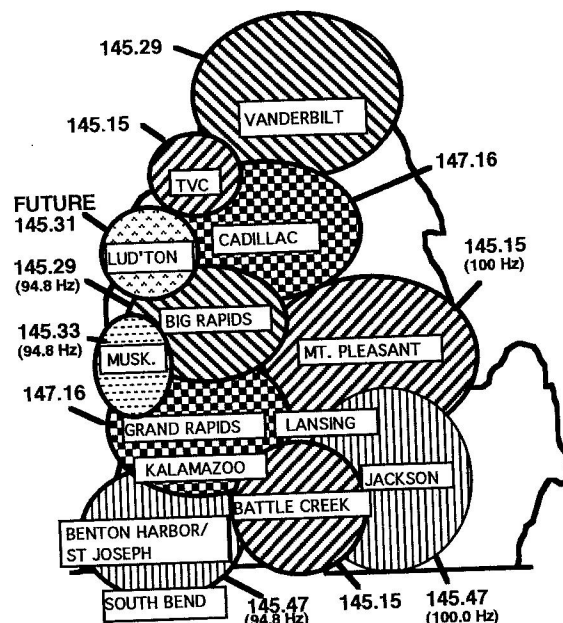
SUPPORT DONATIONS MAY BE SENT TO:

I.R.A., 562 92ND STREET S.E.
BYRON CENTER, MI. 49315

EMERGENCY AUTOPATCH (G.R. AREA ONLY)
(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 (KENT COUNTY)
NORMAL AUTOPATCH
(USE 1 OR 2 STARS AS INDICATED + NO.)

* + 7-DIGIT PHONE NUMBER WITH TX KEYED
* + AUTODIAL CODE WITH TX KEYED
(POUND)..HANG-UP COMMAND



CHECK OUT THE IRA WEB-SITE

Check out the IRA web-site where you can observe some of the happenings of the IRA, catch status updates of the link system, see presentations (which you may want to hear at the IRA hamfest), and view or copy the latest link system coverage map. You can even send comments to the IRA via e-mail. The address is www.iserv.net/~w8hvg.

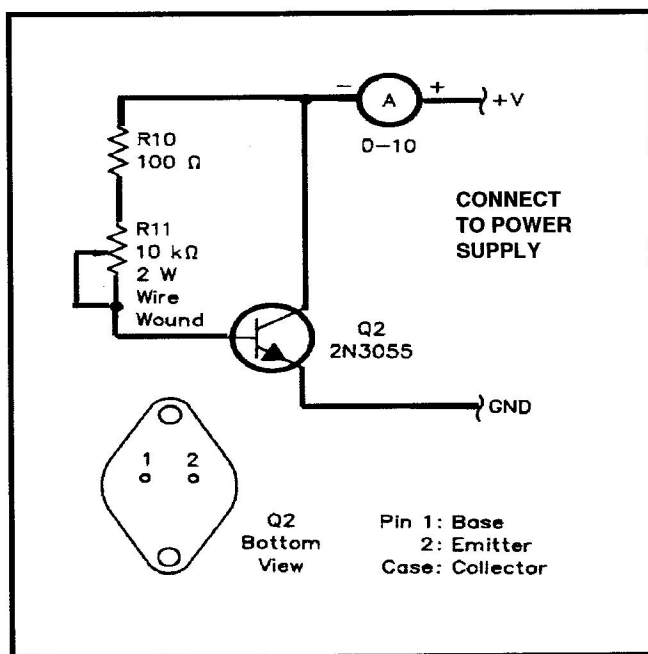
A POWER SUPPLY LOAD TESTER IDEA THAT WORKS!

Here is a simple idea for testing 12 VDC regulated power supplies using a load made from power transistors like those typically used in power supplies. Keep your eyes open at hamfests for large heat sinks with 2 to 5 power transistors mounted on them and you'll have a good start using junk parts.

The concept is simple using power transistors to load down your power supply being tested! Typically, one TO-3 power transistor (like a 2N3055) can handle 5 amps when mounted on a large heat sink. You can use as many transistors as you need for testing, i.e., four transistors on a heat sink can test a 20 amp power supply.

The schematic below shows the circuit using one transistor which will handle 5 amps. For higher load currents, just hook up more transistors in parallel all being driven from the same variable voltage source potentiometer. NOTE: A muffin style cooling fan may be required for higher current testing depending on the size of the heat sink used. Also, make sure the ammeter and wires used will handle the load current.

One Michigan ham that has built and using this basic load circuit is Ken, K8YYC. He operates on the link system so if you have any questions, just ask him.



ALL HAM CLUBS ARE INVITED TO SHARE THEIR INFO ON THE LINK SYSTEM AFTER NEWSLINE

The IRA broadcasts the Amateur Newsline every Monday night at 8 P.M. as a service to Michigan hams. Immediately after newsline, the net control invites any and all ham organizations and clubs to announce pertinent information about their club activities, i.e., meetings, hamfests, transmitter hunts, member passings, estate sales, etc. Any club or organization is cordially invited to have a member announce their info after Newsline on the link system on Monday eves. It's fun, everyone learns something and new friends can be made.

HINTS AND KINKS

A simple idea for keeping track of antenna cables, or computer, video or any other cables in the ham shack or repeater site, is to mark them with a cable marker (tie-wrap tag). Radio Shack sells a package of small cable markers for about \$3.00 containing 10 highly visible yellow tags which can be written on with a permanent ink marking pen. The Radio Shack part number is 278-1648. The tags have 2" tie-wraps on them and if they won't go around your cable, you can wrap your cable with a conventional tie-wrap and then secure the tag to it. No more excuses for misconnecting antenna coax's with this hint and kink.

BETTER OPERATING AID

To assist your ability to understand a call sign or message during poor voice communications conditions such as background static or mobile noise, there is a simple operating aid called the International phonetic alphabet. This generally accepted operating aid can be a very valuable tool in getting information across (providing it's not misused, over-used or abused). You don't have to use it to clarify everything you say, but if a "fill-in" is requested, using the phonetic alphabet can help get the message through. For your information, here is the generally accepted phonetic alphabet that hams use as a better operating aid.

Alpha
Bravo
Charlie
Delta
Echo
Foxtrot
Golf
Hotel
India
Juliatt
Kilo
Lima
Mike

November
Oscar
Papa
Quebec
Romeo
Sierra
Tango
Uniform
Victor
Whiskey
X-ray
Yankee
Zulu

GRAND RAPIDS, MICHIGAN

I.R.A. ANNUAL HAMFESTIVAL

West Michigan's Largest

Hamfest & Computer Fair

Seminars for hams interested in repeaters and Emergency Communications, plus the Michigan Area Repeater Council (MARC) June Quarterly Meeting and VE exams.

Saturday, June 5, 1999.....8 A.M. until it's over.

Convenient location with great facilities at the spacious Hudsonville Fairgrounds. It's bigger and better every year! 6 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. Table & space rental not an admission to Hamfest; tickets are req'd. 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.

Bring a dish and join-in the Friday night pot-luck @ 7 P.M.

4 MAJOR PRIZES PLUS MANY MORE!

FIVE TECHNICAL SEMINARS!

9:30 A.M. - 9:45 A.M. What is the Decibel?
9:45 A.M. - 10:00 A.M. Info about Antennas
10:00 A.M. - 10:15 A.M. Info about Duplexers
10:15 A.M. - 10:40 A.M. Info about Repeaters
10:40 A.M. - 10:55 A.M. Info about the IRA link

FORUM - Y2K AND AMATEUR RADIO

11:00 A.M. - 12:55 P.M. Info about Y2K problems

VE AMATEUR EXAMS, 12-NOON SIGNUP

All walk-ins. NOVICE to 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" for \$6.45. OK to bring a lunch.

MARC MEETING, 1 P.M. UNTIL OVER

All repeater Owners/Trustees are invited to attend. MARC meeting attendees admitted free after 12 NOON.

DEALERS: BRING YOUR HAM EQUIPMENT, COAX, COMPUTER EQUIPMENT, SOFTWARE, BOOKS, WIRE, JEWELRY, SWEAT-SHIRTS, 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!

MICHIGAN/FLORIDA HAMS MEET AT 9:00 A.M. IN CAFE.

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

TICKETS: \$5.00 ea.
Tables: \$8.00 ea.
Trunk spaces: \$6.00 ea.
Camping fee: \$10.00

INFO: Call Kathy at (616) 698-6627 from 4 P.M. to 7 P.M. (E.D.S.T.) for information/reservations or leave an e-mail at w8hvg@iserv.net

TALK-IN ON 147.16 LINK-SYSTEM

Check out the IRA Web-site at www.iserv.net/~w8hvg

1999 IRA HAMFESTIVAL RESERVATIONS

Mail to:
before May 28th
include SASE

IRA
562 92nd St., S.E.
Byron Center, MI. 49315

NAME _____

ADDRESS _____ PHONE () _____

CITY _____ STATE _____ ZIP CODE _____

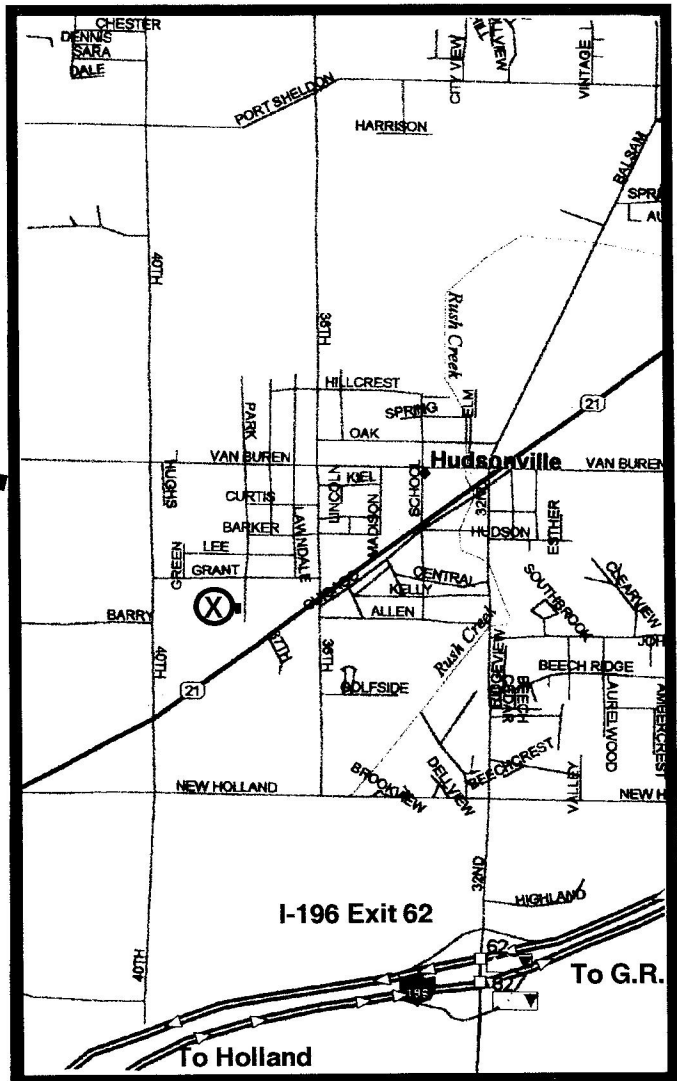
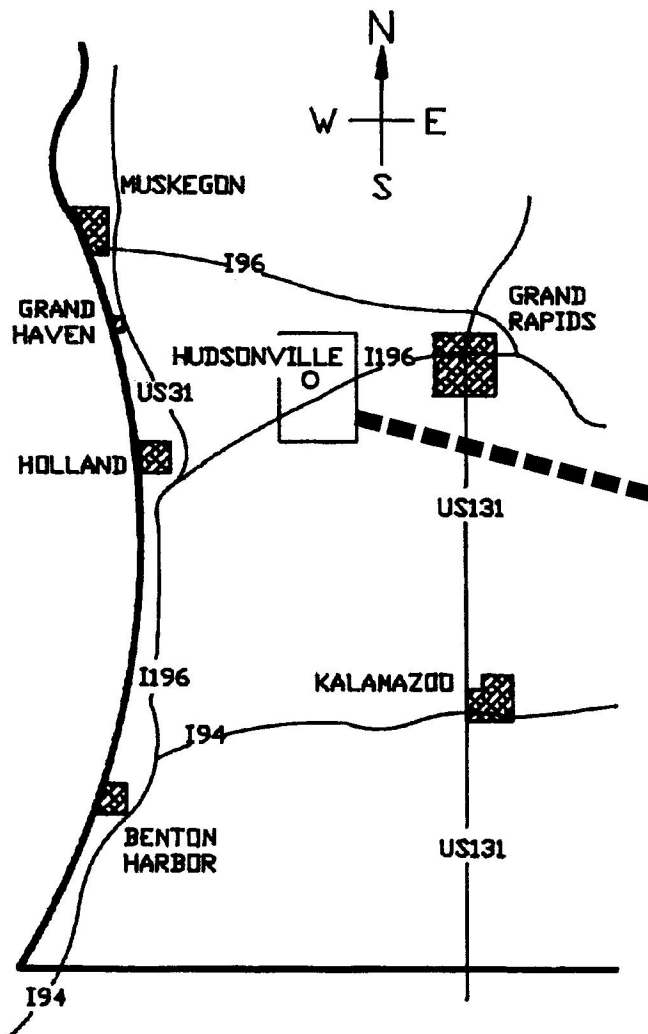
NUMBER OF: TRUNK SALE SPACES _____ 8' TABLES _____ TICKETS _____ PEOPLE ATTENDING _____

CAMPING (Y) (N) TYPE OF MERCHANDISE (Ham, computer, electronics, surplus, etc.) _____

SPECIAL REQUESTS (electricity, wall, etc. If available) _____

AMOUNT ENCLOSED _____ DATE _____ SIGNATURE _____

----- CUT HERE -----



Exit I-196 at exit 62. Go north 1 mile and turn left on New Holland. Turn right on 40th Avenue, cross M-21 and the railroad tracks. Turn right on Grant Street. Turn right on Park. Turn right into the Fairgrounds. Motels are available at Exit 62 (Rest-All Inn telephone 1-800-866-4322).

GIVE US SOME FEEDBACK, WE'D LIKE YOUR COMMENTS.

(SIMPLY ✓ CHECK YOUR CHOICE)

ALOT/OFTEN

SOMETIMES

VERY LITTLE

1. I LISTEN TO THE LINK SYSTEM

—

—

—

2. I TALK ON THE LINK SYSTEM

—

—

—

3. I ENJOY THE LINK SYSTEM

—

—

—

4. I SUPPORT THE LINK SYSTEM IDEA

—

—

—

5. I DONATE TO THE IRA

—

—

—

6. I LIKE/ENJOY THE PURPLE CRYSTAL

—

—

—

7. I ENJOY THE PEOPLE ON THE LINK

—

—

—

8. I ENJOY THE LINK CONVERSATIONS

—

—

—

9. I LISTEN TO NEWSLINE ON THE LINK

—

—

—

10. I LISTEN TO TRADERS NET ON THE LINK

—

—

—

11. I THINK THE LINK SERVES A PURPOSE

—

—

—

MY COMMENTS & SUGGESTIONS ARE:

Sure, I'll help the I.R.A. with my tax-deductible contribution* of:

\$

\$25

\$20

\$10

*Contributions to the IRA are tax deductible. The IRA is an IRS 501C(3) organization.

Name _____ Call _____ Class _____

Address _____

City _____ State _____ Zip _____ - _____

(all 9 numbers)

PHONE NUMBER (OPTIONAL) _____

Want to receive The Purple Crystal? YES ___ NO ___ I DO ALREADY ___

Thank you for your support of the Independent Repeater Association, Inc.

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

Bulk Rate
US POSTAGE
PAID
Grand Rapids, MI
PERMIT NO 155

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ing - All at the IRA Swap!
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The State of the Union!
Who and What is the IRA?
Repeater Tower Pictures
High-Tech Coffee Talk!
Get Outta the Cabin Dinner
It's Been 20 Years!
Interesting Facts About Michigan
Repeaters Around West-Michigan
A Power Supply Load Tester
Better Operating Aids
Give Us Some Feedback!
The Mich. Repeater CTCSS Plan
IRA 1998 Annual Report***

THE MICH REPEATER CTCSS PLAN

Back in the 80's when Michigan hams voted and approved the 20 KHz repeater band plan, there was also a plan suggested by Ray Petterson WB8VWK from Edmore, which was in theory a very "good idea" because it would tend to minimize the number of CTCSS frequencies needed to cover a large geographical area, and it also made sense!

Lower Michigan was divided into three areas. The southeast, the southwest and the top half, north of an east-west line through Alma. The southwest area would use 94.8 Hz, the southeast area would use 100 Hz, and the north half would use 103.5 Hz. The recommendation made for the U.P. was 100 Hz.

Many repeater owner/operators either never knew the plan existed (and still don't) or probably just ignored it. In the future, the IRA link system will have PL installed on receive and transmit and we'll try to adhere to the recommended plan. We presently have the 145.15 link at Mt. Pleasant PL'd @ 100Hz and plan to change it to 103.5 Hz in the spring. All other link repeaters operating with PL, are in consonance with the CTCSS plan frequencies except St. Joseph 145.47 on transmit (and it too will soon be fixed).

IRA 1998 ANNUAL REPORT

January 1, 1998 through December 31, 1998

INCOME

Donations	2,592.00
Swap	4,085.00
Swap Reservations	<u>747.00</u>
Total income	7,424.00

EXPENSES

Bank charges	8.50
Building & Equip.	1,375.00
Electricity	769.24
Insurance	214.00
Misc.	136.00
Postage	413.58
Printing	835.40
Site rent	1,440.00
Telephone	517.97
Swap expenses	1,537.32
Supplies	<u>32.00</u>
Total expenses	7,279.01
Balance carryover to 1999	144.99