USECA EXPRESS

Michigan's Largest and Most Active Amateur Radio Club

UTICA SHELBY EMERGENCY COMMUNICATION ASSOCIATION, INC. | Volume 21, Number 2, February 2005

Looking For a Few Good Hams

Scott, WN1B

THE USECA Hamfest is the club's main fundraising and social event. Held at the end of October, it draws hams from the greater metro area, as far north as Mount Pleasant, as far south as Indianapolis, Indiana, and many of our Canadian neighbors. This event is vital to the club's economic viability and requires good planning and execution.

Bob Hollingsworth, AB8TS, has come forward to help run this event. I applaud Bob for stepping up to the plate. Without people like Bob taking on the tasks of running the club's activities, we become just another uneventful group of hams.

But, Bob can't, and shouldn't, do it alone. The club needs your help in assisting Bob with the swap. Additionally, there are other club functions that, without volunteers, will, and have, been foregone.

Taking on the task of event chairperson is not an overwhelming task. Doing it in committee is even less taxing, and more fun. Please consider volunteering to help Bob with this year's hamfest. Our events, and participation by our members, in large part define our club and set us apart from other area groups.

For more information on how you can volunteer for the hamfest committee, please see Bob, AB8TS, one of your board members, or send and e-mail to *hamfest@k8uo.com*.

73.

An XYL's Revenge

(Updated by N8KC from Feb. 1952 CQ)
("The Worm Turns")

I am…*God have mercy on me*…an XYL. A mere five years ago, I became an OW—Me, fresh out of college, 5 foot 4 inches, blue eyed, blonde, 126 lbs., and according to the college yearbook, the girl "most likely to…"
--- an **OW**!

I should've known better…my mother warned me about Hams…but the moon, Joe and I were zero-beat one night, and here I am—Mrs. Joe, the wife of an "*Amateur Radio enthusiast,*" and I use that phrase to keep from scorching the paper I write this on with anything stronger.

It all started on the day of our wedding. Joe was over 45 minutes late for the ceremony and in making apologies at the church, told me, and everyone who'd listen, that he was held up by traffic (…something about a *pile-up*). Six weeks later when several QSLs arrived that made Joe whoop for joy, I learned that the traffic was between Joe and the last two countries he had needed to complete his basic DXCC application and a state he needed for WAS on 20 meter phone!

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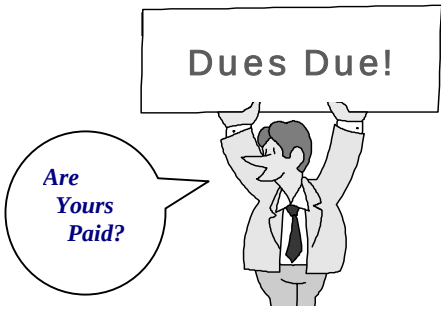

Where Has All The Spectrum Gone?

Scott, WN1B

IF YOU HAVE READ any ham periodicals or attended our club meetings lately, you have undoubtedly heard mention of BPL. BPL, or broadband over power lines, is an emerging technology developed to allow power companies to deliver bi-directional high-speed data to homes and businesses over their power line infrastructure. The concept has merit, and the federal government, wanting to foster competition and promote the development of the "Information Superhighway," has been one of its biggest proponents.

There are, however, two problems with the technology. First, the conductors utilized in existing power systems are widely spaced and unshielded, and their connections, insulators, and apparatus were designed for carrying 60 Hertz electricity. Second, the frequency spectrum used to transmit this data is low and overlaps the same spectrum we use for HF amateur radio communications. This means that the likelihood of interfering signals emanating from such a network are very likely, and that interference will impact us, the amateur radio operators.

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Next Meeting — February 8

CLUB DIRECTORY

BOARD OF DIRECTORS

President	Jim Wickstrom/W1IK (586) 771-4135
Vice President	Scott Madison/WN1B (248) 628-4756
Recording Secretary	Ann Manor/KT8F, (586) 751-3893
Treasurer	Dennis Gaboury/W8DFG (586) 465-7126
Membership Secretary	Ken Cassale/KW8Z (586) 552-8311
Past President	Nancy Carr/KB8QMS, (586) 749-3383

ELECTED BOARD MEMBERS

George Schutte/K8GEO (248) 393-4030
Joe Kennedy/N8OZ (586) 977-7222
Fred Holmes/W1SKU (248) 693-3638

COMMITTEES

ARRL Liaison	Phil/W8IC (586) 751-3893
Awards Manager	Arpad/WY8M (586) 751-3804
Door Prizes	–OPEN–
Editor	Joe/K8OEF (586) 781-0050
Field Day Chair	Phil/W8IC & Ann/KT8F (586) 751-3893
Health & Welfare	Charlene Gracey (586) 777-2954
Historian	Jerry/K8CFY (586) 791-4484
Liaisons	George/K8GEO & Mike N5WCS
Mailers/Sorters	Ann/KT8F; Phil/W8IC; & Crew
Net Manager	Brian/KC8DIR (586) 749-4561
Photographer	Richard/K8QLM (586) 731-4475
Program Director	Scott/WN1B (248) 628-4756
Public Relations Officer	Ken/N8KC (248) 652-1187
Refreshments	Ken/KC8ZVA
Repeater Trustee	Dennis/W8DFG (586) 465-7126
Swap & Shop	Scott/WN1B (248) 628-4756
Technical Director	Floyd/W8RO (248) 391-6660
Technicians	WN1B; K8FT; WA8GQL; KC8IAQ; W1IK; N8KLX; AD8S; N8SA
VE Testing	Joe/N8OZ (586) 977-7222

CONTROL OPERATORS (*Phone Number Above)

Scott/WN1B*	Jim/W1IK*	Floyd/W8RO*
Dennis/W8DFG*	Joe/K8OEF*	Dave/AD8S
Dave/KC8IAQ	Joe/N8OZ*	
Phil/W8IC*	Nancy/KB8QMS*	

PROGRAMMERS

Dennis/W8DFG Dave/KC8IAQ

SILENT KEYS

Len Czapiewski/K8DHH	Stuart Satrun/KW8K	Vance Dupuis/WB8QNI
Art Sheff/WD8EGV	Rick Parady/KB8KLW	Dave Martin/W8VB
Joe Lucido/NU8F	John Moore/KA8KTV	Harry Young/W8VRW
Charles Smith/N8FWF	John Palmer/WD8LBH	Velma Ragon/N8YVC
Clarence Ringo/W8HQO	Joe Palson/WD8MFN	John Tomlins/KG8YX
Joe Steel/KA8IZM	John Pizzuti/WB8NHT	

f=Founder *c*=Charter *h*=Hon. Charter

N8AWV *h*	N8HCT *f c*	WB8OSF *h*
KA8BDG *c*	KA8IZM *f c* SK	K8QLM *f c*
N8BK *h*	KA8KTV *f c* SK	WB8QNI *c* SK
N8FDN *c*	G. Manquardt *h*	KA8VYV *h*
N8FNO *f c*	WD8MFN *f c*	WA8VZZ *c* SK
J. Haubner *c*	WB8NHT *f c* SK	

Michigan's . . .

BEST-IN-CLASS!

The Editor is:

Still Going

Joe, K8OEF

It's that time of the year again—"Dues are Due." If you have not paid your dues, this will be your last *Express*. Also, remember, if you have been using K8UO.COM as your email address, that too will no longer be available to you. The actual "drop dead" deadline is the night of the February General Meeting—there are no exceptions!

You may note several recent changes in this edition. Our new net point manager is Arpad, WY8M. The "Net Point System" information has been updated and included in this issue. The Board with concurrence with the general membership is actively pursuing the fact that our nets will be undergoing changes in the near future. Note changes in the Net Op Schedules and additional information is updated and/or eliminated.

If you are a new member, or an old timer, and perhaps forgot, the *Express* as published, is on our web site in color! Only paid up members can view the current year's *Express* on the web.

As in the past, the newest (current) membership roster will be printed in the March *Express*. Hopefully, Ken, KW8Z our new membership secretary will have it ready for publication.

Thank you to Phil, W8IC and Ann, KT8F who graciously accepted the responsibility of running our field day event this year.

73 for now.

Inside This Issue

Antennas Are Where You Find Them

By Dick Arnold, AF8X

ANTENNAS ARE PROBABLY the most discussed item of Ham gear and the least understood.

For years I have tried every conceivable wire antenna configuration, looking for some accident of physics that would result in a super antenna. During this search I have discovered a few antennas that actually work pretty well and because of my passion for portable operation, are easily erected. The simplest of antenna in my opinion is the half-wave wire supported by a nearby tree. The half-wave wire does not require a counterpoise or ground plane to perform, as it is a complete antenna. If I feel ambitious and not in a hurry, I will often raise my full-wave wire delta loop. This needs only one overhead support and the two lower corners secured to stakes in the ground.

I like to give Walt, WB8E some good-natured harassment about his antennas when we are on one of our "Lark in the Park" activities. Walt usually erects a ground-mounted vertical with a large counterpoise array. This antenna takes about a half an hour to put up when he has help. In the mean time I have been on the air for 20 minutes.

Your choice of portable antennas is most important to your type of operation. My priority is on ease of deployment and a petite package to carry. That's why I prefer wire antennas.

On the other hand I have seen Walt erect a portable yagi antenna that really plays, but it took two men and a strong boy to put up.

I also carry a length of wire with an alligator clip on one end to attach to anything that I think might work as an antenna. I have used my awning framework and flagpole at home with startling results as well as the flagpole at Metro Beach and the metal railing on the boardwalk. In short, you may be surprised at what you can load up with a decent tuner that will become a passable if not very good antenna.

At home, in order to keep peace in the family, I am limited to the number of outdoor antennas allowed. I started thinking about indoor antennas and tried the dipole in the attic, but it is difficult to scamper around in a ranch home attic. (I have the scars on my head to prove it). My next idea was a horizontal loop. My shack is a small 10x10 room with a decorative molding running around the walls near the ceiling. I stapled a 24-gauge wire on top of the molding and terminated the ends at mid point along one wall where I attached the TV twinlead 300-ohm feed line. The feed line is about seven feet long and is attached to my 4-band K1 with the auto tuner. My first contact on 15 meters was a station in Italy on 5 watts!

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So You Want To Erect An Antenna Tower?

George, K8GEO

TYPICALLY, YOU WILL HAVE to make an application for a variance to your local Zoning Board of Appeals ("ZBA") and/or your City, Village or Township governing body. Are you prepared to justify your request? Suppose the ZBA knows of your VHF and UHF radios and through the use of repeaters, you can communicate on Amateur Radio frequencies all over metropolitan Detroit and adjoining suburbs. Why do you need HF capabilities?

You can reply, in part, with these facts. There exists an organization called the Hurricane Watch Net ("HWN") staffed by pre-qualified Amateur Radio Operators scattered across the United States and Canada that begins to function when there is a hurricane threat to land in areas adjoining the Atlantic Ocean, and as needed in the Eastern Pacific Ocean. This closed net operates on 14.325 MHz in the 20 meter band and reports to Amateur Radio Station WX4NHC located in the National Hurricane Center ("NHC") in Miami, Florida. Because of skip and propagation patterns, states in and adjoining the coastal areas cannot communicate by HF with the NHC in Miami. Consequently, by the use of somewhat distant HWN Net Control Operators ("NCOs"), communications can be maintained by Amateur Radio Operators in the impacted or to be impacted areas and the NHC in Miami.

The HWN identifies and collects a list of Amateur Radio Operators in the path of the hurricane who may be available throughout the event and who will observe and measure local weather information that will be conveyed by the HWN to forecasters in the NHC in Miami. As is similar to our own SKYWARN Nets, the NHC relies heavily on trained spotters on the ground for wind speed, direction, wind gusts, barometric pressure, flooding from storm surge, etc., to assist them in getting a better picture of the storm. This information is also utilized by the NHC to make Storm Advisories on a regular basis. These advisories are then relayed back to Amateur Radio Operators the affected areas by the HWN.

Here in Oakland County, we have two HWN NCOs. Floyd, W8RO, has a 60' tower topped by a Mosley TA-33, 3-element tri-band yagi. Just a few miles away, we have a second, newly appointed, HWN NCO, Fred, W1SKU, utilizing a 70' crank-up tower.

As you know, the 20 meter band begins to open about 7 AM and closes in the evening anywhere from 9 to 11 PM. As the propagation shifts westerly, more NCOs are needed in the Mid-West and the West Coast.

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USECA Meeting Minutes

Board Meeting— January 4, 2005

In attendance:

W1IK, Jim	President
WN1B Scott	Vice-President
KT8F, Ann	Recording Secretary
KW8Z, Ken	Membership Secretary
W8DFG, Dennis	Treasurer
K8GEO, George	Board Member
N8OZ, Joe	Board Member
*W1SKU, Fred	Board Member
*KB8QMS, Nancy	Past President

*Absent

Motion to accept the minutes of the last BOD meeting made by Dennis, and 2nd by Joe, motion carried.

Treasurer's report Dennis, W8DFG – no report. Some funds are to be deposited. Liability insurance renewed. Discussion re: our insurance policy. George, K8GEO moved that we issue a "save and hold harmless" resolution to be used if needed for Skyline Tower (our downtown site). Seconded by Ken, KW8Z. Vote: passed with one dissention. Discussion re: savings account.

Membership: Ken, KW8Z, will be working with Mary, KC8IAP though the transition. Mary reported 197 members.

Express: Joe, K8OEF – no report.

Technical: Scott, WN1B – no report.

Trustee Report: given by Dennis, W8DFG. No report

ARRL: Phil, W8IC provided an update.

Club Liaison: Mike, N5WCS discussed events and protocols. George, K8GEO will continue to assist Mike.

George, K8GEO has an article he is having published in area newsletters on ham towers.

New business: Scott, WN1B announced the general meeting program – "show and tell." Scott listed the results of his survey on program suggestions.

Net points: January 31 is the deadline for net logs to be turned in. The results will be announced at the February meeting. Turn logs in to Tom, KC8LOC.

Jim, W1IK announced that Joe Weinmann, KD8ATO (10 year old ham) would like to start up a youth net. This net is aimed at hams age 20 and younger. "Third party" kids would be welcomed, and of course the "young at heart" can also check in. Net to be held every Sunday at 7 PM. This net has been formally OK'd by the BOD. Participation in this net will be encouraged.

Jim, W1IK made a motion that the Tuesday 8 PM information net be dropped at this time due to lack of participation and redundancy with the Sunday net. 2nd by Scott. Discussion. Motion tabled. To be brought to the general membership for discussion.

Jim proposed that net points be offered to members for all nets except the Saturn net. Discussion. Tabled at this time.

Jim, W1IK made a proposal to reimburse club members for assisting in certain club chores, i.e. lunch, gas. Discussed. To be tabled until the next BOD meeting.

Motion to adjourn by George, second by Dennis. Meeting adjourned at 9:00 PM.

Respectfully submitted,
Ann Manor, KT8F, Recording Secretary

General Meeting—January 11, 2005

In attendance:

W1IK, Jim	President
WN1B Scott	Vice-President
KT8F, Ann	Recording Secretary
KW8Z, Ken	Membership Secretary
W8DFG, Dennis	Treasurer
K8GEO, George	Board Member
N8OZ, Joe	Board Member
*W1SKU, Fred	Board Member
*KB8QMS, Nancy	Past President

*Absent

Meeting called to order by the President at: 7:30 PM

Introductions were made, new members, visitors and upgrades recognized.

Minutes: Walt's call sign wrong in minutes under Health and Welfare, corrected to WB8E; under election opening report "none were elected" should have read "no other candidates," page 7 – Dennis's call sign wrong, corrected to W8DFG. Motion to amend minutes made by KC8WWE, Pete; 2nd Jerry, K8CFY, vote to accept amended minutes carried.

Treasurer's report given by Dennis, W8DFG and approved.

Membership: Ken, KW8Z: 200 members. Deadline for dues is the February General Meeting.

Technical report: Scott, WN1B provided the report. North site up and running.

Website: Dave, KC8IAQ reported.

ARRL: Phil, W8IC – reported on BPL.

Club Liaison: Mike, N5WCS read the upcoming events, see list elsewhere in this issue.

Express: Joe, K8OEF – no report.

Health & Welfare: Walt, WB8E reported. Our best wishes go to Delphine, KC8JSH and Richard, K8QLM for a speedy recovery.

Swap: Scott, WN1B stated that the position for Swap Chairman is open. He suggests that a committee be formed.

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Log It!

By Dick Arnold, AF8X

SINCE THE FCC NO longer requires logging contacts, most of us don't any more. However there are good reasons to log your contacts even if not required by law. I am guilty of giving up logging due to nothing more than laziness, but I intend to resume the practice because of the reasons listed below.

A written log of your transmissions might just be the thing to prove your innocence in a lawsuit. A record of dates, times, frequencies, etc. will be evidence as to your operating times and dates and would be invaluable in a TVI complaint. There is also the pleasure of looking back through the log at the contacts made years ago, and of course the information recorded to be included on a QSL card. I have been embarrassed when receiving a QSL card and not having a record of the contact to respond with a valid time and signal report.

The format of the logbook can be your own personal preference and by using a common composition book with bound pages, add information in the order that makes sense to you. On the other hand, there are a number of commercial logbooks with ruled pages available from the ARRL and other sources. If you are a computer person, there are a number of computer logging programs available, many of them are free downloads from the Internet. Contesters almost always use computers to log.

As far as the information to be entered in the log, the essentials are date, time, frequency, mode, signal report, name and QTH. Personally, I like to add comments about the contact's rig and antenna and his fist, if pertinent.

When entering the time, always use UTC or Zulu, as I like to call it. That way there can be no confusion as to time zones or daylight saving time mistakes.

In order to keep your logbook looking neat and orderly, jot down all the data necessary on a note pad while operating and then at a later time, transcribe the information into the logbook in your best script. I also advise using a pen with ink that does not smear from hand contact.

I have all but one of the logbooks that I have kept and I really enjoy going through them from time to time. The very first logbook when I was a novice is the one missing and I would dearly love to find that one.

Let me relate a short tale about logging. This happened a long time ago at a ham friend and mentor's house. I was watching John, W8URM tune up his rig. Remember the tube type rigs that had to be tuned- peak the grid and dip the plate stuff? Well I saw John tune his rig, identify with his call on CW then…log the transmission time, date and frequency in his logbook! Boy, talk about record keeping…but that was John, strictly legal and an A1 operator.

You Know You're a Ham if:

You buy electrical black tape in ten packs.

You've stripped wire with your teeth.

You've told your son that, "One day, all this will be yours," and he doesn't respond.

You'd rather help a buddy put up a new tower than mow the lawn.

You've grabbed the wrong end of a soldering iron.

You start giving out RST reports when you are on the telephone.

The propagation forecast means far more to you than the local weather forecast.

The microphone or visual aids at a meeting don't work and you rush up to the front to fix it.

You tell the XYL, when she notices a new rig in the shack, why that has been there for years.

Your watch is set only to UTC.

At night, when you pray, it starts off something like: CQ CQ CQ GOD DE (your callsign).

You ever had to patch your roof after an antenna project.

Ham radio magazines comprise more than 50% of your bathroom library.

You ever put a GPS tracker in the XYL's car, just so you could watch her on APRS.

You and the XYL took a cruise so you could visit the radio room.

You ever tapped out HI in Morse on your car horn to another ham.

You ever had an antenna fall down.

Your teenager refuses to ride in your car because it looks like a porcupine.

You know the Latitude and Longitude of your home QTH.

You go into the local Radio Shack store and the clerk asks YOU where something is.

—Submitted by Arpad, WY8M

USECA Club Liaison

Sundays	**New** USECA Youth Net, Joe, KD8ATO, (age 10) will be NCO for a youth net at 7 PM Sunday nights for hams 20 yrs.of age and under. Third party non-ham youths are also welcome to check-in.
24-Jan-05 2-May-05	L'Anse Creuse/Mount Clemens Community Program is offering two classes; Morse Code at 6:45 to 7:25 PM, and Technician License Class from 7:30 to 9:30 PM. Contact Diane Lobbestael, (586) 783-6330.
5-Feb-05	USECA will be participating in the Freeze Your Butt Off QRP Contest. Contact Dave, W8RIT at w8rit@k8uo.com.
12-Feb-05	Cherryland ARC, Swap-N Shop, Traverse City, Phone (231) 947-8555.
13-Feb-05	Livonia Amateur Radio Club Swap, at William M. Costic Center on 11 Mile Rd. Farmington, MI.
19-Feb-05 20-Feb-05	Ham University, two day intensive course to prepare for Technician Class test, at Bldg. H, Macomb County Community College Campus, M-59 & Garfield, contact Scott, WN1B at wn1b@k8uo.com.
19-Mar-05	Southern Michigan Amateur Radio Society Crossroads Hamfest, Marshall High School, Marshall, MI. Phone (269) 962-2006.
19-Mar-05	ARRL Great Lakes Division Convention, sponsored by Toledo Mobile Radio Association, at the Holiday Inn, Phone (419) 865-1361 for room reservations and rates. Info: www.tmrahamradio.org.
20-Mar-05	Toledo Mobile Radio Association Hamfest, at Lucas County Recreation Center. Info: www.tmrahamradio.org.
16-Apr-05	Milford ARC Swap-n-Shop, at Milford High School, 2380 Milford Rd. Highland MI.; www.qsl.net/w8ydx; Talk-in 145.49- 67 Hz PL.
1-May-05	USECA Walk America: Metropolitan Beach, contact Dennis, W8DFG at w8dfg@k8uo.com.
20-May-05 22-May-05	Dayton Hamvention, Dayton, Ohio

If we have missed anything or some noteworthy event, please let us know.
Our E-Mail addresses are: k8geo@arrl.net and n5wcs@arrl.net

Submitted by George, K8GEO and Mike, N5WCS

STAY RADIOACTIVE!

Radio Detecting and Ranging

Neil, V73NS

We are all familiar with Radio Detecting And Ranging (RADAR) these days. We commonly watch the evening news for a look at the weather radar to see the location of a storm. Radar is used for aircraft surveillance, surface (ground or sea) surveillance, space surveillance, tracking, weapon control, missile guidance, instrumentation, remote sensing of the environment, intruder detection, and underground probing. Radar can be used for imaging, magnetosphere study and even monitoring tides and currents on the oceans.

Modern radar transmits a short pulse of RF lasting between a few microseconds to a millisecond. The transmitter then shuts off and the receiver switches on to listen for a return signal or "echo". The number of times this switching takes place per second is the Pulse Repetition Frequency, or "PRF." Depending on the transmitted pulse width and the distance being ranged the PRF can be between 10 and 2,000 times per second. Radio signals travel about 1,000 feet per microsecond and this allows distances to be measured very accurately. The total time it takes for the pulse to travel to the target and return is simply divided in half. Doppler shift of the signal allows for speed measurements.

You can thank the British for radar, but it was a far cry from today's marvel. By the way, several countries were working on this at the same time and the claim of who invented radar varies. In 1934 it was demonstrated that the signals from the BBC transmitters were bouncing off of aircraft and that this could be detected. The phenomenon was further studied and improvements were made. Mind you these were short-wave (HF) frequencies that they were using. The receive sites were massive with 75' tall towers – but they proved the concept worked and before long aircraft were being located some 40 miles distant with fairly accurate bearings too.

These were good at detecting large clusters of planes making daylight raids on the UK during the war. When Germany started night bombing raids, these planes flew in smaller, dispersed groups and there was a need to improve the radar to allow them to be intercepted. This was accomplished using a large, ground based, TV transmitter (operating in the 6-meter range). Detection was performed with antennas mounted on the landing gear of a British bomber that was flown to detect the German planes and guide British fighters towards them.

At the same time the British were working on radar, so were the researchers in the US. It was discovered that higher frequencies could be used with better results than HF. As a result of this the klystron tube, waveguide and several other technologies were invented to meet the demands of radar at these higher frequencies. The Air Force spurred the formation of the "Rad Lab" which was based at M.I.T., who today is still involved in radar. These advances were pressed into service as quickly as possible for military uses. Germany also by the height of the war had developed radar but their technology remained very basic. The advancement of radar technology is said to have won the war for the Allies.

After WWII many military radar units were transferred to civilian use for air traffic control. When the Korean War broke out the push for better radar technology was again at the forefront. The Cold War brought new concerns to the table. These were the days of long-range bombers, Intercontinental Ballistic Missiles and nuclear weapons. The Distant Early Warning Line (DEW Line) radar sites were constructed. Behind those was another network of long-range radars to further protect our borders. One of these sites was located in Pt Austin, MI. As a kid we heard the sweep of the radar on the TV, telephone, phonograph, radio, PA systems and at times it seemed it was everywhere. You got used to it after a while. In 1988 the Air Force shut down the Pt Austin site. The downfall of this site was the 86 ton "sail," or oblong reflector, used to focus the beam. The wear on the bearings was great and the cost of maintaining them was as well. Advancements in technology also eliminated the need for this radar location.

In the 1950's the military created Lincoln Labs (now M.I.T./Lincoln Labs) to advance the technology. Frequencies now ranged from 150 MHz to 96 GHz, advancements in tube technology made higher power and wider bandwidths possible and receiver sensitivity improved. Antennas of the older radars rotated. The new technology emerging in the 1960's was the phased array antenna that was able to concentrate energy into pencil thin beams and rapidly scan several targets.

With the space race and satellites came the need to track things in earth orbit. Several large radar sites were constructed in various locations around the globe. Ascension Island in the Atlantic, Diego Garcia in the Indian Ocean and Kwajalein Atoll in the Pacific sprang up. There were gaps in this system though and no islands or friendly nations to place radars on. The solution was a pair of tracking ships, the Arnold and the Vandenberg, which could be placed where needed.

Today the transmitters from these ships are here on Kwajalein Atoll and are part of the system I service at the ALTAIR (which stands for ARPA Long-range Tracking And Instrumentation Radar) radar site. These were placed here with a new

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Antennas Find Them—*From Page 3*

Does it work? I hope to tell you. It also tunes the 4 bands in the K1- 15, 20, 30, & 40 meters. This antenna, which Walt calls, "The Nursing Home Loop," (cruel huh) would work great for any one not allowed to put up outdoor antennas.

What I am trying to convey here is, try everything you can think of and just maybe you will some day create that freak of nature, a small super antenna.

Meeting Minutes—*From Page 4*

Field Day: Phil, W8IC and Ann, KT8F will run Field Day again in 2005.

New Business:
Mike, N8WCS: the FYBO (Freeze Your Butt Off) special event will be held at Metro Beach on February 5. Contact Dave, W8RIT for more info.

Joe, KD8ATO is starting a youth net on Sunday, at 7 PM.

Scott, WN1B stated the net format for the Trader's net following the youth net will switch, so that the tech support question/answer/info part will be first, then the trader's post.

Bill, N8SA spoke about the Ham University 2 day intensive session that will be held at Macomb County College on Feb 19 and 20. See Liaison page for more info. Contact Scott, WN1B or Bill, N8SA.

Jim, W1IK requested a net point manager. Arpad, WY8M agreed to take on the position. Thanks, Arpad.

Jim, W1IK discussed the Tuesday night net. He asked for a show of hands to see if the Tuesday night net should be continued. (Only one hand went up). Jim asked the membership to think about this issue and let the board know your opinions. No formal vote was taken. Also, the hoot owl net has not been held for months. Let Brian, KC8DIR or any board member know if you are interested in running a net. A poll will be put on the USECA web site for comments.

ARRL has a class on Net Control Procedures for emergency communications. The $45.00 fee is refunded when the class is completed. Contact Ann Marie at *k8amr@arrl.net* for info on a class she conducts on net control procedures.

Ken, KC8ZVA agreed to take the position of refreshment chairman. Thanks, Ken.

Business portion of the meeting concluded at 8:26 PM.

Program: show n' tell and sell.

Respectfully submitted,
Ann Manor, KT8F, Recording Secretary

Radio Detecting—*From Page 7*

150' diameter antenna which reatly increased their performance and added to the capabilities of the Kwajalein site.

The 70's and 80's brought smaller, lighter and more powerful radars into use. As computers also followed this trend, the combination of the two today offers stunning performance. Computer processing increases the amount of information gathered from a returned pulse of radar energy. When these advancements are put into weather, imaging, tracking and weapons radar systems the results are amazing. "Synthetic Aperture Radar" (SAR) is making radar mapping images in detail never before imagined. Spacecraft and aircraft use SAR to map the earth and distant planets. Operating at frequencies between 400 and 500 MHz would permit collection of data through the dense upper canopy of tropical rain forests.

As you can see, as with all other radio technologies, it all started from an idea and grew from there. You can also bet that many hams were involved along the way. Amateur Radio—a fascinating hobby any way you look at it.

Erect An Antenna Tower—*From Page 3*

While this short article does not outline all the reasons for the erection of a 60' or 70' HF antenna tower, it certainly demonstrates emergency functioning capabilities of Amateur Radio in natural disasters or other possible terrorist activities.

The Amateur Radio community was recently successful in supporting a year or two long struggle to have the City of Troy amend their ordinances to permit the erection of 70' tall antenna towers. Contact Murray, KE8UM, of the Hazel Park Amateur Radio Club for details. His e-mail address is *ke8um@arrl.net*. A similar effort is presently underway in Clinton Township, Macomb County by David Cunningham, KC8IAQ, and his wife Mary, KC8IAP, of the Utica Shelby Emergency Communications Association. They will also need our support!

Remember, do your homework before you make application for a permit or variance.

73 de K8GEO

XYL—*From Page 1*

Honeymoon? Strangely, Joe insisted we wait 1 week but, sure…we set out on a leisurely, no reservations, cross-country trip to the Pacific Northwest in Joe's Econobox, heading for the new Lake Michigan "Lake Express" Ferry out of Muskegon to Milwaukee. Did I mention Joe had a HF rig in the car?…*I drove*, so *he* could work the "County Hunters" net, check in with MIDCARS, *and* work the last four stations he needed for his 50CW/M FISTS award. On the ferry, Joe just couldn't resist working VHF repeaters around the lake with his HT from the highest part of the boat and signing "*marine-mobile*" with a little giggle. One passenger made the mistake of asking Joe about his "HT" and spent the rest of his crossing listening to Joe's canned pitch for Amateur Radio. We docked and disembarked in Milwaukee that evening and Joe found a "*dirt-cheap*" little "Mom & Pop" motel near the ferry landing, a description that later proved *uncannily* accurate *(…and I'm pretty sure the two characters in the office were never a Mom & Pop!).* I'm really not sure *what* time Joe got to bed that first night of our trip, but I *did* hear in the morning that "*10 and 15 were open most of the night!*" In the morning we were supposed to head towards Yellowstone National Park via Interstate 90 but Joe begged me to stop at a little store with the strange name of "AES". As it turned out, the store wasn't small, was bursting its seams with Ham gear, and, as my luck would have it, *"just happened"* to be having a clearance sale. Pleading with me that this was his *"chance of a lifetime,"* Joe paid to have several large cartons of merchandise shipped home. We got as far west as the Black Hills in South Dakota before our money ran out.

Following the "honeymoon," my father very graciously offered to make the down payment on a small home we had been looking at. It was *supposed* to have *two* bedrooms, but immediately upon our moving in, Joe claimed one of them and turned it into what the Amateur fraternity calls a "shack", declaring that room "out-of-bounds." From the other side of the closed door, I could hear Joe busily drilling holes in the hardwood floor and plaster walls for "feeders" and a sinister sounding "220" box. He even replaced one pane of the French window with ugly brown "Bakelite" he needed for some sort of "ladder-line" to the tree in the back yard. DX cards were nailed and pinned to the walls of our new house and solder "splashes" and burns accent the wood floor of the "shack." Joe, all the while, muttering about the knucklehead who'd built a house on a lot too small for even an 80 meter dipole without bending the ends.

I've been married to Joe three years now, and in that time, I've learned a lot about Ham radio. CW—stands for "Contest Widow." When Joe works a contest, the only way I know he's at home is the flickering of the lights and the frantic calls to *"…hurry Honey, reset that breaker, 10 meters is opening and I need the amp!"* During contests I'm forbidden to use the washer, dryer, dishwasher, toaster, coffeepot, or microwave (might pop a breaker!), nor can I clean house or use any appliances that might create "QRN." SS—"Solo Season"…I spent Sweepstakes weekend with my mother and Joe never even noticed! DX—I've managed to survive three DX contests. "DX" must stand for "Don't X-pect to see me for 48 hours."

Now, don't get the idea that Joe pays no attention to me. Just last month he took me out to dinner and a show. Two videos on Emergency Communications and Hazardous Materials, put on by the local RACES group, with all the spaghetti we could eat for $3 at the following "fellowship" dinner. Last weekend, Joe took me along for a Sunday ride in the country (I drove!), where he spent the better part of the day hanging out the window with an antenna, following someone called "MABEL" and yelling out *"…turn here!"* — *"…faster!"* Believe me, it was all I could do to contain my excitement upon learning MABEL was a balloon!

We drive a rusting 1984 Olds Cutlass now…the little Econobox's electrical system burned up when Joe tried to hook up a 4th mobile rig. We would've had a new car last fall, but the all-new digital Yaesu FT1200MPX-VII came out and Joe needed a new roof-tower and beam to go with it. Walking and riding bikes is healthy. My cookie-jar money has gone for club dues (…how many does one ham need to belong to?), postage, and "IRCs." I've cancelled invitations by the dozens because Joe *insists* on being the fill-in "NCS" (Net Control Standby) for every net without one. I haven't been able to watch my Soaps without crackling audio and snow ("RFI") on the picture since Joe got his "3K Linear" and now I have to brave the neighbors' irate stares as well (more "RFI"). I've spent many days alone, while Joe attended hamfests, conventions, and other "Amateur" meetings. I've had many home-cooked meals go cold as Joe waved me off, in pursuit of some elusive DX station on the other side of the world.

BUT—today, a new age has dawned! Joe doesn't know this yet, but today I went down to the local VE session, passed my exams, and got my General ticket. (…After all, Joe used to bug me to get licensed!) I sold my silver service and china on Ebay this afternoon *and* bought a rig. It should arrive in a few days. I think the sewing machine (also listed on Ebay) will bring in just enough to purchase that gold-plated Vibroplex key I saw in Joe's catalog. I've already hired a carpenter to frame up my own little shack on the West side of our remaining bedroom and I hung up a big map of the world there today. I figure my license will arrive by the end of the week. Those sounds you'll be hearing? Heterodynes? No—*That'll be Joe, screaming for his dinner.*

Spectrum Gone?—*From Page 1*

Over the last year power companies and investment firms have launched BPL tests and trial deployments on several power systems across the country. The results have been mixed, with reports ranging from undetectable to unbearable interference to amateur radio stations. Some of the BPL providers have attempted to incorporate selective band-stop technologies to mitigate interference to amateur radio operators, but these may be limited in their effectiveness and impose a substantial data throughput penalty to the BPL providers.

BPL operates under the Part 15 of the FCC rules and regulations. Theses are the rules that govern the manufacture and use of seemingly innocuous devices such as wireless LANs, microphones, headphones, and a host of other consumer and commercial electronic devices. Simply stated, Part 15 devices must not cause harmful interference to licensed spectrum users and must accept any interference caused by legitimate licensed users of the spectrum.

So! Here we sit, the fat dumb and happy licensed users of radio spectrum in the, seemingly commercially undesirable, HF radio spectrum. Enter the all mighty and lobbyist laden power companies, aching to secure profits for their shareholders who's core business is now being threatened by power company deregulation. Add to that a few zealous governmental officials who see an opportunity to make points with the general public by promoting competition in the high speed internet delivery business, and you've got the makings of a pig slaughter.

Hmmm. Does this make you a bit nervous? Well, if that's not enough, look around. There's plenty more to get nervous about. On December 15th the Wall Street Journal ran an article about companies such as Nextel, Sprint, Microsoft, Intel, and Cisco clamoring for spectrum and pressuring government officials for more spectrum allocation. Many of you are aware of the interference problem we experienced on the repeater a few years ago, the source of which was traced to a Part 15 car alarm system. And we can all see the public's insatiable thirst for wireless products and the timely response by manufacturers with a plethora of new and innovative wireless devices. The FCC has recently responded to the BPL dilemma by effectively softening some of the Part 15 rules. Additionally, they have recently issued a report and order, expanding and modifying some of the Part 15 rules to accommodate new wideband and ultra-wideband devices. If you don't think that some company has their eye on our VHF, UHF, or microwave spectrum, just remember what has happened to the 220 MHz. spectrum over the last fifteen years.

So, what can we do?

For starters, you can be radio active. The more we use our bands the less likely we are to lose them. Explore some of the less used bands and modes. Remember, Technician class license holders have access to nearly every band and mode above six meters. That means you can operate SSB, CW, FM, digital, moon bounce, meteor scatter, aurora, satellites, and a host of other modes and activities.

If you are a Technician, upgrade and get on the HF bands. Find an elmer, practice your code, ask questions, put a study group together, and do whatever it takes to get that next class of license. You will never be sorry that you upgraded.

Write your senators and congressmen. They need to know what we are doing and how valuable we are to the community and national security. The more letters they get the more it sinks in. This is especially important given the lack of certainty surrounding the Spectrum Protection Act now in congress.

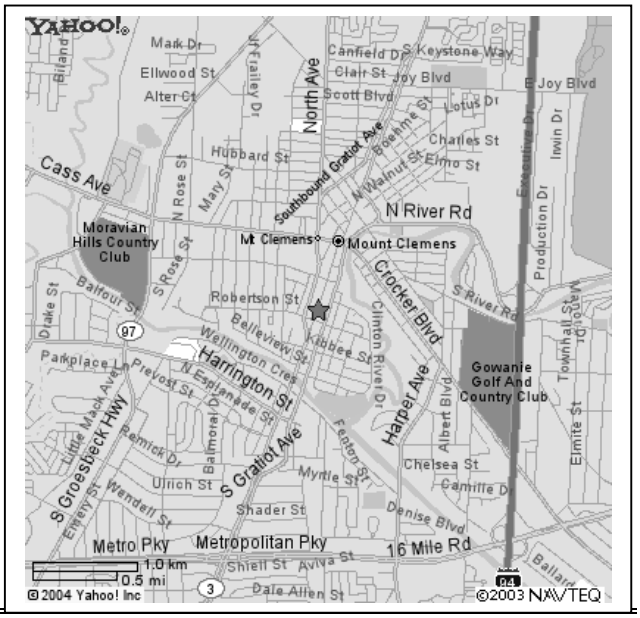
Finally, all of our spectrum rivals have one thing in common, lobbyists. Big business knows that in order to survive they must have their voice heard in Washington. Like it or not, its time to face the fact that in order to survive we must play the big business game. We are but a mere 750,000 minnows in a sea of nearly 300,000,000 fish. Yes, we provide a great service in times of local, regional, and national emergency, assist in community events, and contribute immensely to technological development. But all that tends to get lost when consumer statistics get thrown around and political muscle gets flexed. We need a strong voice to carry our message, toot our horn, and watch our backsides. That voice, like it or not, is the ARRL.

I have held opposing views to the ARRL on many subjects over the years, and still do. I don't agree with them on "No Code" licensing, and I get terribly annoyed when I think of how they have abandoned support for amplitude modulation mode, but I stand by their side and fully support them for one main reason, their spectrum protection actions. Think about all those big businesses and their lobbyists promoting their own interests. We need to be heard in Washington, not just as individual voices, but as a strong and vocal group. If you are not a member, consider becoming one. If you are a member, consider pledging a few extra dollars. The future of your hobby likely depends on it.

As an aside, you can join or renew your ARRL membership through USECA. For more information, see one of your board members or your ARRL liaison, Phil Manor, W8IC.

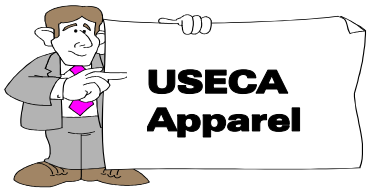
73.

USECA Meeting Location



USECA VE Testing

Testing will be the FIRST Thursday EVERY month of the year. Joe, N8OZ will have the CVE duty. No pre-registration is needed or wanted. Test Fee is $12.00. Applicants need copies and originals of CSCE's and/or license. There is no copy machine at the Elks; (there is none close by). Starting time is 7:00 p.m. — please do not arrive earlier. Walk-ins are welcomed. Test site is at the Mt. Clemens Elks, 179 S. Main St., Mt. Clemens. If testing, you must have the following: picture ID (or birth certificate); and a copy of your current license or completion certificates, if any.



Jackets–$45.00 • Sweatshirts–$25.00
Polo Shirts–$22.00 • Caps–$6.00
(2X & 3X–Additional Charge)
Contact: Richard, W8WTH
At Meetings or Phone (586) 791-4669

Net Point System

✓1) HF CW NCO = 4 points, HF SSB/VHF NCO = 3 points, HF CW/SSB check-in = 2 points, VHF check-in = 1 point. HF < 30 MHz, VHF > 30 MHz. (NOTE: Check-ins should do so *personally,* proxy check-ins are legitimate *only* for members on club business. "In & Out" check-ins, though allowed, are discouraged.)

✓2) Awards are earned for 50 points and multiples thereof. Additional awards for the highest annual HF and VHF scores. Awards are meant to encourage **participation** and can be earned by any licensed amateur.

✓3) Net logs must be readable and include the CALLS and NAMES of check-ins, as well as NCO, DATE, and MODE.

✓4) NCO's: Forward net logs to the Awards Manager within 30 days; logs received later will not earn the bonus points normally awarded a NCO. Mail your logs to: Arpad, WY8M, 28803 Grobbel, Warren, MI 48092; or email to *wy8m@arrl.net.*

✓5) If *you* notice any errors in the database, wrong or changed call signs, mis-spelled names, etc., let Tom know ASAP.

The *USECA EXPRESS* is published monthly (except July and August), by the UTICA SHELBY EMERGENCY COMMUNICATION ASSOCIATION, INC., of Macomb County, Michigan. Club meetings are held on the second Tuesday of each month (except July and August), 7:30 p.m., local time, at the Elks Club, 179 S. Main (between Church and Robertson), Mt. Clemens, Michigan. *Visitors are always welcome.* Articles for the *EXPRESS* should be submitted to the editor no later than the night of the club meeting for publication in the following month's edition. **The articles within are those of the author and not necessarily endorsed by USECA**. Material contained in the *EXPRESS* may be reprinted provided credit is given to the *USECA EXPRESS* and the author, except material published by permission of a copyright holder. The awards for "Excellent" (1994) and four times "Superior" (1995, 1996, 1997 and 1998) were received from ARNS (Amateur Radio News Service). [*Note:* ARNS has disbanded.]

USECA Cork Board

►Radio Items◄

For Sale: Cushcraft A270-10S, 2M/440 Yagi, 6' boom, 5 elements/band, vg condx, $60. Cushcraft AR-6, 6M Ringo, 10' length, excellent condx, $50. Regency R806 VHF scanner, xtal control, fair condx, $10. E-mail Floyd, W8RO at: *w8ro@k8uo.com* or call (248) 431-7769.

ICOM Sound Card Interface. It's the kit of parts and circuit board to build the audio interface. About 95 percent of the parts are with it, it does not come in a kit. I ordered the parts from about three different sources. I did NOT order the case. I have well over $100.00 in the parts and board, I do not need it anymore. Asking $50. Contact Dan, WA8GQL at: *radiodan@comcast.net*.

MFJ-713, 2 meter HT intermod filter. Like to run your HT mobile but can't stand the intermod? This thing really works. $40. KC8LOC, Tom, h (248) 542-3340; wrk: (586) 576-3314 or email: *kc8loc@yahoo.com*.

KENWOOD Linear Amp. 1000 watts, model TL-922A; 160-15 meters; $1000.

General Radio Freq. Measuring Equipment; 2-6' cabinets; w/all frequency equipment; w/manuals; lots of electronics; $250.

HEATHKIT Transceiver model HW-16; w/manual. 80-40 & 15 meters; no crystals; $35.

HEATHKIT SWL radio model GR-81; 160-80-40-20 meters; w/manual $50.

Contact K8LJM, Jose; (586) 792-4602.

►Miscellaneous Items◄

IMATION SuperDisk 120MB Parallel Port Drive. Will trade for anything for which I can find a use. Dick Arnold (586) 791 3595.

SNAP-ON KR1100 upper tool chest, very large (l-53", w-22", h-18", fits KRL1000 roll cabinet, 9 roller bearing drawers, would make nice bench top box $1000. KC8LOC, Tom, home: (248) 542-3340; work: (586) 576-3314 or email: *kc8loc@yahoo.com*.

TOSHIBA Laptop computer 486 Satellite with Canon Jet Printer. $130. Hewlett-Packard Color Printer Deskjet 560C. $35. Bapco safety analyzer 120v to 220v test for ground on any product. $125. Sony car stereo, AM/FM cassette with Sony CD 10 Disc Changer $140. KC8QIC, Denny, (586) 268-7417.

★New or changed this month.

Notify the editor to have items added and/or removed.

This Cork Board is for club members only and it's free!

★FOR SALE

Yaesu FRG-8800 -- HF receiver to 30 MHz, AM/FM/SSB/CW, digital display, original box and manual and service manual; $320.

Kenwood R-2000 -- HF receiver to 30 MHz, AM/FM/SSB/CW, digital display, original box and manual and service manual; $300.

Hallicrafters SX-130 – HF receiver to 30 MHz, AM/SSB/CW, 1960's tube type, original owner's manual, spare tubes; $125.

American Electrola DXC-100 -- HF receiver to 30 MHz, AM/FM/SW, digital display and keypad, wooden case, long telescopic antenna and ext jack, original owners manual; $110.

Kenwood S-599 – speaker, matches the 599 twins; $60.

MFJ MFJ-956 – tuner, two knobs, 2 SO-239's; $25.

Archer 15-1113 – UHF/VHF/FM pre-amp, 110V; $10.

Hallicrafters R-50 – SX-130 matching speaker, 1960's vintage; $50.

Yaesu MH-34 – Speaker mic for Yaesu HT's, single pin 4-conductor style, rotatable lapel clip, like new; $20.

Kenwood SMC-33 – Speaker-mic for Kenwood HT's, two-pin style, right angle connector, has the three programmable buttons across the top, lock switch on the back, rotatable lapel clip; $45.

Computer Stuff – P-III 600 MHz processor w/mboard (board bad, processor good), Elsa Erazor III 32 Mb AGP TNT2 video card, Creative Labs sound card, 3Com 10/100 network card, a complete 386-387 system with keyboard monitor mouse, assorted old 386-486 type stuff; $$$???

Overhead Projector Bulbs (?) – have two new bulbs in the box, one is a 36V-400W, the other a 24V-250W(?); both never touched by fingers directly and both verified for filament continuity; $3/each.

CB Antenna – about 26" long, base loaded, base load is tunable w/2 adjustment rings, 3/8" style mount; $5.

Computer Speakers – pair of amplified pc speakers, my hearing is still too good & the tiny slight buzz in the background annoys me, they were new and used only 10 minutes; $8.

Cell Phone Mobile Power Cord – for cell phone with 4.8V battery, DC coaxial plug on phone end; $5.

Power Supply – switching PS, 12-15 VDC, 16A, works, you wire it up; $25.

Duckies – UHF duck about 6" with BNC, $5; dual band 2M/440 "Icom" style about 6" with BNC, $15; 11 Meter black rubber duck with right angle PL259, $5.

K-40 10/11M Whip – 4' fiberglass, black, tunable, substitute for original K-40 stainless whip & base load, no mount or coax just the antenna; $4.

Contact Arpad, WY8M at: *wy8m@arrl.net* or (586) 751-3804 or 147.180 MHz+ 100 Hz PL.

USECA Cork Board On The Web

Every month, this page is uploaded to our web page for the "whole world" to view.

Don't hesitate to list your wants and/or needs—you never know who will be reading it.

And, the best part, it costs you (members) *NOTHING!*

USecA

(That's us—U S of A)

USECA Application

DATE_____ ☐ NEW ☐ RENEWAL

CALL_____ CLASS_____ AUTO-PATCH_____

NAME_____

STREET ADDRESS_____

CITY_____STATE_____ZIP_____

TELEPHONE #_____PRINT # IN ROSTER ☐ YES ☐ NO

BIRTHDATE_____ EMAIL ADDRESS_____

Rev. 3/04 **ARRL** ☐ YES ☐ NO **RACES** ☐ YES ☐ NO

For Family Memberships Only:

CALL_____ CLASS_____

NAME_____

BIRTHDATE_____

MEMBER: **ARRL** ☐ YES ☐ NO
RACES ☐ YES ☐ NO

CALL_____ CLASS_____

NAME_____

BIRTHDATE_____

MEMBER: **ARRL** ☐ YES ☐ NO
RACES ☐ YES ☐ NO

Annual Membership Dues Regular: $20 — Family: $30 — Auto-Patch: $35 (One Time Fee) + Annual Dues
Applications can be given to the Membership Secretary at monthly meeting or mailed.
Please make check payable to: **USECA —** Address: **P.O. Box 46331, Mt. Clemens, MI 48046**
(Allow 4-6 weeks for processing.)
USECA reserves the right to accept or reject New or Renewal Memberships.

Local Area FM Nets

DAY	TIME	CLUB	FREQ.
SUN	**1:00 pm**	**USECA/Information**	**147.180**
SUN	**7:00 pm**	**USECA/Youth**	**147.180**
SUN	**8:00 pm**	**USECA/Traders/Helpers**	**147.180**
SUN	9:00 pm	HPARC/Info	146.640
SUN	9:00 pm	Garden City ARC	146.860
SUN-SAT	10:15 pm	S. E. Michigan Traffic Net	145.330
MON	7:30 pm	SATERN	147.180
MON	8:00 pm	MECA/Info	147.200
MON	8:00 pm	GMARC (PL 123)	443.075
MON	**9:00 pm**	**USECA/Morse Code Class**	**147.180**
TUE	**8:00 pm**	**USECA/Information**	**147.180**
TUE	9:00 pm	Motor City Radio Club	147.240
WED	9:00 pm	ARPSC/Info	145.490
THU	8:00 pm	RACES/ARES	147.200
THU	8:30 pm	LCARC/Info	147.080
FRI	**Midnight**	**USECA/Hoot Owl**	**147.180**

VHF PL'S — 100 Hz

On The World Wide Web

USECA Home Page

WWW.USECA.NET

Local HF Nets

DAY	TIME	CLUB	FREQ.
MON	7:30 pm	LCARC/15 Meter CW	21.165
MON	9:00 pm	LCARC/15 Meter Phone USB	21.395
WED	**7:00 pm**	**USECA/6 Meter Phone USB**	**50.150**
THU	7:30 pm	LCARC/10 Meter Phone USB	28.435
THU	**9:00 pm**	**USECA/15 Meter Slow CW**	**21.140**
FRI	**10:00 pm**	**USECA/80 Meter CW**	**3.720**

*Listings in **BOLD** are USECA club nets, but ALL ARE WELCOME!*

Net Ops Schedules

2-METER NETS

	SUN. 1 PM	SUN. 8 PM**	TUES. 8 PM	FRI. MIDNIGHT
WEEK	147.180 MHz	147.180 MHz	147.180 MHz	147.180 MHz
1	VA3IDJ	W1IK	–OPEN–	–OPEN–
2	KT8F	KC8WXF	–Meeting–	–OPEN–
3	–OPEN–	W8RIT	–OPEN–	KC8DIR
4	–OPEN–	WN1B	W8DFG	–OPEN–
5*	WB8E	KW8Z	–OPEN–	–OPEN–

***Traders/Helper Net*

NCO's—If you're unable to take your net please get a replacement or contact Brian, KC8DIR (586) 749-4561—Don't wait!

USECA

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(If your dues are not paid)

FEBRUARY 2005

"The Happenin' Club"

Club Activities

MONTH	DATE	TIME	EVENT
FEB	8	7:30 pm	General Meeting
MAR	8	7:30 pm	General Meeting
APR	12	7:30 pm	General Meeting
MAY	10	7:30 pm	General Meeting
MAY	TBA	7:30 pm	Pre-Field Day
MAY	20-22	7:30 pm	Dayton Hamvention
JUN	14	7:30 pm	General Meeting & Fox Hunt
JUN	24-26		Field Day

Name Badges

WITH THE *OFFICIAL* USECA LOGO

CONTACT LAURA — (586) 749-4561

Swaps — See Page 6