

MICH-A-CON RF

Iron Mountain, MI**February**

Meeting Reminder: **Second Wednesday of Month.**

Which is **February 12, 2014** at 7:00 PM at Dickinson Library.

Please be there and support the cause of Amateur Radio.

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Words from the President

I hope that these “Words” find you enjoying the warmer temperatures that February will bring. It could get above 20 degrees!

“It's so cold, my teeth were chattering in the glass!” and “It's so cold, I'm coughing ice cubes!” And from one of my favorite comics, Steven Wright, “If it's zero degrees outside today and it's supposed to be twice as cold tomorrow, how cold is it going to be?” Do the math. HI!

Although it's been minus zero for several days, the RF still has escaped the atmosphere around my antennas. There has been some good DX out there to be worked.

The Amsterdam and St. Paul Islands, ranked #5 on the DXCC Most Wanted list, are on the air. FT5ZM is putting in a fantastic signal on 10 through 20 meters. They can also be heard on 30 and 40 meter CW, if the LIDS and FREQUENCYCOPS shut up. It was a zoo this evening on 40 at 0000 UTC. I couldn't tell if they came back to me, or not. Every time they gave a return, “jammers” came on their frequency sending “CQ”, “dit-dah” etc.,. I gave up. Maybe things will settle down before they leave around February 13.

I have managed to work them on 10, 12, 15, 17, and 20 CW. I worked FT5Z 35 years ago on 20 SSB: so I didn't need them for a new country. I do need them for a new country on RTTY.

The best way to work them is to beam Long Path at 57 degrees in the morning 1400-1900 UTC. They are S5-9 on the high bands on CW. I haven't listened on SSB. They are operating split, of course, and are listening from 2-15 UP. Several non-DXers are upset because of the range of the split. I don't like this range either. Many routine QSOs are destroyed by callers who don't listen on frequency before calling the DX station.

To find out more about this Dxpediton check their website.

<http://www.amsterdamdxdx.org/>



Amsterdam Island

We had another good turnout at the last meeting, even though it was very cold that evening. Thanks.

Hope to see you all at the February meeting.

73,

Tom W8JWN

From your New Newsletter Editor:

First, I would like to thank Steve, KD8CCP for his Newsletter publication efforts over the past years. Dedication, service, support in an untiring effort must be commended. **Thank You!**

As I begin this task, I am open to suggestions, ideas, and your thoughts. Please email or let me know at Club meetings. My email:

Heyboer.tom@gmail.com

Please bear with me as I reacquaint myself with Microsoft Word, stuff, and publishing newsletters.

Mich-A-Con Amateur Radio Club**Minutes of January 8th, 2014 Meeting**

President Tom Martin called the meeting to order at 7:00 pm.

Secretary Report

Minutes of the December 10th meeting were read and approved.

Treasurer Report

Balances as of January 1, 2014:

Checking - \$19.64

Regular Savings - \$ 2,211.39 of which \$ 1,851.62 is in the Trailer Fund.

Repeater Savings - \$ 882.44

Petty Cash - \$ 16.00

Repeater Report

The repeater has been working well, lately. It is still a bit noisy when it's windy.

Old Business

- QSL cards and certificates from our Veterans Day Special Event were mailed out on December 28. President Tom Martin noted there were 38 certificates sent.
- The two meter net has met the past two weeks. There were five participants the first week. The net will continue to meet every Thursday at 6:30 pm on the 146.850 MHz repeater.
- Burt Armbrust will order the parts necessary to repair the club's jumper cables, from Mouser, this week.
- Dave Thomas provided several copies of plans for simple Yagi antennas. The antennas can be built for use in a Fox Hunt activity anticipated for later in 2014.
- President Tom Martin presented an update on the Emergency Coordinator (EC) position for Dickinson County. According to Regional Coordinator Lou Gembolis, the Emergency Coordinator is an ARRL position. Therefore, the EC must be an ARRL member, but not necessarily a resident of the county. Paperwork for a prospective coordinator will go to Lou and he will get the process going. Tom will contact Rob Thomas to see if he still has an interest.
- Herb Pahlow contacted Terry Moriarty and Sam Holmes concerning his antenna situation. However, return calls weren't answered. They are ready to assist him whenever he calls them.

New Business

- The ARRL Centennial QSO Party was discussed. ARRL President Kay Craigie has been active on 80 meters (about 3.992-3.999 MHz). She is worth 300 points. Michigan will be on the air, as a W1AW station from February 19-25 and October 15-21. If anybody would like to operate as W1AW/8, there are slots available depending on mode or band desired. If interested contact AA8R@aol.com. There is more information regarding the ARRL Centennial QSO Party, on the web, at www.arrrl.org/centennial-qso-party.
- Skip Caswell reported that he has had an inquiry as to whether there will be a Technician license class in the near future. It was determined that there are no plans to have a class at this time.
- Members were reminded, that since we are now into the new year, club dues may be paid to club Treasurer Burt Armbrust, at any time. It was reported that there are now 10 paid members.

Adjournment

The meeting was adjourned at 7:30 p.m.

For the Good of the Order

Attendees reported on their recent activities.

Submitted by Joe Ferris

Attendees

Tom Martin, W8JWN – President
Scott Jarmusch, KA8TFF - Vice President
Burton Armbrust Sr., WB8EBS – Treasurer
Joe Ferris, KC9TQR
Tom Heyboer, KC8TH
Mike Bray, K8DDB
Skip Caswell, KE9L
Joe Komblevicz, KB8ETK
Terry Moriarity, K9TRY
David Thomas, KG9Y
Bill Grabowski, KD8VTT
Debbie Grabowski, KD8VTS
Sam Holmes, N8ATS
Michael Boileau, W9MB
Bob Meyers, WA8FXQ

MICH-A-CON AMATEUR RADIO CLUB

CONSTITUTION

October 1993

PREAMBLE

We, the members, desiring to further the interest of Amateur Radio in the community, to further individual skills, to improve co-operation among its members, and to enjoy the pleasure and benefits of the association of those interested in Amateur Radio, do hereby constitute ourselves the Mich-A-Con Amateur Radio Club and do enact this Constitution as our governing law.

ARTICLE I

Membership:

Section 1 - All persons interested in Amateur Radio technique solely with a personal aim and without pecuniary interest shall be eligible for membership.

Section 2 - Membership shall be Full, Associate, or Repeater. Full-Membership: Requires a valid F.C.C. Amateur Radio License and affords all voting and club privileges.

Associate-Membership: Provides all club privileges except voting for those interested in Amateur Radio but not possessing a valid F.C.C. Amateur Radio License.

Repeater-Only-Membership: For those who wish to support and regularly use the club repeater but are unable or do not desire to be an active participating club member. A valid F.C.C. Amateur Radio License is required and voting privileges are not afforded.

ARTICLE II

Officers:

Section 1 - The Officers of this Club shall be a President, a Vice President, a Secretary, and a Treasurer.

Section 2 - The Officers of this Club shall be elected for a term of one year by ballot of the members present at the November meeting, provided there be a quorum.

Section 3 - Vacancies occurring between elections must be filled by special ballot at the first regular meeting following the meeting at which the withdrawal or resignation is announced.

Section 4 - Officers may be removed, on a motion, approved by three-fourths of the total voting membership.

Section 5 - The Board of Directors, consisting of the President, Vice President, Secretary, and Treasurer, shall be the governing body of the Club and as such shall formulate and be responsible for all matters of policy. It shall review all reports of conduct unbecoming a member of the Club and, if sustained, submit the matter to the body of the Club at a regular meeting.

ARTICLE III

Duties of Officers:

Section 1 - The President shall preside at all meetings of this Club, and conduct the same in accordance with rules adopted; he shall enforce due observance of this Constitution and Bylaws; decide all questions of order; sign all official documents that are adopted by the Club, and none other;

and perform all customary duties pertaining to the office of President.

Section 2 - The Vice President shall assume all the duties of the President in the absence of the latter.

Section 3 - The Secretary shall keep a record of the proceedings of all meetings, keep a roll of the members, submit applications for

membership, carry on all correspondence, read communications at meetings, and be responsible for club publicity.

Section 4 - The Treasurer shall receive and receipt all monies paid to the Club, keep an accurate account of all monies received and expended and

make no disbursements without authorization by the Membership at a business meeting. The Treasurer shall present a budget at the Annual Meeting projecting club expenditures for the coming year.

Section 5 - All Officers shall turn over everything in their possession belonging to the club to their successors at the expiration of their term of office.

ARTICLE IV

Meetings:

Section 1 - The Bylaws shall provide for regular and special meetings. At meetings, a quorum of the membership shall be present for the transaction of business.

Section 2 - A Quorum will consist of a majority of full members present.

ARTICLE V

Dues and Assessments:

Section 1 - Dues structure for all classes of membership shall be set and assessed at the Annual Meeting. Non-payment of such dues or assessments shall be cause for expulsion from the club within the discretion of the membership.

Section 2 - The Mich-A-Con Amateur Radio Club by majority vote of those present at any regular meeting may levy upon the General Membership such assessments as shall be deemed necessary for the business of the Organization within its objectives as set forth in the Preamble.

ARTICLE VI

QRM and Membership Assistance:

Section 1 - This Club shall assist members in handling cases of broadcast or television interference caused by any Amateur Station operation in the area of club jurisdiction. The club will provide technical advice to members concerning equipment design and operation to assist in complete frequency observance, clean signals, uniform practice, and absence of spurious radiations from club member's stations.

ARTICLE VII

Amendments:

Section 1 - This Constitution or the Bylaws may be amended by a favorable vote from a majority of the total membership. Proposals for amendments shall be submitted in writing at the regular meeting and may not be voted upon until the next regular meeting, provided all members have been notified by mail of the intent to amend the Constitution and/or Bylaws at a specific meeting.

ARTICLE VIII

Rules:

Section 1 - Meetings: Roberts Rules of Order shall govern proceedings. Section 2 -

Repeater: Use shall conform to rules set forth in Bylaws.

BYLAWS

Section 1 - Secretary:

It shall be the duty of the Secretary to keep the Constitution and Bylaws of the Mich-A-Con Amateur Radio Club and have them at every regular and Special meeting, and cause all amendments, changes, and additions to be noted thereon and shall permit the same to be consulted by members upon request.

Section 2 - Meetings:

Regular meetings shall be held each month on a day determined at the Annual Meeting, unless changed by a vote at the preceding regular business meeting, at such place as the President shall order. Special meetings may be called by the President and/or upon the written request of any five members of the club. Notices shall be sent so that in the ordinary postal delivery they shall arrive at least twenty-four hours before the time therein set for the meeting. Only such business as is designated in said notice shall be transacted at such meetings.

Section 3 - Dues:

Dues shall be payable at the first meeting of the year. Members not paid by the third regular meeting of the year shall be dropped from the membership. Persons who have not paid dues but partake of membership privileges or participate in member-exclusive activities shall be deemed delinquent members.

Within the current year, delinquent members must pay back-dues from the time such activity took place to the present, and current dues to the end of the year in order to be reinstated as a member in good standing.

Section 4 - Annual Meeting:

The Annual Meeting shall be the first meeting of January.

Section 5 - Repeater Use:

Repeater use and operating practices shall conform with all applicable F.C.C. Rules and Regulations, conform with the ARRL recommended Repeater Operating Practices, and such other rules as shall be applied by the membership.

Section 6 - Removal Of Members

Any member whose Federal Communications Commission-issued Amateur Radio license is suspended or revoked with cause by the FCC shall be automatically removed from membership in the Mich-A-Con ARC. 1.21 Any member who operates his/her station in violation of Part 97 of the FCC Rules and Regulations, and who does not cease and desist from the aforementioned violations, may be removed from membership in the MichA-Con ARC.

(3) Any member who causes adverse publicity to Amateur Radio or the Mich-A-Con ARC may be removed from membership in the Mich-A-Con ARC.

ill Whenever a charge is made against a member that could result in his or her expulsion from membership, the Board of Directors shall investigate such charge. If the Board determines to proceed with the matter, the member involved shall be notified and given the opportunity to appear before the Board or, at the member's election, to respond in writing and answer or defend against such charge. After the member has been given reasonable opportunity to appear and defend, the Board of Directors shall act upon the charge and by a majority vote of all members of the Board either reject the charge, continue membership upon stated conditions, or expel. A member charged with conduct unbecoming a member of this Club may be expelled by a two-thirds (2/3) vote of those present at a meeting of the membership, if the Board of Directors has found the charges are sustained by its investigations.

(5) The expelled member may apply, in person before the Board of Directors, for membership in the club one year after expulsion.

ARRL MICHIGAN SECTION NEWS

Greetings to the Hams of Michigan: January, 2014

This the beginning of the new year when we all look forward to what could be and make our personal resolutions as to how we are going to make course adjustments in an effort to improve upon the previous year. I wish you only the best for 2014.

PRB-1 Update

As you know, our PRB-1 Bill (SB 0493) is currently in the Senate Energy and Technology Committee.

Currently there is no progress to report, but our experiences have shown that when it breaks loose, it will move quickly. Please stay tuned. We are moving forward at the speed of government, that's for sure.

ARRL Centennial QSO Party

Attention all amateurs: 2014 will be one of the greatest ham radio years ever (if not THE greatest) The ARRL is 100 years old this year and the QSO Party we never even dreamed of is in process as this is being written.

Notice - W1AW/8 to operate on VHF frequencies!

The ARRL Centennial QSO Party is a year-long operating event and one of the two main activities includes the portable operation of W1AW in each state. Michigan is scheduled for two weeks, the first to begin on February 19 through February 25, and the second time slot will be in October. Plans are currently underway for about 40 hams throughout Michigan to operate phone, CW, digital and SSTV on the high frequency bands.

Recognizing that many hams do not have access to the HF bands, and to make this once in a lifetime opportunity to contact W1AW available to as many as possible, the organizers are looking to include some VHF operations to the working schedule. Due to the limited range of VHF transmissions, there will very likely be several operations ongoing from different parts of the state.

If any individuals or clubs would like to participate, please contact Joe Miller KJ8O at kj8o@arrl.net for more information. The process of selecting HF stations to participate in the first week of Michigan's Centennial QSO Party is complete with over 40 stations who have volunteered to man their stations for over 350 hours of operation during the week of Feb.19 – 25.

Thank you for volunteering to help provide W1AW/8 contacts for your fellow amateurs.

The Centennial Points Challenge is the accumulation of points from qualifying contacts made throughout 2014. To have a score listed online in the Points Challenge competition, logs must be submitted through the Logbook of The World (LoTW) system. W1AW will be on the air from every state and most territories, and it will be easy to work WAS working only W1AW portable operations.

This is the first ARRL-sponsored operating event where every member is worth at least one point, so work as many points as you can during 2014! Earn awards based upon points, working all states or working W1AW portable in every state and territory. This is an on-the-air event like no other. Complete information is available on the ARRL Website at:

http://www.arrl.org/centennial-qso-party#Centennial_Points

ARRL National Centennial Convention

The 2014 ARRL National Convention will be held in Hartford, CT, the home of the ARRL on July 17 – 19, 2014. Tell your boss that you need that week off work and make your plans now! Hotels are taking reservations now and they will be going fast.

Complete information is available on the ARRL website.

Radio Clubs Elect New Officers for 2014

Utica-Shelby Emergency Communication Association

President: Ken Coughlin, N8KC; VP: Pete Matjewicz, AA8GK; Recording Secy: Rob Lifton, NY8W;
Membership Secy: Ray Anderson, K8RDJ; Board: Chuck Perushek, N8ZA; Walt Gracey, W8BE;
Gary Schultz, N8WTT.

Holland ARC

Treasurer: Phil VanHuis, K8PVH; Secretary: Todd Boss, W8YHF; VP: Bryan Leenheer, KD8LDX;
President: Tom Bosscher, K8TB.

Oakland County Amateur Radio Society

President: Joe Miller, KJ8O; Secretary: Doug Basberg, N8VY; Treasurer:
John Eldred, N8FNN

Thank you for accepting the call to serve. Amateur radio clubs are truly the lifeblood of amateur radio.

Hospitality Acknowledgements

Many thanks to the following organizations for their warm hospitality shown to the section staff during travels around the state: Hazel Park Hamfest It was a pleasure to attend your event.

Feb 1, 2014 HARA Hamfest, Negaunee, MI - WB8R

Feb 8, 2014 Cherry Land Hamfest, Traverse City, MI – WB8R

Feb 16, 2014 Livonia Hamfest, Livonia, MI – WB8R

Mar 15, 2014 Crossroads Hamfest, Marshall, MI - WB8R

Apr 12, 2014 Milford Swap, Milford, MI – WB8R

May 3, 2014 Cadillac Hamfest, Cadillac, MI – WB8R

Jun 15, 2014 Monroe Hamfest, Monroe, MI – WB8R

Michigan Section Traffic/ARPSC Nets

MACS - MI Amateur Communications System 3.952 1000 Daily

UPN – Upper Peninsula Net 3.921 1700 Daily; Noon Sunda

MIARPSC – MI Amateur Radio Public Service Corps 3.932 1700 Sunday

QMN – The Michigan Net 3.563 1830 and 2200 Daily

MITN – MI Traffic Net 3.952 1900 Daily

MIDTN – MI Digital Traffic Net 3.583 (Olivia 8/500) in waterfall I
2000 Tues, Thurs, Sat

GLETN – Great Lakes Emergency and Traffic Net 3.932 2000 Daily

MVTN – MI VHF Traffic Net IRA Link System 2100 Mon, Wed, Fri, Sun

NLEUP - Northern Lower Eastern UP Net 146.64- 18:30 Daily

SEMTN – SE MI Traffic Net 146.76- 2215 Daily

TMMTN – Thumb Mid Michigan Traffic Net 147.30+ 2130 Mon - Sat

More information is available at <http://nts-mi.org/>. Come join us on our traffic and public service nets.

Amateur Radio Public Service Corps (ARPSC) Activities

Station Activity Reports (SAR) for December, 2013:

K8ED 440, WB8TQZ 335, WD8USA 303, K8RDN 285, N8FVM 268, WB8WKQ 252, KD8AAD 247, KB8RCR 227, WB8RCR 115, KD8ULU 113, KC8BW 70, W8QZ 53, NX8A 50, W8MSK 28, WB8R 25, WB9JSR 21, KD8LSM 20, WB8H 20, N8OSL 19, KC8QWH 2, N8UN 2, KD8EBY 2.

Total Station Activity Report (SAR) reported: 2897
Brass Pounder's League (BPL) for December, 2013: None
Public Service Honor Roll (PSHR) for December, 2013:

WB8RCR 245, WB8R 210, K8RDN 165, N8FVM 165, WD8USA 145, N8OSL 145, WB8WKQ 100, WB8TQZ 100, KB8RCR 100, KC8BW 90, K8ED 80, NX8A 74, W8QZ 61, WB8H 56, KD8AAD 55, WB9JSR 55, KD8ULU 50, KD8LSM 45, KD8EBY 21, KC8QWH 18.

Total PSHR reported: 1980

Net traffic for December, 2013:

Michigan Amateur Communications System 254, Michigan VHF Traffic Net 199, Michigan Traffic Net 197, The Michigan Net 144, Southeastern Michigan Traffic Net 133, Michigan Digital Traffic Net 79, Upper PeninsulaNet 52, Great Lakes Emergency and Traffic Net 41, District 3 ARPSC Net 18, Branch County Digital Training Net 15, Saginaw County ARES Net 8, Michigan Amateur Radio Public Service Corps 6, Motor City Radio Club 2Meter Net 5, Alcona County ARES Net 3, Red Cross Net of Greater Grand Rapids 1, Chelsea ARC Net 0, Branch County Emergency Net 0, Genesee County ARPSC Traffic and Training Net 0, District 3 Digital Training net .

Total net traffic reported: 1155

Parting Comments

If you are reporting monthly to our SEC/STM WB8RCR, you can see yourPSHR eligibility status at <http://www.nts-mi.org/>. The full details are at: <http://www.arrl.org/public-service-honor-roll>. This award recognizes the efforts of hams that are active in public service. Those reporting accumulate points for checking into nets, volunteering, holding Section appointment(s) and handling message traffic.

EC's can see their reports of Form FSD-212 here:
http://ares-mi.org/ec_his.php

If you send your report to WB8RCR and don't see it noted there, send a note to John to tell him your report has gone missing. EC's: Be sure to share your FSD 212 with your District EC, your ARES/RACES members and with your county's Emergency Manager and others in your jurisdiction who need to know what you and your ARES/RACES group are contributing to your community each month.

Thank you for all of your efforts on behalf of the people of the State of Michigan and for filing your monthly reports. It really shows how active Michigan is in holding a leadership position for ham radio public service activities.

73 until next month, Larry, WB8R, ARRL Michigan Section Manager , wb8r@arrl.org

News

On 1/5/2014 7:28 PM, alcochaser@ameritech.net wrote:

> ACSSB was originally proposed for 220 to 222 they took away from the HAM RADIO service, But those radios are rare and hard to find.

Because they didn't work. Time to re-post the "220 MHz Story" that I was a close witness to.

Taking a slice of the 220 MHz band away from the Amateur Radio Service was the doing of a former FCC Bureau Chief who was part of the "revolving door generation" that went to the "dark side" in the 1970s and 80s, in his case, to a minor two-way radio equipment manufacturer that had dreams of playing in the big leagues.

The idea was to use a new technology - Amplitude Compered Single Sideband (ACSB) - which was developed by a small group of strange people on the ham bands after no established radio equipment manufacturer showed any interest in what was later proved to be a shaky technology, and never marketed well.

At the time, UPS was looking to establish a nationwide data system for their operations, and the ACSB manufacturer caught wind of that and talked up their system. UPS waited patiently while the manufacturer broadcast far and wide that "UPS is going with our system on some new spectrum that we will get for them" but with no proven equipment UPS never made the actual financial commitment nor got any licenses (which require an operating system within a year of grant). Eventually UPS got tired of waiting and went with a Motorola system that met their needs and is still in use today in an upgraded version.

Some of the spectrum was licensed subsequently to the American Red Cross for a regional and national disaster communication system, and the balance was put into what is popularly known as the Spectrum Auction System which the railroad latched onto.

Disclaimer: I am a retired FCC manager and being an FCC staffer at the time, I was a "second class citizen" in that I was prohibited by agency directive from filing individual comments in any FCC proceeding. All we could do is to read the mail and sniff the air and not send anything through in memos that would rock the boat. The fix was in.

End of story.

Phil Kane - Beaverton, OR
PNW CP Hall MP 29.9 - OE District

HELP WANTED

Gene Meyers, 7741256, owner of GM Communications (Motorola). in Iron Mountain called me this morning.

He is looking for a **full time and part time equipment installer** & wanted to know if I knew of anyone looking for a job. He asked me to put the word out, he would prefer someone with two way radio experience. He will be advertising in the paper shortly.

---From: Burt WB8EBS

Stalking the Fox

Become a radio fox hunter and test your skills against a clever opponent!

By Jim Keaman, KRIS
Assistant Technical Editor

The chase is on! There's a transmitter out there somewhere and it's teasing you, taunting you, daring you to find it! You stop to get your bearings. Where is the signal strongest? Yes, it's almost due east, but how far?

Another hunter appears at the top of the next ridge. She turns her antenna slowly and then, suddenly, she stops. Does she have the fix, too? You'd better get moving or you'll come in second place...or worse! Your heart is pumping like a jackhammer as you hurry down the hill. Where is the fox? WHERE IS IT?

Getting Started

Most sport transmitter hunting (sometimes abbreviated "T-hunting") is done on the 2-meter FM band. You can get started with just a portable 2-meter receiver that has a signal strength meter, or *S-meter*. You can use a receiver without a meter, but you'll have to rely on your ears to tell you whether the signal is getting stronger or weaker. A meter is a more precise indicator.

One item you'll definitely need is an *attenuator* between the antenna and rig. You can build a simple attenuator from plans in *The ARRL Handbook*. An attenuator is used to deliberately reduce the received signal strength as you get closer to the transmitter. If the signal becomes too strong, you won't be able to pinpoint the source.

You'll also need a directional antenna, but you can build one easily, from plans in

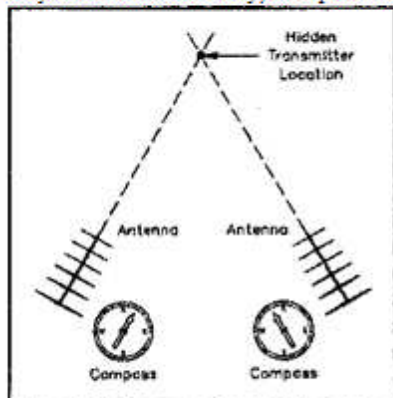


Fig 1—When you're close to a hidden transmitter, you can use *triangulation* to pinpoint its location. Take two bearings from locations a few hundred feet apart and draw lines representing the bearings on your map. The transmitter is located very near the point that corresponds to the intersection of the two lines.

64 Lisrfs-

The ARRL Antenna Book. Like any sport, serious players have more exotic equipment. Like you, most of them started out with simple receivers and antennas.

Sport Hunting

Recreational transmitter hunts are usually organized by clubs. While the participants gather at a local landmark, the transmitter operator—otherwise known as the *fox-is* heading into the field to hide. A favorite trick of transmitter hiders is to plant a low-power transmitter near the starting location. They position the antenna so the signal reflects off hills or mountains, making it *seem* as though it's many miles away!

The transmitter comes on the air at a pre-arranged time. Hunters swing their antennas to take their first bearing. Within a few minutes, everyone jumps into their cars and the chase is on. (Of course, the entire hunt can take place on foot. This type of hunt is an ideal activity for a club picnic.) Hunting is easier and more fun when done with another person. While one drives, the other checks the maps and swings the antenna.

Once you have a rough idea of the area in which the transmitter is operating, you get as close as you can and take more bearings. (For example, is the fox south or southeast from your present position? Check and make sure!) Each set of bearings should bring you closer to the transmitter. Here's where having two or more people on your team pays off. As you get closer to the transmitter, a real traffic jam of hunters will develop.

When you're very close to the transmitter (it takes lots of attenuation to keep the signal from overwhelming your receiver at this point), taking a bearing from a second location lets you *triangulate* to get a better idea of the transmitter's location (Fig 1). If the transmitter is fairly close, the two initial locations from which you take bearings need be only a few hundred yards apart. If the transmitter is far away, it's better to take the initial bearings from more distant locations. The terrain over which the hunt takes place determines the necessary separation, as does the type of antenna you're using.

The Game's Afoot!

Foxes aren't known for making life easy for hunters. You can bet the terrain will be challenging. As you get closer to the transmitter, you may find the signal gets so strong that it's hard to determine its peak strength. Using the null off the sides or back of your beam may help. Here's where having an attenuator between the antenna and receiver

really comes in handy. You'll probably want to make a smaller antenna for hand-held use.

When you finally close in on your target, don't be surprised to find that several others have already beaten you to the spot. Transmitter hunting is like running a marathon: at the beginning, it's important to finish, not win. With experience you'll develop techniques to help you finish sooner.

Games Transmitters Play

If the world was perfectly flat it would be relatively simple to find any hidden transmitter. Hills, mountains and buildings are good reflectors of VHF signals; so transmitter hunting becomes a real challenge when they're in the vicinity! Fig 2 shows a typical case. The hidden transmitter is down in the valley, connected to a highly directive beam antenna pointed at the mountain. From our observation point we detect only the reflection off the mountain. Carefully swinging our antenna may detect the direct signal from the back of the beam—if our antenna is directive enough.

T-Hunting Equipment Suppliers

BMG Engineering, 9935 Garibaldi,
Tempe City, CA 91780

Doppler Systems, PO Box 2780,
Carefree, AZ 85377; tel 602-488-9755

L-Tronics, 5546 Cathedral Oaks Rd,
Santa Barbara, CA 93111;
tel 805-967-4859

Radio Engineers, 3941 Mt Brundage, San
Diego, CA 92111; tel 619-565-1319
Douglas RE Devices, PO Box 246925,
Sacramento, CA 95824-6925; tel 916-
688-5647

Books

Transmitter Hunting—by Joseph Moell,
K0OV, and Thomas Curia, WB6JZZ.
Available from your favorite dealer or the
ARRL \$19.

NT Articles

J. Moell, "Transmitter Hunting: Tracking
Down the Fun—Part 1," April 1993,
pp 48-51.

J. Moell, "Transmitter Hunting: Tracking
Down the Fun—Part 2," May 1993,
pp 56-58.

B. Leskovec, "Build the HANDI-Finder,"
May 1993, pp 35-38. Additional informa-
tion: Oct 1993 QST, pp 78-79.

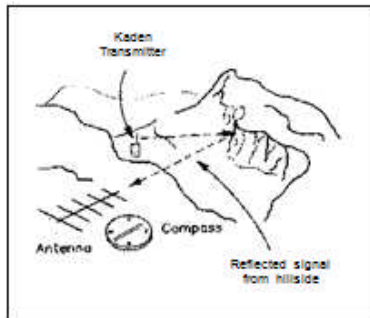


Fig 2—A transmitter hidden in a valley can cause misleading beam headings. In this example, the transmitter antenna is a beam, pointed at the hillside. The strongest signal is coming from the hill. With experience you'll be able to detect and identify the weaker signal coming from the transmitter itself. A similar effect occurs when the transmitter is hidden among buildings or other reflective surfaces, like railroad cars or truck trailers.

Before we started climbing that bramble-covered mountain, we'd want to take a few bearings from its foot, just to be sure.

Urban transmitter hunts are equally challenging, as a cluster of steel-framed buildings can scatter the transmitter's signal in dozens of directions. The problem gets worse at higher frequencies. If you're hunting in the city, remember that the transmitter need not be at ground level. When you're close to a transmitter hidden a few floors up, in a building sandwiched between others, dogged persistence pays off. Use your best directive antenna to "paint" across and up and down the buildings around you, looking for the peak from the transmitter itself.

Practicing Your Skills

It only takes two to T-hunt. You and a friend can take turns hiding and seeking. If no one else is available, try hunting local repeaters or their users. Hunting a user is particularly challenging because the signal isn't constant. In fact, it may leave the air at any minute. Of course, you'll ask permission before going onto private property. Be sure you have your amateur license with you, in case you have to prove you're not a crook plotting a heist! When you get some experience and are ready for a real challenge, try hunting mobiles!

Practical Hunting

Using FM repeaters is not without certain aggravations. Microphone push-to-talk buttons sometimes stick closed. Some hams leave their rigs turned on when they leave their cars. The combination may result in unintentional jamming of a repeater. Also, Amateur Radio has its own collection of loose nuts, who sometimes feel compelled to jam repeaters or simplex frequencies. Repeater clubs often have interference committees. Committee members are probably

among those who find the hidden transmitter first at the monthly T-hunt. Otherwise, they go about their committee business in secret. Only those unfortunate enough to receive a visit from the committee know how efficiently they can track down an "open mike" or a malicious jammer.

Transmitter hunting is a necessary part of high-altitude ATV (Amateur TV) balloon flights. Depending on the winds aloft, the balloon can drift a hundred miles or more before it finally bursts. From the moment of launch, the hunters track the balloon, trying to position themselves directly beneath it. When the balloon pops and the payload falls earthward on its parachute, the hunters have to be ready to track the package and recover it. Thanks to the skills of transmitter hunters, most payloads are recovered successfully.

Transmitter hunting is also a skill practiced by rescue organizations, especially in the Western mountains. Many private airplanes carry emergency locator transmitters (ELTs), operating a few megahertz below the 2-meter band. ELTs emit a distinctive tone and have built-in batteries that will keep them going for several hours. Many search-and-rescue volunteers are hams.

On With the Hunt!

The best way to find out about T-hunting in your area is to ask other users of your local repeaters. If nobody's doing it yet, why not get the ball rolling?

Participants will need adequate equipment. If you don't have enough rigs to go around, form teams. Building some T-hunting antennas and attenuators would be another good club project. Imagine the pleasure you'll get from tracking down the hidden transmitter with an antenna you built yourself!

The first hunts should be easy, to give everyone a chance to find the transmitter. Arrange a meeting place and time and spread the word through club meetings and the local repeaters. Depending on the local terrain, you may want to distribute photocopied street maps of the area in which the transmitter may be located.

The winners of *sprint* hunts within the boundary of a town or small city are often determined by how long it takes them to find the transmitter. The team that finds the transmitter first wins. This method is common when the hunt is held on a repeater input frequency, to reduce the time the repeater is tied up. Wide-area and other advanced hunts are generally scored by mileage, much like a sports-car rally. Scoring by mileage recognizes skill in taking bearings, and discourages high-speed driving during the hunt. These hunts are usually held on simplex frequencies to avoid tying up a repeater.

If you wish, you can collect a small entry fee from each hunter and use the proceeds to buy a plaque or an ARRL book for the winner. The best prize might be to let the winner be the transmitter operator next time. If the winner can't operate a transmitter on the band you use for your hunts, ask some



one who can go along as control operator. If you're looking for an exciting Amateur Radio activity, transmitter hunting is an excellent choice. It's hard to top the thrill of chasing down a fox and savoring the satisfaction of finally finding it! OW]

Radio Tips:

Using an Autopatch to Report an Accident

Repeater *autopatches* allow hams to use their radios to place telephone calls from virtually any location. *Autopatches* are common throughout the US and they are extremely valuable in cases where there is an immediate threat to life or property. If you come upon the scene of an accident, by all means use the *autopatch*.

Remain calm and get as much information as you can prior to placing your call. When it's time to use the patch, don't worry about breaking into someone's conversation. You have priority! Here's a typical emergency *autopatch* procedure:

Give your call sign and say "emergency patch."

U Dial the access code followed by 911.

U When the dispatcher answers, say that you are an Amateur Radio operator reporting an accident.

Give the highway number and direction of travel. If the accident site is near a mile marker or exit, provide this information.

U State whether traffic is blocked, or if the accident is out of traffic.

- List any apparent injuries along with the number of persons involved.

0 If a fuel or chemical spill has occurred, say so. If there is a fire, let the dispatcher know.

For example, "This is KRIS. I am an Amateur Radio operator reporting a two-car accident on I-94 northbound, about 1 mile south of exit 24. The right hand lane is blocked. Property damage only."

Keep your details very brief and to the point. Don't waste time adding superfluous information such as the makes and models of the vehicles. If the dispatcher needs to know, he or she will ask. When you've finished your call, deactivate the *autopatch* and remain on the frequency. If you've stopped at the accident scene, try to stay until help arrives.—Richard Regent, K3GDF

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LINKS:

ARRL WEB PAGE: <http://www.arrl.org>

ARRL MICHIGAN:
<http://www.arrl-mi.org/>

US REPEATERS:
<http://www.usrepeaters.com>

MICH-A-CON :
<http://www.0sl.net/kalddb>

Tropospheric Ducting Forecasts:
<http://www.d/infocentre.com/tropo.html>

FCC Universal Licensing System:
<http://wireless.fcc.gov/uls/>

QTH.COM: <http://www.uth.com/>

QRZ.COM: <http://www.urz.com/>

Ehamnet.com:
<http://www.eham.net/>

U.P. Skywarn: <http://kcra-mi.net/skywarn/>

*Delta County Amateur Radio
Escanaba, MI*

www.dcars.org

*Cooper Country Radio Amateur
Dollar Bay, MI*

www.ccraa.net

*Keweenaw County Repeater Ass.
Hancock, MI*

www.kcra-mi.net

ARRL Affiliated Club Area Nets

UP Net 3921 khz

**Daily - 5pm EST
Sunday - Noon EST
UP CW NET 3590khz
Sunday - 7PM EST**

**Everynight 160 Net
1895 khz - Nightly
2400UTC**

**Midcars 7258khz
Daily 7:30am - 2pm ES**

**outhcars Node 9614
Saturday - 9am EST**

**UP Echolink Node 9617
Sunday - 8pm EST**

**Delta County ARES Net
Sunday - 7pm EST
147.150 MHz**

Area Repeaters

Escanaba	147.15 +	100.0
	145.13 -	No PL
Wells	444.30+	No PL
Gladstone		
IRLP 4013	147.55 Smpx	100.0
Champion	146.82-	100.0
Cooks	146.70 -	110.9
Grd Marais	147.195+	No PL
Gwinn	146.64 -	100.0
Iron Mtn	146.85 -	No PL
Iron River	145.17 -	107.2
Ishpeming	146.91 -	No PL
IRLP 8993	443.50+	100.0
Manistique	146.79 -	No PL
Marquette	146.97 -	No PL
	147.27 +	100.0
	444.80+	No PL
Menominee	147.00 +	107.2
Newberry	146.61 +	No PL
	147.09 +	114.8
Republic	147.09 +	No PL
Trenary	147.03 +	100.0
Wetmore	145.41 -	100.0

Wisconsin Repeaters

Abrams	146.835 -	107.2
Crivitz	145.47 -	107.2
Egg Harbor	146.73 -	107.2
McAllister	146.88 -	136.5
Green Bay	147.12 +	107.2
	147.27 +	107.2
	146.685 -	107.2
	145.49 -	100.0
Sister Bay	147.18 +	No PL
Sturgeon Bay	147.21 +	107.2

ABOUT OUR CLUB....**Club Officers:****President:****Tom Martin, W8JWN****(906) 774-5463**tmartine@chartermi.net**Vice President****Scott Jarmusch, KA8TFF**s_jarmusch@yahoo.com**Secretary:****Joe Ferris, KC9TQR**irferris@borderlandnet.net**Treasurer:****Burt Armbrust, WB8EB****(906) 774-8383**Wb8ebs@yahoo.com**Newsletter Editor:****Tom Heyboer, KC8TH****(906) 779-0481**Heyboer.Tom@gmail.com**We're on the Web!***See us at:*<http://www.osl.net/ka1ddb/>

Previous editions of
Mich-A-Con RF can be
accessed by a link on the
news page

Activities:

Second Wednesday of the month the Mich-A-Con Amateur Radio Club meets in the Dickinson Country Library at 7:00 P.M.

Visitors and prospective members are always welcome!

3rd Saturday of every month, Saturday Morning Breakfast held on at 9:00 AM at the Holiday Kitchen restaurant on Stephenson Ave(US-2) in Iron Mountain.

Club Repeater:

The Club maintains two repeaters which are located on Pine Mountain (Elevation 1650 ft) in Iron Mountain with tower and facilities provided by the Wisconsin Electric Power Co.

The range of the 2 meter repeater is about 40 miles. The range of the 440 MHZ repeater is about 25 miles. Both are under normal conditions, depending upon terrain.

The Repeater Specifications:

The 146.85 repeater is a GR Master Pro, 40 watt output. The 440 MHZ repeater is a GE Master Pro, 80 watt output. The repeaters share a Diamond dual band antenna at a tower height of 125 ft.

Please remit dues to :

Burt Armbrust, WB8EBS
693 Cliff St
Quinnesec, Mi. 49876

Name: _____

Call Sign: _____

Address: _____

City, State, Zip: _____

Email Address: _____

Phone: _____

ARRL Member? Yes _____ No _____

Please make check payable to:

Mich-A-Con ARC

Annual dues for Full Membership -

Single \$10 ___ Family \$30 ___

Repeater Only \$10 ___**

If family membership, please list additional:

Names: _____

Call signs: _____

City, State, Zip: _____

Annual dues are Payable January 1st.

Dues for New Members are Pro-rated. Please remit \$1.67 per month for a Single membership or \$.50 per month for a Family membership.