MUSKEGON AREA AMATEUR RADIO COUNCIL

"LET NO CALL GO UNANSWERED"

CLUB REPEATERS
146.940 (-) (94.8PL)
(Patch w/*key and end w/#)

444.55 (+) (94.8PL)

ARES/RACES
146.82 (-) (94.8PL)

Flashovers

Newsletter of the Muskegon Area Amateur Radio Council
Since 1941
PO Box 691 Muskegon, MI 49443
Club Station, W8ZHO
2888 Scenic Drive
www.qsl.net/w8zho
w8zho@arrl.net

Editor: Tom Porritt, N8YJT
Email: N8YJT@arrl.net

September 2009
Vol. 69 No. 9

2009 MAARC Leadership

President
Tom Nickisch, W8AMZ
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***Flashovers* Editor**
Tom Porritt, N8YJT

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Karen, KD8DHJ
Doc, AC8AL
Committee Member
Bob, N9AUY
Dan, N8PPQ
Chuck, W8CCS

PRESIDENT'S CORNER

Tom Nickisch, W8AMZ
w8amz@yahoo.com

September is upon us and summer is almost behind us. As you look back, I hope you accomplished all your outdoor antenna projects.

Last March we proposed a series of events and activities for the club in an attempt to provide something for members and non-members alike who are interested in amateur radio as an avocation.

Avocation - n.
1. *An activity taken up in addition to one's regular work or profession, usually for enjoyment; a hobby.*
2. *One's regular work or profession.*
3. *Archaic A distraction or diversion.*

An interest that is an avocation carries with it the connotation of a level of involvement that is more than just casual. So, in our plan for 2009, we intended to provide opportunities for amateurs to expand their range of knowledge about our hobby.

Themed seminars, workshops, and activities were proposed for each month. They included such things as antenna building, foxhunts, classes in theory and operation, licensing and continuing education.

MAARC CALENDAR

September 2009	Date	Contact
2 Meter Net	2nd	N8YJT
Club Meeting	3rd	W8AMZ
"Cars for Cancer" Special Event	7th	KC8PCJ
2 Meter Net	9th	N8YJT
Open Shack Night	14th	N8PPQ
2 Meter Net	16th	N8YJT
Board Meeting	21st	W8AMZ
Open Shack Night	23rd	W8GXT
2 Meter Net	23rd	N8YJT
2 Meter Net	30th	N8YJT
October 2009		
Club Meeting	1st	W8AMZ
2 Meter Net	7th	N8YJT
2 Meter Net	14th	N8YJT
JOTA	17th—18th	NA8M
2 Meter Net	21st	N8YJT
Board Meeting	26th	W8AMZ
2 Meter Net	28th	N8YJT

For example monthly themes for 2009 have in-

AREA COFFEE BREAKS & BREAKFASTS

Pine Street Café
Spring Lake, 7AM Saturday

Whitlow's Restaurant, 8:30AM Saturday

Gary's Restaurant, Whitehall, 7AM Saturday

Fruitport Village Inn, 9:00AM Monday

Russ' Restaurant, Grand Haven, 8:30PM Tuesday

Side Street Cafe, Fremont. First Saturday of every month at 8AM

Sherman Blvd Arbys 8PM Sundays

cluded:

- Contesting
- Antenna Building
- Field Day
- Museum ships
- Heritage Old Time Radio
- Marine Mobile
- Digital

We have not accomplished some of what we had hoped because we simply did not find the necessary volunteer leadership. We will continue to work to provide opportunities for learning for club members and the general amateur community alike, but success will depend on the volunteers.

Please let me know if you would like to help in this regard. You can make a real difference.

I would like to wish every body a great new month of Amateur Radio and hope to see everyone at this month's meeting.
73, W8AMZ

HAMFEST CALENDAR

September 12th
GRAHamfest 2009
http://www.grahamfest.org
Talk-In: 147.26- (PL 94.8)
Lowell, MI
Kent County Fairgrounds
225 South Hudson
Contact:
Jack Amelar, NY8D
PO Box 3282
Grand Rapids, MI 49501
Phone: 616-897-6885
Email: grahamfest09@w8dc.org

NEXT MAARC MEETING
THURSDAY
September 3, 2009 @ 7PM

Program by
Mike Eilers, K8OOK, on
"Chasing the Major Awards"

SPECIAL EVENT STATIONS

Sep 3-Sep 14, 0000Z-2359Z, Salt Lake City, UT. Utah DX Association, K7T. 82nd Anniversary of the invention of the electronic TV. 14.260 7.240. QSL. Wesley Wilkinson, W7WES, 7363 Galaxy Hill Rd, West Jordan, UT 84081. **w7wes@yahoo.com** *or* www.udxa.org
Sep 5-Sep 7, 1800Z-2000Z, Brevort Twp, MI. Lake Effect Amateur Radio Club, N8T. North Country Trail/ Mackinac Bridge Segment Walk. 14.240 14.070 7.240. Certificate. Lake Effect ARC/N8T, 36 Southfork St, Marquette, MI 49855. *This 5-mile segment of the NCT is open to hiking on Labor Day each year.* www.LakeEffectARC.info/N8T-2009.htm
Sep 7, 1400Z-2100Z, Muskegon, MI. Muskegon Area Amateur Radio Council, K4C. Cars for Cancer Car Show. 14.245 7.270 146.940. QSL. Muskegon Area Amateur Radio Council, Attn: K4C, PO Box 691, Muskegon, MI 49443. *All proceeds to local Cancer Center* w8zho@arrl.net
Sep 12, 1400Z-2100Z, Grape Creek, TX. Cloud Country Airport Fly-In, W5QX. Commemorating 151st Anniversary of Butterfield Overland Mail. 14.260 7.260. Certificate. San Angelo Amateur Radio Club, Inc, PO Box 4002, San Angelo, TX 76902. www.w5qx.org 92101. kk6fz@arrl.net
Sep 12-Sep 13, 1500Z-0000Z, Coopersville, MI. Michigan DX Association, W8DXI. The RF Express - Railroad And Radio Friends. 14.240 14.050 7.240 7.050. Certificate. Michigan DX Association, 1652 Rossman SE, Grand Rapids, MI 49507. mdxa1.org
Sep 18-Sep 21, 0000Z-2300Z, Marquette, MI. Lake Ef-

Mobile Antenna Installations
Potential Useful Information

Summarized results of three 75m mobile antenna measurement events during the 1980's by W5DXP. All results "other factors being equal"

	Antenna Type	Field Strength Relative to Reference (dB)	Calculated Antenna Efficiency (%)
1	Screwdriver w/Cap Hat	0 dB (reference)	~10% (reference)
2	Screwdriver wo/Cap Hat	- 3 dB	~5%
3	High Located Loading Coil	-7 dB	~2%
4	Center Located Loading Coil	- 9 dB	~1%
5	Base Loaded Spiral Wound w/Whip	-12 db	<1%
6	Whip w/Autotuner	- 14 db	<1%

During transmission, antenna efficiency is the proportion of RF energy fed to the antenna that is radiated.

VHF NETS

Sunday:
MCECS Net:
146.82—7:30PM

West MI Traffic
145.33 – 9 PM

Monday:
IRA
145.33 – 8 PM

West MI Traffic
145.33 – 9 PM

Tuesday:
NOARC
145.49 – 8 PM

Wednesday:
MAARC 2 Meter Net
146.94—7PM

West MI Traffic
145.33 – 9 PM

Friday:
West MI Traffic
145.33 – 9 PM

STATEWIDE ARPSC NET
Sunday 5 PM
3932 MHZ

TEENAGE NET
M – F 6:00 PM
3.945 MHZ

BATHROBE NET
Daily 9AM
14.235.5 MHZ

MITN
Daily 7PM
3.952 MHZ

HAIRNET
Sunday mornings, 8:00AM
3945 +/- QRM.

fect Amateur Radio Club, N8T. North Country Trail Volunteer Trail Building Adventure. 14.070 7.240. QSL. Lake Effect ARC - N8T, 36 Southfork St, Marquette, MI 49855. www.LakeEffectARC.info/N8T-2009.htm

DID YOU KNOW?

For a mobile antenna installation the total input impedance is Rt=Rr+Rc+Rg, where Rt=total or input impedance, Rr the Radiation resistance, Rc the coil resistance (at the operating frequency, not DC resistance), and Rg the ground loss resistance.

MAARC SPECIAL EVENT

By Jim Meyers, KC8PCJ

Monday, September 7th 2009 (Labor Day), MAARC will be operating a special event station from 9:00 AM to 2:00 PM Eastern Standard Time (14:00 to 19:00 UTC) at the "Cars for Cancer" car show.

The show will be located at Hackley Health at the Lakes, in Muskegon (near the corner of Harvey Street and Pontaluna Road). The special event callsign will be K4C (Kars 4 Cancer).

The operation will be on or near 14.245 MHz SSB, 7.270 MHz SSB and on the MAARC 146.940 MHz repeater in Muskegon, Michigan. The repeater has a PL tone of 94.8. QSL information is on the ARRL Special Event web site.

This is a great car show. It is being sponsored by the *Different Strokes Car Club* and Knights of Columbus #13035. Over 400 cars are expected again this year.

All proceeds from this event go to the Hackley Cancer Center and The Johnson Family Center for Cancer.

If you are interested in operating at the show contact kc8pcj@arrl.net or just stop by the shack at the show. Even if you don't want to get behind the microphone, this is a great car show for a great cause. Come on out and enjoy the variety of machines on display.

MAARC BOARD QUESTION OF THE MONTH

Currently only a few people have a key to the clubhouse. The MAARC Board is currently looking a the question of the number of keys available for access. Here's the question, as a MAARC member would you like to have individual access to the clubhouse to use the facilities or the club station? Talk to a Board member or reply to the survey on the club website; www.qsl.net/w8zho.

DID YOU KNOW?

Antenna efficiency can be calculated by dividing Rr (radiation resistance) by Rt (total input impedance). See previous column.

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The ARRL Letter
Vol. 28, No. 34
August 28, 2009
****

FCC TO UTILITIES: DON'T LOOK TO HAMS TO PAY FOR YOUR TESTING

In a case that goes back more than 10 years, the FCC has told a Pennsylvania utility that the utility is responsible for paying for "efforts to locate and correct instances of [power line] noise" <http://www.fcc.gov/eb/AmateurActions/files/Duque09_08_07_5108.pdf>.

At least one amateur has been complaining to the FCC since 2000 regarding harmful radio interference possibly caused by power line equipment maintained by Pittsburgh's Duquesne Light Company (DLC) <http://www.duquesnelight.com/>.

Bob Thacker, K3GT, of Allison Park, Pennsylvania -- a suburb just northeast of Pittsburgh -- first noticed harmful interference back in 1996. He told the ARRL that DLC would come out and fix things, but that he would soon hear noise again. After a few years of this, he complained to the FCC, and in 2005, the FCC notified DLC of the complaint. A month later,

DLC responded to the FCC, detailing their efforts to resolve the matter and indicated that the most recent complaint was the result of changed conditions, not the continuation of an old problem.

According to the FCC, DLC again communicated with the FCC in a letter dated June 2, 2005, explaining the efforts they had taken to repair three lightning arrestors. During the latter half of 2005 and into 2006, Thacker continued to experience interference and continued to report these instances to DLC, requesting that DLC correct the problems. In 2007, he located a specific pole as one source of noise and advised a Mr Luther of DLC of this fact; Mr Luther advised Thacker that he would submit a work order.

In March 2008, DLC contacted Thacker, indicating that it had swept the area where the suspected pole was located and discovered no noise. DLC indicated that the noise source was a neon light. Finally, DLC stated that it had spent "significant amounts of time and money" attempting to address his concerns and that DLC would require him to pay for any additional efforts to locate and correct instances of noise.

Special Counsel for Amateur Enforcement Laura Smith responded to DLC in July of this year, saying "Such a response is not acceptable." She spelled out what she called "the most important rules relating to radio and television interference from incidental radiators," specifically:

47 CFR, Section 15.5: General Conditions of Operation <http://edocket.access.gpo.gov/cfr_2002/octqtr/pdf/47cfr15.5.pdf>; 47CFR, Section 15.13: Incidental Radiators <http://edocket.access.gpo.gov/cfr_2002/octqtr/pdf/47cfr15.13.pdf>, and 47CFR, Section 15.15: General Technical Requirements <http://edocket.access.gpo.gov/cfr_2002/octqtr/pdf/47cfr15.15.pdf>.

"Given the fact this case has been ongoing for quite some time without resolution and DLC has had ample time to locate the instances of interference and make the necessary repairs," Smith told the utility, "you are directed to respond to [me] within 60 days of receipt of this letter, detailing what steps you have taken to resolve the remaining instances of interference that are reported as being caused by your equipment. Should the remaining interference problems not be resolved within those 60 days, DLC will be required to provide [me] with a status update every two weeks going forward as to what progress, if any, has been made to resolve the matter."

ARRL Lab Engineer and power line noise expert Mike Gruber, W1MG, was pleased with Smith's decision, and said that amateurs should not be made to pay fees to the utilities to test for harmful interference by the same utilities. "It is not the responsibility of an Amateur Radio operator to track down and get rid of power line noise -- that's the utilities' job. I am pleased with the precedent that Laura Smith and the FCC have set here. Now maybe more utilities will take power line noise interference more seriously in the future."

THE TOWER

(Editor's note: this story is not new. It may have appeared in Flashovers previously, but I still wince every time I read it. I hope you enjoy it as I do. Please see the credits at the end)

Dear Ms. Jones
Patsy Insurance Co.
Wata'ohoh, HI 96999-0101

I am writing in response to your request for additional information for Block 3 of the Accident Report Form (ARF) I submitted to you on April 1, 1997. I put "poor planning" as the cause for the accident. You said in your letter that I should explain more fully. I trust the following detail will be sufficient.

I am an Amateur Radio operator and on the day of the accident, I was working alone on the top section of my new 80 foot tower. When I had completed my work, I discovered that I had, over the course of several trips up the tower, brought up about 300 pounds of tools and spare hardware. Rather than carry the now unneeded tools and material down by hand, I decided to lower the items down in a small barrel by using a pulley, which was fortunately attached to the gin pole at the top of the tower.

Securing the rope at ground level, I went back to the top of the tower and loaded the tools and material into the barrel. Then I went back to the ground and untied the rope, holding it tightly to ensure a slow decent of the 300 pounds of tools.

You will note in Block 11 of the Accident Report Form that I weigh only 155 pounds. Due to my surprise of being jerked off the ground so suddenly, I lost my presence of mind and forgot to let go of the rope.

Needless to say, I proceeded at a rather rapid rate of speed up the side of the tower. In the vicinity of the 40 foot level, I met the barrel coming down. This explains my fractured skull and broken collarbone.

Slowed only slightly, I continued my rapid ascent, not stopping until the fingers of my right hand were two knuckles deep into the pulley. Fortunately, by this time I had regained my presence of mind and in spite of my pain, I was able to hold on to the rope. At approximately the same time, however, the barrel of tools hit the ground and the bottom fell out of the barrel. Devoid of the weight of the tools, the barrel now weighed approximately 20 pounds. I refer you again to my weight, shown in Block 11 of my submission.

As you might imagine, I began a rapid descent down the side of the tower. In the vicinity of the 40 foot level, I met the barrel coming up. This accounts for the two fractured ankles, and the lacerations of my legs and lower body.

The encounter with the barrel slowed me enough to lessen my injuries when I fell onto the pile of tools and, fortunately, only 3 vertebrae were cracked. I am sorry to report, however, that as I lay there on the tools, in pain, unable to stand and watching the empty barrel 80 feet above me, I again lost my presence of mind and let go of the rope **. . . . .**
Sincerely,

Andy Clark, WA4PRF

TIARA (Tokyo International Radio Association)

Credit: This story is not original. It was copied from another Web site (geocities.com/Eureka/park/4751), but I was so taken with it, I decided to make a copy of it here (www.speroni.com/Tower.html). Joe Speroni, AH0A/7J1AAA. Last modified 06/13/2007 by Joe Speroni.

SSB AND AMATEUR RADIO

A timeline for the development of Single Sideband Amateur Radio by Jim Miccolis, N2EY

1910 - G.A. Cambell (of AT&T) develops LC filters suitable for SSB in the LF range.

1914 - G.R Eglund (of Western Electric) sketches geometric relationship of carrier and sidebands.

1915 - J.R Carson (of Western Electric) describes mathematical foundation of modulation and shows the theoretical advantages of SSB suppressed carrier transmission.

1915 - Carson files for patent on SSB.

1917 - Experimental 3 channel SSB telephone carrier system installed between Maumee Ohio and South Bend, Indiana.

1918 - "Type A" SSB telephone carrier system installed between Pittsburgh PA and Baltimore MD. Four channels using LSB between 5 and 25 kHz. Type A was the first non-experimental commercial use of SSB, and eventually seven Type A systems were installed, remaining in service until the 1940s.

1923 - Experimental one-way LSB 60 kHz radio system demonstrated between Rocky Point, L.I., (New York), and London. Many of the components, including tubes, for this system were developed by Western Electric.

1927 - Regular transatlantic telephone service using 60 kHz LSB put in service. Transmitting stations at Rocky Point and Rugby, England. Receiving stations at Houlton, Maine and Cupar, Scotland. A three-minute call cost $75.

1932 - Carsons's SSB patent granted (17 years after filing).

1933 - Robert Moore, W6DEI, puts an amateur station on 75 meter LSB. This station was later described in detail in R/9 magazine. It used LC filtering at 10 kHz to generate the SSB signal, followed by conversion to 200 kHz and 3950 kHz.

1934 - Several amateur SSB stations are in the air using rigs similar toW6DEI's

1939 - 68 kHz channel added to Rocky Point system

1946 - R.B. Dome describes "Wide Band Phase Shift Networks" in Electronics magazine.

1947 - O. G. "Mike" Villard, W6QYT, puts Stanford University amateur station W6YX on 75 meter LSB with a phasing type transmitter using an audiophase shift network developed from the Dome article. The term "SSSC" (Single Sideband Suppressed Carrier) was frequently used in the early days. This brings us to the point where SSB began to become common in amateur communications. Numerous homebrew transmitters and receive adapters were described in the amateur literature, followed by manufactured equipment. Early SSB efforts all used separate receivers and transmitters – the first SSB transceivers and matched-pair receiver/transmitter sets for the amateur market did not appear until the late 1950s (Cosmophone 35, Collins KWM-1 & KWM-2, Collins S-Line, etc.).

SSB operation concentrated on 75 and 20 meters in

(Continued from page 5)

NEW HAMS, UPGRADES, RENEWALS, CALL SIGN CHANGES, LICENSE ACTIVITY From FCC Web Site For Muskegon County Area Through August 28, 2009
Please congratulate these Hams when you hear them

KC8JNH	BARNHART, DAVID L
KC8MDH	JUNTUNEN, JARED D
N8BVU	FINLAY, WILLIAM N
N8CUV	HAGENBUCH, JEFFREY L

"Let No Call Go Unanswered"

the post-WW2 years because:
- they were the most crowded 'phone allocations
- 40 had no 'phone band,
- and 15 wasn't a ham band, until the early 1950s.

Cost and complexity were the main reasons SSB was not more widely adopted by hams in the '30s.

In those years (late '40s-early '50s), QST had a regular column called "On The Air With Single Sideband". There were "SSB Handbooks" for hams put out by several publishers. And there were gripes that QST was becoming "too technical" and that ARRL was "forcing SSB down hams' throats".

The more things change... 73 de Jim, N2EY

OHIO CONGRESSMAN PRAISES HAMS

Weaver's Words—August 28, 2009
By Jim Weaver, K8JE@arrl.org

"Think US Congressmen don't pay attention to things that go on around them? Think again. US Representative Michael Turner, OH District 3, gave about the best plug for Amateur Radio that we've seen in recent years -- and he isn't himself a ham".

"Great Lakes Division Legislative Action Chair John Meyers, NB4K suggest that all Ohio US District 3 amateurs consider sending a thank you note to Mr. Turner. This can be done easily at http://turner.house.gov/Contact/. Before you send the thank you note, please copy it. After sending the note to Rep. Turner, please paste your note to him in a message and e-mail it to NB4K at nb4k@arrl.org".

"I can't take credit for the article, of course, but I can say that Rep. Turner appeared to be sincerely supportive of Amateur Radio when I spoke with him of the needs and value of our service in a recent telephone town meeting. This may in large part be due to the number of letters he received urging him to support H.R.2160".

Ohio's Amateur Radio Operators Are Valuable Resource in Time of Emergency

Washington, Aug 26 -
by Congressman Michael Turner

As a society and as individuals, we take for granted our ability to instantly connect with the rest of the world. The communications systems that we constantly rely upon are vital not only to our comfort, but our safety. Yet, few Americans realize just how fragile our communications infrastructure actually is. Fewer still are aware of the efforts of a relatively small group of citizens in each of our communities who stand ready to render back-up emergency communications services in times of disaster when cell towers and phone lines are disabled.

In late January, the Southeast and Midwest were struck by one of the most severe ice storms in years. In its wake, 1.3 million people were left without electricity during the coldest days and nights of the year. In addition to losing power for heat and lights, many were also denied the use of their cell phones, land line phone and internet services. They were literally in the dark for days. Kentucky was hardest hit – with much of the state paralyzed for weeks - but Ohio and Indiana also suffered from the historic ice storm's effects. Hurricane Ike in 2008 similarly affected the region and disrupted communications.

The impact of both storms was keenly felt by emergency communications services, according to a recent Associated Press story: "…communications problems were cited by multiple emergency response agencies as the biggest issue they faced."

With many communities cut off from the world, a group of volunteers sprang into action to assist local officials with back-up communications. Amateur Radio operators provided radio communications for emergency responders using their own equipment and battery power to relay timely information from town to town during the storms.

(Continued on page 7)

(Continued from page 6)

The life-saving role of Amateur Radio has been long established. On September 11, 2001, Amateur Radio operators, or "hams," helped to keep New York City officials in touch after their command center was destroyed. Amateur Radio operators were integral in offering valuable life saving communications links during Hurricane Katrina and other major storms. In fact, hams are often present in many local EMA centers and even the National Hurricane Center in Miami, Florida, to help relay information.

There are 663,000 Amateur Radio Operators in the United States, and Ohio ranks fourth in total number of hams with 28,000. Hams come in all ages and from all walks of life. They are fathers, mothers, grandparents and even young people. They are present in most communities and often have the ability to take their equipment with them. They are all volunteers and each shares a love for radio communications, passing a government exam on electronics theory and radio practices before obtaining their FCC license.

The Dayton area has a special connection to Amateur Radio as the host of the annual "Dayton Hamvention." The Hamvention, held each May in Trotwood, has been attracting hams from across the nation and from around the world since 1952. The three-day event offers exhibits of the latest in radio and digital communications technology and forums for hams to share their skills and interests.

Local emergency officials know ham operators are a tremendous resource, yet they are underutilized by the federal government for disaster back-up communications. Amateur radio operators are eager to assist in federal emergency efforts when their communications skills and equipment could be invaluable. Legislation has been introduced in the U.S. House of Representatives to encourage the federal government to explore ways to incorporate Amateur Radio in its own emergency communications. The Amateur Radio Emergency Communications Enhancement Act of 2009 (HR 2160) calls on the U.S. Department of Homeland Security to study how Amateur Radio can work with federal officials in times of disaster.

As long as our communications systems remain vulnerable to hurricanes, tornadoes, earthquakes, flooding and terror attack, we will be in need of the services of America's volunteer Amateur Radio Service.

EDITOR'S CORNER

Volunteerism. Amateur Radio is about volunteerism, I think. Or is it? Maybe there are different kinds of volunteerism. I'm thinking about the problem we have had rounding up volunteer leadership so we can do the things necessary to move the club forward, as indicated by increasing membership numbers. Perhaps we just need to try harder. Or perhaps we are just a "social club", interested mostly in fish dinners, picnics, and such, as one member recently remarked to me. Is this so? Or are there other impediments to a vibrant activity schedule? Are we trying to do things that members (and non members) don't have an interest in; if so, what would generate enough interest to encourage volunteer leaders and participation? The MAARC Board wants to know.

Tom, N8YJT

ASK ELMER (Advice for the Ham)

Dear Knuckle Head,

I am going to put up some more antennas this fall. Should I include one for 10 meters?

Sincerely, Puzzled

Dear P,

I suppose you are referring to an expectation for 10 meters to open up. I would say yes. We are just beginning Cycle 24, and while it seems it might not be a spectacular cycle, you shouldn't miss it.

Sincerely, Elmer

Elmer would like to hear from you too. Write to him at: *Flashovers*, PO Box 691, Muskegon, MI 49443-0691 or contact him through the editor, n8yjt@arrl.net

M.C.E.C.S. Inc
(Muskegon County Emergency Communication Services, Inc.)
1611 E. Oak Avenue
Muskegon

Meeting Second Monday of Each Month at 7:00 PM
Everyone Welcome

K8WNJ 146.82 (94.8 PL)

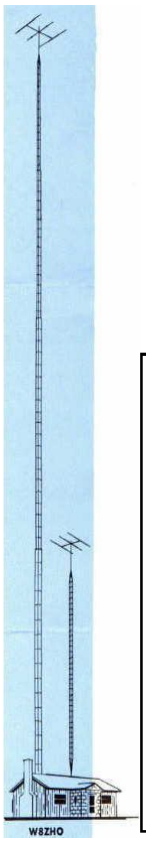
From K8BGP
Free to Good Ham Home
-Custom Built Radio Desk-
-Computer Desk-
-Steel Shelves for Radio Storage-
Call 231 773-5840

This Space Available

This Space Available

Help Needed - The club house could use your donations of time and money towards maintenance and improvements. Please consider what you may be able to do to help
Contact N8PPQ

MUSKEGON AREA AMATEUR RADIO COUNCIL
PO BOX 691
MUSKEGON, MI 49443-0691
POSTMASTER: RETURN WITH ADDRESS
CORRECTION REQUESTED IF UNDELIVERABLE



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