MAARS Quarterly Newsletter

Vol 1, Number 1 *April 2020*

Well, in the last newsletter, we talked about a variety of topics, one of which included dues for the year. I'd be remiss if now in July, I'd didn't mention that dues are due this month! There are a couple ways to pay them and I'll detail them here.

First, go to 513repeater.org. Then, click on the tab "ABOUT". At the bottom of that tab, you'll see "Membership Applications".

If you click on Membership Applications, it will take you to the forms you can print out and manually complete. Once done, you'll send it to: Milwaukee Area Amateur Radio Society, P.O. Box 13604, Milwaukee, WI 53213-0442

OR, at "Membership Applications", you'll see a drop-down menu with "New Member Paypal" and "MAARS Renewal Paypal" choices. Checking either one will take you to the appropriate form. When you click on "SEND", at the very bottom of that form, you'll be taken to the Paypal site where you confirm payment. It's at this time you can change the amount to include any donation you'd like to make over and above the dues amount. (Yes, that's a hint!)

All Paypal payments will be automatically sent with the form you completed. Manually sent forms with checks will be picked up at the P.O. Box on a frequent basis and recorded.

Tech & Tower

It was pointed out that there are many members who don't know much about the workings of our repeater. We will try to give an overview of the system and how it works.

Our repeater main site and transmitter is located at UW-Milwaukee on top of Sandburg

Hall. We have five remote receive sites that relay your transmissions back to our main site at UWM. All of the received signals feed a Motorola Spectra Tac Comparator that we call a voter. The voter compares all the received signals and selects the best signal with the least noise. The voter is connected to the repeater controller which keys up the transmitter and power amp.
That was a basic description of how the repeater works. For those of you who want more details I will break down a little bit more. We also have some more features that I didn't discuss above. Our repeater has multiple ways of linking to other repeaters, simplex or VoIP internet systems.
The repeater controller is the brains of the system. It figures out which controller input has a signal and routes it to the transmitter. It also handles the ID requirement for the repeater along with special announcements and courtesy tone.
Our voter has the ability to handle up to eight receivers in a single rack frame. It can be expanded with another frame to 16.This is the same equipment that MPD and Milwaukee County Sheriff used on their systems before they went digital. When everything is setup correctly you do not notice that the systems switches between sites during a conversation.

A remote site listened to the input of the repeater on 144.530 and re-transmitted it back on a UHF link frequency. Each site has a VHF and UHF commercial radio equipment made by General Electric. The vintage of these radios dates back to the early 90s. The antenna systems at our remote sites are usually high quality commercial antennas and feedline. We do this because they need to survive for 20 years or more. Most of the sites we need to have professional tower climbers do the work. That can cost $1500 or more depending on the site. We cannot afford to pay multiple times for installation of cheap antennas.

I hope this basic overview helped get some understanding how the system works. On our website:
http://www.513repeater.org/repeaters/
we have information on the repeater and all of our sites. In the next issue I will go into more detail about the other features of the system. If you have questions please feel free to email me at ka9wxn@513repeater.org

Dave Schank

"New" uses for Ham Radio

From Randy, KB9JMH:

There are ham radios in homes. There are ham radios in cars/trucks. There are ham radios in boats. And I'm sure there are ham radios in places I've never seen! But one place many have not thought about is ham radio on motorcycles. When I tell people I have a radio on my bike it frequently raises eyebrows and questions.

Of course, I can't speak to every motorcycle and ham radio combination, but I can share with you what I did. What worked and what didn't work as well. And, I'm not alone. Two more MAARS members have amateur radio on their motorcycles. So between the three of us, I suspect most questions can be answered pretty easily!

My set-up is as follows:

Motorcycle 1993 Honda Gold Wing Aspencade

Gold Wing's came in Interstate, Aspencade and SE models. The Interstates were basic Gold Wings without some of the "bells & Whistles". The SE models were the loaded version. They enjoyed a features above the Aspencade model. They featured a two-tone paint scheme, a CB radio, adjustable passenger foot rest and a few other rather minor things. I bought mine used and was fortunate the original owner added numerous after-market gadgets.

Ham Radio

My first attempt to marry ham radio with a motorcycle started with the FTM-350 by

Yaesu. I was able to mount the main radio in a side saddlebag and run control cables to the dashboard counsel between the handlebars. Mounting the microphone nearby gave me decent access. The antenna was dumb luck on my part! Since the bike now had a chromed truck rack, I found a small thin sheet of steel. I drilled it with the holes I needed for mounting. Using a ¾" hole-mount with connector and short coax cable, I mounted a Diamond dual band, secured the assembly to the rack and tested the rig. The reports I received blew my mind! Everyone reported that signal clarity, strength and voice were superb! Like I said; dumb luck!

I ran that way for the entire year. But late that season, I decided that Bluetooth would be far better & safer than trying to reach for and manipulate a hand mic. I found a BU-2 bluetooth board for the 350 (thanks K9ZZZ) and installed. After much fiddling around, it eventually connected with the radio. It turned out if the Sena 10S (Bluetooth helmet mount) was the O N LY bluetooth device the Yaesu saw, it would connect. Once connected, pushing the "intercom" button on the 10S to transmit AND, pushing it again to disconnection from transmit worked fine. But the combination was pretty temperamental. Early this Spring I tried to get them synchronized again and had difficulties. Frustrated, I sold them. I've replaced Sena with Cardo's PackTalk Bold. These units use a newer technology that uses MESH to combine far more riders and (technically) far greater distances. We'll see how much better this work in 2020!

Beyond having the ability to talk while riding, I began to utilize APRS. As a volunteer for the Best Dam Bike Tour (MS150), several of us (K9ZZZ & N9EAX) performed SWEEP duties making great use of the APRS capability. This year with so many public activities up-in-the-air, a number of rides are going virtual.

Motorcycles and ham radio are such a unique and effective tool, I joined the team for Tour de Cure; a fund raising Walk, Run, Bicycle fund raiser for the American Diabetes Association. And, I took the position of Logistics Coordinator for the Wisconsin Ride For Kids, a fund raiser for the Pediatric Brain Tumor Foundation. But sadly, that event has also gone virtual for 2020! I have made a proposal to the MAAC Fund's Trek 100 for the first time and we're still waiting to see whether they can utilize this combination of oversight.

Needless to say, I'm enjoying my motorcycle as I always have, but Amateur Radio has added another layer that I would never have thought about. I encourage anyone with a radio license and a motorcycle to explore how this combination of interest can work for you. And yes, I'd be happy to discuss this in more detail if you have further questions!

Then, from Dan, N9ASA:

D-Star Dan. It is funny how a ham gets a nick name. After programming a handy-talkie for a local ham and registering her on MADOG D-Star system, she was so happy like a kid in a candy store. Then again, we were in an electronic candy store during AES Superfest (now it is Ham Radio Outlet).

Being a ham radio operator can be fun and can be serious as an ARES / RACES operator. It brings people together like no other hobby. We make "on-the-air" friends and may never meet them in an eyeball QSO. That is just the way it is with ham radio.

I have been a licensed ham radio operator since 1991 when the FCC passed the no-code technician. My first call sign; an obnoxious KB7UEX. What a mouth full. Even for a ham doing code it could be cumbersome. Within 10 years, the FCC passed we could apply for a vanity callsign. I applied for one and got my first choice; N9ASA. My other hobby is astronomy and I liked how the call sign

sounded. Some people asked if I worked for NASA. All I could say was a sorrowful no.

Most hams start out with a handy-talkie then progress to a mobile radio. Eventually, we allot a section of our home or garage as a radio shack. For those who ride motorcycles, we manage to find a way to affix amateur radio on it. It can be a challenge depending what manufacture and model motorcycle you have. The most interesting part is how to implement a boom microphone, headset, and PTT while keeping safety in mind.

My latest bike is a Vivid Black 2018 Harley-Davidson Ultra-Tri Glide with 107 cubic inch engine and 1st Stage Screaming Eagle package. The exhaust is Twin Cobra pipes with a very low throaty sound that can make Darth Vader shiver. It's low enough in the early morning not to wake the neighbors, but loud enough that the "cage" next to you will know you are there. The torque/power and acceleration are enough to satisfy Tim Allen's power needs.

Not all ham radio manufacturers have built a mobile unit that was completely waterproof. There are many hand helds that are IPX7, IP54/55 weatherproof or JSI7 submersible. Yaesu had the FTM-10SR, but just the remote head was water and dust proof. You will need to find someplace on the motorcycle to protect the body of it. There is no doubt that the ham will need to be innovative no matter if they are mounting a portable or mobile unit on the motorcycle.

Then there is me. A retired Coast Guardsman with a background in Electrical Engineering, Maritime Law Enforcement and Security. There was no doubt I have the knowledge, but to be innovative with what I wanted to do can be tricky. I own two FTM-400's. The unit that I have on my Trike is the FTM-400XDR due to fast acquisitions of the GPS satellites. You can see my rides using APRS-FI. Type in N9ASA-3.

Mounting the body of the radio was a no brainer. It is mounted in the tour pack where it is protected by the weather and easy to get to for updating the firmware. The antenna I use is a Comet CSB-790A Dual Band. It is 5/8 wave on 2m and 70cm since there is no ground plane. The antenna is 60 inches tall and mounted on my bumper using a CRM-Diamond mount. My SWR's are 1.5 to 1 on the 2m band and 1.3 to 1 on the 70cm band.

The remote head is mounted within a Plano 1230-50 Rifle Cartridge box that fit perfectly. When Gander Mountain was still in business, I took my remote head with me and was placing the remote head in various boxes and found the one I wanted to use. The box is dark gray with a light blue cover with a slight slant. Using a Dremel tool, I cut out all the ribs that would have held each bullet in place. When it rains, all I have to do is close the cover. It is well sealed.

In mounting the box, I used a combination of a LIDO LM-1000EXP and a Harley Davidson Handlebar Phone Mount which I already had on hand. The bike mounting section of the LIDO mounted directly to the back of the box. I drilled two small holes for the mounting plate and secured them with a nylock nut in the box. In order to secure the head within the box, the knurled area of the LIDO mount has a hole in it. Using a ¼-20 screw and Blue Locktite, I secured the head through the hollow knurled mounting head, through the box, to the remote head threads. I also used some foam spacing inside of the box to work as a filler and absorb some of the vibration. This works very well. There are two issues I have. One is sunshine. Why? When the sun is behind you, it practically washes out the screen. Also, vibration can cause the channels or frequency to change if you do not have the LOCK function on. Otherwise, this box is great!

Now the fun part. Rather than using the hand-mic and speakers, I created a hybrid wired headset system that consisted of Harley and Heil. Sort of got a ring to it, eh? No, I am not from Canada. Anyway, I removed the left headset earpiece of the HD brand and the right headset earpiece of the Heil BM-10 for Yaesu and mounted the earpieces in the speaker slots in the helmet. The pads inside of the helmet hides the wires and keeps them in place. Both boom mics comes out from the left side of the helmet. I chose the Heil BM-10 due to the plugs are both 1/8 inch and I had plenty of 1/8 inch mono and stereo female connectors

in the work shack. The boom mics are staggered and slightly to the left of my mouth.

My Harley headset is a heavy coiled cord that plugs into my center console. The Heil headset cords are small and straight. They were wired through the center of the Harley coil cord for two reasons; to protect the Heil headset cord and cosmetics. The female 1/8 inch connectors are exposed but can be easily hidden from the elements when not in use. The wiring travels under the seat with other OEM cables and into the tour box.

The PTT is a Sena wired button which is water proof. Unfortunately, this PTT is no longer in production. The button is mounted on my left grip which is held by the rubber straps that comes with it. It has held up for over two years while in pouring rain, hot days, and 6000 miles.

The final part of this system was the interface box which is in the tour box as well. The only wiring that is in the box is for the boom microphone and the PTT. The remote head cable and the speaker cable comes directly from the radio.

Using a Heil headset boom microphone is not ideal by far, but gets the job done. Wind and road noise can be heard, but my voice level is over that. The helmet is a ¾ type that is open face. If I place my hybrid headset in my other helmet that has a face shield, the wind and road noise is reduced, but I found out that it makes me sound muffled. Recently I discovered that if I use a dead cat windscreen in conjunction with the foam windscreen, it makes a world of difference with my open face, ¾ helmet. Sorry, no dead cat jokes here.

Someday, I would like to use a Bluetooth headset with my Harley Boom Box and FTM-400XDR. I cannot justify $300 to $400 for a Bluetooth Sena or Cardo headset and find out that it does not work on the ham radio. Do not get me wrong, going completely wireless is my ultimate goal.

If you wish to see installation pictures, please visit http://www.milwaukeedigital.org/n9asa/.

DW

Thank you for taking the time to read this newsletter about our organization! Please help it along by asking questions, submitting articles and thoughts so we can all grow together! Send your questions, comments and thoughts to:

KB9JMH@513repeater.org.

Meetings

We continue to monitor and evaluate issues with regard to COVID-19. As soon as appropriate, we'll schedule a membership meeting and get our lives back on track!

We hope you and your family stay safe during these uncertain and difficult times. For those of us "stuck" at home more than normal, get on the air and let's get re-acquainted!

Swap Net

Log on to the Wednesday Night Net if you have ham radio equipment you'd like to sell, or if you're looking for something to purchase. That net begins at 9:00 PM. When there is no further traffic on that topic, N9FSE will provide us with detailed propagation reports for your DX'ing pleasure!

Trivia

What year was the repeater started? What was the call sign of the repeater trustee? What was the frequency?

We'll reveal the answers in the next edition! *73's*

Board Officers:

President
Dave Schank
KA9WXN@513repeater.org

Vice President
Barry Sprifke
W9BLS@513repeater.org

Secretary
Jim Westover
KB9KBK@513repeater.org

Treasurer
Craig Kasseckert
W9CJK@513repeater.org

Past President
Greg Wolf
K9ZZZ@513repeater.org

System Manager
Dan Workenaour
N9ASA@513repeater.org

Marketing & Communications
Randy Timms
KB9JMH@513repeater.org

Control Operators:

Bob Widdish
N9PSN

Jim Goelden
KA9ZYW

Steve Sundquist
N9FSE

Greg Wolff
K9ZZZ

Dan Workenaour
N9ASA

Dave Schank
KA9WXN

Pat Riordan
N9LKH

RENEWAL OF MEMBERSHIP

Milwaukee Area Amateur Radio Society, Inc.

ALL MEMBERS WHO JOIN ED BEFORE JUNE 1 ST

MUST RENEW THEIR MEMBERSHIP BY JUNE 30TH

******FILL IN ALL INFORMATION PLEASE******

NAME: _____ CALL SIGN: _____

(As you want it to appear on the roster)

ADDRESS: _____ LIC CLASS: _____

CITY: _____ LIC EXP: _____

STATE: _____ OCCUPATION: _____

ZI P CODE: _____ E-MAIL ADDRESS: _____

HOME PHONE: _____ WORK PHONE: _____

[ ] Check here if you don't want your phone number listed on the society's roster.

MAIL BOX: IF YOU DON'T NEED YOUR MAIL BOX. INITIAL HERE _____

TO RELEASE IT FOR OTHERS TO USE.

CHECK HERE: ___ IF YOU WANT TO BE PUT ON THE MAIL BOX WAITING LIST

CHECK HERE: ___ IF YOU WANT THE CLUB NEWSLETTER EMAILED TO YOU?

CHECK HERE: ____ If you are an ARRL member

******FAMILY MEMBERSHIP ******

A family member ship includes the individual applying and all members of such person's immediate family residing in the same household who possess an Amateur Radio license.

NAME: _____ CALL SIGN: _____

LIC CLASS: _____ LIC EXP: _____

******TOTALS ******

[ ] Membership Renewal ($20.00 Regardless of Month)

[ ] Family Member ship Renewal ($25.00 Regardless of Month)

[ ] Senior (60 years old or above) Member ship Renewal ($15.00 Regardless of Month)

Donation to the MAARS Equipment improvement: $_____

Date of Application _____ Amount Enclosed $_____

Make Check Payable To: MAARS

(**M**ilwaukee **A**rea **A**mateur **R**adio **S**ociety)

Or Visit

www.513Repeater.org to use pay by PayPal.

MAIL TO:

Milwaukee Area Amateur Radio Society, Inc.

PO BOX 13604

Milwaukee, WI 53213-0442

FOR MAARS OFFICE USE ONLY

Treasurer Received/ Date: _____

Sec. Add Roster/Date: _____

System s Manager Notify MB/Date: _____

Call Sign Checked: _____ *Date:* _____