Official Publication of the
West Allis Radio Amateur Club

Hamtrix

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Volume 73, Issue 1 January , 2024

JANUARY CLUB HAPPENINGS

NUT NET
3.985mhz
Monday-Saturday
8:15am CT
NUT NET
Breakfast
8:30am fourth
Tuesday
of the month

The Milwaukee-Florida Net time is:
7:15 – 8:00AM Central
8:15 – 9:00AM Eastern
Mon through Sat

Guests and YL's Welcome

Click for map

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I WALK
AROUND
LIKE I'M OKAY
BUT
DEEP DOWN
I Wanna
BUY MORE
Radios


HAM
RADIO
ZONE
TURN OFF
All Blasting
Equipment
QRZnow.com


WARAC
Find Us On The Air
VHF Simplex 146.55 Mhz
Looking for a Club Member to chat with? Fire up the VHF rig and give a shout out on the VHF Simplex Frequency 146.55. You'll be surprised how often someone is listening. Hit the PTT and say "Hello"
DMR - BM TG 3155 WI State
DMR
The WI State 3155 TG is available on all the local DMR Repeaters AND via your HotSpot. Put yourself monitoring and come find a Club Member
Nut Net - Mon to Sat on 3.985 Mhz @ 8:15 AM
Join The Nut Net on 80 Mtr SSB from 8:15 to 9:00 AM Mondays thru Saturdays. Check-ins are from all over WI. You'll be a Nut Netter regular in no time. This is a general discussion net that gets your day started out right.
Milw - Florida Net - Mon to Sat 14.290 Mhz 7:00 AM
Join Tom, K9BTQ, for this early morning Check In Net, Mon thru Sat on 20M from 7:00 AM to 8:00 AM. Get the news to get your day started out just right.
6 Meter Chat - Wed, Fri 50.160 Mhz @ 9:30 AM
Paul, W9PCS, hosts this informal 6m online get together on Wed and Fri starting at 9:30 AM. This is a round table discussion and everyone is welcome to drop by and join in.

WARAC General Meeting Minutes – December 12, 2023

Called to order by Feroz WU9N @ 7pm.
Attendance: 23 – 22 Members, 1 Visitor.
Feroz WU9N: - did intro's.
November General Meeting Minutes: - Approved.
Treasury Report – Bill N9KPH: No change from November.

January - No meeting. We have our Annual Holiday gathering. Mike WO9B will email group. Time and location, still TBD.

Dave Garnier WB9OWN: Presentation on his Rigol Spectrum Analyzer.
A spectrum analyzer is not a receiver or communication device. The spectrum analyzer sweeps frequencies and display to a video display, showing frequency and signal amplitude. It can measure low power input - power, noise, noise floor, distortion, harmonics. It can test filters, duplexers, antennas, antenna switch isolation. By setting parameters (frequencies, marker, etc) the spectrum analyzer can output a sweep of frequencies to the filter and display what the filter is doing. Dave setup and displayed the output of his 20M bpf he built for Field day. Dave also setup and displayed the output of a club members HT on 2M.

February – Getting ready for WIQSO Party in March.

Field day: Dave Garnier WB9OWN Will spearhead head Field Day. Feroz - DJ Mackie is a great site, but is in the middle of nowhere. And has issues with power. Maybe look for somewhere closer. Waukesha Parks reservations open Jan 1. Waukesha county residents get preference during the first 2 weeks.

Any feedback on WCTC symposium idea. Very little. We need to setup a committee to get this going.

Frank will take care of setting up Sendik's dates for 2024.

Frank showed his Arduino project (in progress) for his screwdriver antenna position feedback, which will use a string potentiometer.

Meeting Adjourned at 8:24 pm.

Respectfully Submitted
Bill Dargis KD9BJZ
Secretary WARAC, December 12, 2023

Contest Corner and DX Report

Happy New Year! Here's hoping that activity and sunspots combine to make a great 2024 for us.

This weekend (January 6-7), check the bands for the ARRL RTTY Roundup and ARRL Kids Day. Both are enjoyable events, though they have a very different rhythm from each other. The RTTY Roundup is a fast-paced contest running for 30 hours from Saturday afternoon to Sunday evening (though you may operate a max of 24 hours), whereas Kids Day is six hours on Saturday afternoon and evening, and is a leisurely introduction to ham radio for the kids you know.

The North American QSO Party is a manageable 12 hours on the second (CW) and third (SSB) weekends in January. Both run from noon to midnight on Saturday afternoon and evening. Both have an easy exchange, name and state. Both will feature wall-to-wall stations on the bands, with emphasis on the 20 and 15 (and if conditions cooperate, maybe even 10) meter bands in the afternoon with emphasis on 40, 80, and 160 meters later on. 40 meters has been very long in the evenings here, so 80 and 160 might be better bets for close-in contacts. Strategy for these contests revolves around multipliers (states, provinces, and other North American countries) being counted once per band, so being able to work many states on many bands is a winning strategy.

The January VHF Contest coincides with the NAQP SSB, running from Saturday afternoon to Sunday evening on January 20 and 21. My son Max (KD9NZB) and I generally operate as a rover for the June VHF contest, but we are not quite hardy enough to brave the cold and snow in several different grid squares in January. One other disadvantage in January is that we don't usually see the Sporadic-E openings on 6 meters (and possibly above) that are such a key part of the June contest. Just the same, stations will be on VHF, UHF, and above, all modes, all bands, trying to take advantage of what propagation enhancement they can find. Are you looking for contacts on 222 MHz FT8? How about making FM contacts on 902.1 MHz using a modified baby monitor? 2 meters with your HT? 6 meters SSB or CW? All of those and more will be on the air for this contest.

And then we have Winter Field Day, which is a beast unto itself. WFD is not in any way affiliated with Field Day, the June ARRL event that many of us know so well. It is technically an emergency communications exercise with its own independent organizers, rules, and philosophy. The idea is to be able to make ham radio contacts in suboptimal conditions (just like on the regular Field Day in June), but with the added obstacle of winter weather conditions. I think this is more of a hardship for us in Wisconsin than for hams in, say, Arizona or Texas, but that's kind of the point – to be able to look into the distance with a steely-eyed glare, hands on hips in a superhero pose, and feel real tough in a John Wayne or Superman sort of way.

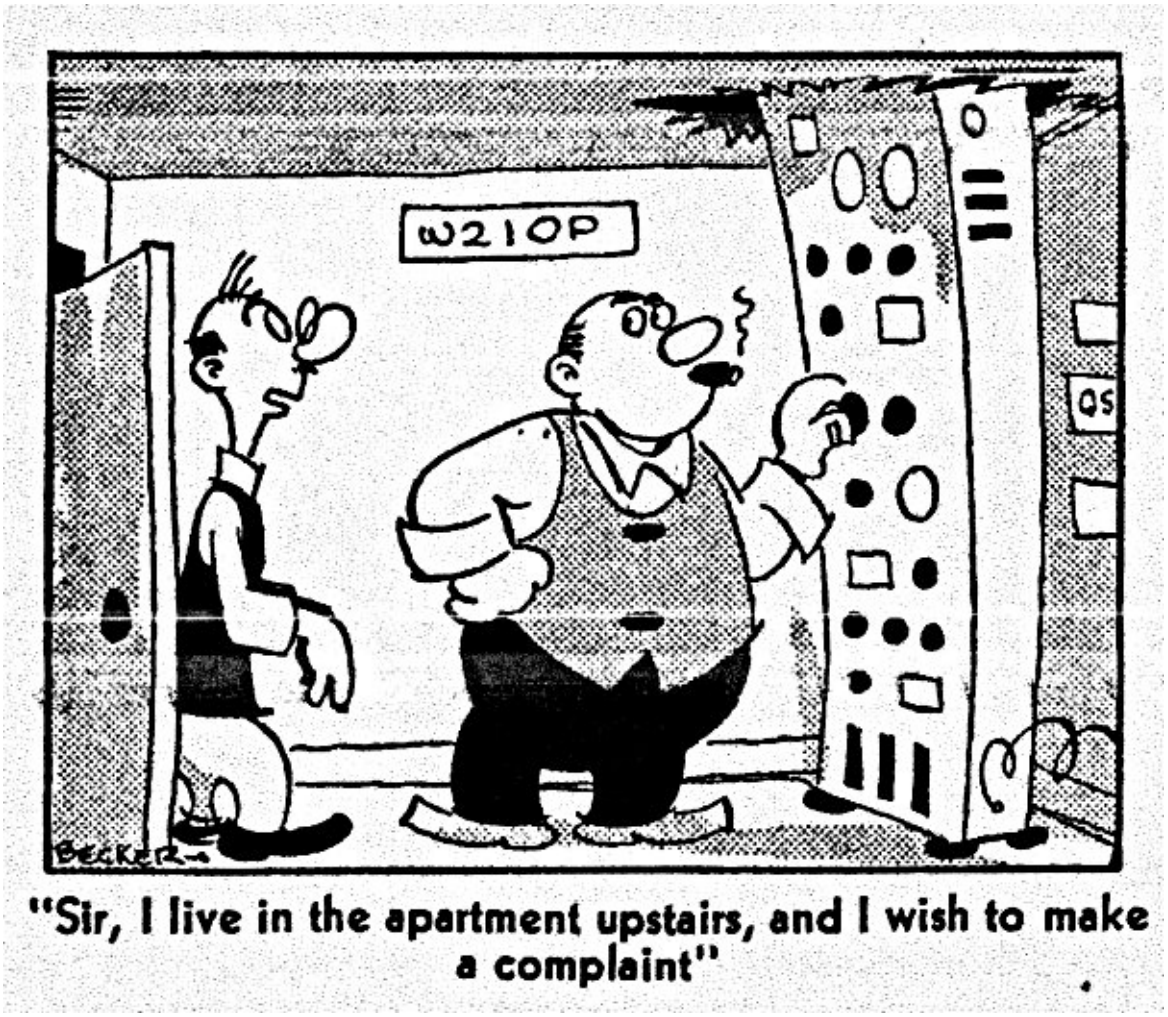
Goodness, that got a little bit out of hand there. You knew what you were getting yourselves into when you let me have a column. Anyway, if you just want to participate from home, your exchange is "1H WI" (1 transmitter, home station, and the ARRL section). If you are interested in getting more involved, possibly setting up outdoors, or mobile, or in some other non-home QTH, you should check out their website at http://www.winterfieldday.org . They tweak their rules and philosophy statements every year, so it's worth reading their latest iteration. I operated from home in January 2020, which went great until I ran over my feedline with my snowblower, and then I've operated from my car at Mary Knoll Park in Brookfield the past three years.

Continued next page

On the DX side, there are two notable DXpeditions running now, with some other interesting calls on the air.

- A number of Japanese hams are activating Koror Island in Palau, as T88RH, T88HS, T88AQ, and T88SM, from January 12-18, 2024.
- Around the same time, ET3AA will be QRV from Ethiopia. Ken K4ZW and Bob W9XY will be the ops.
- TX5S, Clipperton Island, will be on the air from 160-6 meters, CW, phone, and digital. They have a great team of 18 operators for this DXpedition.
- Another way to get Antarctica (in addition to last month's mention) is to work VK0AI, operated by Norbert VK5MQ, who'll be on the air all of our winter (his summer).
- There are planned DXpeditions to Wallis and Futuna (FW8GC, February/March 2024) and Kiritimati (T32EU, March 2024).
- Two rival groups (3Y0I and 3Y0K) are hoping to activate the forbidding Bouvet Island in the next couple of years. They are rivals, people are leaving one group for the other… this is soap opera-level drama, folks. I'll keep you posted.

Let me know your DX and contest tips, and I'll include them here.
-Michael AA9RK



DIGITAL DIGEST

January 2024 * Hamtrix * By Michael Johnson, WO9B

DMR Doodles

So what's happening with DMR these days? Let's take a look at a couple of developments.

BrandMeister Policy Changes: At some point in 2023, BrandMeister (BM) implemented changes to their network access policy. For those unfamiliar with DMR, BM has been the "Top Dog" of DMR networks for several years. With new DMR networks popping up and with crossmode access increasing across the digital voice universe, BM has chosen to enforce policies to isolate their network from the cacophony of digital comms available. Whether you like the changes or not, BM is not asking. It's their network, their rules. Here are a couple of examples:

-C-Bridge Connectivity: DMR repeaters are commonly networked via C-Bridges. These repeaters often use BM State Talk Groups as their primary landing pad. For WI, that is TG 3155. Repeater served C-Bridges became an issue for BM as these C-Bridges also serve as cross network facilitators and therefore BM stopped that connectivity to their network. What that means is if you access BM 3155 via your local repeaters, you will not be able to communicate with users that access BM 3155 on their hotspots. That's a big deal.

-Access Restrictions: The very popular BM TG 3100 USA Bridge is being restricted to USA issued DMR ID's only.

-YSF Cross Mode Disallowed: Cross mode links offer access to various digital voice modes. Of late, two BM TG's that I frequent can no longer be accessed via the DMR2YSF cross mode connection. Attempts are met with a "Connection not allowed" message.

Goodbye Pi-Star, Hello WPSD: This is not breaking news, but with the new generation of Raspberry Pi's finally being available, the hotspot game has changed. Back Story: The DMR hotspot world has been powered by the open source Pi Star software for years. It's been wonderful, but sadly the project has languished for the past 2 years. Riding to the rescue, W0CHP is filling the void with his WPSD Project software.This orginally billed as a fork to Pi Star, but of late it is now being labeled as its own legitimate contender.

Over Christmas, I picked up a new PiZero 2 W and transformed one of my hotspots to the new software. Wow. It is quick, intuitive and loaded with new capabilities. The transition was actually fun given the easy to read and understand documentation. Be warned however, depending on how complicated your digital voice life is, you will most likely have a code plug revision in your future if you make the change. If using multiple digital voice networks is your thing, this software is a must. Well worth your time to give it a try.

Nut Net Breakfast

Several years ago there was talk among Nut Net members that we should get to meet each other. A breakfast get together idea was started. It was open to all hams, XYL/partners and anyone who wanted to learn about amateur radio. Even visiting OM/ XYL couples joined us.

So, on the fourth Tuesday each month at 8:30 am we meet at Gensis Restaurant, corner of HWY 100 and Beloit Road, Greenfield, WI. Looking forward to seeing you, mark your calendar.

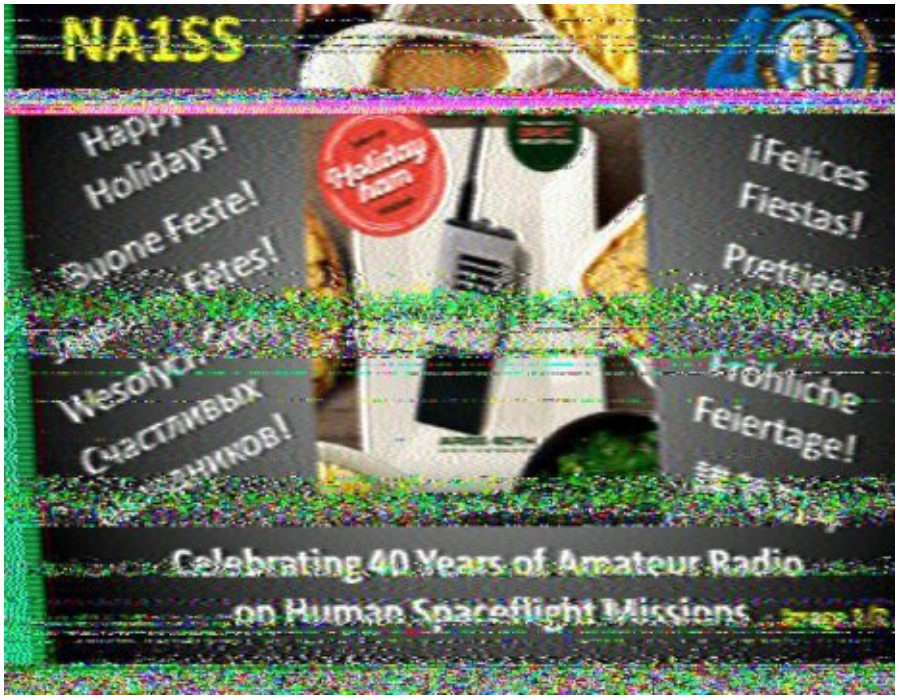
Phil, W9NAW

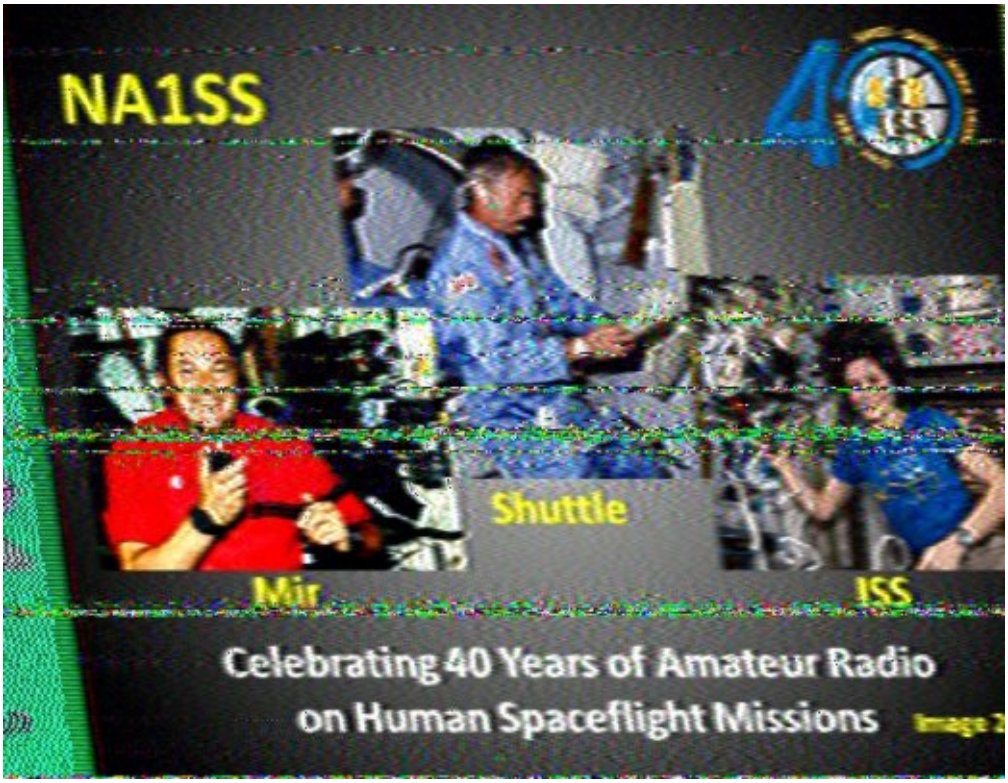
2023 Challenge for our membership. Have someone you meet, Ham or Ham wannabe come to a meeting this year!

ELMER **by Rich Regent, K9GDF**

Pierre, KD9SSY, is pleased to report that his first attempt at receiving SSTV images from the ISS (International Space Station) was a success.

Time: Approximately 7:40am, CST
Location: ProHealth Park, New Berlin, WI
Weather: 35° F, damp
Frequency: 437.8000
Max elevation: 73.9
Transceiver: Wouxun KG-UV9F Mate
Antenna: Arrow II Satellite antenna, UHF section only
Sound editing software: Audacity
Decoding software: MMSSTV





Survival radio

From Wikipedia, the free encyclopedia
An AN/PRC-90 rescue radio

Survival radios are carried by pilots and search and rescue teams to facilitate rescue in an emergency. They are generally designed to transmit on international distress frequencies. Maritime systems have been standardized under the Global Maritime Distress Safety System. Civil and military organisation's utilized different frequencies to communicate and no infringement on either sector would take place. For emergencies involving civilian aircraft, the radio frequency used is VHF 121.5 MHz and for military aircraft incidents, the frequency used is UHF 243 MHz.

An AN/PRC-90 rescue radio

History

The use of radio to aid in rescuing survivors of accidents at sea came to the forefront after the sinking of the RMS Titanic in 1912. Lifeboats were equipped with spark gap transmitters such as the Marconi Type 241, c. 1920.[1][2] These operated using Morse code on 500 kHz, the international distress frequency at the time. This frequency had the advantage of long range due to ground-wave propagation and was constantly monitored by all large ships at sea after the Titanic's sinking. However, due to its wavelength of 600 meters, a long antenna was required to achieve good range. Long wires on the order of 1/4 wavelength held up by kites or balloons were often used. Spark-gap continued to be used in lifeboats long after the technology was banned for general communication.

The Gibson Girl
BC-778 "Gibson Girl" radio transmitter.

During World War II, Germany developed a hand-crank 500 kHz rescue radio, the "Notsender" (emergency transmitter) NS2. It used two vacuum tubes and was crystal-controlled. The radio case curved inward in the middle so that a user seated in an inflatable life boat could hold it stationary, between the thighs, while the generator handle was turned. The distress signal, in Morse code, was produced automatically as the crank handle was turned. An NS2 unit was captured by the British in 1941, who produced a copy, the Dinghy Transmitter T-1333. Britain gave a second captured unit to the United States, which produced its own copy, the SCR-578. United States Army Air Forces aircraft carried the SCR-578 on over-water operations. Nicknamed the Gibson Girl because of its hourglass shape, it was supplied with a fold-up metal frame box kite, and a balloon with a small hydrogen generator, for which the flying line was the aerial wire. Power was provided by a hand cranked generator. The transmitter component was the BC-778. The frequency was 500 kHz at 4.8 watts, giving it a range of 200 miles (300 km; 200 nmi). Keying could be automatic SOS (including the 4-second long dash for autoalarm), or manual. Crystals for frequency control were a scarce item for the U.S. during the war and the SCR-578 was not crystal-controlled.

A post-World War II version, the AN/CRT-3, which added a frequency in the 8 MHz range, was in use by ships and civil aircraft until the mid 1970s.[3]

VHF era

The use of aircraft for search and rescue in World War II brought line-of-sight VHF radios into use. The much shorter wavelengths of VHF allowed a simple dipole or whip antenna to be effective. Early devices included the British Walter, a compact single vacuum tube oscillator design operating at 177 MHz (1.7 meter wavelength), and the German Jäger (NS-4), a two-tube master oscillator power amplifier[4] design at 58.5 and, later, 42 MHz.[5] These were small enough to include in life rafts used on single-seat fighter aircraft. [citation needed]

Post-war designs included the British Search And Rescue And Homing beacon (SARAH) beacon made by Ultra Electronics, used in the location and recovery of astronaut Scott Carpenter after his Mercury space flight,[6] the U.S. AN/URC-4 and the Soviet R 855U. These operated on the aircraft emergency frequencies of 121.5 and 243 MHz (2.5 and 1.2 meter wavelengths).[citation needed]
Automated beacon systems

After a light plane with two U.S. congressmen on board went down in 1972 and could not be found,[7] the U.S. began requiring all aircraft to carry an Emergency Locator Transmitter (ELT) that would turn on automatically in the event of a crash. Initially these units sent beacon signals on the 121.5 MHz aircraft emergency frequency. These are being phased out in favor of ELTs that use a 406.025 MHz signal, which can be picked up by the Cospas-Sarsat international satellite system for search and rescue. Each 406 MHz beacon has a unique digital ID code. Users are required to register the code with the Cospas-Sarsat, allowing inquiries to be made when a distress signal is picked up. Some advanced models can transmit a location derived from an internal GPS or GLONASS receiver. Maritime practice has shifted from rescue radios on 500 kHz distress frequency (which is no longer officially monitored) to the Global Maritime Distress Safety System, which includes use of the Cospas-Sarsat system and other measures, including radar transponders and hand-held marine VHF radios.[citation needed]

There are many other types of emergency locator beacons that do not use the 406 MHz Cospas-Sarsat system, including man-overboard beacons that transmit Automatic identification system beacons and Avalanche transceivers.[citation needed]
U.S. Military survival radios
An AN/CRC-7 rescue radio

Military organizations still issue pilots and other combat personnel individual survival radios, which have become increasingly sophisticated, with built-in Distance Measuring Equipment (DME), Global Positioning Satellite receivers, and satellite communication. In slang terms "PRC" radios were called a "prick" followed by the model number, "Prick-25," and "URC" radios were called an "erk." United States military survival radios include:

AN/CRC-7 - World War II era set, 140.58 MHz[8]
AN/PRC-17
AN/PRC-32 - Navy rescue sets, 243 MHz.[8]
AN/PRC-49
AN/PRC-63 - Smallest set built.[8]
AN/URC-64 - (Air Force), 4 frequency rescue sets. Four crystal controlled channels (225-285 MHz)[8]

AN/URC-68 - (Army), 4 frequency rescue sets.[8]

AN/PRC-90 - Vietnam War era airman rescue set. AN/PRC-90-1 and AN/PRC-90-2 are improved, repairable versions. Operates on 243 and 282.8 MHz AM. The PRC-90 also included a beacon mode, and a tone generator to allow the sending of Morse Code.[8][9]

AN/PRC-103 - (Air Force) Rescue Swimmer Radio.[8][10]

AN/PRC-112 - Offers Synthesized radio in the VHF and UHF aircraft bands. A PRC-112 and a hand held GPS were used by Capt. Scott O'Grady when he was rescued after being shot down over Bosnia.[11] The AN/PRC-112B, initially known as the Hook 112, is a PRC-112 modified to include a GPS receiver, allowing encrypted position information to be sent. Also has Cospas-Sarsat beacon. The latest model PRC-112G, built by General Dynamics can communicate with satellites as well.[12] Over 31,000 radios in the PRC-112 family have been produced.[13]

AN/PRC-125 (Navy) Rescue Swimmer Radio.[8][10]

AN/PRC-149 Rescue Radio, replaces the PRC-90, PRC-112 and PRC-125 for non-combat use.[14] Includes GPS and Cospas-Sarsat beacon.[15] Operates on 121.5 MHz, 243.0 MHz, and 282.8 MHz and 406.025 MHz. Built by Tadiran, the PRC-149 uses standard D cell batteries, unlike other units that took special batteries.

An AN/CRC-7 rescue radio

AN/PRQ-7 Combat Survivor/Evader Locator (CSEL) combines selective availability GPS, UHF line of sight and UHF satellite communications along with a Sarsat beacon. It can send predefined messages digitally along with the user's location.[16][17] As of 2008, the PRQ-7 cost $7000 each, "batteries not included." A rechargeable lithium-ion battery pack cost $1600, while a non-rechargeable lithium-manganese dioxide unit cost $1520.[18] As of Oct, 2011 Boeing has delivered 50,000 PRQ-7s.[19]

AN/URC-4 - 121.5 and 243 MHz[8]

AN/URC-11 - (243 MHz), "A" versions replaced one audio tube with transistors.[8]

AN/URC-10 - The RT-10 are subminiaturized, completely transistorized UHF radio sets. They consist of a crystal-controlled receiver-transmitter, a 16-v dry battery, and a power cable assembly. The unit operates on one channel in the 240-260 MHz band, usually 243 MHz. RT-60 and RT-60B1 were two frequency versions of the RT-10[8][20]

AN/URC-14 - (121.5 MHz)

From Wikipedia https://en.wikipedia.org/wiki/Survival_radio for references and web pages

From the Editor

I had a good for me Straight Key Night. Even though I was busy with other things I made two contacts. Each one lasted over a half hour. They were fun!

The survival radio article which I added to Hamtrix, brought back memories from work. They mentioned ELT's (emergency locator transmitter) Of course most planes that landed at MKE had one. So, if one went off, we were informed very fast. That's because Air Traffic was required to monitor the emergency frequencies. These were the same frequency the ELT's transmitted on with a two tone wailing signal.

Generally a couple of us went out with our aircraft transceivers and looked for the ELT by just turning the rf gain down until we were right on top of them. Then we had to have it turned off. Sometimes it was more fun. Like a Uhf ELT in a parachute at the 128 air force base. There was one type of aircraft in commercial service where the ELT went off if it got wet with deicer liquid. That was so common I knew where to go to turn it off!

Another time I was called in at night to find one. It turned out to be one of the 440th's transport planes. So after getting permission to go on their apron. I started looking for it. No luck finding it so a tech was called in. We then looked on each plane one at a time. That involved getting on top of the fuselage and walking back to the tail with a portable receiver. We did find it and got it turned off, so Air traffic had some peace and quite.

What I found interesting about that was the feel when walking on the top of a plane. You can feel they are made to be light weight. The last round thing I had walked on was a submarine. That was very solid which is no surprise!!

Enough stories.

73
Frank KA9FZR

Swap Corner

If you have something ham related you are looking for or you would like to sell or give away. I would be happy to post them in Hamtrix

Editor

CW Practice

One of the best and maybe the only way to get better at CW is practice. Having someone else who also wants to practice also helps. Just makes it more fun.

The West Allis Radio Club is going to try to help. We are running a CW practice net on Monday at 8pm The repeater is 147.045+ 127.3 the CW portion is on HF

Mike WO9B has been joining me and setting up some practice but we are open for suggestions on where to go with this. Come join us.

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