CAARA NEWS

Cape Ann Amateur Radio Association
Gloucester, Massachusetts
MARCH 2022 EDITION

PRESIDENT'S COLUMN

by Brandon- NQ1W

Hello Members!

I hope you all are doing well and staying safe out there.

Big news is that based on the current numbers it really looks like we can start to plan in person meetings at the club house (again) this March. We'll keep people posted if plans change but the rate of infection in Essex county has been dropping precipitously. Members will be able to get together for Tues night open house again too if they have not begun already by the time you read this.

Well things have been going along well on the Nets and I hope that more of you will try your hand at Net control operations at some point in the future. There is still a need for a Net Controllers that can substitute in for existing operators or who can operate close enough to the repeater site for good copy during inclement weather events. We can never have enough people with this experience. If you are interested in a 6pm net slot please let Kevin K1KL know or for our Sunday Night CAARA net please let Jeff W1XTX know and we can set you up to try your hand at net control operations.

Also, we have some fairly large shoes to fill in the our Public Events committee with Chris W1TAT moving in April. We have some major events coming up and desperately need volunteers and operators for the 2022 season. These public service events are crucial to CAARA and our mission to offer our radio skills to the benefit of community safety and the position of Public Events Coordinator is a very high profile position. Please consider inquiring about this position with the board@caara.net or email me directly with candidates. We can get a new person onboarded pretty quickly and painlessly. And we need that position filled ASAP.

And just so you know that it is not all work over at CAARA. We'll have some more information coming your way about some fun events in the near future based around building electronics and learning electronics techniques like soldering, understanding signals, or microcontroller applications. We have a couple things lined up for interested hobbyists. Listen in to our Nets and watch this space for more about them.

By the time you have read this many of us will have already been together up at Halibut Point State Park in Rockport for an outdoor meet up and my hope is that we will be doing many more of these field events over the next few months as the weather gets better. This one was a POTA informational event but we may find ourselves operating outdoors in other contexts too. For instance we may just get together to grill hotdogs. I like that we can mix up the indoor and outdoor activities as it makes for more interesting get togethers.

I hope everyone enjoys the last days of winter and starts looking forward to the future. We are going to have a fun spring!

Regards,
Brandon Hockle NQ1W
President CAARA

THE EMCOMM MINUTE

By Dean- KB1PGH

So for amateur radio emergency communications we have access to the frequency spectrum that other agencies can only dream about. Not only do we have our established 2 Meter and 440 MHZ repeaters we can use but that`s only the beginning. Lets say that CAARA`s repeaters are "Knocked Out" for whatever reason and we can`t access them. So what do we do?

Of course we also access the other repeaters in our area such as the NSRA repeaters and the one in Beverly and Ipswich and Topsfield. There are also amateur radio

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CAARA Newsletter is a monthly publication of the Cape Ann Amateur Radio Association (CAARA).

Jon Cunningham- K1TP Editor
Dean Burgess- KB1PGH Reporter

Welcome to CAARA:

CAARA, an ARRL affiliated club, operates the 2 meter W1GLO repeater on 145.130 MHz with antennas located on the ATT cell tower in the Blackburn Industrial Complex in Gloucester Massachusetts. It has an average effective radius of 60 miles, and serves Eastern Massachusetts, Cape Cod, Rhode Island, Southern New Hampshire, and maritime mobile stations.

CAARA also operates the W1GLO repeater on 224.900 located at the CAARA clubhouse.

The 443.700 repeater is now on the ATT cell tower in the Blackburn Industrial Complex with greatly enhanced performance running in fusion mode and linked to 10 other repeaters in the New England area.

The Association is one of the few amateur radio clubs that has its own clubhouse. Located at 6 Stanwood Street in Gloucester, with s variety of HF stations with beam, vertical, or G5RV Antennas.

Amateur radio exams are held on the second Sunday of each month at 10:00 AM at the CAARA clubhouse. Anyone who is considering a new license or an upgrade, is welcome to test with us. Currently pre-registration is necessary. Contact the head of our VE team Bill Poulin-WZ1L if you have any questions about monthly testing.

Monthly member meetings are held on the second Saturday of each month at noon except for July and August.

Each Sunday evening at 9:00 PM, the club operates a 2 meter fm net on 145.130. This is an open and informal net which disseminates club news and prepares operators for emergency communications work. All are invited to check into the net as club membership is not a requirement.

The club is open every Tuesday from 5-8PM for CAARA members to stop by and socialize, as well as use the extensive collection of ham radio gear.

operators around who have portable repeaters that can be put on a back of a pick up truck for local access. Plus CAARA has a 220 MHZ repeater at the clubhouse, but I`m not quite sure of it`s status.

Ok, so lets say all of those repeaters are unavailable-so what do we do? Well we can operate 2 meters and 440 MHZ simplex from mobiles and handhelds. I myself have a complete 2 meter and 440 MHZ portable base station set up that I can throw in the back of my car. I have a 2 meter/440 MHZ ARROW J pole antenna that can be raised 20 feet on a Buddipole mast,or any other mast, and with my 50 watt Yaesu FTM 400 DR I can reach some pretty good distances for repeaters or simplex use.

Now, let`s say the challenge is to operate emergency communications without VHF and UHF. Well lets go to HF. We have 6 and 10 meters available to us for local communications. I have a 10 meter mag mount I can put in my car real quick or set up a 10 meter vertical Buddipole and I can operate all over Northeast Mass with no problem. After all that we still have the internet available to us. With the hotspots out there and Openspots and DMR we still can get a message through The point I`m making is that in amateur radio we have many options and ways to get a message out when other modes that even we have fail.

The next item I would like to move on to is to take a look at the one obvious item that every ham should have in their shack and that is a AC/DC Digital Multi tester or DMM. My first piece of advice is don`t get one of the $10 cheap testers at Harbor freight. Spend a few bucks and get a decent one. Multi testers can cost as much as $200 but that`s going way overboard. The one in the photo is my Klein Tools MM 400 tester. It costs about $50.00 and is rated up to 600 volts.

Let`s take a look at why you should get a meter for amateur radio purposes. You can test all your HT batteries to make sure they have a correct charge. You can even test your HT charger to make sure its charging correctly. You can check the voltage coming out of your rigs power supply and what voltage is going into your rig. You want to make sure that there are no voltage drops so your HF rig is getting the 13.8 volts it needs. You can also check he voltage coming out of your homes electrical outlet to make sure its 120 volts. If you operate portable you can check the voltage on your battery. One neat trick is that you can test to see if you have a short between the center conductor of you coax and the outer brand with the continuity. Of course a multimeter has a bunch of uses in kit building where you can check resistors, switches, transformers, amperage up to 10 amps and continuity in wires and circuit boards. Of course I don`t have enough room to think of all the home uses for a multimeter. The Klein tools MM 400 meter that I have is rugged for outdoor use. I like that it has a nice backlight and that the display is easy to read. It is also auto ranging unlike the cheaper ones. You can also get a hard carry case for $10 on Amazon which I would recommend so you can store the probes and manual with it.

Since I had mentioned the Buddipole Antenna system and the ARROW J Pole antenna I thought I would give you some websites to check out for portable HF and VHF/UHF antennas. Here we go: www.buddipole.com,www.arrowantennas.com, www.outbacker.biz,www.alphaantenna.com and www.alexloop.com .You can also Google "Portable HF antennas" and you will find a bunch of Chinese made knock offs on Amazon too if you type in "HF portable antennas. You can also find portable antennas at www.mfjenterprises.com and www.dxenginnering.com as well. That`s it for now and I'll see you next month!

SUPPLY LINE

By Dr. Curtis Wright-*AA3JE*

The beauty of being retired is that you never know what will happen on any given day. In the old days, you just had coffee, and went to work. Not so these days.

This adventure started when I finally gave in and picked up the box of tools from the dining room table, and took them out to the garage. The presence of the tools had elicited comment.

It's late winter/early spring up here, and the snow has melted down into extremely slick ice. After going back in the house and changing my boots, I strode confidently the 25 yards to the garage. (Fell only once).

Putting down the box, I noticed a flashing alarm light on the generator auto-disconnect switch. So I wandered out, dug away the snow, pulled the generator cover, and hit the "Manual Start" switch.

"Clunk"

I tried again.

"click."

Obviously a dead battery. This surprised me as I had just changed out the battery….. (I counted on my fingers), five years ago. The mean time between failures of cheap lead acid storage batteries. Dead battery. Need new battery. I drove to "Manly Supply", the local feed, tools, batteries and everything else store. Knowing that the brands they stocked might have changed, I asked for help.

"Need help with batteries."

"I will be glad to help you sir."

"Need to match this one I bought here five years ago."

The nervous look on his face suggested things might not go well. We walked to the battery rack.

"Here is where the batteries are, Sir."

I looked. Yep. All new brands, evidently from Yugoslavia. Completely different markings.

"I need 575 Cold Cranking Amps, 75 ampere hours."

A blank look.

"Have you ever sold a battery before?" I asked.

"Bud usually does the batteries. He works Monday to Friday. Can you come back?"

"What do you do? I mean what do you sell?"

"Dog food. Need dog food? I am really good with dog food."

There was a tattered pamphlet by the rack, and after ten minutes of scrutiny, I found a battery that claimed to be big enough. I bought it for twice what I paid five years before, and drove home. The battery installed easily, cranked and started the generator easily, and all I had to do was re-connect the float charger.

No color coding on the leads. So I went to get the VOM. No test leads. So I got down the box labelled test leads. None fit. This VOM required something other than banana plugs. So back to the house, down to the storage room. (Only fell twice on the ice).

An hour later, I found the right leads, and hit the power switch. Dead battery. Gathering up a 9V battery and a small Phillips after another 20 minutes of searching, I swapped the battery in the VOM. I checked the polarity,

connected up the float charger, and went into the garage to plug it in.

Disaster. Amber fault light.

Off to the store for another float charger.

“Didn’t I sell you one of these before?” said the clerk.

“I have three. One pooped out.”

“Really? I never had one fail. What’s the problem?”

“Amber fault light.”

“Look again. The red one bleaches out. Looks kind of amber. Red means it’s charging.”

Back to the garage. Charger unplugged, 12.25 V, Charger plugged in 12.57 V. Charger OK.

Put everything away, go back to the house. (Fall again). Total time, four hours 30 minutes.

But the box of tools was off the table. I got points for that.

A VERY SHORT LIST OF AMATEUR RADIO TERMS:

AF (Audio Frequency)
AFC (Automatic Frequency Control) – automatically compensates for frequency drift.
AFSK (Audio Frequency Shift Keying)
AM (Amplitude Modulation)
AMSAT (AMateur SATellite) – amateur radio communications via orbiting satellites carrying amateur radio equipment installed before launching.
AMTOR (AMateur Teleprinting Over Radio) – a form of radio teletype.
ANT (ANTenna)
Antenna impedance – the impedance (or “resistance in an electric current to a flow of alternating current”) of an antenna at its resonance. Although an antenna’s impedance fluctuates with the frequency of operation, an antenna should be 50 Ω for most transceivers.
Antenna matching – to make sure that the antenna’s impedance at resonance is at optimum performance for your transmitter output circuit.
Antenna tuner – a device used to match an antenna to the output impedance of a transmitter.
APRS (Automatic Position Reporting System) – in conjunction with a GPS and TNC, provides position reporting.
ARES (Amateur Radio Emergency Service) – a public service organization of the American Radio Relay League.
ARRL (American Radio Relay League) – the national association for amateur radio in the United States.
ASCII (American National Standard Code for Information Interchange) – a seven-unit digital code for the transmission of teleprinter data.
ATV (Amateur Television) – sending television signals over amateur radio frequencies.
Autopatch – used for telephone connection to amateur radio equipment.
Average power – power, as measured on a standard power meter.

Backscatter – a form of ionosphere propagation of radio transmissions.
Band – a range of frequencies.
Bandwidth – frequency needed for a particular type of radio transmission.
BFO (Beat Frequency Oscillator)
BNC (Bayonet Neill-Concelman) – a type of antenna connector.
BPF (BandPass Filter) – allows only certain ranges of frequencies to be received or transmitted.

Call sign – a unique sequence of letters and numbers used to identify amateur radio operators and issued by the FCC.
Carrier wave – an unmodulated transmitted signal.
CBR (Cross Band Repeater) – a repeater which receives incoming signals and retransmits them in different bands; e.g., receives 144 megahertz (MHz) bands and retransmits 430-440 MHz bands.
Club station – in the United States, special call signs might be made available for clubs, and are frequently used at a club station established for use by the club's members.
CPU (Central Processing Unit)
CQ – radio communications term used to call others.
CW – carrier wave (Morse Code communications).

Data communications – transfer of data between two or more locations.
dBd – unit of RF power as compared to a dipole antenna.
dBi – unit of RF power as compared to an isotropic antenna.

dBm – decibel measure; 1 mW with a load impedance of 600 Ω (0 dBm=1 mW).
DC (Direct Current)
DC ground – a connection point directly to a chassis or battery ground to prevent the buildup of hazardous DC voltages.
Deviation – measurement for FM signals for the maximum carrier frequency changes on either side of the carrier frequency.
Distress call – signals a life-threatening situation. Most commonly referred to as an SOS or MAYDAY call.
Distress frequency – a frequency or channel specific for use in distress calling. Radiotelephone distress frequencies are 2.182 MHz and 156.8 MHz. Survival craft use 243 MHz. Maritime distress frequencies are the same, while general aviation frequencies are 121.5 MHz.
Downlink (↔Uplink) – the frequency that a repeater or satellite transmits on to a user.
DSP (Digital Signal Processor) – used to improve the signal-to-noise ratio, for clearer and more legible communication. Relatively new to the ham radio.
DTCS (Digital Tone Coded Squelch) – a selective call system.
DTMF (Dual Tone Multi-Frequency (or touch-tone)) – used to transmit and/or receive numeric information, such as phone numbers or remote radio control commands.
Dummy load – a nonradiating 50-ohm load connected to the transmitter, instead of to an antenna, for testing purposes.
Duplex – an operation mode in which the transmit and receive frequencies are different.
Dx'pedition – a trip to a foreign country to set up and operate amateur stations in exotic locations.

EME (Earth-Moon-Earth) – radio signals bounced off the moon and returned to Earth.
EMI (Electro-Magnetic Interference) – often called RFI (Radio-Frequency Interference).
Emission – transmission of a signal.

Fading – signal reduction due to atmospherics.
FCC (Federal Communications Commission)
Filter – a circuit designed to pass only the desired frequency(s).
FM (Frequency Modulation)
FSK (Frequency Shift Keying)
FSTV (Fast Scan TV) – graphics (and audio) communication using TV broadcast signals.
Full duplex – an operation mode which transmits and receives on different frequencies at the same time, as in a normal telephone conversation.

Ground Plane – a type of omnidirectional antenna
Ground Wave – electrical wave directly travelling from transmitter.
Grounding – electrical connection to the earth.

Harmonic – multiple of a fundamental frequency.
HF (High Frequency) – 3-30 MHz-range signals. Commonly known as "short wave."
HPF (High Pass Filter)
Hz (Hertz) – one cycle of an electromagnetic wave. A "KHz" is 1,000 cycles per second. A "MHz" is 1 million cycles per second.
IC (Integrated Circuit)
IF (Intermediate Frequency) – internally converted frequency for amplification and other signal processing.
IF shift – a function that electronically shifts IF frequency from a center frequency.
IMD (Inter-Modulation Distortion) – distortion within RF circuits made with upper and lower adjacent channel signals.

LF (Low Frequency) – 30-300 KHz-range signals.
LPF (Low Pass Filter)
LSB (Lower Side Band)

MARS (Military Affiliate Radio Service)
MF (Medium Frequency) – 300 kHz to 3 MHz-range signals, as in AM radio stations.
MIC (MICrophone)
Modulation – method of adding information to a radio frequency carrier.
Morse Code – a very efficient method of communication (see CW) using the International Morse Code. Many hams prefer this method of radio communication over all others.

NB (Noise Blanker) – a function reducing pulse-type noises.
NBFM (Narrow Band FM)
Notch filter – sharp and narrow rejection filter for elimination of interfering signals.
NR (Noise Reduction) – this DSP feature reduces unwanted signal noise.

Offset frequency – frequency difference between transmit and receive frequencies.

OSC (OSCillator) – generates radio frequency signals within transmitters.

PA (Power Amplifier)
PEP (Peak Envelope Power) – RF power at maximum amplitude.
PLL (Phase Locked Loop) – a circuit to synthesize different frequencies for operation.
PTT (Push To Talk)
PWR (PoWeR)

Reflected power – nonradiated power dissipated as heat when the transmitter is mismatched to the antenna or load.
Repeaters – radio systems which receive incoming signals and retransmit them for an extended communication area. Normally put on geographically high locations for VHF/UHF hand portables.
RF (Radio Frequency)
RF ground – connection of amateur equipment to Earth ground to eliminate hazards from RF exposure and reduce RFI.
RFI (Radio Frequency Interference)
RTTY (Radio TeleTYpe)
RX (Receive)

S/N (Signal to Noise ratio)
SAR (Search And Rescue)
Scan – continually sweeping frequencies looking for signals.
Sensitivity – indicates how weak a signal the receiver will pick up.
Silent Key – term for a ham radio operator who has passed away.
SKYWARN – trained volunteer storm spotters for the National Weather Service.
SMA (Sub-Miniature coaxial cable connector) – type of antenna connector, used in VHF/UHF portables.
SP (SPeaker)
Split – mode in which the transmit and receive frequencies are different.
SQL (SQueLch) – a function that mutes audio output unless a strong signal is received.
SSB (Single Side Band)
SSTV (Slow Scan TV) – graphics and image/voice transmission using narrow bandwidth.
SWL (Short Wave Listener) – listening to international short wave bands for enjoyment.
SWR (Standing Wave Ratio) – measurement of forward vs. reflected power output during transmit.

TNC (Terminal Node Controller) – for digital data communication. Also a type of antenna connector.
TX (Transmit)

UHF (Ultra High Frequency) – 300 MHz to 3 GHz-range signals. This range includes "microwave" frequencies with antennas only a fraction of an inch long.
Uplink (↔Downlink) – frequencies used to communicate with the repeater or satellite.
USB (Upper Side Band)
UTC (Universal Time Coordinated) – an astronomical time based on the Greenwich meridian (zero degrees longitude, passing through Greenwich, England).

VFO (Variable Frequency Oscillator) – an operation mode in which the operator can change frequencies freely.
VHF (Very High Frequency) – 30-300 MHz-range signals, as in TV and FM radio stations.
VLF (Very Low Frequency) – under 30-KHz-range signals. Characterized by very long wavelengths. Long used for military communications with submerged submarines.
VOX (Voice Operated transmission)

Mad Magazine's Alfred E. Neuman, now and then!

FOUNDATIONS OF AMATEUR RADIO

How to compare radios

One of the topics I've been talking about lately is the idea that we might be able to measure the performance of your radio in some meaningful way using equipment that can be either obtained by any amateur, or by introducing a process that allows results to be compared, even if they have been generated differently.

Recently I came up with a tool that automatically generates a spectrogram of an audio recording. That on its own isn't particularly interesting, but it's step one in the processing of an audio signal. In addition to the spectrogram, I also created a tool that generates a tone frequency sweep, think of it as a tone that changes frequency over time, let's call it a sweep.

If you combine the two, you can generate a spectrogram of the sweep to give you a starting point or baseline for comparison. You can build on that by using your radio to transmit that sweep and record the result using a receiver. In my initial experiments, I used an RTLSDR dongle to receive the audio with some success and a boatload of spectacular harmonics, but I wanted to find a better, more accessible way to do this and during the week I realised that my Yaesu FT-857d that's sitting in my shack, is connected to a perfectly functional antenna and with a few settings it could do the job perfectly.

One of the biggest issues with my RTLSDR setup was squelch. That is the difference between what is a legitimate transmission and what is noise. Set it too high and you hear nothing, set it too low and you hear everything, including background noise.

Since the VHF or 2m noise levels are quite high at my location, or QTH, I normally have the squelch completely closed. This is fine if you're normally using a strong repeater, but if you're attempting to receive a weak hand-held, that's never going to work.

As any self-respecting amateur I was dragged down the path of last resort to read my user manual where I discovered that in addition to CTCSS, a way to transmit a tone to open a repeater, there's also a setting called Tone Squelch or on my radio TSQ, which will keep my radio squelch closed, unless it hears the CTCSS tone from another radio.

Truth be told, I had to read a different user manual to discover how to actually set the CTCSS tone on my handheld to test, but that's just adding insult to injury. It has been a while since I read any manual, even though I try to get to it once a year or so. I blame it on the lack of field-day camping. That's my story and I'm sticking to it.

So, combining all this, the spectrogram generator, the sweep, CTCSS, and adding a Raspberry Pi with some website magic, if you're interested, an AWS S3 bucket, I now have a service that listens on a local frequency, opens the squelch if it hears the correct CTCSS tone, records the incoming signal until it stops, then generates a spectrogram from that audio and uploads it to a web site.

None of this is particularly complicated, though I did have some bugs to work through. I've published the code as a branch to my existing frequency-response project on github and I've asked my local community to experiment with what I have on-air before I start doing more far reaching experiments.

For example.

If I were to tune my radio to a local repeater output frequency, rather than the simplex one I'm currently on, I'd be able to record and generate spectrograms for each transmission coming from that repeater. If that repeater was connected to the internet, using AllStar, IRLP, Echolink, DMR or Brandmeister, or even all of them, the global community could send their audio to my recorder and it could generate a spectrogram on the spot.

If using that repeater, you played a sweep into your microphone, or used your digital audio interface to play the sound, you could then compare your signal path against others and against the baseline response.

One of the issues with doing this is that much of the audio that travels across the internet is pretty munched, that is, it's compressed, frequencies are cut-off, there's all manner of interesting harmonics and the value of the comparison appears limited at best.

Once I have my multi-band HF antenna, which I'm told is still being built, I intend to set this contraption up on HF where we can do point-to-point recordings and we end up having a direct comparison between two stations who transmit into my frequency-response software.

I should add some disclaimers here too. At the moment I'm only using FM. The intent is to get this to a point where I can compare any mode, but when I move to HF, I'll likely start with Single Side Band and go on from there.

One other annoyance is that any user needs to configure CTCSS to make this work, which is yet another hurdle to overcome, not insurmountable, but I like to keep things simple when you're starting to learn.

Also, the harmonics still show, even on an analogue radio, so there's plenty more to discover.

In the meantime, what kinds of things can you think of to use this for?

I'm Onno VK6FLAB

Have you paid your 2022 dues yet?

Thought provoking keynote speaker at March 12 QSO Today Virtual Ham Expo

Courtney Duncan, N5BF, will be delivering an incredible, thought provoking Keynote Presentation at the upcoming March 12-13 QSO Today Virtual Ham Expo. Courtney will be speaking about the importance of amateur radio and other technical hobbies in advancing mankind's biggest projects. As an example, missions to deep space, the Moon and Mars, are supported by JPL and NASA engineers, many of whom are amateur radio operators. Courtney recently retired from NASA's Jet Propulsion Laboratory after 35 years of working on radios for spacecraft including the Mars Rover and helicopter. He is currently President of the San Bernardino Microwave Association and active in EME Moonbounce and 10Ghz contesting.

Come for the Keynote address on Saturday, March 12th, 2022, at 12:01 PM PDT, in the auditorium at the QSO Today Virtual Ham Expo. More information about the Keynote as well as over 60 additional presentations can be found at https://www.qsotodayhamexpo.com/mar2022presentations.html.

Purchase your $10.00 Early Bird ticket NOW at https://qsotoday.vfairs.com/en/register-form.

ARRL, the national association for Amateur Radio® in the United States, is a QSO Today Virtual Ham Expo Partner. FlexRadio is the Expo's Platinum Sponsor and Elecraft is the Gold Sponsor.

Heil Sound has new top leadership

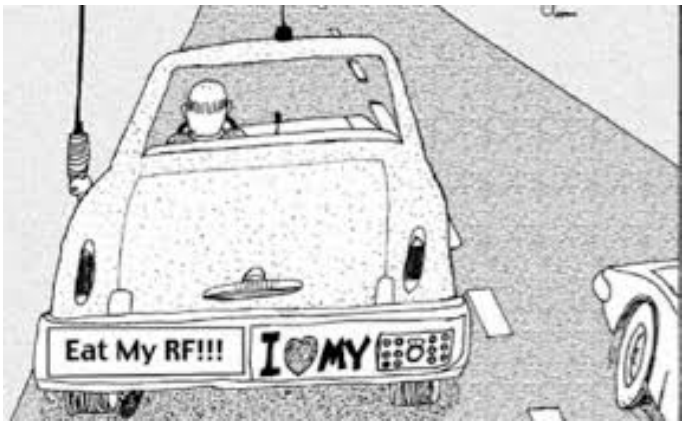
WIA News report that microphone manufacturer Heil Sound has new top leadership for the first time in its 56-year history

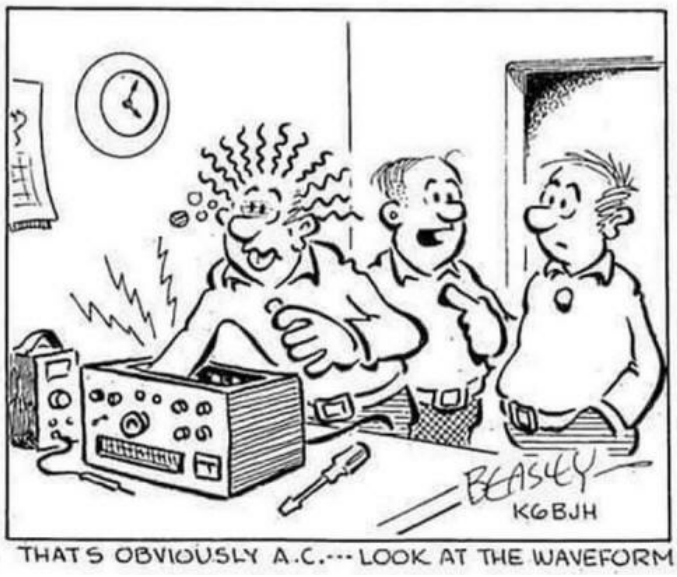
The Illinois-based company said Bob and Sarah Heil have transferred ownership to current President/CEO Ash Levitt and Director of Operations Steve Warford.

Sarah Heil has retired, but Bob will continue to do outreach work and product design within the amateur radio space under the title Founder and CEO Emeritus, it stated.

The company said Levitt and Warford each began working with Heil Sound as teenagers, building and packaging products. Levitt took a different career path in academia for a number of years, but continued to regularly consult with Heil Sound during that time.

He returned to the company full-time in 2017 and assumed the role of president in 2020. Warford worked his way up in the company during his tenure and has been responsible for daily operations for the past several





YAESU FTM-200DR...NEW RADIO

Dual-Band 50W 144/430 C4FM/FM Digital/Analog Mobile Transceiver with BT, GPS & APRS VIDEO

We are pleased to introduce Yaesu's All New FTM-200DR – 50W VHF/UHF Dual Band C4FM/ FM Mobile Transceiver.

The new FTM-200DR is a C4FM Digital Multi-Functional transceiver with a single receiver.

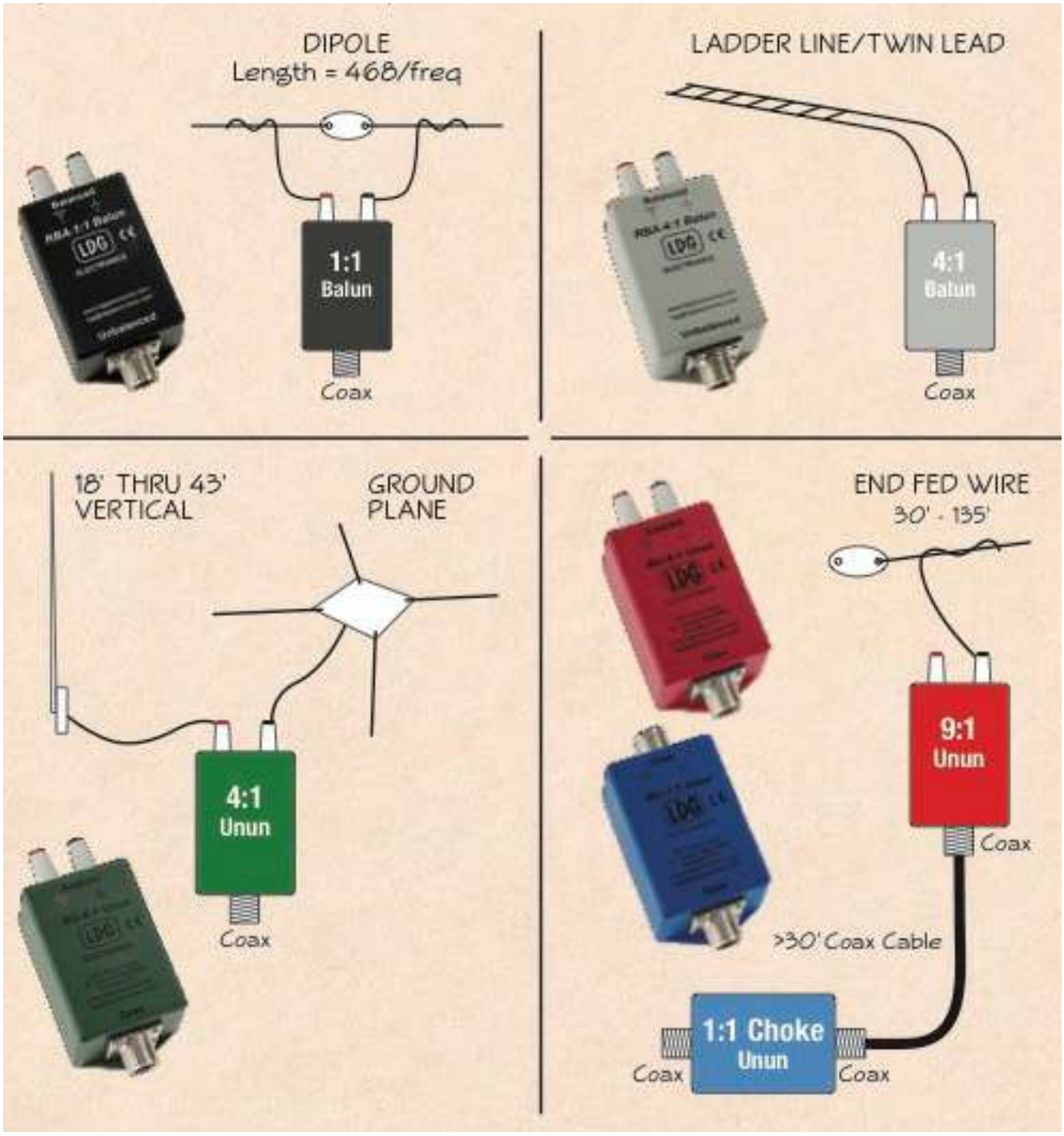
The FTM-200DR delivers reliable and stable 50W Transmit Performance. The heavy-duty heat sink is equipped with FACC (Funnel Air-Convection Conductor). The speaker delivers 3 Watts of Clear and Crisp Receive Audio which has been specifically tuned for radio communication. 2-inch Full-color display provides high visibility and highlights the frequency of the operating band with selectable color – White, Blue or Red. Front panel of the FTM-200DR is detachable and can be mounted at the most desirable operating position. The new FTM-200DR supports optional Bluetooth® wireless operation using the SSM-BT10 Headset or a commercially available Bluetooth® headset*.

1104 Memory Channels can be programmed with 16-character alpha-numeric tags. The MAG (Memory Auto Grouping) function allows memory channels to be automatically categorized in each band, ALL, AIR, VHF, UHF and OTHER.

The C4FM Digital Communication features which are already popular in the market, such as Automatic Mode Select (AMS), Digital Group ID (DG-ID) operation, and Smart Navigation Function are available with the new FTM-200DR. The FTM-200DR supports the Worldwide WIRES-X Internet Communication. A Fixed Node using an HRI-200, or a Portable Digital Node can be easily set up with the optional SCU-40 Cable Kit.

New Custom Function List (CFL) of the FTM-200DR quickly recalls a list of frequently used functions by simply pressing the [F Menu] key. 10 functions are listed by default, and up to 8 functions can be customized from the 124 items of the setup menu.

Where to use Baluns & Ununs



This would be a good club project, very easy to build. You can find many articles on the use of baluns and ununs and detailed plans on how to build them and where to obtain the necessary parts. If interested in building one or watching how they are made, contact any board member and suggest the idea.

CROZET ISLAND DXPEDITION

After the permission granted by the TAAF and the DXpedition announcement, time has come to gather the equipment and move forward with the preparations. As you can see on the picture below, talks are extensive!

Dates are now known. The Marion Dufresne will leave Reunion Island on December 8th, with a stopover at Tromelin to resupply the people there (another nice DX), then bound for Crozet. I should get there around Christmas.

The ship will come back on March 26th, 2023, to pick us up, and after stop-overs at Kerguelen and Amsterdam, arrive at Reunion on April 16th, 2023. Therefore, I will be on Alfred Faure base for a solid 3 months. These dates may vary slightly depending on weather conditions.

I am in close contact with the TAAF (Many thanks to the man in charge of Crozet, and to Mr. Chareyre for their attention) in order to prepare my arrival in the best possible conditions. Some of the main points under

discussion are where the antennas (HF and QO-100) will be installed, as well as the shack.

Obviously, I will not start operating the day after my arrival. I will need to install the antennas and the station. For that, other people's help will be required. The weather will have its role to play, as it would be

impossible to climb to the roof, erect a mast under high winds: the base commander will have to give his approval. Starting the operation will not be the top priority of the first day.

The callsign is not issued yet, and I have requested a special call to commemorate the 60 years of the first transmissions made by Mr. Baudelot, first ham operator on the island in the years 61/62. The callsign will be released only hours before the start of the activity by Paul F6EXV and Jean-Michel F6AJA, i.e. after my arrival on the island. Paul will inform via internet and Twitter, Jean-Michel on his DX bulletin. This will be so to

avoid pirate activities. Anything not coming from Paul or Jean-Michel will be mere speculation. Be cautious of the FT4Wxxx that might show up !

As for the equipment, things are also progressing. Many sponsors have kindly responded to our solicitations. Contrary to our initial information, I will not be using K3s. Since Elecraft no longer produces K3S, it was

difficult for them to loan or sell some to me. They mentioned a K4 but I do not want to go with only one transceiver, I need at least a second one in case of break down. Considering the procurement problems that all manufacturers are facing, I did not want to take any risk. Consequently, I have decided to use a transceiver that I have at home, as well as used by F6KOP for their DXpeditions, namely the TS-590. It is fully equipped, and has a big advantage: no interface required to operate FT8, a mere USB cable between the rig and the laptop is enough. Antenna plugs, a receiving antenna connector, an RS232 interface, USB, all filters and ATU. So no further options will be required. Furthermore, it has a great receiver, and can be easily found second-hand at very reasonable price.

So, I purchased a TS-590 which is right now being modified by the Kenwood after sale service, to solve the known ALC issue. This modification is covered by the Kenwood warranty. I will soon purchase another 590 that will also be modified.

On the amplifier side, after talks and advice from the Clipperton DX Club and the F6KOP team, I have chosen a 500W tube amp, the Acom 1010, less fragile than solid state amps. It can bear with a 3/1 SWR, which

is a great advantage for a place where I will not be in full control of the environment. So I will purchase a 1010 and have another one loaned by the CDXC via F6KOP. Let them be thanked for this.

I also thank Acom company for the discount they are offering for the purchase, but this is not a gift. They are doing the best they can, still, the cost is not negligible in the overall budget.The antennas will be the subject of another press release, after we have made some tests at Paul's QTH in the spring. More to come later.

I have asked the TAAF to get permission to send part of the equipment with the previous ship supply mission (leaving in November). It sometimes happens that, because of the weather during landing, not everything can be brought to the island. Imagine being on the island without a station! As I often say, Crozet is not Tahiti !

A lot remains to be done. Going to the TAAF islands for 4 months needs a lot of work, and is to be deserved. One of the next items on the agenda is winter clothing, and organizing skeds with school children's via QO-100. Thank you to all the team members as well as to our sponsors, nothing would be possible without them.

TRAGEDY IN BRAZIL: RADIO AMATEURS PROVIDE SUPPORT

Brazil's LABRE reports on the amateur radio response to the landslides and flash flooding that hit the Brazilian city of Petrópolis on February 15

The tragedy caused by a storm in Petrópolis two days ago [Feb 15] already accounts for more than a hundred fatalities. It was a very large volume of rain, 240 mm, in about two hours, the worst since 1932.

At that time, a group of radio amateurs organized and trained to act in emergency was activated, the ROER Network of Emergency Operations of Amateurs, petropolis, with great performance in other tragedies in thSee below the report of PY1ZV Fábio Hoelz, how ROER was acting on the first day of the disaster.

Today, Rio de Janeiro already has its REER - State Network of Emergency Radio amateurs, linked to the State Civil Defense and coordinated by PY1IBM Sales Morenno. Py1ZV itself is the coordinator of the Serrana Region 1 of REER-RJ.

It is up to REER-RJ to coordinate, within the scope of the State Civil Defense, the action of radio amateurs, providing support to local networks such as ROER, which is linked to the Municipal Civil Defense. RENER is the body that brings together state networks. Thus, we are all together, speaking the same language and acting in harmony. The biggest beneficiaries are those who can count on the work of volunteer Radio Amateurs, especially those working directly at the disaster site.

Summary of the first day of ROER operation in response to storms in Petrópolis

• A station was installed in charge of firefighter operations at 15°GB and an operator with a portable radio was sent to the Civil Action Command at the Civil Defense Headquarters and to the Advanced Fire Station in the Alto da Serra region.

• In a second moment, a station was activated at the Civil Defense headquarters with an advanced operator with the leadership and command of the actions, and another at the advanced command post in the Alto da Serra region, as a time to improve and stabilize communications and improve signals. through GO-BOX system and antenna base and launched advanced operator with rescue teams.

• Portable station launched at IML and Alcides Carneiro Municipal Hospital.

• Two repeater systems were used for communications: one for VHF and the other for UHF located in Morro da Bandeira. Both are maintained and owned by ROER and all non-emergency traffic was directed to the VHF ARP Repeater, also in the same location.

• In addition to these actions taken, ROER is in charge of maintaining the City Hall's private VHF system, which is meeting the demands of the Municipal Guard, Petropolitan Transit Company, Secretary of Civil Defense and Secretary of Health.

• Traffic was relatively small throughout the operation, especially in the afternoon, when cell phone signals were restored in the crisis region.

Summary of the SECOND day of ROER operation in response to storms in Petrópolis

• Improvements were made to the station in charge of firefighter operations on the 15th GB with the arrival of support from GRATE – GREMIO DE RADIOERS

DE TERESÓPOLIS, and also to the station at the advanced base in Bairro Alto da Serra with an antenna for UHF, now giving operability 100% on all available ROER system repeaters and point-to-point for operation.

• A new semi-portable station was launched to assist the State Civil Defense.

• IML operator was demobilized for reestablishment of modal communications with the agency

• The station was maintained in the Vila Felipe community.

• The conduct continues to be to use two repeater systems for communications, one VHF and one UHF linked, located in Morro da Bandeira, owned and maintained by ROER, and all non-emergency traffic was directed to the ARP Repeater of VHF also in the same location.

• At various times, radio amateurs were deployed together with firefighters in the Alto da Serra locations.

• At dusk, the power supply at Morro da Bandeira was discontinued due to a strong electrical discharge that also took the Petrópolis City Hall repeater station off the air, and access to the maintenance site is blocked by two barriers and a power pole. listed, this region is sensitive because it concentrates all the Internet links, Radio and TV transmitters and repeaters of public (fire department and Military Police) and private services. The ascent of a mission composed of a backhoe loader team, maintenance of the energy concessionaire and ROER is scheduled to try to restore the system of the City Hall.

• On this second day, even with modal services re-established for a large part of the municipality, traffic was intense due to the logistical needs of the points supported by the Amateur Radio Network. The system proved to be very efficient and faster in responding to requests than those made by standard means (Whattsapp, cell phone) which generated this large flow.

Source LABRE: https://tinyurl.com/IARU-Brazil

SOUTH GOBI REGION, MONGOLIA

Mats, RM2D (SM6LRR), will be active as JT4RR from South Gobi Region, Mongolia, between March 20th and April 5th. He also mentions that sometime in March-April and in July-August, he is planning a few days of activity as JT4RR/P from the South Gobi Desert.

He states on QRZ.com [edited]: "It will not be a regular DX-pedition, but rather a bit of extreme portable operation, using Lab599 TX-500 Heavy Duty QRP-Transceiver with 5-10 watts (99% CW) and a vertical antenna with three elevated resonant radials on a DX Wire Mini glass-fiber pole.

Possibly, I will be able to use a 50W amplifier provided that I will find a suitable battery power source. Activity will be every 14 days on my day off from my work at the Oyu Tolgoi Copper & Gold Mine. After a month, it could be activity once per week. Most likely days of operations will be Sundays, but these second month on each Roster swing, Thursdays may be alternative days. I will be 10 weeks on site and 5 weeks home in Russia as it looks now. Normal Rosters are 4/2 weeks, but COVID changes that a bit to longer Rosters.

As an FYI the ARRL announced this morning some relevant changes to the rules that will take effect for this years Field Day. A couple of them are actual rule changes, others were temporary waivers put in place the last couple of years that have been made permanent.

2022 FIELD DAY CHANGES by Larry AJ1Z

Briefly, the highlights I gleamed are:

Maximum allowable power is now 100W PEP. The 5X power multiplier for QRP stations remains and the 2X power multiplier still applies for stations running between 5-100W and the high power category (which was 150-1500W PEP TX) no longer exists. I personally like this rule change as it levels the playing field a bit for portable ops as well as those who have more modest home stations.

The waiver allowing Class D stations to get credit for contacts made with other Class D stations is now a permanent rule. The point aggregation plan combining multiple stations under a club's submission is also now a permanent rule.

The 100 point media publicity bonus now requires actual publicity, unsuccessful attempts do not count. Posting details of the event on a "club media site" or for example on a club Facebook site, counts

2022 ORLANDO HAMFEST

I got these photos from friends who attended the 2022 Orlando Hamfest. I have made the trip once and it is not much different from the Boxboro Event.

Wear a hat and plenty of sunscreen, bring water, the heat is intense.

Looks like a simple project for a club meeting.

Messages from radio amateurs in Ukraine

On the morning of Thursday, February 24, the Ukrainian Amateur Radio League (UARL / LRU) circulated a message to radio amateurs world-wide and another to amateurs in Ukraine

Dear friends,

Early this morning russia launched a war with Ukraine.

Military facilities and airfields in some cities, including Kyiv, were shelled.

Also Ukraine was attacked from the east from the territory of Russia, from the north from the territory of Belarus, from the south from Crimea.

Thanks from Ukrainian citizens to USA, Great Britain, Canada, Poland, Baltic countries, Czech Republic, some EU countries for help and weapons.

Martial law has been imposed in Ukraine today.

There is a ban on the operation of amateur stations in Ukraine for 30 days beginning today.

Anatoly Kirilenko, UT3UYed for this.

FROM THE EDITOR- Jon K1TP

The next issue will include a story and pictures of a ham event at Halibut State Park. All hams are invited to participate by just showing up and saying hello. Some hams will setup portable stations and antennas and make some contacts around the world. Some stations might activate and run stations on POTA (Parks on the Air).

We will cook hot dogs and provide some drinks, all are welcome! Listen on the CAARA repeater for the date.

I would love to receive some articles coming from hams in the club, photos of your shack, old photos, portable ops, etc. for the newsletter…..my email is **jpcrockport@gmail.com**

If you have any radio gear for sale we will list it free here in the newsletter. Just drop me an email with a picture and description of what you have for sale.

TenTec Parts and Service is Discontinued in Sevierville

Undoubtedly everyone has heard of the so called “chip” shortage by now. The shortage isn’t just microprocessors and memory but extends to all levels of the electronics industry, even including even very basic parts such as linear voltage regulators.

No one has ever seen anything like this in the history of the electronics industry. The status of some critical parts like DSP processors are unknown if they will be produced again. Other parts like encoders are 36 weeks delivery. Some microcontrollers are showing more than a year delivery. Some transistors are showing 67 weeks delivery! It isn’t possible to repair units or build radios without parts. Irate customers are calling and emailing Dishtronix and complaining that units are not repaired and demanding returns. All repair radios are being returned to respective owners unrepaired. We do not have recommendations for anyone to do repairs. The inventory is not for sale.

As there are no guarantees that the shortages won’t extend further into the future, there is no alternative except to suspend operations in Sevierville. Unfortunately we will no longer be able to answer email or telephone calls regarding Ten Tec amateur radio products. Ten Tec is not out of business. We are developing new products and will introduce them if and when we can obtain components. When we have resources, we might put some of the parts online in the parts store, but this will not be anytime soon.

Shack Pictures

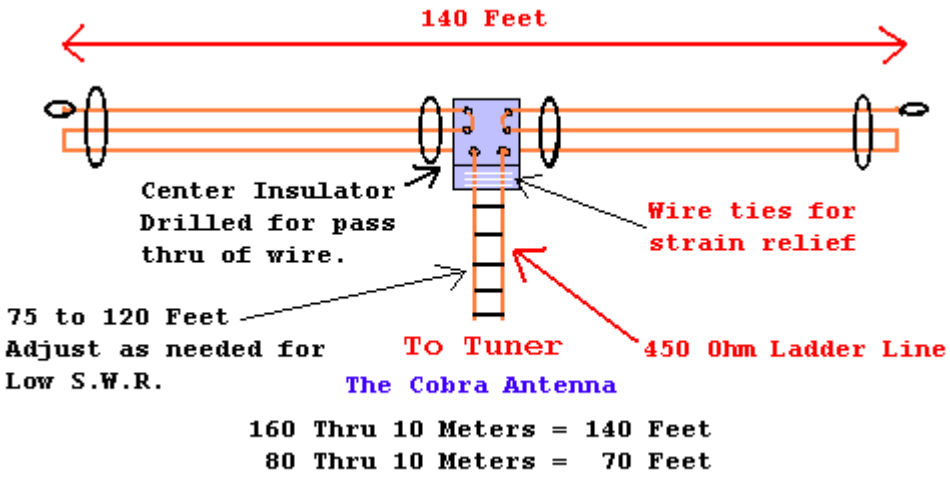
Ham Shack of Jon- K1TP

Studio A: Main radio is an Icom 7600, TenTec 2KW manual tuner, Acom HF amplifier, dipoles and a hex beam antenna.

Studio B: Icom 7300, LDG autotuner, Yaesu FTM 400DR for vhf/uhf.

Portable Ops: Icom 706MKII and autotuner, endfed antenna, Outbacker vertical antenna, and a rotating dipole setup with MFJ adaptor for ham sticks

Cobra Antenna Plans



This is the Cobra Antenna sold by Joe- K1JEK in NH

You could build one yourself with common materials and save a lot of money and have fun doing it!

A good performer on 160-10 meters and a shorter version for 10-40.