The Blurb

Newsletter of The Phil-Mont Mobile Radio Club

Public Service Since 1949

Volume 73 Number 01

www.phil-mont.org

The Making of an RMS Gateway

- Follow step-by-step as Steve Davidson, K3FZT puts a new RMS Gateway into service. - page 8
- Learn 'What Hams Do', a new web series from the ARRL and Jay Silber, WA2UAR- page 5
- Holiday Meeting Memories - page 14
- *AuctionFest!!!* - *page 3*

Get the Net!

There's no ham radio without *YOU*!

Get on the air and share! Operate, cooperate, & celebrate ham radio!

Phil-Mont's Drive Time Net

Join us on the air every Monday to Friday 1700 to 1800 EDT on:

- 147.030 MHz (+offset 91.5 PL)
- Bucks County and North PL 88.5 (147.030)
- Echolink W3QV-R
- ALLSTAR 47970

January Net Control Schedule

1/2 - WA3GM

1/09 - W3UP

1/16 - KB3IV

1/23 - NC3U

1/30 - N3QV

CLUB REPEATERS

VHF: 147.030 MHz (+offset 91.5 PL)

Bucks County and North PL 88.5 (147.030)

UHF: 444.80 MHz Yaesu System Fusion WiresX

ECHOLINK W3QV-R & ALLSTAR 47970

EMAIL REPEATER COMMITTEE

Click Here and Sign Up Today! It's a Fun Way to Meet Our Members!

Sunday Morning Nets

Three Nets on three bands, all in a Row! Tune in on any or all for a Sunday morning 'Hello!'

0930 EDT:

- 147.030 MHz (+offset 91.5 PL)
- Bucks County and North PL 88.5 (147.030)
- 2m, Echolink W3QV-R
- ALLSTAR 47970

1000 EDT:

75 meter Net (3.993 MHz LSB +/-QRM)

1030 EDT:

10 meter Net (28.393 MHz USB +/-QRM)

Club Business

TIME TO RENEW YOUR MEMBERSHIP

Your 2022 Dues Invoice/Directory Information Sheet was sent to you in a separate mailing. Please verify the information and return it with your dues & optional P.M.R.C. SCHOLARSHIP FUND DONATION to: PMRC PO Box 404 Warminster, Pa 18974 OR submit using PayPal.

NEXT GENERAL CLUB MEETING:

Wednesday, January 12th

AuctionFest!!!

At the Ben Wilson Senior Activity Center
580 Delmont Avenue Warminster, PA 18974

7PM Start - (6PM Setup)

It's an Auction! It's a Donation Center! It's a Social Event!

And it's a whole lot of fun!

December Board Meeting Minutes

Call to order by AJ3DI at 7:07 PM
Eyeball QSO - introductions of members and guests in attendance
Repeater Report - K2RSJ
- Scheduling ground level work and climber
Treasurer's Report - KB3IV
- 2022 Dues Invoices going out 12/9
- There will be 4 scholarships for 2022
Membership - KB3IV
- Pending members approved
VE Report - NS3K
- Next in person session 12/13 at Giant Foods, Willow Grove
President's Remarks - AJ3DI
- **Special thanks to Jay, WA2UAR for his support and participation as a board member these past two years and for stepping in for Phila ARES and his work as the EPA PIC, and to Ed, KB3IV for his many years as our club treasurer**.

Election

- Slate approved and duly elected
Year in Review - AJ3DI
Discussion on engaging and supporting new hams
Discussion on Auction Fest in January
Meeting adjourned at 8:30 PM

AuctionFest!!!

PMRC's annual gear auction benefitting our scholarship fund! ***Come early, bid often!***

MEMBERSHIP STATS

At press time P.M.R.C. has:

121 Fully paid members

10 Family members

1 Youth members

Honorary Members:

Elaine Spencer

Richard Moll - W3RM

New Members Pending:

John Gallagher - KC3RFC - Technician

Christopher Clements - KC3RGL - Technician

Dipreet Bajwa - KC3SSG - Extra

Jonathan Herman - KC3JYK - General

The Prez Sez…

Hello Phil-Mont,

Thank you all who attended the General Meeting in December. The Annual Meeting of the Club. Always a great time to reflect and look back on all the things WE did during the year.

Thank you to the whole Board for 2021 and all the work to accomplish all the things.

2022

It's here.

Rolling out with AuctionFest. Following up with a Restoration presentation. Following that with an Arduino workshop. Following that by chasing RFI.

Continuing the Sunday Nets.
Continuing the DriveTime Net.
Continuing with OPEN groups.io
Continuing Monthly General Meetings.
Continuing to publish The Blurb monthly.
Continuing In Person VE Sessions with PIOTA (Parking lot ON THE Air) station.
Continuing to monitor the 2 meter repeater and leave NO CALL UNANSWERED.
Continuing to provide WiresX backended Fusion repeater on 444.800.
Continuing with Club loaner program.
Continuing with Scholarships.
Continuing with Facebook.
Continuing with IRC.
Continuing with Coders Corner. (yeah it's there)
Continuing with hosting the Phila ARES Net.
Continuing to participate with the Omik Net on Saturday 11am.
Continuing to promote the MontCo RACES Thursday night net.
Continuing with Field Day operations in June.
Continuing with support of MS150.
Continuing to welcome and engage new Amateurs into the hobby.

WE NEED YOUR HELP WITH ALL OF THIS.

If any of these interest you, reach out to us! We'll gladly accept any and all of your assistance.

JUMP RIGHT IN. WE NEED YOU. WE WANT YOU. WE WANT TO GO ON THE JOURNEY WITH YOU.

Make this YOUR Cheers. Where EVERYBODY knows your name/call.

Want to add to the list above?

DO IT. PLAY RADIO. We'll PLAY with you.

As a club,

When we play, they will come.
When they come, they will play.
When they play, WE will learn.

EVERY SINGLE MINUTE remember, this is YOUR Club, YOUR repeaters. USE them. MONITOR them. BE A REPEATER GREETER. Answer calls when you can. Let's try to leave

NO CALL UNANSWERED.

PLAY*BREAK*LEARN

jim fisher
AJ3DI
www.aj3di.com
HamshackHotline ext: 14423
"Do, or do not. There is no 'try.'"
-- Jedi Master Yoda

‘What Hams Do… ‘

A TV Show for the Unlicensed

Amateur Radio is an amazing hobby. Three quarters of a million Americans are licensed by the Federal Communications Commission as Amateur Radio Operators, or ‘hams’ as they are often called. But among the unlicensed there’s little understanding of What Hams Do.

The US government first started licensing amateur radio stations in 1912, but by 1934 congress created the Federal Communications Commission and it created the Amateur Radio Service. It was intended as a source of skilled and trained radio operators in times of local and national emergencies. But as early as 1909 when the American Radio Relay League (ARRL) was formed, it was already a well-established hobby, and it has grown over the decades into a multi-faceted, worldwide community of experimenters, hobbyists, scientists, engineers and just average folks participating in both the fun and serious public service aspects of Amateur Radio. The ARRL is known today as the National Association for Amateur Radio.

The YouTube TV Show, What Hams Do… explores all the many aspects of ham radio and the wide variety of people of all ages and all backgrounds who participate. It is produced by the Eastern Pennsylvania Section of the ARRL and can be found by searching YouTube for “EPA-ARRL.” And while to many, ham radio inspires images of old white guys with old vacuum tube radios doing things that modern cell phone and internet technology has made obsolete, the fact is, nothing could be further from the truth.

Among the topics already covered by the show are:
Youth in Amateur Radio – Among those featured in this program is a 12-year-old from Georgia who uses tiny amateur radio transmitters to track high altitude balloons using a ham radio inspired system called APRS – the Automatic Position Reporting System. The transmitter offers not only the balloon’s position, but it’s altitude, speed and direction – all displayed on freely available internet maps.

A young lady from northeastern Pennsylvania appears in the program. At age 11, she became one of the state’s youngest ham radio operators. Her parents are BSA scout masters running an all-girl troop that focuses on amateur radio, the radio merit badge and the science behind electromagnetic radiation. Mom and dad are also licensed Amateur Radio Operators. Many of the girls are on track to get their FCC licenses.
And finally in this show, there’s a poignant interview with a blind ham from the Philadelphia area who recounts his earliest moments as a young child becoming fascinated by radio and his growing desire to get an Amateur Radio license. (https://youtu.be/8T3JmUze7JQ)

Minorities in Amateur Radio – Amid the nationwide reckoning on race following the death of George Floyd in Minnesota, Amateur Radio had to ask itself if it embodied the systemic racism that featured in much of the national dialogue. This program interviews 4 people of color who are active Amateur Radio Operators and examines whether or not minority hams have felt any systemic racism in the hobby. Amateur Radio, as one interviewee proclaimed, is color blind. Each described their reasons for participating in the hobby and each explored ways to expand racial horizons in Amateur Radio. In this program you’ll hear from a technology entrepreneur, a radio engineer for a multinational radio equipment manufacturer, a 17-year veteran Red Cross volunteer and a Hispanic church pastor who mobilized his bilingual ham radio community to provide public service emergency communications in the wake of Hurricane Maria’s devastating impact in Puerto Rico. (https://youtu.be/H6zVgGGn6N4)

Amateur Radio Emergency Mobile Communications – Many people get into Amateur Radio because they know hams will continue to communicate no matter what. Time and again we see Amateur Radio Operators assisting emergency management agencies throughout the world when disaster strikes. We all use the internet and global cell phone technology without a thought as to how we'll communicate if those services disappear. The fact is they do disappear, often as a result of natural disasters. Famously, hams assisted first responders during Hurricane Katrina in New Orleans, during and after Hurricane Maria in Puerto Rico where the entire electrical grid was wiped out, in Superstorm Sandy where New York and parts of New Jersey were off the grid for days. These are just a few recent examples. This in-depth video looks at how Amateur Radio Operators are deployed by emergency management agencies and organizations like the American Red Cross to provide vital communications assistance and strategic information to help safeguard and save lives. When the internet and cell towers cease to function, hams are still on the air communicating with advanced, modern tools including high speed over-the-air digital networks that get messages where they are intended with speed and accuracy. (https://youtu.be/FLHh0wMIAtI)

Amateur Radio Operators as Citizen Scientists – A total solar eclipse will cross North America on April 8th 2024. Scientists are gearing up now to study how the darkened skies will affect communications. Ionospheric scientists who are part of HamSci.org centered at the University of Scranton in Pennsylvania, are enlisting Amateur Radio Operators across North America as Citizen Scientists to participate in a massive data collection project. Each participant tunes their ham radio receiver to a steady government signal and looks for a frequency shift as the ionosphere moves up and down during the eclipse. The ionosphere is the electrically charged layer above the earth that bounces radio signals back to earth. It's responsible for long range communications and disruptions in the ionosphere caused by an eclipse are a major area of study for these Ph.D.'s many of whom are themselves, licensed Amateur Radio Operators. Thousands of ham radio operator citizen scientist of all ages and backgrounds are expected to participate with many already collecting data showing the daily upheaval in the ionosphere caused by the earth's rotation from day to night and back again, as well as disturbances caused by electrical and geo-magnetic storms around the planet. It's a favorite topic in STEM programs throughout the US. (https://youtu.be/z5e8ezmLwcU)

Amateur Radio in Space – For all the decades humankind has ventured into space, Amateur Radio has been right there, travelling with astronauts and cosmonauts to the far reaches of the heavens. At this very moment, two ham radio stations are on board the International Space Station – one in the Russian module and one in the US module. This program explores the international organization that ties young leaners to astronauts via amateur radio as well as the long history of amateur radio satellites that repeat signals sent by Amateur Radio Operators on one part of the earth and sends them to hams at great distances. (https://youtu.be/3JxBUkpe_rs) ❖

Contact Info:Jay Silber, WA2UAR, Public Information Coordinator, ARRL* Eastern PA Section
jaysilber@...

*The ARRL, formerly the American Radio Relay League, is the National Association for Amateur Radio.

FOR SALE

"FOR SALE: An Icom 746 (non-pro) fully functioning with no known difficulties. Includes an Icom desk mic, power cable, a SignalLink sound card with Icom cable, a Bencher paddle for the internal keyer, and original manual. It requires a 12 volt power supply and I do not have the original box or hand mic. This radio model had Icom-typical screen issues originally, but the screen was factory replaced by Icom with an upgraded screen during the original warranty period. Asking $600.00. Contact KB3RN, Ed, egtiii@comcast.net."

Have some gear you'd like to see someone else enjoy? List it here! Write a full description of your gear and your asking price, we'll do the rest. Email 'The Blurb' and free up some space in your shack.

WINTER FIELD DAY

January 29/30, 2022

Like summer Field Day, but with jackets.

www.winterfieldday.com

RULES: https://a2a53e2b-2285-4083-9cff-c99fe5ba1658.filesusr.com/ugd/1c7085_f1652124f23c41459daeaf9bad29f2aa.pdf

If your group wishes, you may have a "group/club" score tallied by having individual members fill in the "CLUB:" line in their Cabrillo log file (above). Individual members will operate using their own callsign (operating under their own privileges), using a class & category exchange that reflects their individual situation. They will send in their log under their own callsign with the name or callsign of the group/club noted on the "CLUB:" line.

YES! USE Club NAME: Phil-Mont Mobile Radio Club

OUR 2021 Results/Submissions:

CALL	CAT	SECT	PH	CW	DI	MULT.	PWR	BONUS PTS	CLAIMED SCORE	CALCULATED SCORE	CLUB
WA3GM	1H	EPA	3	39	0	5	2	0		790	PHIL-M0NT MOBILE RADIO CLUB
AJ3DI	1H	EPA	0	0	47	3	2	1500		1999	PHIL-MONT MOBILE RADIO CLUB
NC3U	1H	EPA	20	0	0	1	1	0	20	20	PHIL-MONT MOBILE RADIO CLUB
										2809	

Let's IMPROVE upon this!

PODXS 070 CLUB

2022 PSKFEST

0000-2359 UTC 01/08/2020

EXCHANGE:

State/province/country (SPC). Call "CQ PSKFEST".

BANDS:

80 thru 10 meters, no WARC bands. Work each station once/band.

All contacts must be 2-way PSK31. No repeater, cross-mode or cross-band contacts allowed.

Complete rules are available on the PSKfest rules page. Logs to be submitted by 2359UTC 1/15/22 via the Uploader (TBD)

A New 2M Winlink Gateway for Philadelphia Area Hams

By Steve Davidson, K3FZT

In spring 2021 having built an HF antenna and working on learning the essentials of emergency communication I was growing increasingly frustrated because I was unable to connect to any Winlink gateway on VHF or HF. Sure, I could send email messages through winlink using the built-in telnet facility, but the point was to use RF, amateur radio RF, to connect to a gateway to send email.

At the same time I was hearing from the Philadelphia County ARES Coordinator, Cliff Hotchkiss - KC3PGT, that both the ARRL and American Red Cross were focusing on Winlink as the preferred means of passing traffic in the event of an emergency. George Miller - W3GWM, the ARRL Eastern Pennsylvania (EPA) Section Manager, also had sent out a note confirming the ARRL requirement for Winlink usage in emergency communication (EmComm). [September 25, 2021 email to all EPA Emergency Coordinators]

Just as I thought I'd reached a dead-end I found a new direction from a fellow ham. As Field Day was wrapping up Jim Fisher -AJ3DI, suggested I consider standing up a 2M RMS (Radio Message Server) Winlink Gateway. I was off and running. In this multipart article I will describe and show the work that went into bringing the idea of an RMS winlink gateway to fruition.

What is an "RMS Winlink Gateway"? I met John Galvin N5TIM through the Winlink email group and he offered a draft of his *Using Winlink . . . Configurations for Basic, Field and Emergency Communications Use with Diagrams.* This invaluable guide helped me understand what I'd been reading about Winlink on the winlink.org authoritative website. It also helped me focus on what I was going to accomplish in the simple diagram illustrating an RMS Packet Gateway.

As with many projects I've undertaken in my career, this one started out with the idea and followed an incremental and iterative process to get to the final result of a working RMS Winlink Gateway. In what follows, I'm going to share a more structured process than actually occurred. My process was by turns fun, frustrating, fruitful, fulfilling and more expensive than necessary. By sharing the distillation of the work I undertook between early July and early December 2021, I hope you'll recognize the value of planning and documenting any ham radio project that requires more than a few minutes or hours of effort on one day. I'll slip in a few stories so you can laugh along with me at some moments of chaos I experienced.

Start by getting a notebook and pencil and dating your notes and ideas. You'll want to address at least the following components:

- Location- Where will you site the station? The antenna? Considerations include availability of power, connectivity to the house network and thus the internet, spouse/partner approval of gear location and antenna appearance and location.
- RF Chain- Antenna, feedline, radio are required to be dedicated to the RMS Gateway. The radio must have either a built-in soundcard or a 6-pin mini-DIN or alternate (DE-9 as on Alinco single band radios) for connection to an external sound card.
- Power- Sysop guidelines call for dedicated gateway equipment, preferably with *automatic emergency power.* (italics added)
- Sound Card- whether built-in or external a quality sound card is required.
- Computer, operating system, and network- A 12 VDC mini-pc is sufficient and desirable as it will run off the same power supply and power backup used for the radio.
- Winlink Gateway registration and operating software- Authorization is required to operate as a Winlink Gateway.

In what follows I'll discuss each of these components and describe my choice and reasoning. Where applicable I'll include captioned photos.

Location

My shack, located in a corner of what was originally renovated as a home office, is a somewhat cramped

arrangement. I was also looking for maximum height for an antenna. After discussions with my wife it was plain that she thought that anything behind the barn was preferable to anything at or close to the house. The back of the barn is the highest point on our property, 305 feet above sea level at ground level. There's power, 50 A split phase, but no network. I'll address both of these factors in the relevant section. The peak of the barn's metal roof is at ~20 feet and the peak runs approximately north-south. Inside the barn there was plenty of room to set up an operating position and install networking, power management, computer and communications equipment. This left me with the challenge of installing networking, but the tradeoff for the high point on the property seemed worthwhile. My friend, Clemens Sippel, a talented contractor, finish carpenter and former stage technical director with rigging experience suggested that an Ikea kitchen cabinet (40H x 36W x 14.75D) could be mounted to the inside barn wall to provide shelves and an enclosure around the operating point. By leaving off the back of the cabinet during assembly and screwing 1x1 wood strips to the barn wall at the inside dimension of the cabinet, the cabinet could be screwed to the strips and well supported.

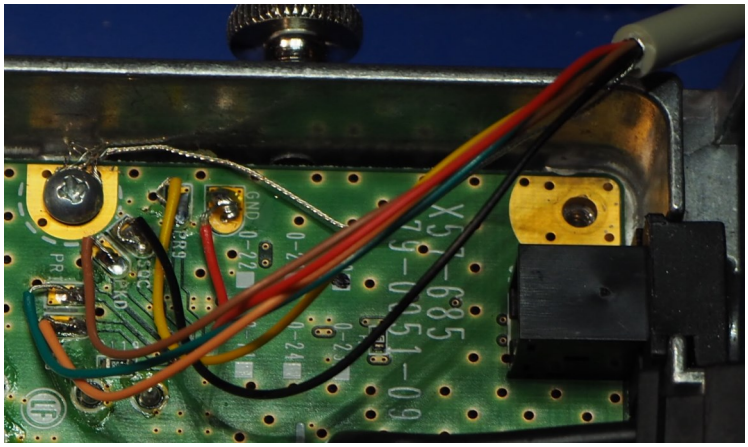
Ikea cabinet encloses power at top; vertical ground bus at left and provides space for the Winlink Gateway Station, backup power and future expansion

Detail of attachment to barn wall.

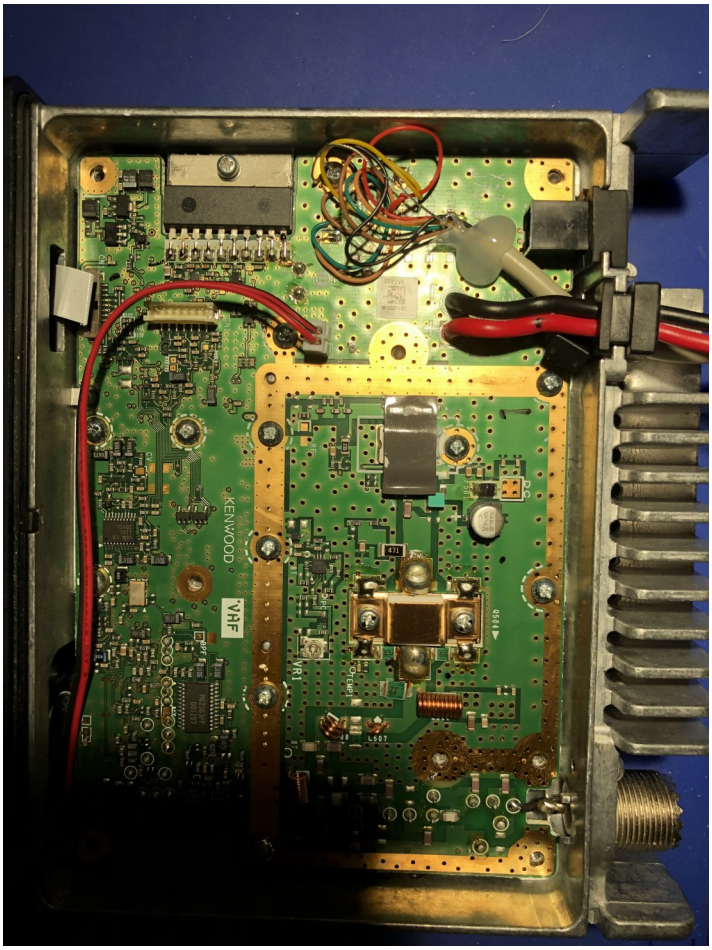
RF Chain

Looking for a durable and reliable 2M single-band radio I was repeatedly referred to Kenwood radios as the preferred choice. Recent and current models seemed rather expensive to dedicate to the gateway project.

I came across hamprojects.info while investigating ways of setting up an Allstar node (I'm always looking for the next five projects while trying to get something done--it's a guaranteed timesink.) and that led to DINAH (DIN connector based Allstar interface for Hams) and that led to N1VG's page and started me on a search for a Kenwood TM-271A, a single band 2M radio based off Kenwood's commercial radio line at the time of manufacture. It puts out 60W at high power and has a big, finned heat sink. It doesn't have a 6-pin mini-DIN connector. Unbelievably, QRZ's swapmeet forum came through the next day with a radio that purportedly had been boxed or sitting on a bench for most of the past decade. It was inexpensive and



Radio top off showing pads and wiring in place for the 6-pin-mini-DIN pigtail



Hot glue strain relief and wiring in final position just prior to reinstalling the cover

when received fired up easily putting out the full 60W. I've since acquired a second identical radio courtesy of Barry Feierman K3EUI that I've modified in the same fashion so as to have a backup.

The European version of the radio, TM-271E, *does* have a 6-pin mini-DIN socket and what I learned from N1VG is that the TM-271A had solder pads where the connection to a mini-DIN could be made. (Sometime ask me about the first time I took the cover off a radio to modify it.) So I followed the brief instructions and photos on the N1VG website and successfully installed a pigtail with a 6-pin mini-DIN socket to the radio. The radio has a single menu item to choose 1200 or 9600 "baud" and since I'm running VARA FM in wide mode, I've set it to 9600.

For the feedline, I used LMR-400 Ultraflex terminated with a Type-N at the antenna and a PL-259 for the Morgan M-303U coaxial lightning arrestor. The arrestor is mounted inside a KF7P MetalWerks entrance panel box attached to an eight-foot ground rod that could not be sunk beyond 3 feet. So my friend, Clemens, dug an 8-foot long ditch about 18-inches deep and we laid the ground rod down in it. Deeper is better, but better and best can't always happen.

2+ inch hole for conduit

To get the feedline and ethernet cable from the mast mounted network station transceiver to the operating point inside the barn Clemens drilled a hole for the 2-inch conduit from the back of the entrance panel box into the barn. The conduit carries the bonded station grounding bus out to the entrance panel. The mast is also bonded to the entrance panel with 2-inch copper strap.

The antenna I installed is a Diamond X510HNA mounted on a Rohn 50-foot (really 43.5-foot) tall push-up mast as suggested by Bill Popovik W3AOK. The mast is bracketed to the barn at 5.5-feet and 16-feet above the ground and sits on an 8-inch square plate. The mast is bonded to the entrance panel with 2-inch copper strap. Steve WU3I led the crew that included Cliff KC3PGT, Clemens and me who together installed the mast and antenna. Also mounted to the mast, about five feet above the roofline was the

Entrance panel box in place with coax on lightning arrestor, ethernet from UBB (see below) to switch and tinned copper braid from station ground bar. I installed this medium size box to support future expansion to an HF RMS gateway and a remote wideband SDR and discone antenna. Perhaps I'll put other radios out here too.

Antenna back up two hours later. The narrow barn hadn't allowed for enough spread for three point guys. So a fourth point at an approximately right angle to the barn peak trued up the mast.

On the Cover: The antenna raised for the first time.

station end dish for the Ubiquiti Building Bridge (UBB), which brings the house network out to the barn. The UBB ethernet connection is bonded to the mast where it is mounted.

Power

Power in the barn was available at a panel in a space about 30-feet from where the antenna mast stands on the outside rear. Using 12-gauge BX armored cable I brought 120 VAC to the planned operating point on a dedicated 20 Amp circuit breaker. I had acquired an Alinco DM 330-MV switching power supply that would easily power the radio (13A) and mini-pc (2A) with headroom to spare.

I planned on using a 12 V battery for backup power, but wasn't sure how to manage the switching until a post-net QSO with Frank Rocap N3FLL that had been provoked by Jim Fisher AJ3DI talking about his Chinese knockoff of the device Frank described. I learned from Frank that he used a West Mountain Radio Epic PWRgate to seamlessly switch power (up to 40A) from AC powered supply to battery backup. That power management device, a 100 A Lithium Iron Phosphate (LiFePO4) battery from Amazon, and an Anderson Powerpole equipped fused, power-distribution panel completed the power setup.

Epic PwrGate charges the battery and seamlessly powers the system if grid power is lost.

Sound Card

I built a Masters Communication DRA-70 from a kit. It's also available pre-assembled and tested but I wanted to build the kit. While I'm writing about it halfway through this article, building the kit was the very first step I undertook. I've been making solder connections since I was 10-years-old but not many in the past 50 years. Soldering on this small circuit board seemed somewhat problematic. I've experienced familial, essential tremor since about age 30. Both of my deceased parents had it

Philadelphia

ARES

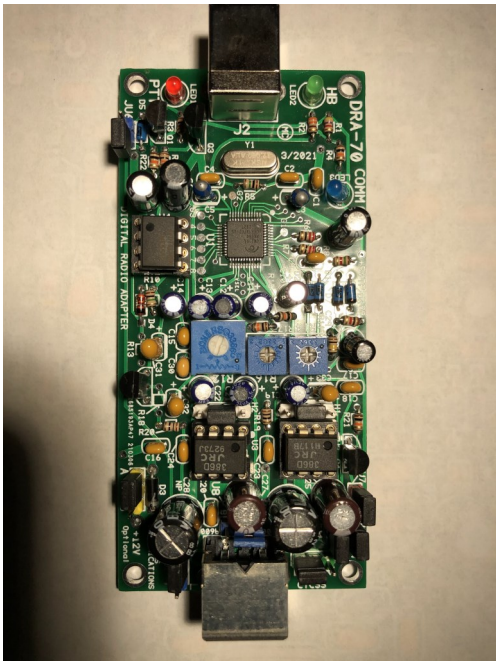
The Amateur Radio Emergency Service are trained licensed amateur radio operators providing radio communications as a public service in disaster situations. All licensed operators are welcome to join. To get started fill out this ARES Registration form and submit it to Cliff Hotchkiss (KC3PGT), the Philadelphia Emergency Coordinator.

Join the A.R.E.S. Training Net

Every Sunday evening at 2100 (9:00 PM)

147.030 MHz (+offset 91.5 PL)

and both of my siblings have it. It is fortunately not associated with dementia, but it is variably disabling. Some of you may remember Katharine Hepburn who also suffered from it and spoke about it on Johnny Carson's *Tonight Show.* I wanted to see if I could build a kit on a circuit board despite the obvious challenge it presented. When I talked to Kevin Custer W3KKC of Masters Communication he offered both his encouragement and availability to solve any problem I confronted while building the kit. He encouraged me, looked at photos, requested more photos of solder joints and talked me through desoldering, resoldering and initial start-up and testing. The DRA-70 worked and is the sound card in use for this gateway station running VARA FM in wide mode at 9600 "baud."



DRA-70 completed. USB type B port for computer connection at top. 6-pin mini-DIN at bottom.

Computer, operating system and network

I sought out 12 VDC powered computers as I explained above. I came across the Chuwi Herobox running an Intel "Gemini Lake" Celeron N4100, 8GB of DDR4 RAM, and a 180GB Intel SSD. This seemed to be plenty of power to run Winlink sysop software and Teamviewer, the preferred tool the moderators of the Winlink groups.io group use to support users. It will also be sufficient if I choose to add a software packet gateway with, for example, UZ7HO Soundmodem and/or a bulletin-board with BPQ32. For those inclined toward experimentation and comfortable with minimal support, PiGate offers an alternate RMS server.

The computer I acquired came with Windows 10 Home and that's sufficient for the purpose. However, because I wanted to use Microsoft Remote Desktop (RDP) to connect to the computer in the barn from my office/ham shack computer I chose to upgrade to Windows 10 Professional. This was an unnecessary and time wasting exercise. Teamviewer has been more than sufficient for remote access. For users who might need to use RDP for other reasons, purportedly RDP Wrapper Library allows that use with Windows 10 Home. I have not tested that.

Getting network access from the house to the barn was relatively easy, if a bit pricey. My house network is built upon the Ubiquiti Unifi system and I won't detail it here. The Ubiquiti Building Bridge (UBB) was readily available and after getting through an 18-inch thick stone wall to get the cable outside and updating the firmware on both 6-inch diameter dish equipped 60 GHz transceivers [Tip: Update software while both dishes are on your bench.] the connection to the barn was installed. An eight port switch supporting power over ethernet (POE) and a POE powered access point completed the installation in the barn. This supports direct connection over ethernet for the computer, wireless connection for users in the area of the barn and connections for the two floodlight cameras I installed front and rear on the barn while working on this project.

Transceiver dish and ethernet lightning arrestor on the house

My house network is served primarily by Verizon Fios, but in preparation for the project and in the interest of reliability, I had Comcast internet installed for fail-over

support. The house network is configured with POE for the access points, and the entire network is powered from the transfer switch panel providing grid power or natural gas fired 20KW generator power that the previous owners installed.

Winlink Gateway registration. operating software and operating frequency

I had registered with Winlink early in 2021 and had sent messages both for testing purposes and in response to the EmComm Technical Group's weekly Winlink Thursday exercises. Registration as a gateway required evidence of prior use of Winlink and agreement to the "Sysop Guidelines" [https://winlink.org/content/join_gateway_sysop_team_sysop_guidelines]. *The Winlink Book of Knowledge* [https://winlink.org/content/winlink_book_knowledge] contains recipes and advice for configuring Winlink Express (client) software on many different radios and sound cards. It also, in conjunction with the help files in the three main Winlink Sysop programs (RMS Packet, RMS Relay, and RMS Trimode) offers plenty of information for configuring a Winlink gateway. The details are mostly there, supplemented by excellent support by the list owners/moderators of the Winlink programs group.[https://groups.google.com/g/winlink-programs-group],

Historically, Winlink gateways supported connections using a variety of ham radio digital modes. Likely packet and Pactor are among the best known and most widely used though the Winlink folks themselves support Windmor (now deprecated) and Ardop. Of late, VARA FM on VHF and VARA HF, software modems from José EA5HVK [https://rosmodem.wordpress.com/] have become widely used. I implemented VARA FM at 9600 baud in Wide mode. I've had several connections at very high speeds, but I've yet to figure out the logging details so as to capture that information.

The last step was picking a frequency for operation. I relied upon the Area Repeater Coordinating Council (ARCC) band plan for 2M and selected the sub-band of 145.510-145.790 MHz reserved to digital and experimental modes (20 kHz spacing) by the ARCC band plan despite the regular appearance of FM analog simplex qsos on this and adjacent frequencies. I have put K3FZT-10 on the air and serving hams throughout the Delaware Valley at 145.650 MHz. ❖

The completed station with room for storage and expansion

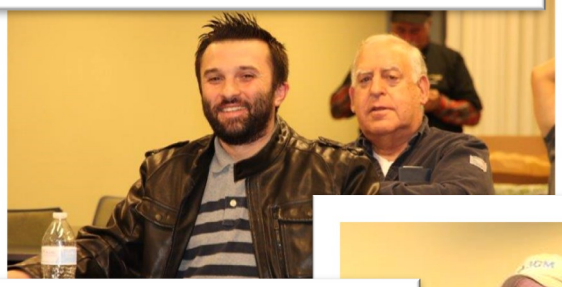
Acknowledgements: I've mentioned many hams and vendors in the text, but particularly want to acknowledge my non-ham friend Clemens Sippel a craftsperson, rigger and problem solver nonpareil. In addition to general encouragement Cliff Hotchkiss KC3PGT helped put up the antenna, Jay Silber WA2UAR helped test the gateway and provoked me to do a better job adjusting the audio levels, Perry Pepper KC3JUD helped test the gateway. Along with me these three Yaesu FT-991A owners all suffered through our learning curve of digital sound card modes through the tutelage and encouragement of Barry Feierman K3EUI. Ron Wenig NY3J and Glenn Allison, N3MEL provided a wide range of advice and counsel to me during the build and continuing thereafter. Daniel Wagaman, W4GMN and Editor of the Phil-Mont Mobile Radio Club *Blurb* reviewed, commented upon and generally assisted the improvement of the manuscript. It takes the whole community.

Phil-Mont Launches New Coders Corner

Like to code? Sure you do! Join up with fellow hams who like to bite into the bits. Come early to the monthly meeting and talk shop with the group. Check out the repositories on GitHub. Let's get geeky!

Holiday Memories from P.M.R.C.

We hammed it up at the last meeting of 2021. All these happy faces were photographed by Rich, AA3RC at our club's December general meeting. It was our annual holiday party and election of officers and board members for 2022. The pics commemorate our third in-person meetings since the start of the Covid era. A good time was had by all. Thanks everyone for another great year!



The Last Page

The Blurb wants to hear from ***YOU!***

Got a hot lead on antenna design? Soldering up a special circuit? Digging some new DSP? Reminiscing about some retro receivers? Maybe you have some goodies for sale. Click the big blue envelope and tell us your tale!

Put a Smile on Everyone's Face!

It's easy: Every purchase you make through our club's Amazon Smile page donates part of that purchase to the club and helps us fund our scholarship, activities, and more. Click the Amazon smile link and help us help each other!

Support us with amazonsmile
You shop. Amazon gives.

PMRC Officers for 2022

EMAIL THE BOARD

Officers

President: AJ3DI Jim
Vice President: AA3RC Rich
Treasurer: Jim NS3K
Secretary: Jim K3YO

Board of Directors

KB2ERL Bobby(22)
NC3U Sal(22)
W3UP Dick(22)
KC3GJX Jeff(23)
K3RON Ron(23)
W3QV Eric(23)
WA3GM Greg(A)

FOLLOW US ON facebook

73

Club Email List