Founded 1919

The Old Professor

The Providence Radio Association, Inc. September 2023 Volume CIV, Issue III

Affiliated 1921

MESSAGE FROM THE PRESIDENT:

KEEP ACTIVE

DAVE TESSITORE, K1DT

You hear it from your doctor, your elderly neighbor, your XYL, "Keep Active!" No truer words were ever spoken. Of course, they are talking about Ham Radio!

Today there is no excuse to not be active and on the air. We have more different aspects of our hobby to engage in than ever before. For the newer Amateurs these are a lot of fun, for the older set, these things are simply amazing.

For instance, the FT8 Craze has taken HF and VHF by a storm. While not embraced by all, there is no debating its popularity. For many with a small station and a meager antenna system it's a gamechanger.

POTA is another major "disrupter". Field Day Every Day! POTA moves Ham Radio out of the shack in the basement and into the Great Outdoors. Talk about keeping active!

Space Communication has never been easier. Make QSOs via the ISS with a Handi-Talkie, or via one of the dozens of OSCARS and CubeSats with simple set-ups. Work DX via Moonbounce with nothing but a Multimode radio, a simple yagi and free software. Extraordinary!

There are more high-quality Amateur radios on the market than ever before. Radios with features and performance that was near impossible just a decade ago. Offerings from several American companies, the Japanese Big 3, numerous sets from China and Korea, and a lot of specialized products from throughout Europe. Not only are these a mouse-click away, but compared to the sets of the 50's and 60's they are a fraction of the cost. Grandpa's vacuum tube HF transceiver cost him in the order of $10,000 in today's money, and in 1970 a 2M FM mobile cost an equivalent $2500. Compare that to a $29 Baofeng!

There are more mentoring and online resources than ever before. Tutorials on every imaginable subject are free on YouTube and various websites. Online classes and exams are all over the Internet. Spotting networks and real-time propagation maps, predictions, and signal analysis tools abound. Digital QSLing and Award programs are integrated into logging software. Radio Clubs are ripe with help and advice, either in-person or via web meetings. No matter what your situation or ability, there is assistance for the asking. In the words of my grandfather, "In my day we had to walk to and from school 5 miles uphill both ways." Today you get a free ride in a Tesla!

Of course, the Traditional aspects of our hobby are still alive and well. SSB and CW are going strong as ever, evidenced by listening to the HF bands during any DXpedition or contest. With an average of 1200 applications each month, DXCC remains one of the sought after awards in Amateur Radio since 1935! And a comprehensive list of the active nets on HF and VHF would be the size of an old Callbook.

So put down that QST magazine and get on the air. The way to keep our hobby healthy is to Keep Active!

73,

Tess, K1DT

WELCOME

INSIDE THIS ISSUE

The Providence Radio Association, Inc.

The Old Professor is The Newsletter of The Providence Radio Association, Inc. and is published quarterly.

Honorary President for Life:
Princess Elettra Marconi
President: **Dave Tessitore, K1DT**
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Treasurer: **John Winman, KZ1K**
Board of Directors:
Gilbert Brown, N1BBM
Neville Bedford, W1ESQ
Ted Casassa, NE1U
Editor: **Tom Greenwood, W1ER**

How to Contact Us

1 Ludlow Street
Johnston, RI 02919-6618

E-mail: motormandave@gmail.com

http://www.w1op.com

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222 MHz Analog: 223.980 / 222.380
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FROM THE EDITOR

"EMBRACE CHANGE"

TOM GREENWOOD, W1ER

Once again late and yes, I'll be late for my own funeral. But I assure you, I will be found behind the radio chasing that one last DX entity I need, P5. More about that later.

Change. No one likes it. But it's inevitable. It comes whether we like it or not. When I worked for the phone company, I had an executive director who used to like to impart upon his team some of his philosophies on life. One of his most important amongst many was the idea "Embrace Change". His thinking was that change is inevitable and not to waste time fighting it. Embrace it. When he was promoted to Vice President, he was told, "you need a better car. You can't be seen driving to meetings in that old car". He was down to earth and wasn't caught up in putting on a false show. But change was acknowledged and he went out got himself a nice lower end BMW. Change.

Why do I bring this up? If you spend every opportunity trying to fight change, you will be in the backseat. Does this mean you have to jump in head over heals? Certainly not. There is certainly nothing wrong with doing things with old and proven ways. If that's what you like, go for it.

We have heard the many battles over FT-8. A relatively new technology that allows for simple communications and exchanges under the harshest of radio environments. "But it's not real amateur radio". Are you sure? Have we not heard this same argument when spark was replaced or when SSB was introduced? Is it truly not real amateur radio? Let's consider this in terms of the FCC's viewpoint for the amateur radio service under "Basis and Purpose" stated as follows:

> **§ 97.1 Basis and purpose.**
>
> The rules and regulations in this part are designed to provide an amateur radio service having a fundamental purpose as expressed in the following principles:
>
> (c) Encouragement and improvement of the amateur service through rules which provide for advancing skills in both the communication and technical phases of the art.

Advancing the radio art. What a great philosophy. Shouldn't we spending more time doing that rather than wasting our time which ultimately will be long forgotten when we become SK? Am I promoting FT-8? No. Am I bashing it? No. But, I do subscribe strongly to the concept of advancing the art.

Let's consider this another way. Frank, W3LPL, recently made a great pitch of how the technology can be used as a tool. We all love tools! Many of us are interested in where we can be heard, or how new antennas are performing. With the aid of tools like PSKReporter and the Reverse Beacon Network, we can broadcast a signal and quickly see where and how we are being heard. What phenomenal tools to have at our disposal.

So if that interests you, give it a try. And let's not forget a newer introduction, JSCall discussed in depth by Dom, N1DM in our June 2022 issue. Full communications, be it slow, operating using derivative technology of FT-8. So give it a try, or don't. Your choice. But let's choose to not engage in wasted time.

"Embrace Change"

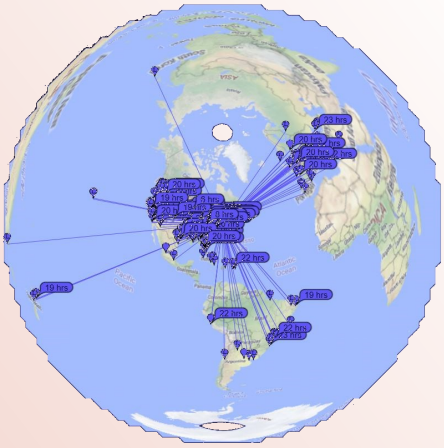
Lot's of great articles this month. Enjoy!

73, Tom, W1ER

CLUB NEWS: BUSY

Busy is the word. Lots going on at the club. Let's highlight some of the activities.

On June 4th, Vic, NE1Y, operated the W1OP station remotely during the ARRL International Digital Contest in the Single Operator, One Radio (SO1R), Low Power category. During the contest he worked 353 QSO's on FT-4 and FT-8 for a total of 3,359 points over a period of 17 hours. Forty-four DX countries were worked. Reports from PSKReporter can be seen in the images for where W1OP was being heard on 40, 20, and 15 meters.



W1OP—40 Meters

W1OP—20 Meters

W1OP—15 Meters

Dan Harrington, AC1IJ reports that he went to help proctor a ham radio license exam, onboard a warship. As part of the ARRL "Museum Ships On-the-Air Weekend" *https://www.arrl.org/news/view/museum-ships-on-the-air-weekend*, the exam took place at the United States Naval Shipbuilding Museum in Quincy, Mass., on board the USS Salem CA-139 *https://www.uss-salem.org/*, decommissioned in 1959. Dan joined Ron Prendergast W1OF, a volunteer for the US Naval Shipbuilding Museum, Kathy Savage KB1LPW, Secretary for the North Shore Radio Association, and Rick Savage KB1LYJ, President of the North Shore Radio Association. Rick was the leader for the exam session. Many thanks to Dan for the outreach he extended to fellow club. Dan indicates that he learned some valuable information about sponsoring exams, information and experience that will help the PRA as we consider our role in the testing of future candidates. Fine Business Old Man! This is what it's all about.

From L. to R., Ron Prendergast W1OF, Kathy Savage KB1LPW, Rick Savage KB1LYJ

CLUB NEWS:

In the latest July 2023 issue of QST, it is impressive to see six of our members and friends in print.

Beginning with page 30, we are proud to see Frank Donovan, W3LPL listed as both an ARRL Leadership and a Maxim Society Donor, along with PRA Vice President, John Good, W1GS and RI Section Manager Bob Beaudet , W1YRC listed as a Maxim Society Donors, all making substantial monetary donations for the betterment of Amateur Radio. Our sincere thanks and gratitude to these generous Amateurs who support our League and our hobby.

Page 84 features member Rick Rosen, K1DS with his Rover setup during the last 222 MHz and Up Distance Contest. Rick continues to push the limit of UHF and microwave operations.

Page 95 features an announcement of an RI Hamfest sponsored by our good friends at the Massie Wireless Club of the New England Wireless and Steam Museum, a.k.a. "Tune-Up", held on Saturday, July 22nd. Always a great event.

Lastly and sadly, Page 103 lists former member Geoffrey Allsup, W1OH as a recent Silent Key. Geoff was an active PRA member in the 70's and 80's before moving to the Cape. He served as our Secretary and remained in contact with several of us. RIP. SK

We've recently added a dedicated GOTA station to the clubhouse. A few members set up this easy-to-operate "GOTA" station equipped with an Icom IC-751A transceiver and Heathkit SB-200 amp for your operating pleasure! NE1Y operated the IARU contest using this station

The New W1OP GOTA Station

on July 8th. His second contact was Frank W3LPL operating W1AW/KH6 in Hawaii on 20M SSB!

On May 23, KC1QYD, W3DRE, N1DM, and K1DT presented an Intro to Amateur Radio to an assembly of 350 8th Grade students at the Alan S. Feinstein Middle School, in Coventry, RI. K1DT presented a short video

KC1QYD Demonstrates a Parks On The Air QSO On The Stage of the Alan S. Feinstein Middle School

N1DM Readies The Antenna for the Satellite Station

and a slide show. W3DRE had a POTA station on stage, and to the joy of the audience made a 20M SSB QSO with a High School club station in Florida. KC1QYD made a 446MHz FM QSO with a local Ham who transmitted encouraging remarks to the students, resulting in a resounding round of applause. N1DM attempted to work an OSCAR satellite pass but the timing was not conducive. Overall, the students were very interested with a few requesting further information. We were invited back for next year.

Dave, K1DT is all smiles upon receiving a very special gift to the Club from member Mike Gibbemeyer, K1CW (K1OHE), of a pristine Collins 75S-3 receiver. The receiver will replace the 75S-3B next to it in the photo which was severely damaged by mice. This gift will bring the W1OP Collins S/Line station back into full operation. The full S/Line station was bequeathed to the PRA by the estate of Zaven Tenkarian, W1IUX (SK), the genius behind our Log Periodic antenna. The newly gifted receiver was formerly owned by Mike's dad, Augie "Gibby" Gibbemeyer, K1RHG (SK). Gibby purchased it new from another PRA member and famous New England electronics distributor, William H. Edwards W1EZW(SK). Coming full circle, back in 1970, the 13-year-old K1DT (WN1QOG) was introduced to Gibby at his shack in Bristol through a

K1DT with the Donated Collins 75S-3B

mutual ham friend. The lasting impression on Dave was that of Gibby's Collins 75S-3 receiver, at the time the finest Amateur receiver money could buy. Who would have dreamt that 53 years later that very same receiver would be gifted to Dave for the club! Truly spectacular.

CLUB NEWS:

Did you attend Northeast HamXPosition 2023 in Marlborough, MA? Twenty two PRA members and friends were in attendance. As customary, the PRA hosted a very popular Friday & Saturday HAPPY HOUR. On Saturday morning, PRA President K1DT spoke on Club Revitalization and Dom N1DM on DMR and NEDECN Network. ARRL Section Manager Nancy Austin, KC1NEK held a first-ever RI Section Town Hall Forum. All were very well attended. The Friday night DXCC/Contest Dinner featured noted DXpeditioner Don Greenbaum, N1DG, and the Saturday Banquet a talk by scientist and inventor Chip Cohen, W1YW. PRA member John Brewer N1SXB won the Grand Prize of a Yaesu FT-710 AESS HF Transceiver! The many excellent lectures and presentations and workshops, License Classes, Exams, 3-Day Flea Market, Exhibits and Sales by Amateur distributors and Vendors, QSL Card Checking, and of course the PRA Happy Hours made for an exceptional weekend!

This clean-looking ham station is operated by the father and son combination of Augie (K1RHG) and Mike (K1OHE) Gibbemeyer. From a QTH in Bristol, R.I., this station is on 6, 15 or 20 meters daily.

From the 1964 Popular Electronics Handbook

Mike Raisbeck, K1TWF, ARRL First Vice President and K1DT

CLUB NEWS:

PRA Members and Friends at Saturday Night Happy Hour

HamXPosition 2023 HONOR ROLL

K1CW, Mike Gibbemeyer
K1DT, Dave Tessitore
N1DM, Domenic Malozzi
W3DRE, Dave Steussie
W1ER, Tom Greenwood
W1EYH, Frank DePetrillo,
WA1FOS, Ron Cameron
W1GS, John Good
K1GWW, Will Waterman
W1IUP, Tom DePetrillo
KB1KVD, Jason Legrow
K1LFS, Leo Smith
W1PRA, Paul DePetrillo
WQ1Q, Rocco Quatrucci
N1RHH, Octavio Rivieira
AJ1S, Andy Stenberg
WA1SCS, Alan Kuong
N1SXB, John Brewer
NE1U, Ted Casassa
Meg Wilson, No Call Yet
Sarah Good, No Call Yet
Daniel DeCiccio. No Call Yet

ON THE AIR:

FIELD DAY 2023 RECAP

Field Day 2023 saw the Providence Radio Association operate from a new home located at the Masonic Youth Center in Warwick, RI. From our new home, we setup one CW and two SSB stations along with a GOTA station operating class 3A.

Our 2023 Host: The Rhode Island Masonic Youth Foundation

Forty two members and friends of the PRA joined us for the event. Overall, the weather was good but it did try to threaten us with rain on a few occasion. But in the end, sunshine prevailed.

K1DT, W1GS, AJ1S, K1DS, and N1DM operated the CW station from Andy's camping trailer with a great view of the world and allowed to be put on display in a cage like residents of the zoo. Their grand total was 793 contacts.

KZ1K, KC1QYD, N1BAQ, W1ER, and QYD's friend Evan oversaw the operation of the 20 meter SSB GOTA station from the back of Bob Van's utility trailer and achieved a grand total of 736 contacts operating under the callsign of W1C. Evan exclaimed that this was the best time he had ever had. Glad it was so much fun for you, Evan. We all hope you will take the plunge and go for your ticket.

W3DRE, NE1U, and WQ1Q's son, Rocco junior operated the 40 meter SSB station while K3DRE operated the 15 meter SSB station. In total, the SSB stations made 2046 contacts. Way to go!. NE1U proved to be a fantastic Elmer and had young Rocco banging out contacts like a pro. He appears to be a natural for this.

N1DM and N1BAQ operated during a couple of satellite passes and managed to make five contacts by way of the single channel FM satellites.

N1BAQ Readies the Antenna for a Satellite Pass

A great installation and deinstallation crew made this all possible for us. Our team consisted of NE1Y, AJ1S, NE1U, W1AV, AC1GE, KZ1K, K1TNX, K1DT, W3DRE, KB1EFR, and KC1NAB. This year we had a new toy at our disposal, an AB-577 military telescoping mast courtesy of Frank Donovan, W3LPL. The mast made for easy installation of the tri-bander used for the GOTA station.

We also had three FT8 stations operated by NE1Y at our Johnston, RI clubhouse who scored 909 contacts using the call W1D to add to our club aggregate score.

From our new location we were able to

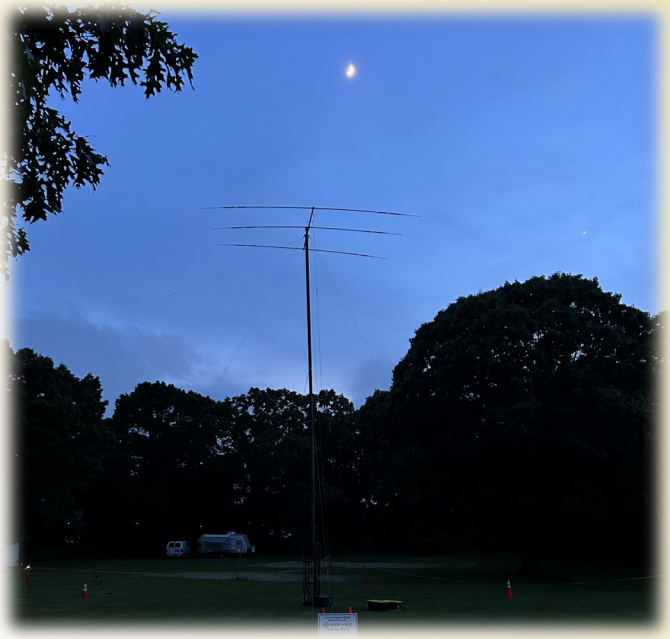
FIELD DAY 2023 RECAP
CONT'D

achieve the antenna spacing needed to keep us from interfering with each other. Unlike last year where we were on top of and in front of each other, we operated with all antennas end to end over the permitted 1000 feet and this helped tremendously to minimize any potential for interference amongst us.

NE1U Elmers Rocco Junior on operation of the 40 meter SSB Station

Of course, a couple gremlins did step in create some short lived difficulties for us. Late on Sunday morning, a coaxial cable jumper failed on the GOTA station causing the radio to briefly overheat. Luckily, after some quick troubleshooting, we found the bad jumper and replaced it to return back on the air. We also experienced some brief interstation interference when we tried to operate two stations on the same band at the same time. Some minor issues for us to keep in the back of our heads for next year's operation.

W1GS and AJ1S Working the CW Station



The Tri-Bander atop the AB-577 Mast

KC1QYD Working his first Field Day with KZ1K in the GOTA Station

FIELD DAY 2023 RECAP
CONT'D

Results totals are tallied on the next page. Many thanks to Team PRA for a great operation this year.

Finally, a well deserved thank you to our hosts this year,

FIELD DAY 2023 RECAP
CONT'D

W1OP & W1C 2023 Field Day Results

CW QSO's	793	x2	1586
PHONE QSO's	2051	x1	2051
DIGITAL QSO's	81	x2	162
TOTAL QSO POINTS			3799
POWER MULTIPLER		x 2	7598
EXTRA POINTS			5010

TOTAL SCORE 12,608

W1D 2023 Field Day Results

DIGITAL QSO's	909	x2	1818
TOTAL QSO POINTS			1818
POWER MULTIPLER		x 2	3636
EXTRA POINTS			670

TOTAL SCORE 4,306

FIELD DAY 2023 HONOR ROLL

Many thanks to the following members and friends of the club for their participation this year:

W1AV	Bob Ruzzo	KC1NAB	Bob Hart
N1BAQ	Bob Egan	KC1NDE	Nicholas Harrington
N1BBM	Gil Brown	W1PRA	Paul DePetrillo
N1DM	Domenic Mallozi	WQ1Q	Rocco Quatrucci
K3DRE	Doug Evans	KC1QYD	Thomas Boulay
W3DRE	Dave Steussie	N1RHS	Paul Gosselin
KV4DN	Don Stanford	AJ1S	Andy Stenberg
K1DS	Rick Rosen	KC1SMS	Bertrand Boulay
K1DT	David Tessitore	N1SXB	John Brewer
KB1EFR	Larry Basile	K1TNX	Jim Meltzer
W1ER	Tom Greenwood	NE1U	Ted Casassa
W1ESQ	Neville Bedford	WA1UWU	Dave Smith
W1EYH	Frank DePetrillo	W1WBB	Bill Bliss
WA1FOS	Ron Cameron	WA1WEE	Jack Butler
AC1GE	Rachel Simon	NE1Y	Vic Farmer
W1GS	John Good	no call yet	Bob VanHerpe
K1LFS	Leo Smith	no call yet	Noah Roccha
AC1IJ	Dan Harrington	no call yet	Evan Cain
KZ1K	John Winman	no call yet	Elizabeth Sisk
N1MZA	Domenic Valenti	no call yet	Evan Sisk
KC1MSH	Kevin Richard	no call yet	Rocco Quatrucci jr.

ON THE AIR:

CHASING THE OLD DOG X-RAY

TOM GREENWOOD, W1ER

Chasing the old Dog X-Ray. Some say that it may be one of the more masochistic aspects of amateur radio. If you enjoy what is sometimes the unbearable pain of calling and calling that rare DX station for all eternity along with thousands of your colleagues and if you are lucky, finally being rewarded with the DX station returning your call, then it is masochistic. On the other hand, for many it is sadistic. We jump into the foray like a Viking warrior entering battle with a battle-axe and mace not satisfied until we have pillaged and conquered the offending entity with scars and wounds to show for it. We view the ClubLog Most Wanted list as a script leading us towards world domination in the form of our name and callsign being engraved on the coveted DXCC honor roll. How you look at it, it can be very rewarding and fun. In this three part series, I will introduce you to chasing DX, what are some of the terms and techniques, and finally review tools available to help you in your conquest.

My entry into chasing DX dates back to the late 1970's during the heyday of the CB radio craze in solar cycle 21. My friends and I were teenagers and CB radio had become the rage with truckers and rock stars promoting it. Very quickly, we encountered the phenomenon of skip. Every channel where AM operated was a wall of competing heterodynes and an S9 artificial noise floor. If we had extra money, we graduated ourselves to SSB equipment and operated on a few dedicated channels where the more serious operators called home, no longer dealing with the painful sound of heterodynes but still dealing with an S9 noise floor. But we had the luxury of three times as much channel power or 12 watts PEP versus 4 watts on AM.

The signals came from all over, especially from down south. FCC Part 95 had a distance limitation of 150 miles, but nobody paid attention to that especially when all those "good ole boys" from down south were pounding on your doorstep. The signal was there, and we had to try to work it. In total, over the couple of years that CB was at its peak, I contacted 35 states and four countries including one very rare contact across the big pond into Italy. But the sun's solar activity began to wane, there was college to attend to, and the craze died down, relegating the radio to develop a large pile of dust on it as it sat on my desk and mother nature proved that it was far stronger than the aluminum of a roof top antenna.

Fast forward ten years and I finally got my ticket, a Tech Plus. For all practical purposes I was relegated to wavelengths that were shorter than my body. I rag chewed with friends on the local 222 MHz repeater and it was fun. Fast forward another 20 years and I was preparing for one of my many overseas trips to my home away from home in London, I thought it would be fun to bring my HT with me, only to learn that Europe did not recognize the US tech license. I'd have to upgrade. So I studied hard for my General and took the test. I studied so hard that I whipped through and aced it in about ten minutes. Michelle, KA1WJD, was the VE and asked me if I'd like to attempt the Extra, "you have nothing to lose". So I did. It was painful, I searched the deep recesses of my brain to recall theory from high school electronics shop 35 years earlier. It took time but, in the end, I walked out of the examination room as N1JQB/AE. Success, never another exam needing to be taken. Now to get a radio and get on HF.

My first HF radio was an ICOM IC-761. I recalled the day I received it and opened the box.

CHASING THE OLD DOG X-RAY
CONT'D

It was a monster compared to any radio I had before that. I got on 80 meters and rag chewed with people up and down the east coast and across the pond. But after a while, the rag chewing became a bunch of nonsense. I dropped off for a short period of time. But then as I began to become familiar with different spotting sites, I'd began to observe rare entities being spotted. Let's give them a shot, let's see if I can contact them. It was a battle, and it was frustrating and masochistic. It was a lot of work but then, I started getting responses. I was contacting these lesser-known entities across the globe. The addiction that had been held at bay for more than three decades was back. I was hooked and it hasn't let go since. I can proudly say that after close to ten years chasing DX, I can claim contact with more than 250 countries and have been able to achieve 7BDXCC. Still lots of work to do, still a long way from achieving world domination.

What is DX? DX stands for distance or technically, "distant exchange", a term from the old days of wired telegraphy. But what is the definition of "distant"? Is distant any station outside of the United States? Is distant any station that is not in the top 25 percent of the ClubLog Most Wanted list? If I am operating at 142 GHz, is distant any station I can contact? It's all the above. For this article, let's call it call it anything that furthers the achievement of our personal station working goals.

Maybe your goal is the ARRL Worked All States (WAS) award. Maybe you are trying to achieve WAS on all bands. From here on the northeast coast, working any station west of the Midwest on 160 meters could be considered distant. But then again, working Vermont from Rhode Island on 10 meters could also be considered distant because the distance between the two stations is in that dark area between what can be achieved via the ground wave and the sky wave making it very challenging to work it. But what if I am trying to work all states on operating QRP, generally considered anything less than five watts? If I can work any station outside of my home state, it may be considered distant.

Maybe you are trying to check off every entity listed on the ARRL DXCC list, all 340 of them. Maybe you are trying to achieve that on all bands from 160 to 10 meters for the 9 Band DXCC award, 9BDXCC. Until you have worked that entity, then maybe you consider that unworked entity distant. Consider that I still have not worked Canada on 12 meters, yet on the Most Wanted list it sits at 326 out of the 340 entities, in the top five percent of easiest entities to work. Until I work Canada on 12 meters, it will be considered by me to be distant. Maybe you have achieved DXCC, having worked 100 entities. You still have 240 more to go. Getting up to the 250 to 300 mark can be achieved with effort, technique, and tenacity. But working that last 40 may be a long time coming. Get yourself to the 331 mark and you land yourself in the elite club of the DXCC Honor Roll. Get yourself to the 340 mark and you land yourself in the super elite club of Number One DXCC Honor Roll. But, be prepared for a long wait, a very long wait. Two of the entities on the list, North Korea and Turkmenistan effectively ban amateur radio operation and there have only been a couple of extremely short duration operations from them with only a very lucky few having been successful in making contact.

For those operating on six meters and above into the VHF, UHF, microwave and millimeter wave ranges, there are those that still pursue the WAS and DXCC awards, but then another goal is the VUCC award which is based upon working Maidenhead grid squares, geographic areas

CHASING THE OLD DOG X-RAY
CONT'D

measuring two degrees from east to west and one degree from north to south. To make things more interesting, the number of grid squares that must be worked to achieve VUCC depends on the band. In simple terms, the higher the band, the fewer grid squares that need to be worked. Sound easy? With some minor effort, I can most likely work five grid squares at 144 MHz in a fairly short period of time, but it won't grant me VUCC, I need to work 95 additional grid squares for the required 100 at 144 MHz. But at 142 GHz, to get VUCC I only need to work 5 grid squares, yet only one station in North America has been able to achieve that, W2SZ/4. An entire ham radio career chasing five contacts? Some might think that is crazy.

So why do we do it? Because we are out of our minds, right? We love the pain and torture of trying to achieve something that can require an entire amateur radio career. No, it's the thrill of the chase, the sense of accomplishment when we finally do make that contact. It's the battle against mother nature and our peers that drives us. We must win the battle, and we won't be truly satisfied until we do. It's the tearing of the hair when we hear the DX station announce that they are QSY'ing to another band after we have spent the last three hours chasing them to no avail. It's the tenacity to further develop and improve our technique when we have been unsuccessful with the full intention of not being defeated next time.

One of my earliest thrills was working FT5ZM, Amsterdam and St. Paul Island in the middle of the Indian Ocean in 2014. I tried and I tried to no avail to work them. I wore out my voice calling them. Then, during Superbowl XLVIII, I heard them calling. While everyone was watching the half time show, I threw my call sign out. Suddenly, I heard my call sign being returned to me with a signal report. I returned a signal report to them and entered a record into my logbook. I then proceeded to sit in utter amazement. I'd done it! I recognized at the time that I had exhibited effort and tenacity, but unbeknownst to me at the time, I had ever so slightly improved and developed my technique by taking advantage of perfect timing, a quality that to this day I continue to refine with each and every tenacious effort.

In the next installment, I will discuss terminology you will encounter and some techniques that I have learned over the years. Stay tuned and happy DX'ing!

DO YOU LIKE TO CHASE DX?

For several members of the PRA, chasing DX is their passion. If it's your passion too, and you want to keep in contact with us while we chase our pursuits, alert each other of activity, celebrate our achievements, and whine and complain, then send us an email and we'll add your to our email distribution.

ON THE AIR:

AN INTRODUCTION TO TEST EQUIPMENT

DOM MALLOZZI, N1DM

In our last installment of this series we discussed some less common instruments and also some details on some instruments you might hear about when discussing things with other hams. Let's now delve into more esoteric equipment along with some old standbys.

Function Generators — Function generators generate signals that represent 'functions' like sine waves, square waves and triangle waves. The ones made in the budget range of most hams are good up to 20 MHz or so. They are especially useful for testing audio circuits and some digital circuits. In fact, the under $400 function generator on my bench can generate stable signals for working on RF circuits up to 20 MHz.

Rigol DG1022 Function Generator

Signal Generators — The term signal generators typically used to simulate RF signals to do things such as aligning radios and also testing them for performance. Signal generators can generate a continuous unmodulated carrier or a signal can be modulated by an internal modulator for AM and FM signals. They also usually generate an amplitude of microvolts thru a couple of volts RMS. They do this by having calibrated attenuators of their output stages.

For the ham who wants to roll his own radio they are a fabulous tool. Unfortunately, their cost even on the used test equipment market is not cheap. Look for quality names like; Keysight, Hewlett Packard, Tektronix and Fluke who made a wide variety of quality signal generators. Shown below is the popular HP 8640B.

The HP 8640B Signal Generator

Spectrum Analyzers — A spectrum analyzer display frequency versus amplitude typically on a dB scale that we have all seen in pictures in the ARRL Handbook. Many spectrum analyzers are available with a tracking generator as an option. This makes the spectrum analyzer even more versatile allowing you to put a circuit you want to test between the generator and the spectrum analyzer input to sweep across a band of frequencies to display the response of the circuit over the band you selected. They are still not cheap the simpler ones starting at $100 and running up to $2000 for something a ham might use from a more complex application. (In my professional life I had the pleasure of using a top-of-the-line Keysight and Rhode & Schwartz analyzers that cost over $250,000 and had an incredibly wide frequency coverage). In my

The HP 8640B Signal Generator

shack I have a Rigol DSA815-TG (shown below) that is useful from 9 KHz to 1500 MHz and includes a tracking generator. It is the tool I use to tune up repeater duplexers. It makes tuning and optimizing duplexers and other types of RF filters relatively easy and costs under $1000. Also, the internet is full of Tiny SA's for under $100. They are limited performance versions of their big brothers but can be helpful in some situations.

Service Monitors — Many members at past meeting have heard K1DT and I talk about taking a service monitor up to the club to work on one of the repeaters. A service monitor is a collection of instruments in a single box used by two-way radio shops to service radios used by police and fire departments among others. They typically cover at least the 25 MHz to 1000 MHz range. They are very expensive (even used) and they almost always include the following:

- High quality synthesized RF Signal generator
- Audio Signal Generator to modulate the RF signal generator
- Measurement receiver that includes a function to tell how far off frequency a transmitter is from a specified frequency on an individual meter.
- Calibrated attenuator
- Deviation meter (which allows you to measure your peak FM modulation)

The more expensive service monitors have oodles of additional functions like power meters, PL generator, DPL generator, SINAD meters and spectrum analyzers. These were very useful 30+ years ago when 2 m and 440 radios used individual crystals that had to be set on frequency with trimmer capacitors in the radios circuitry and the radio's circuits needed to be tuned up occasionally for optimum performance. They are no longer necessary with modern programmable radios, even the cheapest programmable radio does not justify the use of one of these. Service monitors are complex and take some knowledge to use correctly (look at the picture below and you will see the multitude of knobs and buttons). The manufacturers are not your typical ham radio suppliers but rather names like Aeroflex, Hewlett-Packard, Anritsu, IFR, Motorola, Cushman, Wavetek, Gertsch, Helper Instruments, Viavi and others. It is a fabulous tool for those hams that are maintaining repeaters. Most hams really don't need one and there is no good reason for someone new in the hobby to spend a bundle of cash to get one. K1DT, K1CW and I can discuss them with you if you feel the need to have one.

The IFR 1500 Service Monitor

Show above is an IFR 1500 Service Monitor very common in two-way radio shops.

Now for some oldies but goodies to round out or discussion. The VOM and VTVM are instruments with over 60 years of history but they are not the only old one's a ham might see.

Grid Dip Meters—For many years adjusting antenna traps was a hit or miss proposition. VNA's make this easier but prior to VNA's the grid dip meter (GDO) solved this problem by making a simple to use portable instrument that could tell you when a circuit coupled to it was resonant. It is a tunable oscillator that has a meter in the grid of the tube (or base of a transistor). As you tune it thru its frequency range when it detects a nearby circuit on that frequency the meter will quickly go to zero (or close to it). That frequency the grid dip meter is reading at that point is the resonant frequency of the circuit you are testing.

The MFJ-201 Grid Dip Meter

LC Meters — If you are cheap like me and like to build things grabbing cheap bags of miscellaneous parts at a flea market is not unusual. Sometimes the parts are in grab bags because they are poorly marked or are manufacturer's seconds which means they are not right on the value stamped on them. In that case a LC meter is a nice thing to have but definitely not cheap.

Sencore LC53 L-C Meter

As the letters imply the measure inductance (L), capacitance (c) and sometimes resistance (r), in the case of a LCR meter. So, if you buy a grab bag of capacitors you can measure them to see what their true values are. Some DMM's are starting to offer these functions in a limited way but for the serious experimenter the LC meter is a money saving tool (OK that may be a bit of a stretch but that's the excuse I have for owning one).

AN INTRODUCTION TO TEST EQUIPMENT
CONT'D

Buying Used vs. New Equipment—As with anything if you buy new equipment it is nice but sometimes the price tag drives you to buy something used.

Some thoughts about used equipment, ideally you want to see it work prior to purchase or have some right of return (in the case of internet sales). A used DMM or VOM is usually less of a problem as if you turn it on it hopefully has a battery and you can try it on the resistance range by shorting the leads together. It should read close to zero ohms.

Buying used professional equipment has its own set of problems. In all likelihood If you buy a Tektronix oscilloscope you need to get the operators manual. Also, it's nice to get the repair manual with any used equipment you buy (with older Tektronix equipment the operator and repair manuals are often one manual). But be warned if you need parts, they are custom made for Tektronix which means they are expensive and often very hard to get. A Tektronix scope is a great piece of equipment but a maintenance nightmare. I can confirm that as I used to work for a Raytheon repair depot that serviced them for the companies use.

Always make a real effort to get the manual with any piece of gear you buy. The more complicated the instrument the more important it is to get the manual to operate it properly. A DMM or frequency counter is pretty easy to operate but a spectrum analyzer or service monitor has up to 20 possible settings for a measurement. Manuals for commercial gear more than a few years old are in the $25 to $100 range so not getting it when you buy the gear should affect its price.

There are also used equipment dealers who specialize in selling test equipment. They offer some level of guarantee unless they state 'as-is'. Also, they typically can calibrate the equipment but be warned calibration cost significant money and for most ham applications is a bit of overkill. If you feel the need to have the equipment calibrated ask for 'commercial calibration' which is more than adequate for most ham applications. Avoid Z540 or ISO17025 calibration they involve a huge amount of data statistical analysis that you will pay for and likely never use.

I hope this walk through the world of test equipment has been interesting and if you have any questions on a particular item see me at the club or on a Zoom session and I will be glad to go into more detail.

W1OP DMR BUSIEST NEDECN REPEATER

The W1OP DMR repeater has again attained first place in usage for the week according to reports issued each week by NEDECN.

During the week of August 27 to September 2 W1OP had 17 local users and placed as number one for locally generated air time significantly above the usual busiest repeater in the network, K1DQ in Shapleigh, ME.

Keep on Talking

ON THE AIR:

PARKS ON THE AIR ACTIVATIONS

Dave Steussie; W3DRE, Andy Stenberg; AJ1S and Bob Simoneau; N1ET with the assistance of many other club members continue to put Parks On The Air.

Recent activations include:

June 20, 2023	Snake Den State Park	US-RI	W3DRE
June 21, 2023	Snake Den State Park	US-RI	W3DRE
July 5, 2023	Rocky Point State Park	US-RI	N1ET
July 6, 2023	Snake Den State Park	US-RI	W3DRE
July 7, 2023	Rocky Point State Park	US-RI	N1ET
July 8, 2023	Cardigan Mtn. State Park	US-NH	AJ1S
July 9, 2023	Goddard Memorial State Park	US-RI	W3DRE
July 15, 2023	Gardner Memorial Wayside State Park	US-NH	AJ1S
July 15, 2023	Wolfe's Neck Woods State Park	US-ME	AJ1S
July 18, 2023	Rocky Point State Park	US-RI	N1ET
July 19, 2023	Acadia National Park	US-ME	AJ1S
July 22, 2023	Rocky Point State Park	US-RI	N1ET, W3DRE, K1LFS, KB1EFR, N1DM, WA1WEE
July 22, 2023	Herring Cove Provincial Park	CA-NB	AJ1S
July 22, 2023	Roosevelt Campobello National Park	CA-NB	AJ1S
July 22, 2023	Roosevelt Campobello International Pk.	US-ME	AJ1S
July 23, 2023	Rocky Point State Park	US-RI	N1ET
July 25, 2023	Rocky Point State Park	US-RI	N1ET
July 25, 2023	Aroostook State Park	US-ME	AJ1S
July 27, 2023	Baxter State Park	US-ME	AJ1S
July 27, 2023	Southern NE Trunkline State Trail	US-MA	W3DRE
July 30, 2023	Rocky Point State Park	US-RI	N1ET
August 1, 2023	Rocky Point State Park	US-RI	N1ET
August 2, 2023	Rocky Point State Park	US-RI	N1ET

ON THE AIR:

PARKS ON THE AIR ACTIVATIONS
CONT'D

August 2, 2023	Snake Den State Park	US-RI	W3DRE
August 5, 2023	Rocky Point State Park	US-RI	N1ET
August 5, 2023	Goddard Memorial State Park	US-RI	W3DRE, K1DT, K1TNX, KZ1K, KV4DN
August 10, 2023	Ferry Beach State Park	US-ME	W3DRE
August 14, 2023	Snake Den State Park	US-RI	W3DRE
August 16, 2023	Snake Den State Park	US-RI	W3DRE
August 21, 2023	Snake Den State Park	US-RI	W3DRE
August 23, 2023	Snake Den State Park	US-RI	W3DRE
August 28, 2023	Snake Den State Park	US-RI	W3DRE

AJ1S at Canyonlands National Park K-0010 US-UT

Want to learn more?
https://parksontheair.com/

W1OP at Fort Adams State Park K-2874 US-RI

JUST FOR FUN—ANTENNAS

ANDY STENBERG, AJ1S

Many thanks to Andy Stenberg, AJ1S, for his word search contribution.

We begin the fun with the topic of antennas. Can you find them all? No, there will be no answer sheet at the end of the issue or in the next issue either. This is serious competition. The only clue I will provide is that according to Andy, there are 24 antennas as shown on the list below, but there are also other amateur related words included, like when you were a kid and you found words in the puzzle that had not been intentionally placed in there but because of the random arrangement of the camouflage letters, words were formed. But this is intentional.

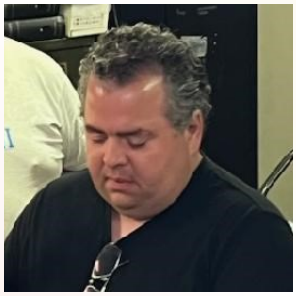
So, get your spouse to help, get your kids to help, get your grandkids to help, get that kid across the street to help. Then insist they get their ticket. Good luck!

E	Q	B	O	B	T	A	I	L	C	U	R	T	A	I	N	W	E	Y
N	S	E	Z	R	T	Y	U	I	I	P	O	P	A	Q	S	F	H	A
D	Y	A	R	R	A	E	R	I	F	D	N	E	J	K	U	L	M	G
F	Q	M	H	S	D	F	G	E	R	I	W	M	O	D	N	A	R	I
E	B	U	N	P	M	O	F	F	C	E	N	T	E	R	F	E	D	M
D	L	N	A	K	N	I	A	T	R	U	C	A	B	R	E	T	S	V
Z	A	A	R	G	T	I	T	T	O	D	E	L	T	A	L	O	O	P
E	D	D	M	V	I	U	S	E	H	D	X	K	O	Y	A	R	D	O
P	C	C	P	R	A	T	T	E	C	C	S	C	X	Z	Z	A	N	O
P	O	O	C	E	A	N	H	H	V	P	A	C	I	F	Y	I	C	L
A	C	O	L	L	I	N	E	A	R	A	R	R	A	Y	H	K	L	D
S	K	K	F	L	O	O	P	S	K	Y	W	I	R	E	C	O	A	E
K	R	Q	D	Q	R	Z	H	D	R	I	G	F	E	L	O	P	I	D
P	L	S	A	R	I	V	E	R	T	I	C	A	L	S	Y	O	Q	L
O	Q	T	D	O	U	B	L	E	T	A	T	T	E	A	N	X	R	E
T	R	W	O	N	E	A	I	W	L	P	O	U	R	E	H	B	O	I
A	Z	P	R	Q	V	F	C	I	D	O	I	R	E	P	G	O	L	H
T	W	B	E	V	E	R	A	G	E	T	S	E	T	N	O	C	W	S
H	R	O	V	F	I	E	L	D	D	A	Y	W	O	R	K	E	M	T

ADCOCK
BEAM
BEVERAGE
BOBTAIL CURTAIN
COLLINEAR ARRAY
DELTA LOOP
DIPOLE
DOUBLET
END FED ZEPP
END FIRE ARRAY
HELICAL
LAZY H
LOG PERIODIC
LOOP
LOOP SKYWIRE
OFF CENTER FED
QUAD
QUAGI
RANDOM WIRE
SHIELDED LOOP
STERBA CURTAIN
TWO HALF WAVES IN PHASE
VERTICAL
YAGI

HAPPENINGS:

Congratulations to the following new PRA members:



WQ1Q
Rocco Quattrucci
June 13

N1SXB
John Brewer
June 13

W1BSN
Barry Noel
July 11

Welcome to the club and remember "once a member, always a member".

Many thanks to Frank, W3LPL on helping us to procure an AB577 mast. This will assist the club greatly during our field day deployment.

Congratulations to John, N1sXB who won the door prize at the Northeast HamXPosition In August. John was the product recipient of a Yaesu FT-710 AESS.

Please Join us in congratulating the Club's dear friend, Nancy Austin, KC1NEK on her election as the new Rhode Island Section Manager. Please provide Nancy with all your help and support. Many thanks to outgoing Rhode Island Section Manager, Bob Beaudet W1YRC, for his many years of service and support for the club and to all the amateurs in the state of Rhode Island.

The League is doing a ham radio booth at the Big E https://thebige.com in West Springfield, MA and is looking for people to attend it. The goal is to introduce ham radio to the general public, show that it is still relevant, and to interest the public in signing up for ham courses. The dates are Friday, September 15th through Sunday, October 1st. Please email Larry, W1AST at W1AST@arrl.net if you have any questions. For additional information on The BIG E and the ham radio booth, visit https://nediv.arrl.org/project-big-e. If you are interested signup at: https://docs.google.com/forms/...

Our **Happenings** section is the place to list member accomplishments and other short notices pertaining to club members and other items of member interest.

If you think there is an item of interest or event that should be listed in our **Happenings**, please let our Club President know and we will do our best to get it included.

CALENDAR: AUTUMN 2023

POTA Activation Fort Adams State Park, Newport	***9-Sep***	9am to 1pm. Part of the "Activate all RI POTA References" SES sponsored by the Newport Cty RC. *https://parksontheair.com/*
Masonic Lodges on the Air 116 Long St, Warwick, RI 02886	***23-Sep***	10 AM - 6 PM Local. Field Day/POTA-like activity, involving youth and providing hands on training and experience for all members. Multiple stations. *http://cgmorelight.com/*
PRA Awards Dinner @ Atwood Grille 1413 Atwood Ave, Johnston, RI 02919	***26-Sep***	5:30 PM. Awards presented to 9 outstanding members. ARRL Officials will join us! *https://www.atwoodgrille.com/*
Tour of Providence EMA HQ, KK1PMA 591 Charles St, Providence, RI	***30-Sep***	9:30 AM. Barry W1BSN will give us a tour of the Providence EMA headquarters, the KK1PMA RACES Station, and present an overview of how Amateur Em-Comm, ARES and RACES fit in. *https://www.providenceri.gov/pema/*
NEAR-Fest XXXIV Deerfield State Fairgrounds, NH	***Oct 13 & 14***	New England Amateur Radio Festival and Flea-Market *https://near-fest.com/*
Visit to Retro-Computing Society of RI Suite 411, 118 Manton Ave, Providence, RI	***21-Oct***	1:30 PM. Mike Umbricht W9GYR, Curator of Retro Computing Society will give us a tour of their museum at the Atlantic Mills *https://www.rcsri.org/*
Olneyville NY System Dinner 18 Plainfield St, Providence, RI 02909	***24-Oct***	6:00 PM. The PRA met at the infamous Olneyville New York system for dinner *https://www.olneyvillenewyorksystem.com/*
CQ World-Wide, Phone 1 Ludlow St	***Oct 28 - 29***	Multiop entry *https://www.cqww.com/rules.htm*
ARRL Sweepstakes, CW 1 Ludlow St	***Nov 3-5***	Multiop entry *http://www.arrl.org/sweepstakes*
ARRL Sweepstakes, Phone 1 Ludlow St	***Nov 17-19***	Multiop entry http://www.arrl.org/sweepstakes
CQ World-Wide, CW 1 Ludlow St	***Nov 25 - 26***	Multiop entry *https://www.cqww.com/rules.htm*
Volunteers On the Air 1 Ludlow	***Nov 28-Dec 5***	Operate as W1AW/1 on various bands and modes per RI schedule. Week 2 of 2 *https://vota.arrl.org/*
ARRL 160M Test - as W1AW/1 ! 1 Ludlow St	***Dec 1,2,3***	Annual 160m Tradition. Operate as W1AW/1 *http://www.arrl.org/160-meter*
FT RoundUp 2023 Remote from FL	***Dec 2 & 3***	1800z Dec 2 - 2359z Dec 3: Remotely Operated Contest. Operate as W1AW/1? *https://www.rttycontesting.com/ft-roundup/rules/*
ARRL 10 Meter Contest 1 Ludlow St	***Dec 8,9,10***	Multiop entry *http://www.arrl.org/10-meter*
Christmas Party 1 Ludlow St	***19-Dec***	Traditional Pot Luck

IN CLOSING:

WHERE'S DX?

Cycle 25 is here. 10 and 12 Meters were hopping in February and March. But since April, not so much. Some scientists postulate this Cycle has peaked early, and this is all we get, or maybe we will observe a double peak. Others still say this will be like Cycle 19 when in 1958 you could work VK and ZL on 6 meters with 2W of AM and a mobile whip via F2 layer propagation. We can only wish!

The Annual 6 Meter Sporadic E season came and went. There were a few good days, but even the QST World Above 50 MHz editor, N0IK, labels this season as "Dismal", and "less than spectacular." But he also goes on to say "Scientists still have only a limited understanding of what causes sporadic E."

Of course, you can still work a POTA station in Ohio, and Italy on FT8 is no problem, and there's the occasional 6M single-hop Es to Chicago. But Where's DX?

The answer is for you to find. DX is different things to different folks. The definition of DX on 2M SSB is different than DX on 20 CW. DX to someone new in the game is different than for the person close to Honor Roll. Some define DX as anything you haven't yet worked. As you move up Your particular DX ladder, finding Your DX becomes more difficult. Exactly! We don't chase DX because it's Easy, we chase it because it's Hard.

I wish I was logging VKs on 6M, but this week I was really happy to log Bill, K4WMS, on 2M SSB, Grid FM17, 400 miles away in VA via Tropospheric ducting, KB3RHR in Pittsburgh last week on 6M SSB via Perseid Meteor Scatter, and a nice chat with blind operator XV1X in Vietnam on 15CW. All "good DX" in My book.

So don't be too concerned about the SSN or equatorial ionization crests. Just get on the air. A dismal week of DXing is better than a spectacular week at work!

DX Is!

Tess

Many thanks to all who contributed for this issue.
It could not be done without you.

This is Your Newsletter !!
Forward your items of interest, short articles, and photos to *W1ER@ARRL.NET*
We will make every effort to include your submission.

73 AND SEE YOU IN DECEMBER

Our **Calendar** section is the place to list events either sponsored by the PRA or of general interest to the PRA membership and including its participation.

Events take place year round, be it contests, conventions, flea markets, or just casual get togethers.

If you think there is an event that should be listed in our **Calendar**, please let our Club President know as soon as possible and we will do our best to get it included.

Also, don't forget we meet weekly every Tuesday evening on the web. Members should watch your email for meeting announcements.

PRA NET ON DMR

Don't forget that the PRA conducts a weekly net on DMR every Sunday night at 2000 EST/EDT, hosted by the New England Digital Emergency Communications Network (NEDECN) on talk group NETAC1.
All are welcomed to attend.