



The Old Professor



The Providence Radio Association, Inc. December 2021 Volume CII, Issue III

MESSAGE FROM THE PRESIDENT: 100 YEARS OF ARRL AFFILIATION DAVE TESSITORE, K1DT

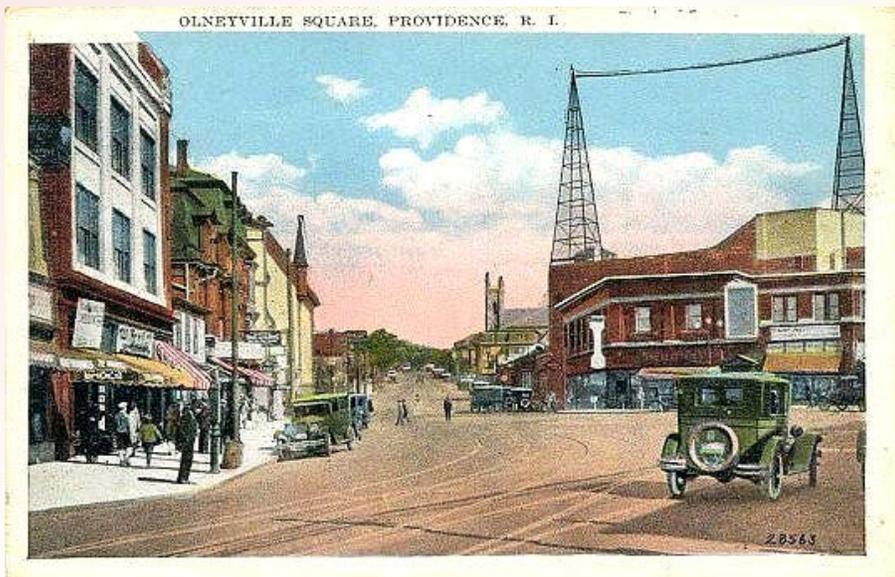
The Providence Radio Association was founded in 1919 in the Elmwood section of Providence. In October 1921 the club filed a “Resolution of Affiliation” with the American Radio Relay League, with Lew Bellem, 1BES as President and Lew Leighton, 1ETD as Secretary signing for the Club. This resolution was approved by the ARRL on November 19, 1921, and an ARRL club charter of affiliation was issued on December 9, 1921, signed by ARRL Secretary K.B. Warner, 9FW and President Hiram Percy Maxim, 1AW.

Note that this was back before US callsigns had the international W or K prefix. The prevalent mode of Wireless transmission was keyed Spark Gap, and crystal detectors for receiving. Continuous Wave (CW) transmission and thermionic detectors were in their infancy and would re-

main out of the reach of most amateurs for several more years.

Today we casually operate via DMR over global networks using handheld radios costing less than dinner for two, look-on as our computers Work All States in a weekend on FT8, and learn that our local elementary school contacted the International Space Station on 2 meters during an assembly.

100 years later, on December 9, 2021, we will celebrate the achievements of all our PRA members, especially our founders who were at the forefront of the electronic communication era. Each one has contributed in some way to the betterment of not just Amateur Radio, but of modern technology. At our Centenary Dinner we will raise a glass and toast to them, for 100 years from now I know our descendants will continue to marvel at what they accomplished.



INSIDE THIS ISSUE

From the President.....	1
Events—Near-Fest XXX.....	2
On the Air—What is a Duplexer .	4
Mystery Solved	7
History	7
Happenings.....	8
Calendar.....	9
In Closing	10

INTERESTING TIDBITS

- Telefunken Concertino

EVENTS: NEAR-FEST XXX
TOM GREENWOOD, W1ER

Another successful Near-Fest was held on October 16th and 17th after a two year hiatus due to Covid. The excitement could not have been greater. Immediately after arriving after the official opening, you had to creep very carefully in the car to avoid mowing down crowds of buyers, seller, and other excited attendees.

The PRA set up at our regular spots along what has become affectionately known as “The Boulevard of Broken Dreams” atop “Federal Hill”.

Weather for the event could not have been any better. A requirement of every Deerchester is to have some rain. We were not let down. The Rain Gods made their brief presence at 1:00 AM soaking down the ground to leave evidence of their attendance. We had a great dinner on Friday evening at Candia House of Pizza and had the honor of having Fred Hoppengarten, K1VR, ARRL New England Director join us.

Representation from the PRA was great. The honor roll of Near-Fest XXX is listed below along with photos courtesy of Bob Simoneau, KA3WLV.



Good stuff for sale. Please don't make us take it back



K1DT greets members, past, present, and future



Home—Don't leave home without it

**EVENTS: NEAR-FEST XXX
TOM GREENWOOD, W1ER**



**The Boulevard of Broken Dreams atop
Federal Hill**



**W1GS and W1ER engaged in deep discussion
while awaiting customers**

NEAR-FEST XXX HONOR ROLL

Congratulation to the following members for their attendance this year:

W1NZR, Brown Beezer
WA1FOS, Ron Cameron
W1TMC, Tom Cragin
W1EYH, Frank DePetrillo
W1PRA, Paul DePetrillo
W1IUP, Tom DePetrillo
N1MJF, Matthew Ferreira
K1CW, Mike Gibbemeyer

W1GS, John Good
W1ER, Tom Greenwood
*** KC1NAB, Bob Heart
N1DM, Domenic Mallozzi
K1DT, Dave Tessitore
*** KA3WLV, Bob Simoneau
AJ1S, Andy Stenberg
*** W3DRE, Dave Steussie

***** First time attendees indoctrinated into NEAR-FEST.**

Welcome to the Party!

ON THE AIR: WHAT IS A DUPLEXER?

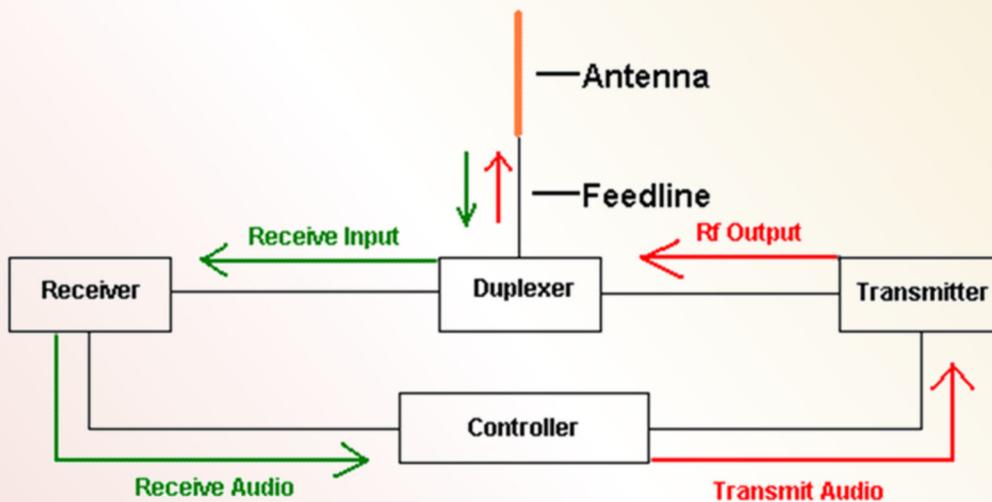
DOM MALLOZZI, N1DM

Over the past year or so members have heard K1DT and N1DM talking about the 'duplexer' for the DMR repeater. Recently, someone asked me just what is 'the duplexer'?

The duplexer is a high-power filter that allows a transmitter and receiver on two closely spaced frequencies to share an antenna. To do this you combine two very high Q filters made of transmission line sections.

at the top of the tower is a real advantage.

Using open ended quarter wave transmission lines with an air dielectric results in a very high Q notch filter which has a very narrow notch. By putting them in series it actually improves the null by making it even deeper. The loaded Q of the network is about 2500. By adjusting the length of the center conductor of the line you can tune the notch to exactly the frequency you want



BASIC REPEATER BLOCK DIAGRAM

N4UJW

In a repeater this allows the receiver and transmitter to share a single antenna which has a lot of advantages. First, it means the receive and transmit coverage are identical. With two separate antenna that were physically spaced to allow the transmitter and receiver to be used simultaneously this would be near impossible. It also allows you to use a single antenna up at the top of the tower. This is critical to VHF and UHF where range is dependent on height above the average terrain, so getting one antenna

to eliminate. In the Motorola T1500 duplexer being used in our repeater the knobs on the front panel allow you to adjust the length of the center conductor of each line (in this application you will hear these adjustable lines referred to as cavities). It takes two cavities in each path to obtain the desired isolation between the transmitter and the receiver. This isolation has to be greater than 80 dB, which is the difference between and S0 signal and a S9 + 25 dB signal on a typical receiver.

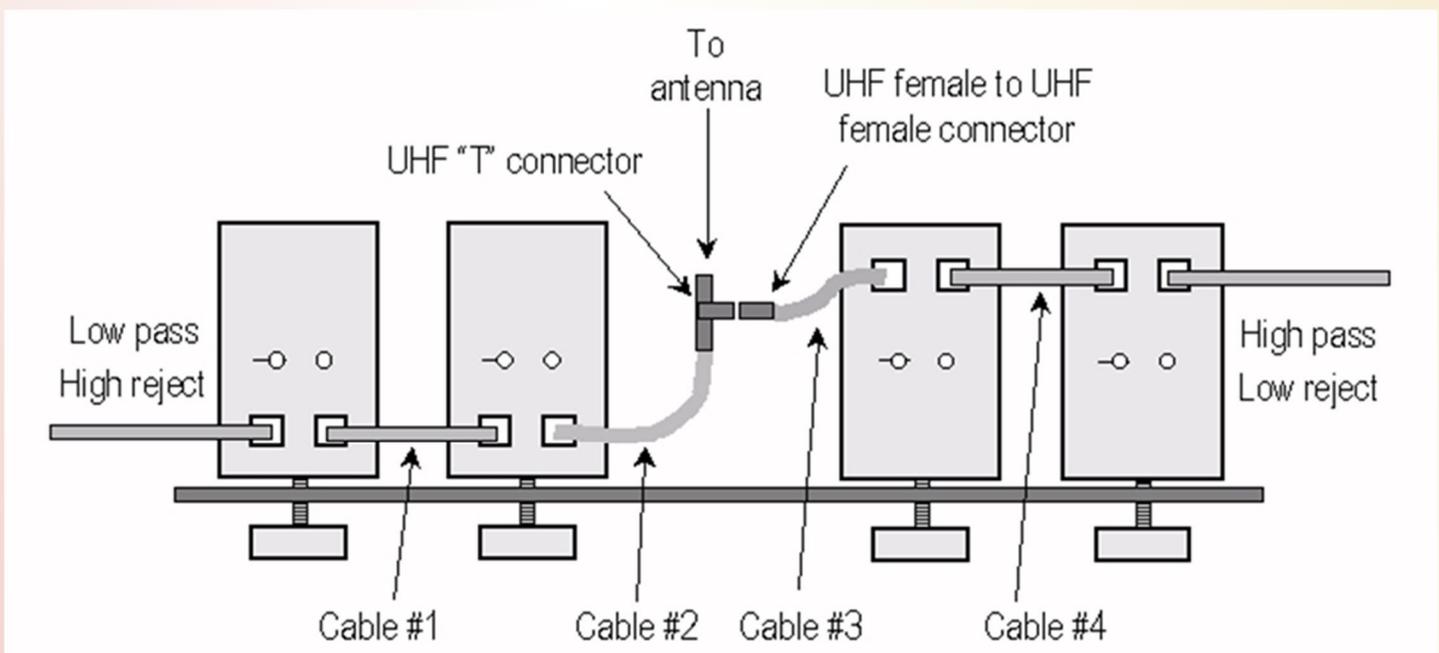
ON THE AIR: WHAT IS A DUPLEXER? CONT'D

Using a service monitor or a spectrum analyzer with tracking generator the tuning process is simply to get the notch in each path as deep as you can on the required frequency. In our case on DMR we set the notch on the receive path for 447.725 MHz (which is the transmitter frequency) this eliminates any transmitter signal or close in noise reaching the receiver. Similarly, in transmit path we set the notch on 442.725 MHz which is the repeater receive frequency this eliminates any off-channel noise from transmitter that may be on the receive frequency of the repeater.

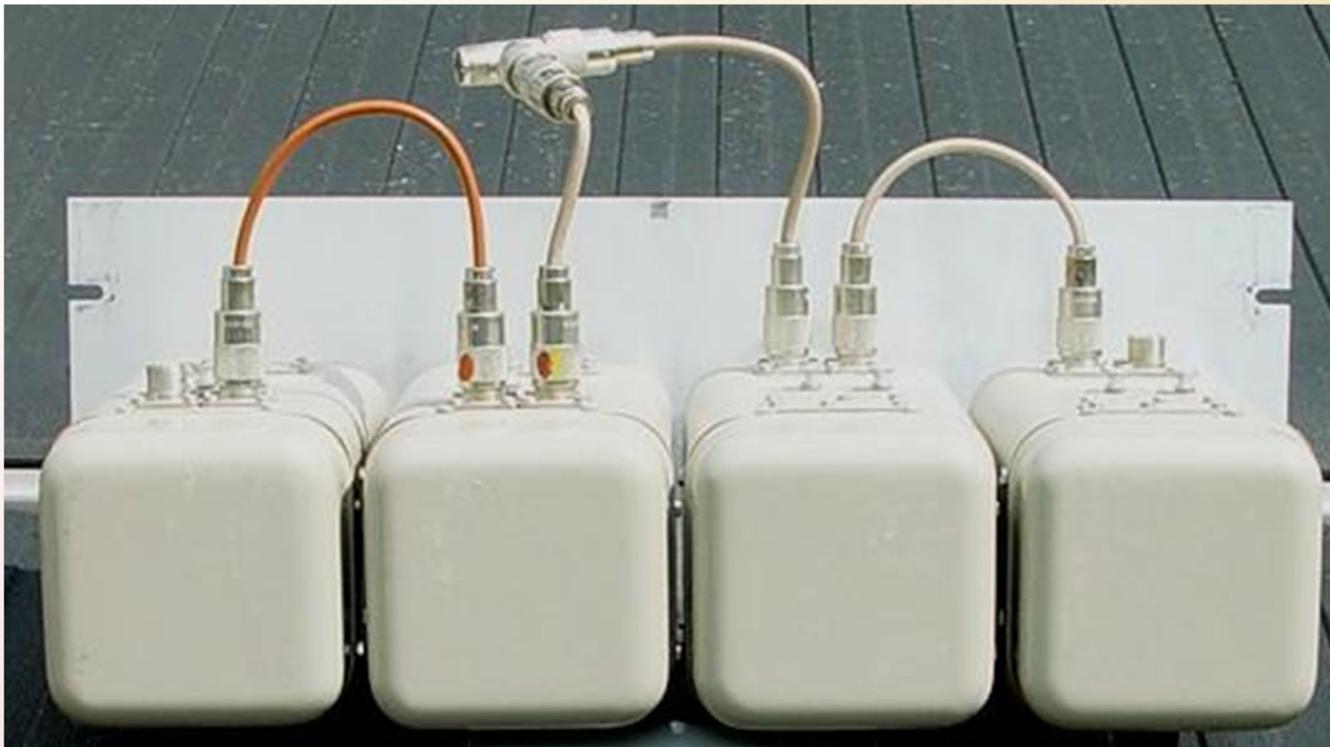
By the way we use a similar duplexer on the 223.98 machine with longer length cavities.

Duplexers are very common in repeaters operating from 144 to 1296 MHz. Below 144 MHz they become very expensive and are rarer. For that reason most 6 and 10 meter repeaters do not use duplexers but use two sites separated by 1000's of feet or more. Split site using a telephone line or other RF linking to link to geographically separated sites.

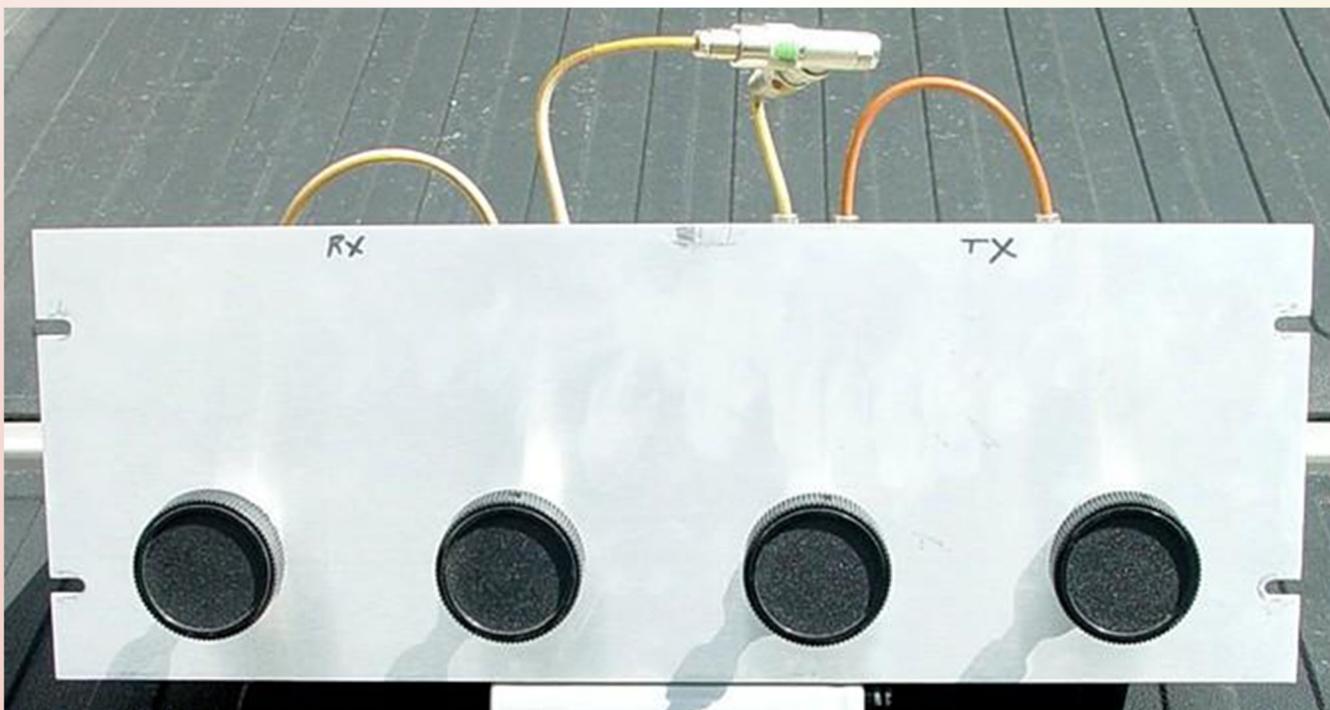
Hope this helps in understanding what we are doing.



TYPICAL DUPLEXER ARCHITECTURE



BACK SIDE OF MOTOROLA T1500 DUPLEXER THE SQUARE BOXES ENCLOSE THE LENGTHS OF ¼ WAVE TRANSMISSION LINE



THE TUNING KNOBS ON THE MOTOROLA T1500 DUPLEXER PANEL

Pictures from WA6ILQ via the Repeater Builder Technical information page : [Motorola® T1500 Duplexer / Cavity Filter information, manuals and other documentation \(repeater-builder.com\)](http://www.repeater-builder.com)

In the September issue, a mystery message was hidden. The message was in CW along the right hand margin on page 5 and read as follows:

“Congratulations. You found the hidden message. Please let us know.”

Nobody reported finding the mystery message so the mystery prize will be saved for the future.

**PUBLIC SERVICE: FIELD DAY 2021 RESULTS
TOM GREENWOOD, W1ER**

On June 26th and 27th, the Providence Radio Association participated in the ARRL annual Field Day operating event. We operated class 3D from the PRA club house atop Neutaconkanut Hill. A great turnout for the event permitted us to have enough operators to have three stations running for the entire 24 hours event. We were honored with appearances from Frank Donovan, W3LPL, and Rick Rosen, K1DS.

K1DT, W1GS, N1DM, and KQ6UP operated the CW station from Studio B using the Yaesu FT1000 Mark V into the 80 meter doublet for a grand total of 1047 contacts.

K1DS, KZ1K, W1AXB, and W1ER operated the SSB station using the FT1000 in Studio A into the log periodic for a grand

total of 1044 contacts.

KA3WLV operated the FT8 station using the ICOM 7300 on 6 meters into the 6 meter Yagi. This was Bob's first Field Day with the club and had the opportunity to witness the fast paced action along with the ups and downs as traffic came and went and as we fought the unexpected emergencies.

KZ1K raised concerns on Saturday afternoon that he was having difficulty hearing the SSB stations on 20 meters, but late on Sunday morning he switched over to 15 meters and became a machine cranking out contacts at a peak rate of 140 plus contacts per hour. Fantastic job!

Final results are tallied on the next page.

SAY CHEESE!

A healthy helping of stinky cheese has become a staple of the P.R.A. Field Day diet. In 2016 we conducted a battle of the nations by taste testing Blue Cheese from four countries. The winner was a tie but the loser was clear. The loser is spared the embarrassment.

This year we had healthy servings of Blue Stilton, English Cheddar, and Cotswald Double Gloucester. While there was no competition, the Blue Stilton was clearly the winner because there was not a speck remaining. The pile of English Cheddar also had a sizeable dent. We had a lot of amount of Cotswald remaining which suggests to me that people don't like their cheese being fouled with spices. What will we do for Field Day 2022? We will have to wait and see, but a larger quantity of Blue Stilton comes highly recommended.



KZ1K operating the SSB station, not sleeping



Meg Wilson, K1DT, and W1GS in the CW station

HISTORY: TELEFUNKEN CONCERTINO

Everyone has a radio they remember as the one that sparked the fire underneath them. Mine was the Telefunken Concertino. Smart enough to know what AM and FM was at the young age of 7, I asked my Dad what SW1 and SW2 was. That evening, he hooked up an old car radio antenna and revealed a world of strange noises, voices, and languages. The fire was instantly lit and no fire extinguisher has possessed ability to put it out ever since.

The Concertino was manufactured by Telefunken Deutschland TFK about 1959 and featured nine Telefunken tubes, Stereo Hi-Fi, with AM, FM, and shortwave coverage from 2.2 to 22.5 MHz. The receiver employed a dual con-

version IF at 460 KHz and 10.7 MHz. It was housed in wood grain cabinet with a single full range elliptical speaker in the front and two tweeters on the sides. The receiver also included a band spread dial, a magic eye tube, and automatic frequency control for aids in tuning.

What radio sparked your fire?



HAPPENINGS:

Congratulations to **David Steussie;** **W3DRE** who was sworn in as a new member of the association on October 12, 2021. David has recently relocated to the Ocean State after many years in Long Beach, California.

Congratulations to **Bob Simoneau;** **KA3WLV** on passing his Amateur Extra exam on November 20th.



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.

On Nov 13th PRA HQ was visited by Linda Gasparello, Co-host, and Llewellen King, Host of the syndicated PBS show White House Chronicle <http://whchronicle.com/> . PRA President David Tessitore spoke on camera about the birth of wireless, the importance of the technology, and the role Amateur radio played in its early development and continue to have today. The interview aired on November 19th on over 200 local PBS-TV outlets, at various times on SiriusXM Radio's P.O.T.U.S. (Politics of the United States), Channel 124, and via your favorite Podcast outlet.

<https://vimeo.com/647568809>



CALENDAR: DECEMBER 2021—FEBRUARY 2022

Remote Sensing of Geophysical Data from Earth and Mars

To Be Rescheduled for Early 2022

Meg Wilson, Brown University Graduate Student, will describe her work on remote sensing data from Earth and Mars, and turning raw data from Landsat and AVIRIS into actual useful units. Don't miss this fascinating presentation!

ARRL 160 Contest, CW

3 December 2200Z — 5 December 1600Z <http://www.arrl.org/160-meter>

FT Roundup

4 December 1800Z—5 December 2359Z <http://www.rttycontesting.com/ft8-roundup/rules/>

PRA - ARRL Affiliation Centenary Dinner

7 December Atwood Grille, 1413 Atwood Ave., Johnston, RI

All current and past members are invited to join along with special guests ARRL First VP Mike Raisbeck W1TWF and NE Director Fred Hopengarten K1VR, for an evening of history and good cheer

<https://www.atwoodgrille.com>

ARRL HQ Visit

9 December Newington, CT

We will Tour League HQ, Operate station W1AW, Meet with ARRL Leadership, and have a Photo-op with our Certificate of Affiliation signed December 9, 1921 by Hiram Percy Maxim! We have reserved a limo leaving the PRA Clubhouse at 8AM, returning by 5PM. **Please RSVP ASAP.**

160-Meter Transatlantic Centenary QSO Party, CW

11 December 2021 <http://www.arrl.org/transatlantic>

ARRL 10 Meter Contest, All Modes

11 December 0000Z — 12 December 2359Z <http://www.arrl.org/10-meter>

Stew Perry Top Band Challenge Contest

18 December 1500Z — 19 December 1459Z <http://www.kkn.net/stew/>

PRA Christmas Party

21 December 2300Z

All members of PRA Past, Present and Future are invited to our Annual Pot Luck Holiday Extravaganza at the Clubhouse. Bring a small dish to share.

PRA Annual Meeting

11 January 2300Z

Annual Reports from Officers and Committees, and Voting for the 2022 Officers and Board of Directors. Open to all members in Good Standing. Dues may be paid prior to the meeting

ARRL January VHF Contest

15 January 1900Z— 17 January 0359Z <http://www.arrl.org/10-meter>

CQ World-Wide 160M, CW

28 January 2200Z— 29 January 2159Z <http://www.cq160.com/rules.htm>

Algonquin Flea Market

19 February 1400Z — 1800Z 1Lt Charles W. Whitcomb School, Marlboro, MA

<https://www.qsl.net/n1em/2022flyer.pdf>

CQ World-Wide 160M, SSB

26 February 2200Z— 28 January 2159Z <http://www.cq160.com/rules.htm>

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.

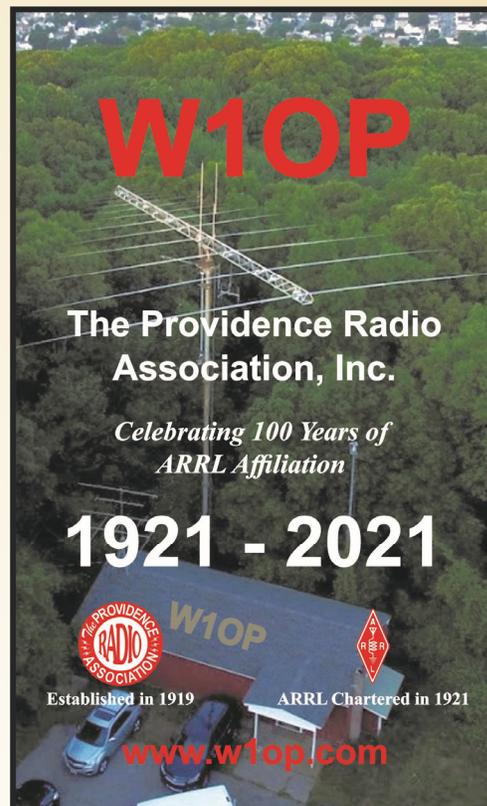
IN CLOSING: REMEMBERING THOSE BEHIND 100 YEARS

On December 9, 2021, PRA members will be visiting League HQ to commemorate 100 years to the day of ARRL affiliation. Coincidentally, on December 9, 2007, one of our most influential members of the past half century, Zaven "Zeke" Tenkarian, W1IUX passed away. Zaven was the principal, if not singular, designer, architect, engineer, and craftsman responsible for our Log Periodic antenna, many amplifiers, countless projects and building maintenance. In addition, he operated the W1OP station most every day, most every contest, and worked most of the

DXCC entities we have accredited.

Over the past 100 years there are hundreds of Silent Keys who, along with Zaven, have each contributed to the good of this association. At our Centenary Dinner on December 7, and at our ARRL HQ visit on December 9, I ask you to join me in a moment of silence for Zeke and all our dearly departed SKs who made the PRA what it is today.

David Tessitore, K1DT, President



The Providence Radio Association, Inc.

The Old Professor is published quarterly by The Providence Radio Association, Inc.

Editor: Tom Greenwood, W1ER
W1ER@ARRL.NET

How to Contact US

Snail mail:
1 Ludlow Street
Johnston, RI 02919-6618

E-mail: dmallozzi@AOL.COM

<http://www.w1op.com>



<https://www.facebook.com/groups/144768709262409/>

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.

We wish you all a safe and happy Thanksgiving, a very Merry Christmas, and a Happy Hannukah!

73 AND SEE YOU IN MARCH

