OUR 25TH YEAR!

EPARA BEACON

VOL. 5, NUMBER 8 THE OFFICIAL NEWSLETTER OF THE EASTERN PENNSYLVANIA AMATEUR RADIO ASSOCIATION AUGUST 2021

NEXT CLUB MEETING: AUGUST 12TH

Monroe County Public Safety Center, 100 Gypsum Rd Stroudsburg, PA 18360

Welcome to the EPARA Beacon! This newsletter is published monthly and is the official newsletter of the Eastern Pennsylvania Amateur Radio Association. EPARA has served the amateur radio community in the Pocono Mountains for over 25 years. We have been an ARRL affiliated club since 1995. We offer opportunities for learning and the advancement of skills in the radio art for hams and non-hams alike. EPARA supports Monroe County ARES/RACES in their mission of providing emergency communications for served agencies in Monroe County. Feel free to join us at one of our meetings or operating events during the year. The club meets on the second Thursday of every month, at the Monroe County 911 Emergency Control Center. The business meeting starts at 7:30 P.M. Anyone interested is invited to participate in our meetings and activities.

West coast wildfires take their toll

ZOOM Meeting Info: Meetings begin at 7:30PM!

https://us02web.zoom.us/j/85463346031?pwd=bU1KcVZoaVZiVEUvdjRsUXlNNHZkZz09

Meeting ID: 854 6334 6031 Password: 244632

From The President

Antenna/Elmer Weekend was another great event! A couple antenna projects and some HF Elmering where the main parts of the event. We did some house keeping to the EMCOMM trailer so its organized again.

Coming up in August we have our public outreach event to promote ham radio at the West End Fair, we will be canvassing the membership for people to man the booth at the next meeting. This is a fun event, and we will run the nets from the fair grounds as in years past. Also coming in September, we will hold our hamfest. We will be going over assignments and planning for the event.

Finally, I am sad to report that our ARES EC, Charlie KB3JUF, suffered a mild stroke. Charlie's motor function was not affected but his speech was. He is making tremendous progress with his recovery. He has already returned on the air checking into nets both on VHF and HF. We all are pulling for his continued recovery and are inspired by his spirit and grit. Nothing keeps that guy down!

That's if for now, I hope to see many of you on August 12th at our next meeting. 73

Chris AJ3C

CONTACT INFORMATION

President Chris Saunders AJ3C: aj3c@gmx.com	Vice President Bill Carpenter AB3ME: bill47@ptd.net
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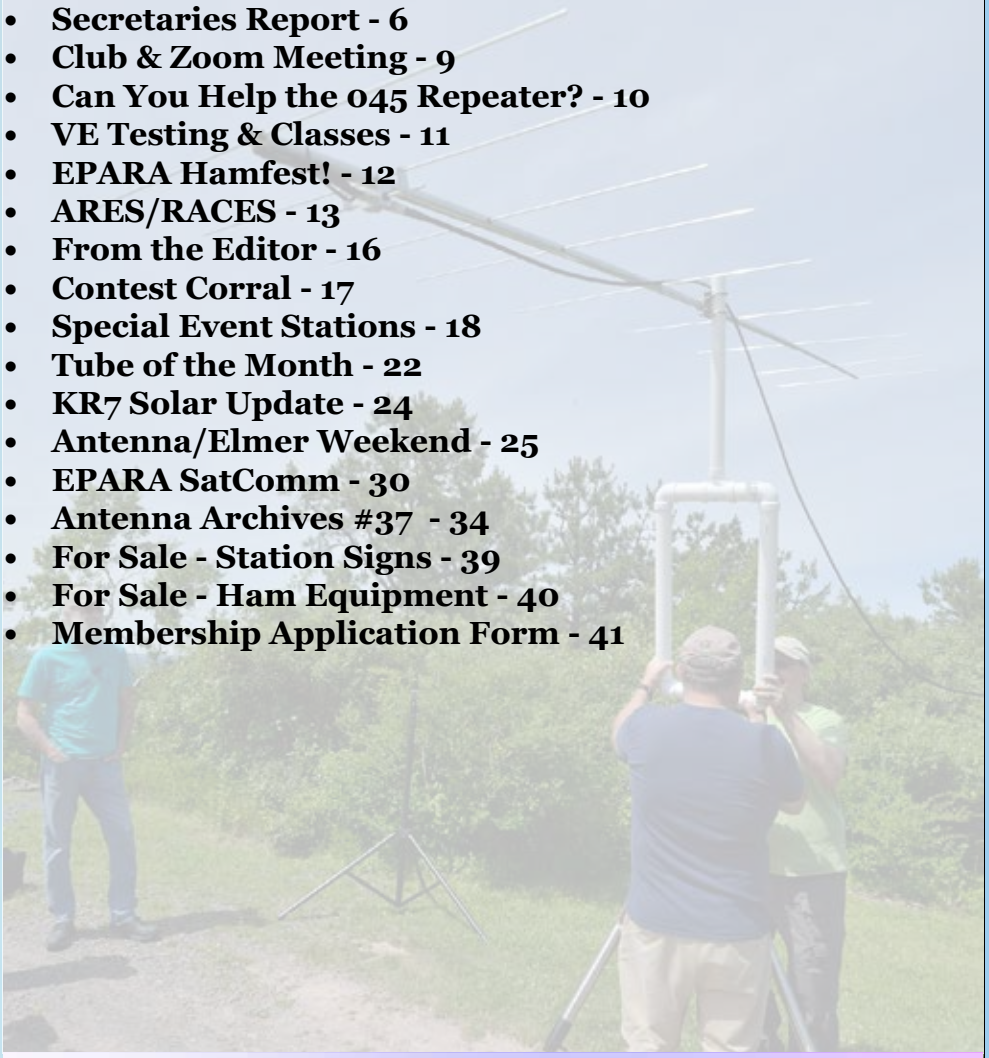
What's INSIDE this ISSUE



EPARA Net list

Monroe county ARES-RACES – Sunday's 8:30 PM, 146.865 MHz, PL -100 Hz

The Monday Night Pimple Hill repeater 8:30 PM (Repeater freq = 447.275 with a - 5MHz offset) DMR TECH Net on TG314273* Time Slot 2

SPARK Information/Swap Net – Tuesday's 8:30 PM, 147.045 MHz, PL 131.8 Hz

The Wednesday Night EPARA Hot Spot DMR Rag Chew net at 8:30 PM, TG 3149822* Time Slot 2 (N3IS Talk Group)

EPARA Tech Net – Friday's 8:30 PM, 147.045 MHz, PL +131.8 Hz

*TG = Talk Group

Announcements
AND UPCOMING EVENTS

EPARA Patches: Club patches are in! For those that ordered them please step forward to collect them. We also have extra just in case …

EPARA Club Dues
Club dues were due January 1st. For those that missed the chance to stay current, there are two (2) methods available to pay to help make this easy for all. Contact Scott KC3IAO via his email: KC3IAO@hobbyguild.com and you can send him a check or pay via PayPal.

EPARA Club Meeting
The next club meeting WILL BE held once again at the Monroe County 911 call center. We will also be holding a zoom meeting from the center for those that wish to join from their homes. This has worked well so far and we will continue the trend.

Antenna/Elmer Weekend
This years event was better than expected! Charlie made an appearance to the surprise of everyone. We all wish you a speedy recovery Charlie! You made us all see the true spirit that the club has!

Big Pocono State Park
EPARA's application for the Field Day and Antenna/Elmer weekend site has been approved for the next 10 years. This is good news!

EPARA Hamfest
The EPARA hamfest is fast approaching. The club will be reaching out to everyone to make the effort and volunteer your time to make this a big success. Please make room in your schedules to be there and help out. This hamfest is our first in many years and the success we build here will make future events that much easier. Plan ahead to be there!

Pennsylvania QSO Party
The Pennsylvania QSO Party is always the 2nd full weekend in October so make plans to join in!

Rule #1 of Amateur Radio, it is a hobby, unless you figured out a way to fashion a living out of it.
Rule #2 of Amateur Radio, life is not a hobby and typically carries heavy responsibilities of everything that is not a hobby.
Rule #3 of Amateur Radio, never give up a LIFE event for a Ham event. You may make some great memories at the Ham event, but the guilt you may carry missing a LIFE event can be a terribly heavy millstone.
Rule #4 of Amateur Radio, as technology moves forward, so does Ham Radio - do what makes you happiest, experiment with other elements of Ham Radio as LIFE allows.
Rule #5 of Amateur Radio, it is only Ham Radio, when confused always refer to Rule #1 through #4.

TEST YOUR KNOWLEDGE!

What is the most common configuration of an optoisolator or optocoupler?

A. A lens and a photomultiplier
B. A frequency modulated helium-neon laser
C. An amplitude modulated helium-neon laser
D. An LED and a phototransistor

Last month's answer was, B. A spectrum analyzer displays the strength of a signal, and signals above and below the signal's frequency. Since spurious signals and/or intermodulation distortion products appear above and below a SSB signals frequency, the spectrum analyzer is a useful test instrument for displaying these.

DMR
DIGITAL MOBILE RADIO

The EPARA HOT SPOT Wednesday night DMR rag chew is here!

Wednesday evenings at 8:30 PM local, 0:30 UTC!

Tune your DMR radios to Talk Group 3149822 TS2 to join the

N3IS EPARA Hot Spot rag chew DMR net.

Listen to the Tech Net Friday nights on the 147.045 repeater to learn more about joining this net and for upcoming ZOOM meetings announcements to learn more about programing your radios and hot spots!

International Edition
July 1983 $2.49½
Issue #274
Amateur Radio's Technical Journal

EPARA General Membership Meeting Minutes
July 8th*th* 2021
General Membership Meeting 7:30Pm

Open meeting:

Meeting called to order at 7:32 pm on July 8th*th* 2021 by Chris AJ3C
Introductions with call signs
Declaration of Quorum.
Total members attending: 23 Visitors present: 1 (9 members on Zoom -15 on location at 911 Center)

Pledge of Allegiance / Moment of silence:

Membership Meeting - Minutes May 13th, 2021:

Secretary - Kevin W3KCF:

Meeting minutes for June 10th, 2021 were posted on the EPARA website. Chris – AJ3C asked members if they had seen and read the minutes from our previous meeting. He then asked if there were any questions or objections to the minutes as they were presented. With no objections, Chris asked for a motion to accept the minutes as presented:

Motion to accept minutes as read: By RuthAnn/– W9FBO 2nd by Alex -KD2FTA Motion Passed

Treasurers report:

Scott, KC3IAO stated the opening balance for June was $2896.08 We had expenses of $15.00 paid to Rich-KC3IAM for a refund of his Dues. We had income for dues collected in the amount of $70 and $16.00 dollars for the 50/50.00. In addition, we earned $0.13 from bank interest. Our PayPal account had an opening balance of $463.69 We had no activity, leaving a closing balance of $463.69

Motion to accept reports by AL – KB3OVB 2nd by Ron – N3GGT Motion Passed

Correspondence:

Chris -AJ3C said we received a letter from the West End Fair with an application allowing us to set up a booth and participate in 2021. This year, we were told the hours of operation have been shortened. The new times are from 1500 to 2100 hours and will require one shift per day and 2 members per shift. West End management also requested that we provide them with our club's proof of insurance.

Reports of officers and committee's:

Bill AB3ME – Program Committee:

Bill stated that we have a presentation scheduled for after the meeting tonight with Alex - KD2FTA - ***An Introduction To DMR***. Alex also said he is working with Chris – AJ3C and they will be putting together DMR Workshops for those interested. Alex hopes these workshops will help us better understand how to setup up hotspots, build code plugs and familiarize ourselves with the world of DMR.

Bill then mentioned that Len – KC3OND would be doing a presentation in August and he would be doing one in September on Antennas. He then asked if anyone else was interested in giving a presentation and to please contact him to set things up.

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EPARA GENERAL MEMBERSHIP MEETING AGENDA

Charlie KB3JUF – ARES/RACES:

Charlie stated that he had nothing new for the group, but said "*Stay Prepared*", as he was going to implement a surprise activation to test our readiness for any situation.

Charlie then emphasized that all members get involved and start checking into other ARES Nets to gain experience and see what is going on around the area.

One further note, make sure you're training and task books are up to date and ready to go.

Chris AJ3C ├- Instruction and Training:

Chris said the General Class Training has concluded and RuthAnn – W9FBO has earned her General Class License. Congratulations!

PIO: Public Information Officer position is still vacant

Chris AJ3C - Website

The newsletter and Hamfest Flyer have been uploaded to the website and they are now available for download. If anyone would like to set up a table at the Hamfest, please contact Walt as he is the coordinator for this event.

AL, KB3OVB: Membership:

Chris stated we are currently at 56 paid members. Chris believes through the Hamfest, field day and other events we will gain additional interest and members. Chris – WW2BSA asked when dues are due. Chris told him In January.

Eric N3SWR – Newsletter and Communications:

Eric said there was nothing new to add and Chris thanked him for a job well done.

Sat-Com Group: *Planning for an EME project*

Alex talked about the next time the moon would be in position for an EME. He was hoping to do it on Elmer/Antenna weekend, but the conditions are not going to be favorable. The dates that are best were July 13th – 18th, but are not ideal for those having to work. It was also suggested that we find another location other than the 911 center and Top of The Mountain at Camelback was mentioned.

Old business:

Embroidered Patches:

Chris said there are still about 13 patches available for purchase. For those still interested in purchasing patches, the cost of a patch is $10. PayPal is setup, so if you are interested, contact Scott KC3IAO

Tech Net on DMR:

EPARA Tech Net on the KG3I DMR repeater (T 442.275/R 447.275) The net is hosted on Monday nights at 8:30 PM on Talk *Group* 314273 ***and is on Time Slot 2, Color Code 0.***

N3IS DMR Talk Group:

EPARA has established a DMR talk group under the club N3IS call sign. The talk group is 3149822 and is accessible via hot-spot only. This group meets Wed nights at 8:30pm for a great time and rag chew.

World Wide Net - DMR

Talk Group 91 - Saturday 11:00am: Alex mentioned there is a *World-Wide Net* on talk group 91 every Saturday. The net begins at 11:00am and gets around to North American for check-ins around 1400

EPARA GENERAL MEMBERSHIP MEETING AGENDA

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2021 Hamfest:

The EPARA Hamfest will be held on September 26th 2021. We secured rental of the American legion Hall in East Stroudsburg and the rental fee has been paid. Food preparation will be handled by the American Legion cook and Chris talked about the club setting up a stand to handle all the drinks.

Elmer/Antenna Weekend:

Elmer/Antenna weekend will be on Saturday July 24th through July 25th. The club will be providing some food and drink, attendees should bring additional refreshments.

New business:

Field Day:

Chris mentioned field day was a great success. We had a fabulous turn out and radio contacts far exceeded our wildest dreams. We exceeded our proposed budget for the weekend, coming in just under two hundred dollars, but Chris said not to worry, as we have had very few expenses to date.

Budget Audit:

Bill – AB3ME suggested we have a formal audit of the 2020 budget. Three members volunteered to be on the committee to review the budget and report back to the club. The following members volunteered their time to meet and go over the budget.

Bill – AB3ME
RuthAnn – W9FBO
Ed -KC3OLD

Votes / New members:

We had one new member voted it in. John – KC3SCJ. It was unanimous. EPARA welcomes its newest member.

The 50/50 raffle contained $26.00

Adjournment…

Meeting was adjourned at 8:52 pm Motion to close by Pete – KB3YKJ 2nd by Bill – AB3ME. Motion Passed

Secretary
Kevin Forrest
W3KCF


ZOOM
MEETING


Eric N3SWR
Chris ww2bsa.org
N3GGT Ron
KD2FTA
Dan KD3CEU


00:07:55
chris AJ3C


Zoom Meeting
Dan KD3CEU
Roy Preuning...
Len KC3OND
John KA2ABV
chris AJ3C


00:11:14
chris AJ3C

To: All EPARA Members and Users of the WA3MDP Repeater System

Re: The 147.045 Repeater Malicious Interference

Over the past few years the 147.045 repeater here in Monroe County has been plagued with an increasing amount of deliberate and malicious interference. While some of this interference has been directed at some specific operators the end results has been a wide area large foot print repeater that get little to no use except for a few regularly scheduled nets.

This is not a problem that is special to just the 147.045 system. Nationwide FM repeaters (and HF bands for the matter) are also being interfered with deliberately and the FCC lacks the manpower and ability to search out the people causing the issues.

The ARRL in conjunction with the FCC reorganized the Volunteer Monitor program a while back to assist in tracking down QRM on all of the amateur bands. While some progress has been made there obviously is a lot more to be done.

A small dedicated group has been tracking the QRM locally by various means for over a year. While some of the sources have been narrowed down it is now time to get the rest of the local ham community involved.

What we are asking people to do is when you listen to the 147.045 repeater also listen to the "input" frequency which is 147.645 (no tone is required). If you should hear any of the malicious and deliberate QRM occurring, do the following:

1) DO NOT ENGAGE IN A CONVERSATION WITH THESE INDIVIDUALS.

2) If you hear farting, cat calls, high pitch cartoon voices, music, etc write down the DATE, TIME, YOUR LOCATION and APPROX STRENGTH OF THE QRM STATION. If you have a beam antenna and can provide a heading that would be great too!

3) Send your listening report to the email address LIDSonzero45@gmail.com.

ALL information will be kept confidential and with this added information we hope to narrow down the locations that have already been identified.

In closing let me assure you that the people looking for the sources of the interference are doing so with the blessing of the repeater owners. It is our desire to see the 147.045 repeater system return to the quality repeater that it used to be many years ago.

Thank you in advance for your cooperation.

VE Testing & Classes

Anyone looking to take an exam is encouraged to contact Chris AJ3C to preregister at least one (1) week in advance of the test date. If you have any questions or to register, Chris can be reached via email AJ3C@GMX.COM. VE sessions are being held the 4th Friday of each month at 6pm at the Monroe County 911 training center. Seating is limited for the time being so we can follow the health guidelines set forth by the county and state.

VE sessions are back - contact Chris AJ3C for further information!

AMATEUR RADIO CLASSES

NEWLY RESURRECTED!

HAMFEST 2021

Sunday, September 26th, 2021 - Opening 8am

ALL NEW LOCATION!

The American Legion Post 346
126 E 5th St, East Stroudsburg, PA 18301

Take exit 309 off I-80, then left on 447 N. - 2 miles to Business rt 209 S. - then 1st left to E. 5th St.

Featuring:

- ✓ Hot & Cold Food
- ✓ Beverages
- ✓ Hourly Giveaways
- ✓ Free Parking

Rain or Shine

- ✓ Handicap Accessible
- ✓ Convenient Restrooms
- ✓ Door Prizes!
- ✓ 50/50 Raffle

- ✓ Sat/Comm Demonstration and Information
- ✓ VE Session will be held at 10AM
- ✓ Grand Prize Drawing is an Alinco DJ-MD5T Hand held DMR Transceiver

Google Maps

Eastern Pennsylvania Amateur Radio Association

For more information please visit the EPARA website at: www.qsl.net/n3is

Talk-in: 147.045MHz PL+131.8 · Phone 570-350-1185 · email: 3w3fnz@gmail.com

VISITOR INFORMATION

ADMISSION: Buyers: $7 · Sellers: $10
Vendors & Sellers: 6:00AM · Buyers: 8:00AM
Tailgate Outside or Table Space Inside our Pavilion
Club Table for Consignments

EPARA Website

ARES/RACES meetings are now being held on the fourth Friday of each month at 7PM. The meetings are once again being held at the 911 call center. These meetings will serve as training sessions covering several aspects of amateur radio emergency communications. We will start with traffic handling and the use of Radiograms and the ICS 213 general message form. Future sessions will cover the use of several ICS forms and the setup and use of digital communication modes including Winlink, Packet Radio, APRS, and the FLDIGI software program. Meeting are open to all, you do not need to be an ARES/RACES team member to attend.

Don't forget to sign up with with ARES Connect if you haven't done so already and if you plan to attend the meeting or check-in to the weekly net remember to register you attendance on the ares connect page. To sign please use this link: https://arrl.volunteerhub.com/lp/epa

Want to Put Your Ham Radio Skills to Good Use? Get Involved in

EmComm!

One of the missions of the Amateur Radio Service is for amateur radio operators to provide public service and emergency communications (EmComm) when needed. We act as a voluntary noncommercial communication service and pitch in to help our communities and first responders.

So, what organizations are out there for community-minded amateur radio operators and what can we do to help?

Join In

One good entry point into public service and emergency communications is to join SkyWarn, a volunteer program run by the National Weather Service (NWS) with more than 290,000 trained severe weather spotters. These volunteers help keep their local communities safe by providing timely and accurate reports of severe weather to the NWS.

Not all of these weather spotters are amateur radio operators, but many are. Amateur radio communications can report severe weather in real time. When severe weather is imminent, SkyWarn spotters are deployed to the areas where severe weather is expected. A net is activated on a local repeater and SkyWarn spotters who are Hams check into that net. The net control advises the spotters when they might expect to see severe weather, and the spotters report conditions such as horizontal winds, large hail, rotating clouds, and even tornadoes.

To become a SkyWarn spotter, you must attend a class that teaches you the basics of severe weather, how to identify potentially severe weather features, and how to report them. The classes are free and typically last about two hours. Check your local NWS website for class schedules.

ARES/RACES/CERT

Another way Hams can become involved in public service and emergency communication is to join an ARES or RACES group. Technically, these are two separate services—the Amateur Radio Emergency Service (ARES) is run by the ARRL, while the Radio Amateur Civil Emergency Service (RACES) is a function of the Federal Emergency Management Agency (FEMA). Amateur radio operators who typically take part in one also take part in the other.

To participate in RACES, you'll need to take some self-study FEMA courses in emergency preparedness and emergency-response protocols. Classes may or may not be required to participate in ARES. These requirements are set by each individual ARES group. To get involved with either ARES or RACES, ask your local club members when they meet. You can also contact the Section Manager or Emergency Coordinator for your ARRL section. To contact them, click here and find the section that you live in.

Amateur radio operators belonging to ARES (and its predecessor, the Amateur Radio Emergency Corps) have responded to local and regional disasters since the 1930s, including the 9/11 attacks, and Hurricane Katrina and Hurricane Michael, among others.

The Community Emergency Response Team (CERT) program trains volunteers—both Hams and non-hams—how to be prepared for disasters that may impact their area. They provide basic disaster response skills, such as fire safety, light search and rescue, team organization, and disaster medical operations. CERT offers a nationwide approach to volunteer training and organization that first responders can rely on during disaster situations, allowing them to focus on more complex tasks.

What Gear Do You Need?

For most local needs, a 5-watt VHF/UHF handheld transceiver is sufficient for utilizing local repeaters to relay messages and report on conditions as they exist. Replacing the radio's stock antenna with a higher gain antenna or connecting it to a magnetic mount on a vehicle will increase range significantly.

Even better is a VHF/UHF mobile radio installed in your vehicle with 25 or more watts output and a good mobile antenna. In the event the repeater loses power, you can talk over a considerably larger area in simplex mode with the extra power and a good mobile antenna.

If you work with an ARES or RACES group, you may be asked to act as a county control station. In this capacity, you'd need both HF and VHF transceivers in a fixed location, such as your house, with a good antenna system and emergency power capabilities like a generator or batteries. This allows you to make contacts within your state and throughout the U.S.

Helping Hams

Ham radio can play a key role in emergency situations. Here are a few examples:

- Ham radio connected firefighters and police departments, Red Cross workers, and other emergency personnel during the 2003 blackout that affected the northeast United States.
- In 2017, fifty amateur radio operators were dispatched to Puerto Rico to provide communications services in the wake of Hurricane Maria.
- Amateur radio operators provided communications in the aftermath of the Boston Marathon bombing when cellphone systems became overloaded.

- During Hurricane Katrina, more than one thousand ARES volunteers assisted in the aftermath and provided communications for the American Red Cross.
- During the devastating Oklahoma tornado outbreak that began in May 1999, amateur radio operators—giving timely ground-truth reports of severe weather—played a critical role in the warning and decision-making processes at the NWS Weather Forecast Office in Norman, Oklahoma.
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Credit: https://www.onallbands.com/want-to-put-your-ham-radio-skills-to-good-use-get-involved-in-emcomm/

From the Editor

Eric, N3SWR

I'm glad to hear that everyone seemed anxious about the release of this months newsletter! Despite the feeling of running out of energy at times, it's still a fun thing to put together for the club. Sure is better than being at work too.

Antenna/Elmer weekend was a smash hit this year. I totally enjoyed being up on the mountain once again. Charlie KB3JUF decided to join up on the mountain despite the fact the man had a stroke just days before. He simply doesn't give up! My hat goes off to him for the spirit and karizma that he brings to the club. The laughs were no ending at times and it made eating hot dogs a chore lol.

Would anyone be interested in operating a rig during the 65th PA QSO Party Weekend on October 9th and 10th Saturday and Sunday of this year? The club may be putting together an event to take advantage of the party. It would be really nice to have another club event to enjoy.

Okay that's it for now as this guy needs to get some sleep since i do tend to do this editing stuff into the night hours.

See you all at the next club meeting!

Eric N3SWR

"Failure is an option here. If things aren't failing, you aren't innovating enough."
- Elon Musk

Topics of Interest

Have an idea you would like to share with your fellow hams? Interested in one of the new exotic digital modes and would like to get others interested in it too? Found a blog somewhere that you think others would find interesting? Members are encouraged to submit items of interest for publication. Submitted articles (are suggested) to be no more than a page or two in length and may be edited for content and grammar. The EPARA officers and newsletter editor reserve the right to determine which items will be included in The Beacon. The deadline for publication is the 15th of the month. The publication date will be at the end of each month. Copyrights are the property of their respective owners and their use is strictly non-profit/educational and intended to foster the spirit of amateur radio.

If you've taken pictures at an event and would like to submit them for possible inclusion in the newsletter, forward them to the newsletter editor. Please send action shots, if possible. Faces are often preferable over the backs of heads. Many hams may be way too overweight, so please consider using a wide-angled lens.

Disclaimer

The Beacon is not representative of the views or opinions of the whole organization, and such views and opinions expressed herein are of the individual author(s).

Bruce Draper, AA5B, aa5b.corral@gmail.com

Contest Corral

August 2021

Check for updates and a downloadable PDF version online at **www.arrl.org/contest-calendar**.
Refer to the contest websites for full rules, scoring information, operating periods or time limits, and log submission information.

Start - Finish Date	Time	Finish Date	Time	Bands	Contest Name	Mode	Exchange	Sponsor's Website
1	1400	1	1700	3.5-14	SARL HF Phone Contest	Ph	RS, serial	www.sarl.org.za
2	0000	2	0100	1.8-14	K1USN Slow Speed Test	CW	Max 20 WPM, Name, SPC	k1usn.com/sst.html
3	0100	3	0159	1.8-50	Worldwide Sideband Activity Contest	Ph	RS, age group (OM, YL, or Youth)	wwsac.com/rules.html
3	0100	3	0300	3.5-28	ARS Spartan Sprint	CW	RST, SPC, power	arsqrp.blogspot.com
3	1700	3	1900	3.5-14	RTTYops Weeksprint	Dig	Other's call, your call, serial, name	rttyops.com
4	0230	4	0300	1.8-21	Phone Weekly Test — Fray	Ph	Name, SPC	perluma.com/Phone_Fray_Contest_Rules.pdf
4	1300	4	1400	1.8-28	CWops Mini-CWT Test	CW	Name, mbr or SPC	cwops.org/cwops-tests
4	1700	4	2000	144	VHF-UHF FT8 Activity Contest	Dig	4-char grid square	ft8activity.eu/index.php/en
4	1900	4	2000	1.8-28	CWops Mini-CWT Test	CW	Name, mbr or SPC	cwops.org/cwops-tests
5	0300	5	0400	1.8-28	CWops Mini-CWT Test	CW	Name, mbr or SPC	cwops.org/cwops-tests
5	1700	5	1900	3.5-14	RTTYops Weeksprint	Dig	Other's call, your call, serial, name	rttyops.com
5	1700	5	2100	28	NRAU 10-Meter Activity Contest	CW Ph Dig	RS(T), 6-character grid square	nrrlcontest.no/index.php
5	1900	5	2000	3.5, 7	EACW Meeting	CW	RST, name, mbr or EA province or country	www.eacwspain.es
5	1900	5	2100	1.8-50	SKCC Sprint Europe	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
6	0100	6	0230	14	QRP Fox Hunt	CW	RST, SPC, name, power	www.qrpfoxhunt.org
6	0145	6	0215	1.8-21	NCCC RTTY Sprint	Dig	Serial, name, QTH	www.ncccsprint.com
6	0230	6	0300	1.8-21	NCCC Sprint	CW	Serial, name, QTH	www.ncccsprint.com
6	2000	6	2100	1.8-14	K1USN Slow Speed Test	CW	Max 20 WPM, Name, SPC	k1usn.com/sst.html
7	0000	8	2359	3.5-28	Batavia FT8 Contest	Dig	4-char grid square	batavia-ft8.com
7	0001	8	2359	28	10-10 International Summer Contest, SSB	Ph	Name, mbr or "0," SPC	www.ten-ten.org
7	1200	7	2359	1.8-28	European HF Championship	CW Ph	RS(T), 2-digit year first licensed	lea.hamradio.si/~scc/euhf
7	1200	8	2359	1.8-50	SKCC Weekend Sprintathon	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
7	1300	7	1330	144	Two-Meter Classic Sprint	CW Ph	Serial, 4-char grid square	fwrc.info
7	1600	7	1800	3.5-28	FISTS Saturday Sprint	CW	RST, SPC, name, mbr or "0"	fistsna.org
7	1800	8	0559	1.8-28	North American QSO Party, CW	CW	Name, state/DC/province/country	www.ncjweb.com
7	1800	8	1800	222 and up	ARRL 222 MHz and Up Distance Contest	CW Ph Dig	6-char grid square	arrl.org/222-mhz-and-up-distance-contest
9	0000	9	0200	1.8-28	4 States QRP Group Second Sunday Sprint	CW Ph	RS(T), SPC, mbr or power	www.4sqrp.com
11	0030	11	0230	3.5-14	NAQCC CW Sprint	CW	RST, SPC, mbr or power	naqcc.info
11	1500	13	1459	144	MMMonVHF 144 MHz Meteorscatter Sprint	CW Ph Dig	Signal report	mmmonvhf.de/ctestinfo.php
11	1700	11	2000	432	VHF-UHF FT8 Activity Contest	Dig	4-char grid square	ft8activity.eu/index.php/en
14	0000	15	2359	3.5-28	WAE DX Contest, CW	CW	RST, serial	darc.de/der-club/referate/referat-conteste/worked-all-europe-dx-contest/en
14	0800	14	1100	1.8-28	QRP ARCI European Sprint	CW	RST, SPC, mbr or power	qrparci.org/contest
14	1200	14	1300	7	SARL Youth Sprint	Ph	RS, age	www.sarl.org.za
14	1400	14	2200	3.5-28	Kentucky State Parks on the Air	CW Ph Dig	KY park abbreviation or SPC	k4msu.com/kypota
14	1400	15	0400	1.8-432	Maryland-DC QSO Party	CW Ph Dig	Entry class, county or SPC	w3vpr.org/mdcqsop
14	2300	15	0300	50	50 MHz Fall Sprint	CW Ph Dig	4-char grid square	svhfs.org
15	1400	15	1700	3.5-14	SARL HF Digital Contest	Dig	RST, serial	www.sarl.org.za
15	1700	15	2100	3.5-28	NJQRP Skeeter Hunt	CW Ph	RS(T), SPC, skeeeter # or power	www.qsl.net/w2lj
15	2100	15	2300	3.5-28	FISTS Sunday Sprint	CW	RST, SPC, name, mbr or "0"	fistsna.org
15	2300	16	0100	1.8-28	Run for the Bacon QRP Contest	CW	RST, SPC, mbr or power	qrpcontest.com/pigrun
21	0000	22	1600	3.5-28	SARTG WW RTTY Contest	Dig	RST, serial	www.sartg.com
21	0600	22	2359	10 GHz to light	ARRL 10 GHz and Up Contest	CW Ph Dig	6-char grid locator	www.arrl.org/10-ghz-up
21	0800	22	0800	1.8-28	Russian District Award Contest	CW Ph	RS(T), RU district code or serial	rdaward.org/rdac1.htm
21	1200	22	1200	1.8-50	Keyman's Club of Japan Contest	CW	RST, JA prefecture code or CQ zone	kcj-cw.com/e_index.htm
21	1600	21	1759	1.8-50	Feld Hell Sprint	Dig	RST, mbr, SPC, grid	sites.google.com/site/feldhellclub
21	1800	22	0559	1.8-28	North American QSO Party, SSB	Ph	Name, state/DC/province/country	www.ncjweb.com
22	1800	22	2359	3.5-28	ARRL Rookie Roundup, RTTY	Dig	Name, 2-digit year first licensed, SPC or XE province	arrl.org/rookie-roundup
25	0000	25	0200	1.8-50	SKCC Sprint	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
28	0400	30	0400	1.8-28	Hawaii QSO Party	CW Ph Dig	RS(T) HI district or SPC	hawaiiqsoparty.org
28	0600	29	0559	3.5-28	ALARA Contest	CW Ph	RS(T), serial, mbr, name, YL or OM	alara.org.au/contests
28	1200	29	0300	1.8-50	W/VE Islands QSO Party	CW Ph Dig	RS(T), USI/CISA Island Designation or SPC	usislands.org/qso-party-rules
28	1200	29	1200	1.8-28	YO DX HF Contest	CW Ph	RS(T), YO county or serial	www.yodx.ro/en
28	1200	29	1200	1.8-28	World Wide Digi DX Contest	Dig	4-char grid square	ww-digi.com
28	1400	29	2000	3.5-50	Kansas QSO Party	CW Ph Dig	RS(T), KS county or SPC	ksqsoparty.org
28	1600	29	0400	1.8-28	Ohio QSO Party	CW Ph	RS(T), OH county or SPC	www.ohqp.org
29	1400	29	1700	3.5-14	SARL HF CW Contest	CW	RST, serial	www.sarl.org.za

There are a number of weekly contests not included in the table above. For more info, visit: **www.qrpfoxhunt.org**, **www.ncccsprint.com**, and **www.cwops.org**. All dates refer to UTC and may be different from calendar dates in North America. Contests are not conducted on the 60-, 30-, 17-, or 12-meter bands. Mbr = Membership number. Serial = Sequential number of the contact. SPC = State, Province, DXCC Entity. XE = Mexican state. Listings in blue indicate contests sponsored by ARRL or *NCJ*. The latest time to make a valid contest QSO is the minute listed in the "Finish Time" column. *Data for Contest Corral is maintained on the WA7BNM Contest Calendar at* **www.contestcalendar.com** *and is extracted for publication in* QST *2 months prior to the month of the contest. ARRL gratefully acknowledges the support of Bruce Horn, WA7BNM, in providing this service.*

Amateur Radio Special Event Stations!

07/30/2021 | Indiana State Fair

Jul 30-Aug 20, 2000Z-0000Z, W9ISF, Indianapolis, IN. Indiana State Fair Amateur Radio Club. 7.240 14.240 3.800. QSL. Indiana State Fair ARC, 7405 E. County Road 900 N, Brownsburg, IN 46112-8858. www.qrz.com/db/w9isf

07/31/2021 | 66th Season at Penn Can Speedway

Jul 31-Aug 1, 1400Z-1900Z, N3P, Susquehanna, PA. Binghamton Amateur Radio Association. 28.350 14.260 7.260 146.865 repeater (146.2 tone). Certificate. Robert Mess, 2505 Oak Hill Rd., Susquehanna, PA 18847. ws2u.bob@gmail.com or www.w2ow.org

08/01/2021 | San Max Special Event

Aug 1-Aug 31, 0000Z-2359Z, 4A2MAX, Diamond, MEXICO. Asociacion de Radioexperimentadores de Nuevo Leon. 28.420 21.220 14.180 7.160. Certificate & QSL. Jose de Jesus Lopez V , 5914 San Bernardo Ave, Suite 4-135, Laredo, TX 78041-2506. 4a2max@xe2n.org or www.qrz.com/db/4a2max

08/04/2021 | US Coast Guard 231st Birthday

Aug 4, 1400Z-2300Z, K1CG, Port Angeles, WA. CG CW Operators Association. 21.052 14.052 7.052 3.552. QSL. Fred Goodwin , 424 N. Bagley Creek Rd, Port Angeles, WA 98362. www.qrz.com/db/k1cg

08/06/2021 | Pluto - Countdown to the 100th Anniversary of the Discovery of Pluto

Aug 6-Aug 8, 0000Z-2359Z, W7P and W7P/0, Flagstaff, AZ. NADXA - Northern Arizona DX Association. 14.290 14.090 21.290 7.290. Certificate & QSL. Bob Wertz, NF7E, 6315 Townsend/Winona Rd., Flagstaff, AZ 86004. Back by heavy demand - Countdown to the 100th Anniveresy of the Discovery of Pluto" - Last opportunity for contact in the inaugural year. See our web site NADXA.com for Certificate and QSL information. The Ninth Planet? nadxa.com

08/06/2021 | Pro Football Hall of Fame Enshrinement Festival

Aug 6-Aug 8, 1900Z-2359Z, W8AL, Canton, OH. Canton Amateur Radio Club. 3.980 +/- 7.280 +/- 14.280 +/-. Certificate & QSL. Canton ARC - W8AL, PO Box 8673, Canton, OH 44711-8673. Watch for FT8 or other digital modes. On the air times subject to operators availability, watch spots/social media. Send QSL Card and $2.00 for postage & handling. www.w8al.org

08/07/2021 | Johnsonville Brat Days (Sheboygan, WI)

Aug 7, 1500Z-2259Z, W9B, Sheboygan, WI. Sheboygan County Amateur Radio Club. 7.240 14.240. Certificate. W9VCL Sheboygan County Amateur Radio Club, 4235 N 29th Street, , Sheboygan, WI 53083. QSL: Certificates feature hand-drawn artwork from Joe Ash W9ODV - Please include $2.00 for an 8-1/2x11 certificate mailed in manila envelope or send $1 and SASE #10 (certificate will be folded). Emailed PDF: no charge. Please do NOT send folded envelopes with postage affixed - we will use our own envelopes w9vcl.com

08/07/2021 | Missouri Bicentennial 1821 - 2021, First State Capitol

Aug 7-Aug 15, 0001Z-2359Z, K0B, Saint Charles, MO. St. Charles Amateur Radio Club. 14.215 7.215 7.105; all bands, all modes as conditions permit. Certificate & QSL. Special Event Station K0B - SCARC, PO Box 658, Saint Charles, MO 63302. Club members will be operating all modes / all bands as possible from home QTH's. https://wb0hsi.org

08/07/2021 | Montrose Sesquicentennial

Aug 7, 1700Z-2100Z, K9UXZ, Montrose, IL. National Trail Amateur Radio Club. 14.250 7.250. QSL. National Trail Amateur Radio Club, P.O. Box 903, Attn: Montrose Sesquicentennial, Effingham, IL 62401. The National Trail Amateur Radio Club will be helping the town of Montrose, Illinois celebrate 150 years. www.nationaltrailarc.org

08/07/2021 | River City Days

Aug 7, 1430Z-1800Z, W0R, Red Wing, MN. Hiawatha Valley Amateur Radio Club. 14.250 7.250

Amateur Radio Special Event Stations!

147.300. Certificate. Bill Eichenlaub, 1966 Launa Ave, Red Wing, MN 55066. hvamateurradioclub.com

08/07/2021 | Stannard Rock Lighthouse Activation

Aug 7-Aug 8, 1600Z-1600Z, W8L, Muskegon, MI. Grand Valley State University ARC, W8GVU. 3.875 7.287 14.285 28.485. Certificate. Dan Mills, 1817 Mills Ave, Muskegon, MI 49445. This is the first time Stannard Rock Lighthouse has been activated! (It is very challenging!) For details, please see n8ppq.net/stannardrock

08/08/2021 | Jackson County Fair

Aug 8-Aug 14, 1400Z-0000Z, W8J, Jackson, MI. Cascades Amateur Radio Society. 14.235 14.045 7.180 7.045. QSL. Cascades Amateur Radio Society, P.O. Box 512, Jackson, MI 49204. K8TS@arrl.net or www.w8jxn.org

08/08/2021 | Steel City ARC - 80th Year Anniversary

Aug 8-Aug 15, 0000Z-2359Z, W3KWH, Carnegie, PA. Steel City Amateur Radio Club. 28.495 3.985 146.550. QSL. Steel City ARC, P.O. Box 281, Carnegie, PA 15106. Help the Steel City ARC celebrate its 80th year in Ham radio. Operating from our clubhouse since 1941. Our member will be operating a special event station from Aug 8th though Aug 15th. w3kwh.com/steel-city-arc-80th-year

08/09/2021 | American Association for Nude Recreation National Convention

Aug 9-Aug 14, 1800Z-2359Z, NU5DE, Mc Dade, TX. Naturist Amateur Radio Club. 14.265 21.365 7.260. Certificate. Naturist Amateur Radio Club, 166 Eely Rd, #G1, Mc Dade, TX 78650. Celebrating 90 yrs. Request full color QSL card or a 81/2 x 11 Certificate. nu5de.org

08/09/2021 | The Brickyard 400 - Race Three

Aug 9-Aug 15, 0000Z-2359Z, W9IMS, Indianapolis, IN. The Indianapolis Motor Speedway Amateur Radio Club. 18.140 14.245 7.245 3.840. Certificate. W9IMS, P.O. Box 30954, Indianapolis, IN 46230. See the website for ALL information! w9ims.org

08/10/2021 | Navajo Code Talkers

Aug 10-Aug 14, 0000Z-0000Z, N7C, Chinle, AZ. N7HG. 14.265 21.265 7.265 18.133. Certificate & QSL. Herbert Goodluck, PO Box 06, Lukachukai, AZ 86507. A group of Native American men join US Marine Corps in World War II to pass messages in own native tongue to help end the war. n7hgster@gmail.com

08/12/2021 | Celebrating the return of the 2021 Illinois State Fair

Aug 12-Aug 21, 0500Z-0500Z, K9Y, Rochester, IL. K9ZXO. 14.070 mHz. QSL. K9Y - J. Mitch Hopper, 536 E. Mill St., Rochester, IL 62563. Celebrating the re-opening of the IL State Fair which was cancelled last year due to the Covid pandemic. ALL modes, all bands. QSL SASE only. id@brainmist.com or www.qrz.com/db/k9y

08/13/2021 | Hedy Lamarr, the Inventor

Aug 13-Aug 27, 1400Z-1400Z, K4H, Dallas, GA. W4IBM Amateur Radio Club. 80m - 3.945; 40m - 7.245; 20m - 14.245; 10m - 28.345; FT8 as conditions permit. Certificate & QSL. Ruth Leber, 598 Trace Rd, Dallas, GA 30157. w4ibm.club/joomla30/index.php/club-activities/18-special-event-hedy-lamarr-inventor

08/14/2021 | Irishfest La Crosse Special Event

Aug 14, 1600Z-2200Z, W9UP, La Crosse, WI. Riverland Amateur Radio Club. 14.260 14.265. Certificate. Riverland Amateur Radio Club, PO Box 621, Onalaska, WI 54650. Operating Frequency – 14.260 MHz (we would move up from this frequency if it is in use) • Additional Operation – Yaesu Fusion Wires X – Room 63956 via Riverland Amateur Radio Club's Repeater. rarc.qth.com

08/14/2021 | USS Midway Museum Ship Special Event: US Coast Guard Birthday

Aug 14, 1600Z-2300Z, NI6IW, San Diego, CA.

Amateur Radio Special Event Stations!

USS Midway (CV-41) Museum Ship. 14.320 7.250 PSK and CW on various HF bands DSTAR on various reflectors. QSL. USS Midway Museum Ship COMEDTRA, 910 N Harbor Drive, San Diego, CA 92101. Please check spotting networks to find us on HF. Consult www.dstarusers.org to find our call sign NI6IW and Reporting Note to see what reflector we're using. Note: Typical QSL turn-around time is 4 to 6 weeks after receiving request with SASE. www.qrz.com/db/ni6iw

08/19/2021 | D-Day Ohio D-Day Reenactment and WWII Living History Special Event Station

Aug 19-Aug 22, 2000Z-0400Z, W8D, Conneaut, OH. D-Day Ohio Radio Amateur Club. 1.885 3.885 7.290. QSL. Garret Scott / W8D, 10236 Birch Hill Lane, Knoxville, TN 37932. Operations will be from the D-Day Ohio Event, in Conneaut Ohio, utilizing WWII period radio equipment. Equipment operated will include SCR-177B, SCR-284, SCR-694, and others. Modes are AM and CW. w8d.us

08/21/2021 | Discover Amelia County - Finally!

Aug 21-Aug 22, 1200Z-2359Z, WB2DHY, Amelia Court House, VA. Amiable Amelia County Radio Club. 14.280 7.280 14.074 7.074. QSL. Phil Lorito, 12371 Deaton Lane, Amelia Court House, VA 23002. Amelia County, VA is #12 out of 3,077 Counties on the Most Wanted County List. Will operate CW, SSB & FT8. Additional frequencies & times will be posted. www.qrz.com/db/wb2dhy

08/21/2021 | First RR Train Dispatch by Telegraph 1851

Aug 21-Aug 22, 1400Z-0200Z, K2T, Cornwall, NY. Orange County Amateur Radio Club NY. 14.250 14.074 14.040 7.255 7.074 7.040 3.920 3.573 3.540 . Certificate. OCARC, P.O. Box 624, Cornwall, NY 12518. Certificate downloadable from website. W2HO@ocarcny.org or www.ocarcny.org

08/21/2021 | ILLW

Aug 21-Aug 22, 0001Z-2300Z, W5BMC, Patterson, LA. Bayouland Emergency Amateur Radio Service. 14.275 7.275. QSL. BEARS, 708 Front St, Morgan City, LA 70380. Echo Link 507010 w5bak Echo Link W5BMC- Echo ini 507010 W5BMC- W5BMC-R echo link 507010

08/27/2021 | Amateur Radio Software Awards

Aug 27-Sep 5, 0500Z-0459Z, K2A/K2R/K2S, Ames, IA. Amateur Radio Software Award. 14.250 7.185 3.950 7.078. QSL. Amateur Radio Software Awards, Special Event Station, PO Box 126, Ames, IA 50010-0126. Special event stations K2A, K2R, and K2S are operating from Iowa, Colorado and Washington to promote free and open amateur radio software. During the event the 2021 Amateur Radio Software Award recipient Jordan Sherer will be honored for his JS8Call digital communication software. Nominations for the 2022 awards will also be encouraged. Please QSL with S.A.S.E. The Amateur Radio Software Award is an annual international award for the recognition of software projects that enhance amateur radio. The award aims to promote amateur radio software development which adhere to the same spirit as amateur radio itself: innovative, free and open. For more information about the Amateur Radio Software Award or a detailed schedule of the special visit arsaward.com

08/28/2021 | 65th Annual Auburn, Cord, Duesenberg Festival

Aug 28-Sep 8, 0000Z-2359Z, K9A, Auburn, IN. Northeastern Indiana Amateur Radio Association (W9OU). 14.074 7.225 7.074 7.030. Certificate & QSL. K9A C/O Northeastern Indiana ARA, P.O. Box 145, Auburn, IN 46706. www.w9ou.org

08/28/2021 | Buhl Day Celebration

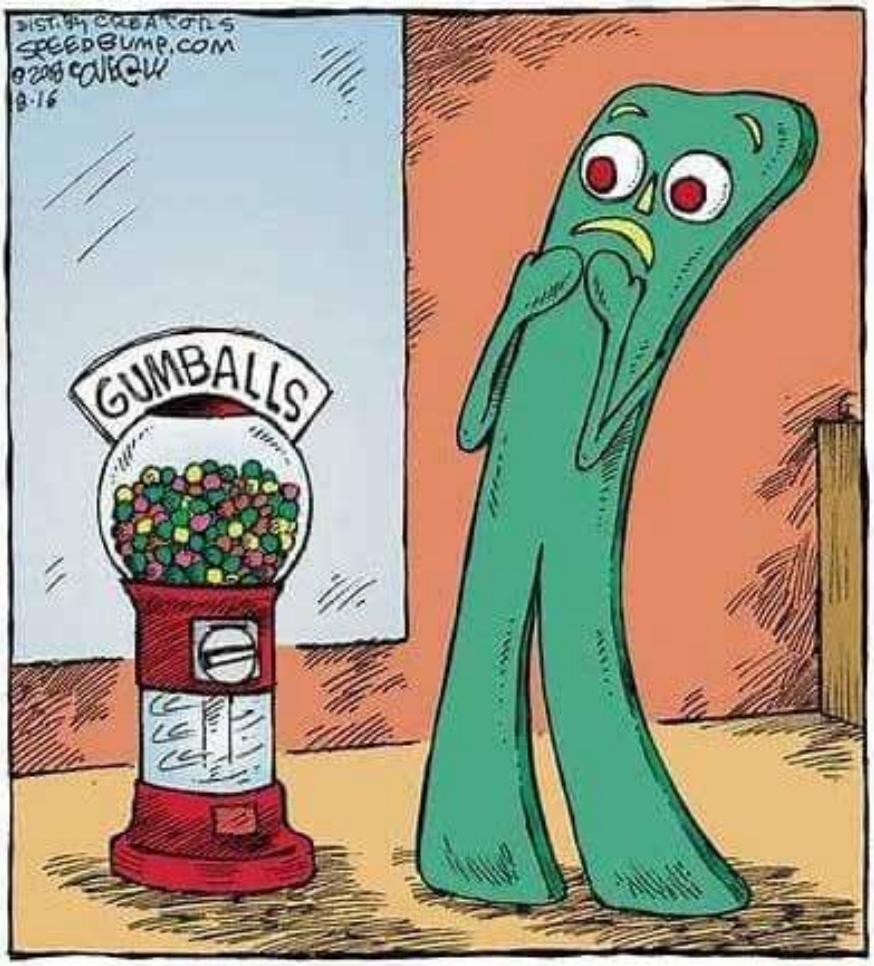
Aug 28-Sep 7, 0800Z-2200Z, W3B, Sharon, PA. Mercer County Amateur Radio Club. 7.185 14.240 145.350. QSL. Mercer County Amateur Radio Club, PO Box 996, Sharon, PA 16146. W3B Special Event Station The Mercer County Amateur Radio Club is celebrating BUHL DAY, the 106th anniversary of Buhl Farm Park, which covers 300 acres in the Shenango Valley. The Park was given to the Shenango Valley community by Frank Buhl, a local

Amateur Radio Special Event Stations!

industrialist, for the use and recreation enjoyment of the community in Mercer County, PA. A commemorative QSL will be available with a SASE. Send your QSL card to: Mercer County Amateur Radio Club PO Box 996 Sharon, PA 16146 USA www.w3lif.org

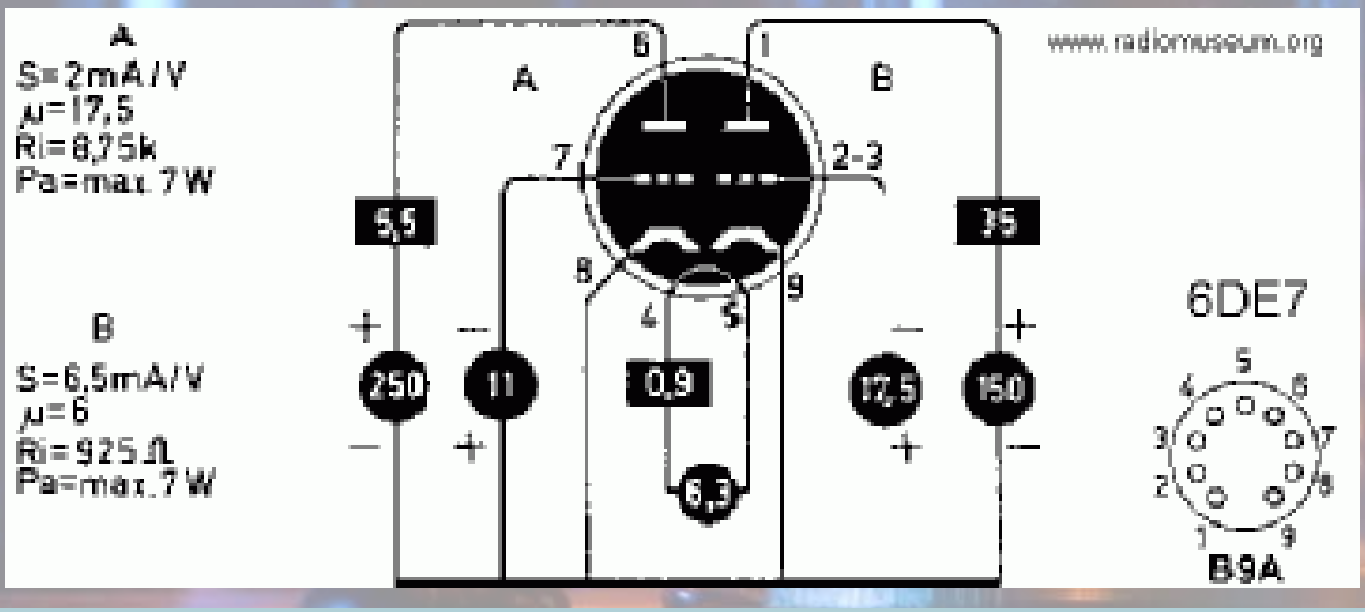
08/28/2021 | Tri-States Portable Special Event: ND, MN & SD (White Rock, SD)

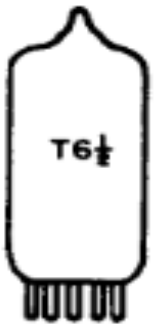
Aug 28-Aug 29, 1400Z-2350Z, W0JH, White Rock, SD. Stillwater (MN) Amateur Radio Association - SARA. 21.360 14.260 7.260 3.860. Certificate. By email only,, to Shel Mann, N0DRX, WhiteRock2021@radioham.org . Certificates will ONLY be sent via e-mail in PDF. WhiteRock2021@radioham.org. We will be operating from the corners of South Dakota, North Dakota and edge of Minnesota (Grid Square: EN15). Encampment at: White Rock, SD www.radioham.org



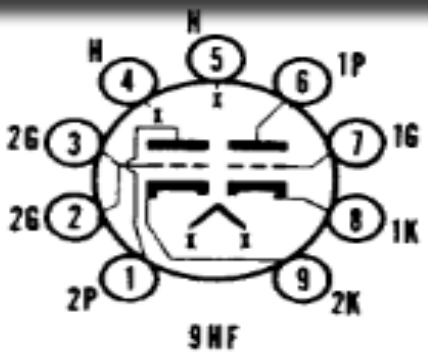
6DE7, Triode, Dissimilar Double

The 6DE7 is a miniature double triode in the 9 pin miniature construction. Section #1 is intended for use as a vertical deflection oscillator having medium mu and section 2 is intended for use as a vertical reflection amplifier with low mu.





SYLVANIA TYPE 6DE7 10DE7 13DE7



MECHANICAL DATA

Bulb	T-6½
Base	E9-1, Miniature Button 9-Pin
Outline	6-3
Basing	9HF
Cathode	Coated Unipotential
Mounting Position	Any

ELECTRICAL DATA

HEATER CHARACTERISTICS

	6DE7	10DE7	13DE7
Heater Voltage	6.3	9.7	13.0 Volts
Heater Current	900	600	450 Ma
Heater Warm-up Time[1]	—	11	11 Seconds
Heater-Cathode Voltage (Design Maximum Values)[2]			
Heater Negative with Respect to Cathode			
Total DC and Peak			200 Volts Max.
Heater Positive with Respect to Cathode			
DC			100 Volts Max.
Total DC and Peak			200 Volts Max.

DIRECT INTERELECTRODE CAPACITANCES (Unshielded)

	Triode No. 1	Triode No. 2
Grid to Plate	4.0	8.5 μμf
Input: g to (h + k)	2.2	5.5 μμf
Output: p to (h + k)	0.52	1.0 μμf

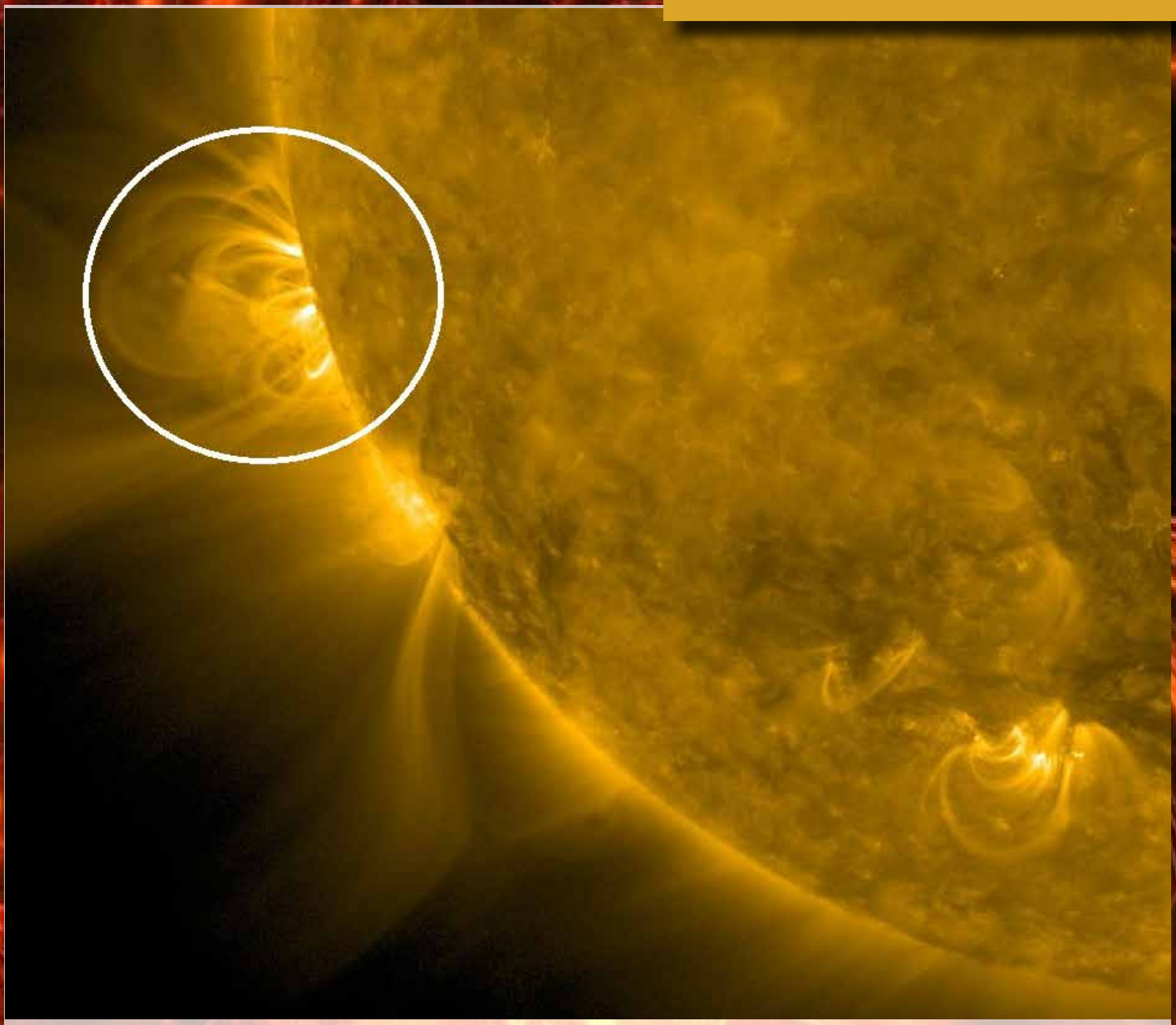
RATINGS[3] (Design Maximum Values—Except as Noted)

Vertical Deflection Oscillator and Amplifier[3]

	Triode No. 1 Oscillator	Triode No. 2 Amplifier
DC Plate Voltage	330	275 Volts Max.
Peak Positive Pulse Plate Voltage (Abs. Max.)	—	1500 Volts
Peak Negative Pulse Grid Voltage	400	250 Volts Max.
Plate Dissipation[4]	1.5	7.0 Watts Max.
Average Cathode Current	22	50 Ma Max.
Peak Cathode Current	77	175 Ma Max.
Grid Circuit Resistance Self Bias	2.2	2.2 Megohms

AVERAGE CHARACTERISTICS

	Triode No. 1	Triode No. 2
Plate Voltage	250	150 Volts
Grid No. 1 Voltage	−11	−17.5 Volts
Plate Current	5.5	35 Ma
Transconductance	2000	6500 μmhos
Amplification Factor	17.5	6.0
Plate Resistance (approx.)	8750	925 Ohms
Grid Voltage for Ib = 10 μa	−20	— Ohms
Grid Voltage for Ib = 50 μa	—	−44 Volts
Plate Current at Ec = −24 Vdc	—	10 Ma
Plate Knee Characteristics Eb = 60 V; Ec = 0 (Instantaneous Values)	—	80 Ma



Tad Cook, K7RA, Seattle, reports: Solar activity is strong! For the June 24 – July 1 reporting week, the average daily sunspot number rose from 14 to 34.7, while the average daily solar flux bumped up from 79.3 to 86.9. Both figures represent a dramatic increase in solar activity. The sunspot number last Thursday, June 24, was 56 — above the average of 34.7 and always a good sign.

The planetary A index went from 5.3 to 6.1 over the reporting week, while the average daily middle latitude A index was steady at 6.1.

The predicted solar flux is 94 on July 2 – 6; 90 on July 7 – 8; 85 on July 9 – 11; 82 on July 12 – 14; 80 on July 15 – 18; 82 on July 19; 85 on July 20 – 24; 88 on July 25; 90 on July 26 – 28; 92 on July 29 – August 1; 90 on August 2, and 85 on August 3 – 7.

Predicted planetary A index is 8, 12, 8, 10, and 8 on July 2 – 6; 5 on July 7 – 8; 8 on July 9 – 10; 5, 15, and 12 on July 11 – 13; 5 on July 14 – 20; 8 on July 21; 5 on July 22 – 26; 10 on July 27; 5 on July 28 – 30; 12 on July 31; 5 on August 1 – 4; 8 on August 5 – 6, and 5, 15, and 12 on August 7 – 9.

Antenna/Elmer Weekend 2021!

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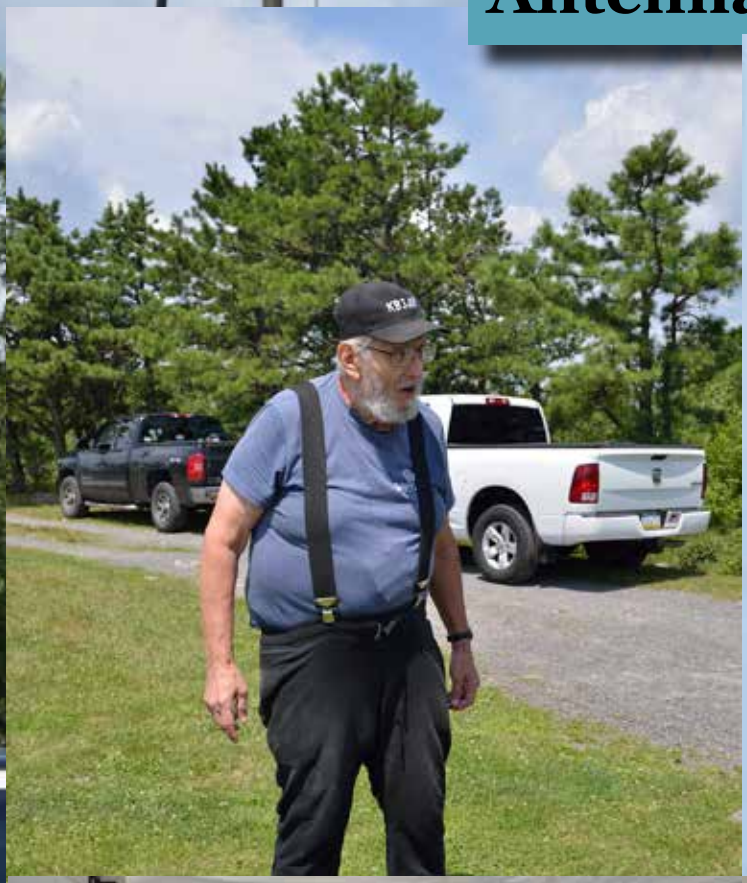
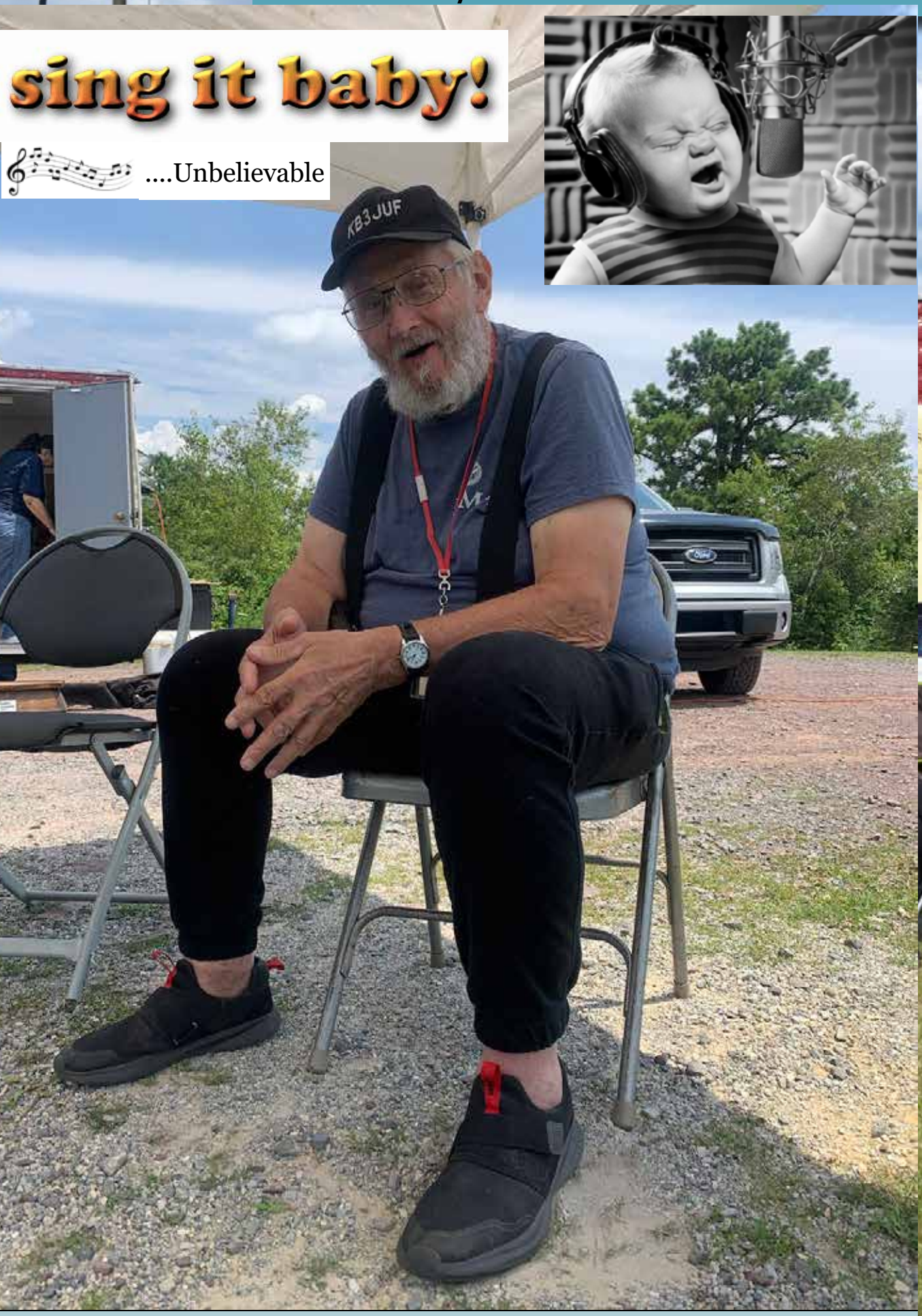


Antenna/Elmer Weekend 2021!

sing it baby!

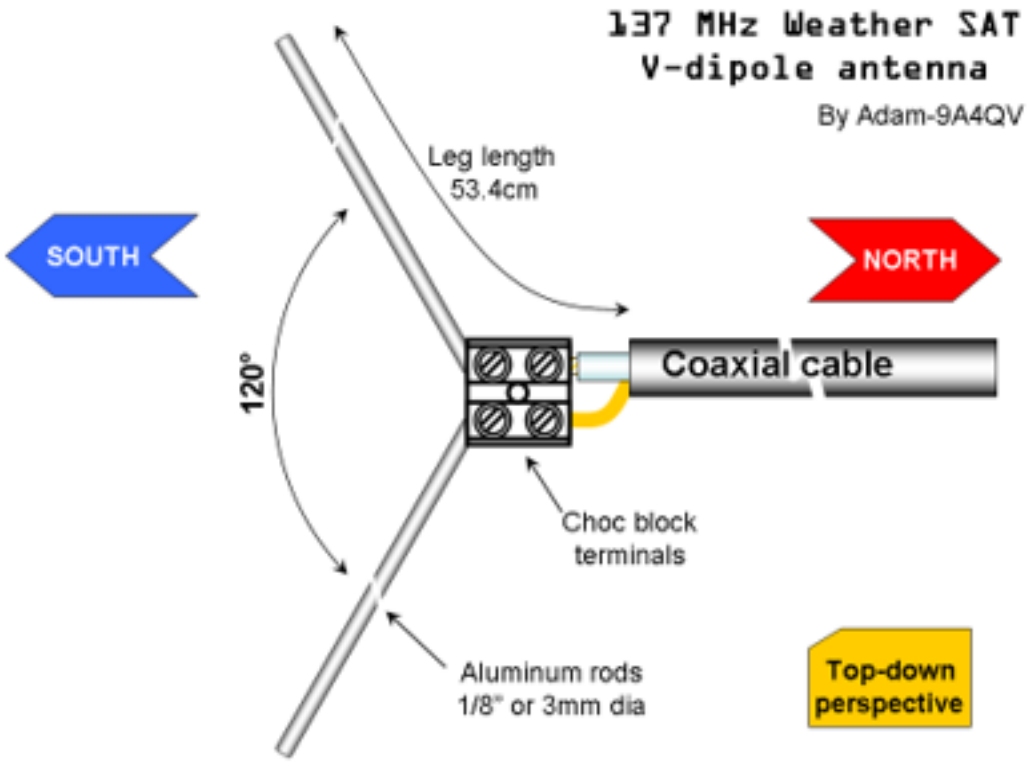


....Unbelievable

A Simple Satellite V Dipole for Weather Satellites – de KD2FTA

At our recent Antenna Elmer weekend event we built a very simple satellite antenna made from basic copper tubing and a few items that were lying around the house. With the v dipole antenna design, all it takes are two copper or wire pieces each approx. 21 inches long, a SO-239 connector, and a little solder and you're in business.

The trick is to figure out how you want to position and mount the two elements so that they're about 120 degrees apart. The next trick is to be able to get the antenna as high above the surrounding building obstructions to get a clear path of signal from the NOAA birds. Below is the original design I used to make the dipole.



Ruth Ann, Chris and I along with a little help from Eric, labored Saturday afternoon to cut the copper tubing to the correct size. We cut a piece of wood to mount the pipe to, after swagging the ends so that we could drill a hole to mount the tube to the wood. Chris then did an expert job of soldering two small

wire pieces to the end of the tubing and to the SO-239 connector that was place in the center of the wooden piece. Finally, a ½ inch diameter PVC pipe was cemented to the bottom of the wooden platform and we used zip ties to mount the antenna to the top of a portable mast. The reason for having the elements angled at 120 degrees is to capture a right polarized signal better than a conventional dipole.

I've downloaded dozens of signals with an arrow antenna and have never received the quality of image this simple antenna produces because of the signal polarization. When placing the antenna on a pole make sure of two items. The antenna is relatively flat and horizontal, and the pointed end is pointed north. Ruth Ann got a quick course in SDR radios dongles, the installation of the software drives for the radio, and the actual software used to decrypt the images from the .wav produced by the weather birds.

https://www.nooelec.com/store/nesdr-smartee-sdr.html

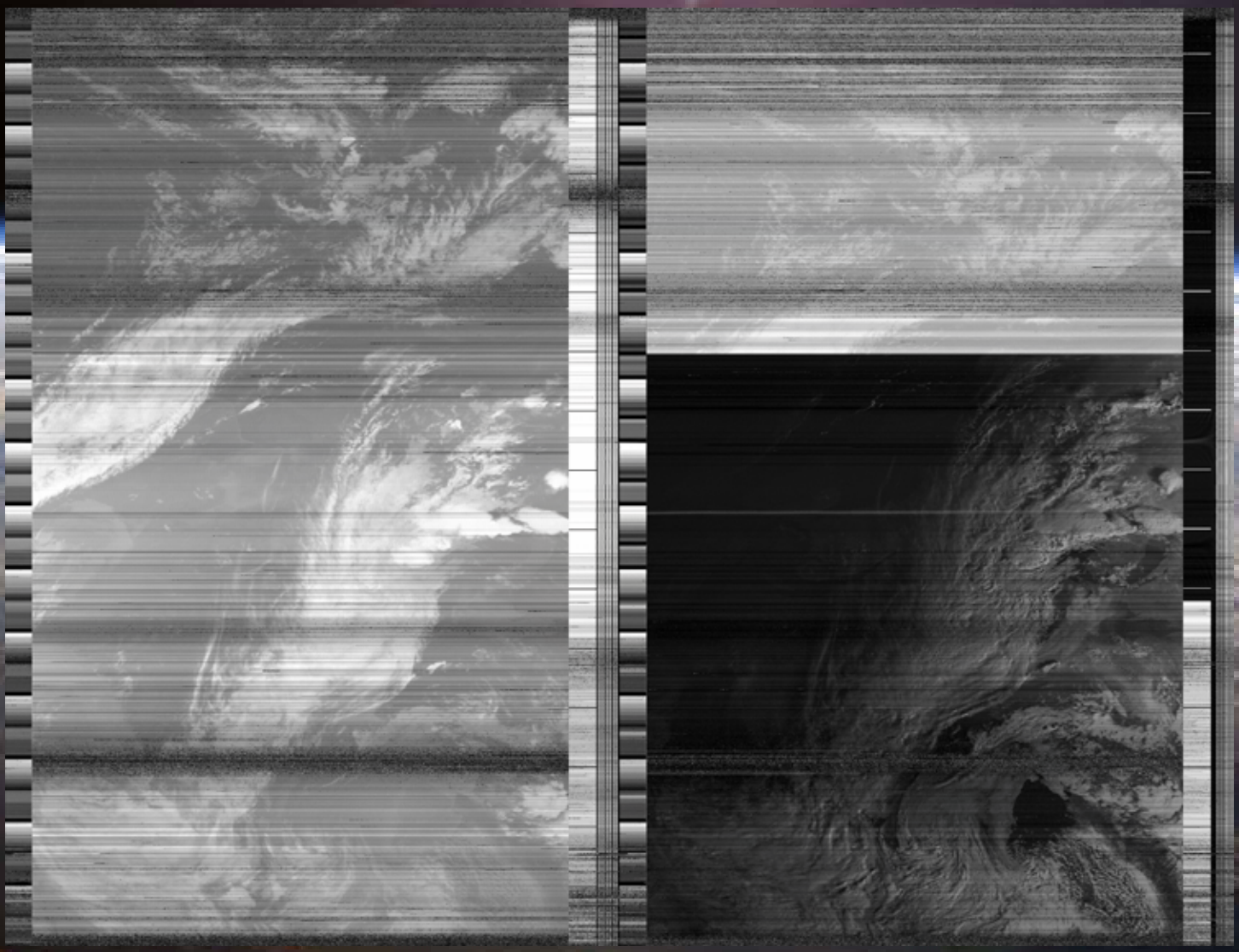
We downloaded them all as well as VB audio cable (used on the WXtoIMG software), Cubic SDR, and Audacity software to do the actual recording of the NOAA signal. The software used for the signal decryption was NOAA-APT 1.3.0 : https://noaa-apt.mbernardi.com.ar/

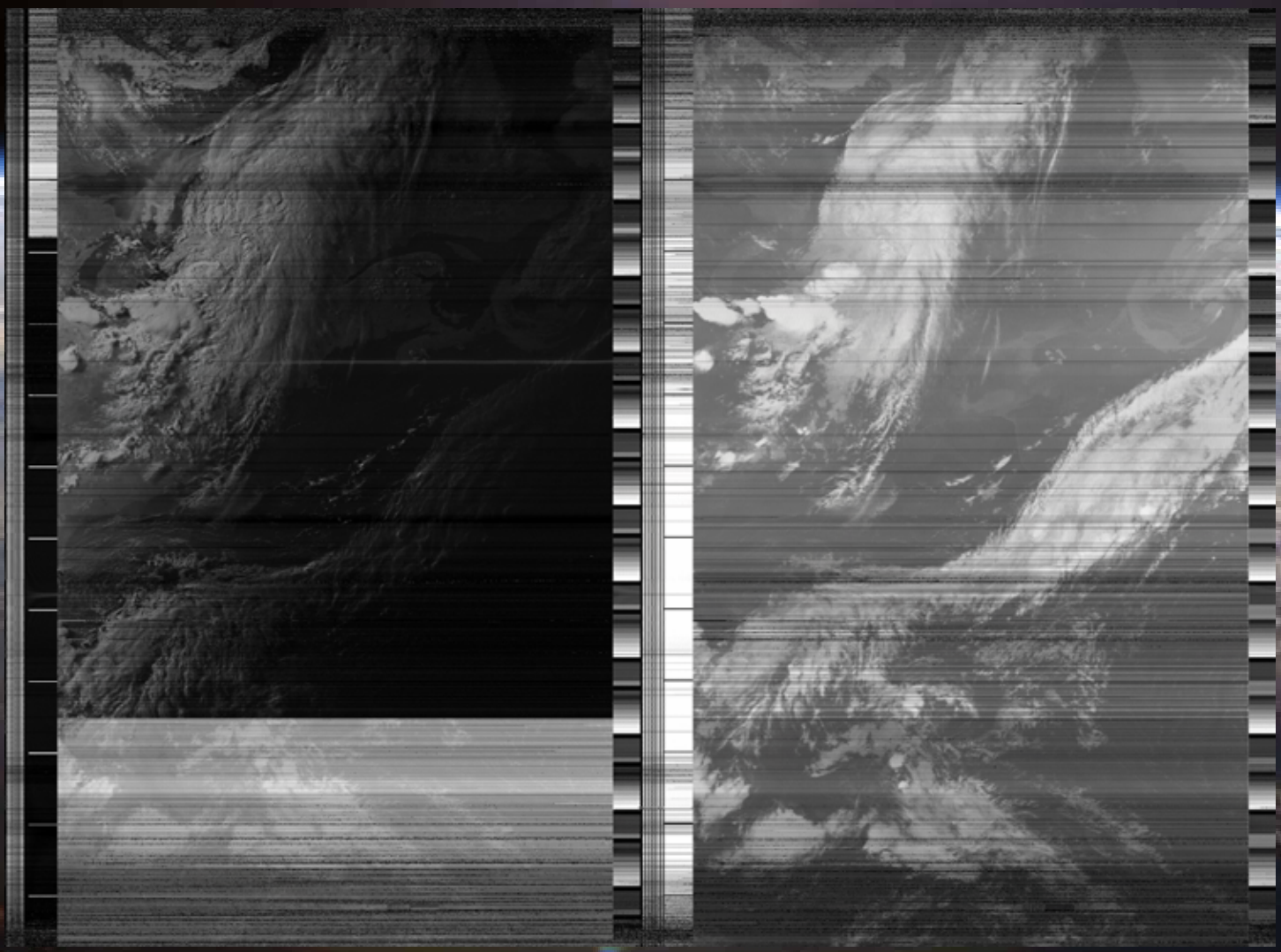
The SDR radio used Cubic SDR (the software that controls the SDR dongle) to tune in the 137.100 Mhz signal with 50,000Hz spacing to allow for doppler shift.

We waited till 7 pm for the NOAA 19, then 7:20 for the NOAA 15 birds to pass overhead. They weren't higher that 45 degrees on the horizon as they flew by, but we got exceptionally strong signals being on top of hill. Ruth Ann captured two excellent images, but since the birds provide real time images, we really saw more of the Midwest states as the sun was setting over Big Pocono State Park.

Anyone wanting more information on how to capture weather images from the NOAA birds can now contact Ruth Ann. She's now officially a SATComm Weather Elmer! Congrats Ruth Ann!

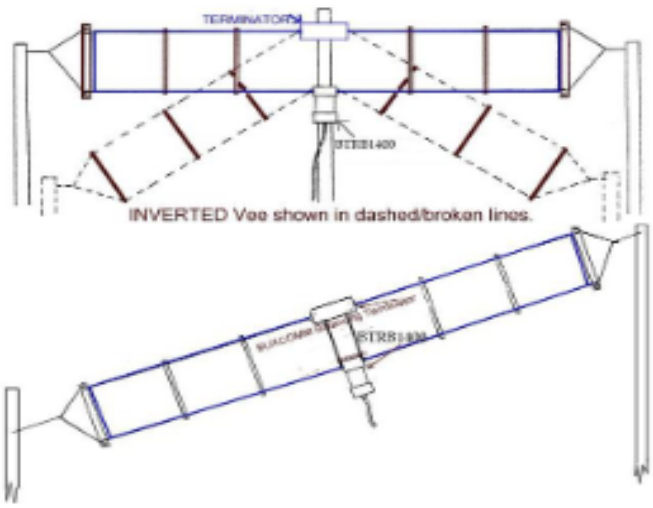
73 de -KD2FTA





Building the Balanced Termination Folded Dipole, (BUXCOMM 1606FD)

By Glynn E "Buck" Rogers K4ABT



The T2FD, modified to a *Balanced Termination Folded Dipole* (BTFD)

Over the years I have built many antennas, Windom's, Dipoles, Folded Dipoles, balanced terminated folded dipoles, BTFD or T2FD broadband antennas. I prefer to call the latter a "balanced, termination folded dipole (BTFD)." When tilted to a 30 degree incline, it is called a T2FD, or Tilted-Terminated-Folded-Dipole. It can be designed for any number of frequencies between 1.8 and 30 mHz. The original balanced termination, folded dipole (T2FD) was the design of amateur radio operator *(An Experimental All-Band Non-directional Transmitting Antenna" by Gil L. Countryman, W1RBK, (W3HH), QST, June 1949)*, the antenna was first used for maritime and naval communications.

It was 1958 when I built a modified version of the T2FD. Instead of using the 600 ohm, non-inductive termination, I used an 450 ohm termination, and added the Guanella version of a transmission line transformer (TLT) 9:1 BALUN. Our balanced termination, folded dipole (BTFD) now provided an excellent bandwidth using the balanced termination, folded dipole (BTFD) designed for a low frequency with the upper frequency limit extending well above 50 megahertz. In the articles I had read that when the Tilted-Terminated-Folded-Dipole (T2FD) is installed with the 30 degree incline, that it would exhibit an omni signal pattern.

In 1966, while doing some experimenting with the balanced, termination folded dipole, I installed it with the 35 degree incline. After several contacts, I soon discovered there was a lack of back-fill in the direction behind the incline. To circumvent or at least correct some of the back-fill problem, I raised the high end (tall pole) to 35 feet, and brought the low end to slightly over 6 feet. After all the raising and lowering of the ends, the antenna's signal still favored the slope side or direction of the low end. In subsequent tests I found that either horizontal, or sloped, the antenna exhibited similar coverage. If anything, the flat-top or horizontal installation may have displayed an edge over the sloped installation.

ROLL YOUR OWN T2FD or BTFD:

To determine the dimensions of a BTFD or T2FD using 450 ohm termination and 9:1 BALUN use the following formulae to calculate the dimensions. My reason for developing the formulas using PI or 2 times pi (6.28) is to make the calculations linear when computing dimensions for bands other than the bands used in the examples below. Example; 3.8 Mhz to 30 Mhz, 7.2 to 30 Mhz .etc.

In addition to the formula for the 450 ohm T2FD and 9:1 BALUN shown here, here is a formula for the 450 ohm balanced termination, folded dipole that uses a 9:1 BALUN with a similar (BTFD) overall length: 166 divided by the frequency in megahertz = antenna length (Ft); thus **166/1.85 Mhz** = 89.73 feet. For meters, divide feet by 3.28, or 89.73 ft divided by 3.28 (**89.73/3.28**) = 27.36 meters. **16 inches**. *Wire/element spacing is not a critical dimension, and can vary +/- 2 inches MOL.*

Thus you now have the dimensions you need to build a T2FD balanced termination folded dipole (BTFD).
An *important NOTE to remember:* These calculations are based on the T2FD using an 450 ohm non-inductive BTR, and the BUXCOMM B15KC91 BALUN, or the **1606T2FD**

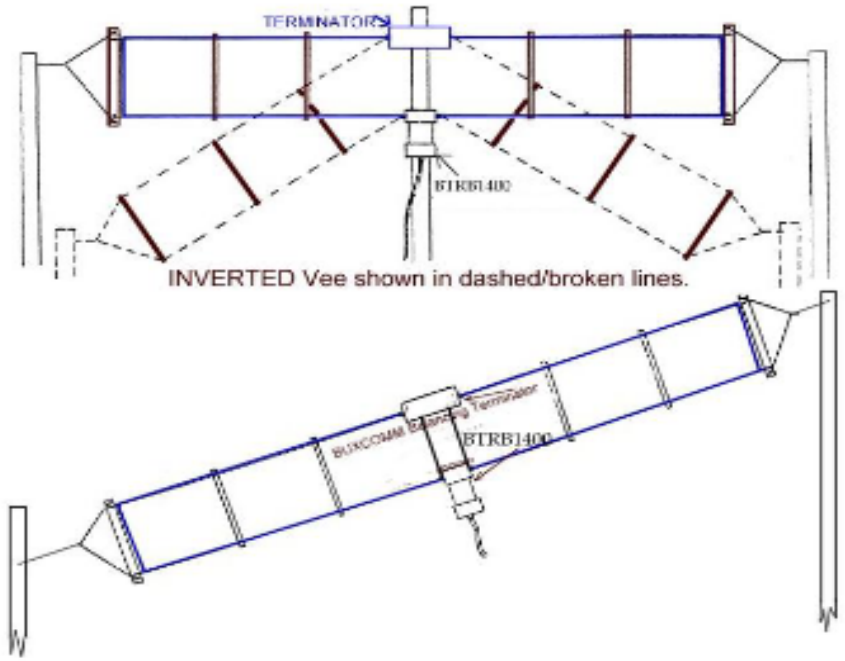


Figure 1: Several installation configurations for the The balanced termination, folded dipole (BTFD) BUXCOMM model 1606FD

The balanced termination, folded dipole (BTFD) is an extremely broadband antenna, and it is a very quiet antenna indeed, as it is immune to terrestrial noise as compared with a vertical or a horizontal dipole. The SWR, Standing Wave Ratio, when transmitting may vary from an almost perfect match of 1.1:1 at some frequencies to 2.5:1 at other frequencies. In either case, either reading is good when you consider you are able to operate across the HF spectrum without an antenna tuner.

Balanced Termination, Folded Dipole (BTFD) BUXCOMM model 1606FD, Low-Noise, High-Performance, Antenna

Features:

* Frequency range 1.8 - 55 MHz
* Can be used as an SWL monitor or transmit antenna from 1.8 - 30 MHz
* Low-noise design, reduces sensitivity to terrestrial man-made noise and atmospheric static.
* Constant sensitivity over the entire frequency range without an antenna tuner.
* Coaxial cable between antenna and receiver.
* Length, 27.5 meters
* Passive, therefore no inter-mod
* Antenna is complete, ready to erect.
* Heavy duty construction, both wire and fiberglass.

Advantages of the balanced termination, folded dipole (BTFD) antenna:
The balanced termination, folded dipole (BTFD) (Tilted Terminated Folded Dipole), originally developed by the US Navy, is an antenna still in common use by military and government receiving stations. There are good reasons for this choice by the professionals. The antenna has a balanced termination which provides it with its characteristic impedance. This terminated principle means the antenna is not prone to annoying man-made interference sources, such as fluorescent lights, dimmers, televisions etc. The antenna is also less subject to noise from likely causes, such as atmospheric static and open high-tension power lines.

ANTENNA ARCHIVES #37

The balanced termination, folded dipole (BTFD) is really a "low-noise" transmitting and receiving antenna! By ensuring a constant impedance throughout the length of the antenna, the balanced termination, folded dipole (BTFD) is also less prone to distortion due to multi-path fading. Our tests have shown that when compared to dipole or long-wire antennas, the background noise with a balanced termination, folded dipole (BTFD) antenna is not only much lower, but allows weak signals normally not heard, to be audible and therefore legible.

One of the most desirable features of the BTFD is when using digital modes, packet radio, PSK, SSTV, MT63, etc, makes for easy recovery of their signals. The immunity to terrestrial noise reduces the number of errors in data communications simply because of its low noise figure and lower distortion.

The balanced termination, folded dipole (BTFD) does not suffer from dead spots across its frequency range as we have found the specifications for the BTFD are the same for its entire frequency range. This is not only a useful feature for SWL shortwave listener who likes to listen to both the broadcast and other communications services of the shortwave spectrum. This is also ideal for the HAM who often and hastily changes frequency.

Height is not a pre-requisite:
The ends of a dipole, trap-dipole, and long wire antennas have a high impedance. This is a problem when the wire runs in the vicinity of conductors such as metal roofs, trees, and similar vegetation. The balanced termination, folded dipole (BTFD) has fewer of these problems because of its constant impedance at any point of the antenna. In addition, the conductivity of the ground under the BTFD antenna has little influence on its performance. The height of the lower end of the balanced termination, folded dipole (BTFD) does not have to be more than 10 to 15 feet above the surface. If you hang the balanced termination, folded dipole (BTFD) with an angle of 30 degrees, then the antenna pattern shows a number of lobes that it may cause you to feel the antenna is sensitive to signals from all directions, or omni-directional. This apparent "omni-directional" can be a bit misleading, however the circularity of the T2FD pattern does is over 300 degrees, but falls short of a full circle signal capture.

This back-fill null is the result two properties:

1) Lack of back-fill aft the support mast,
2) Poor capture by the antenna in the E plane of the slope toward the low end.

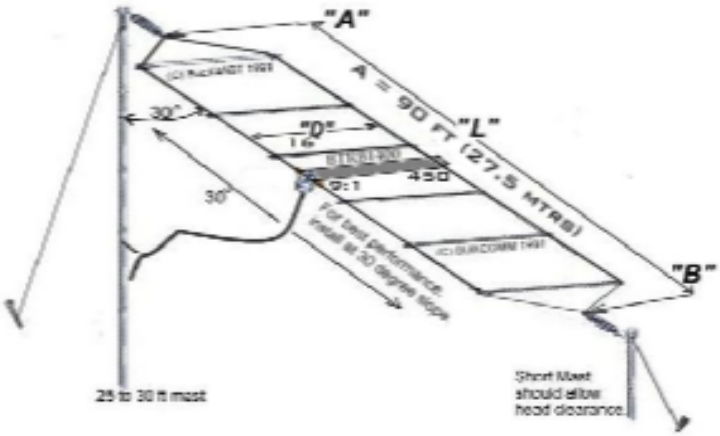


*Figure 2: **Properly installed, balanced termination, folded dipole (BTFD) is omni-directional over most of its operating range.*** In addition to the formula for the 450 ohm T2FD and 9:1 BALUN shown here, here is a formula for the 450 ohm balanced termination, folded dipole that uses a 9:1 BALUN with a similar (BTFD) overall length: 166 divided by the frequency in megahertz = antenna length (Ft); thus **166/1.85 Mhz** = 89.73 feet. For meters, divide feet by 3.28, or 89.73 ft divided by 3.28 (**89.73/3.28**) = 27.36 meters.

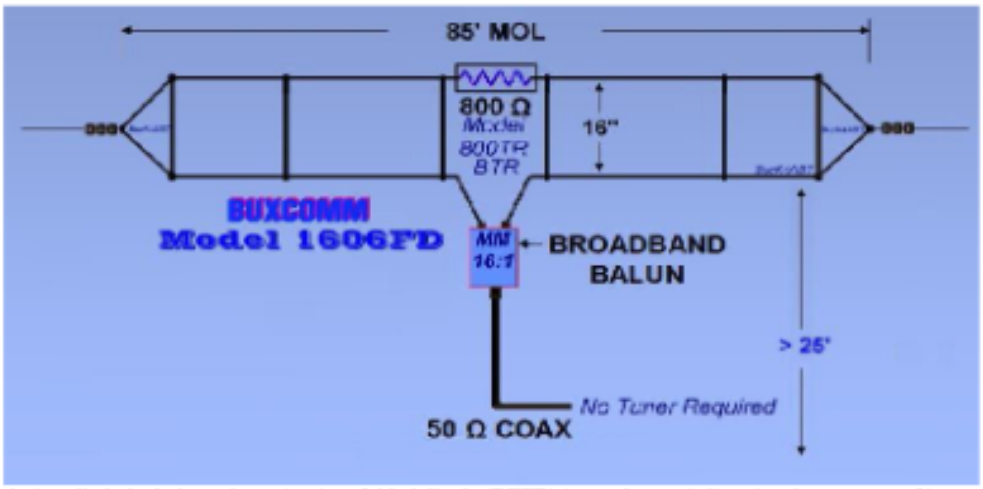
We've calculated a "happy-medium" for spacing the top and bottom elements of the T2FD. To determine spacing between the wire elements of the T2FD, we use a constant of 30/Fmhz the formula is: **30/freq Mhz** = inches; thus **30/1.85 Mhz** = 16.2 inches. Since the spacing is not critical, we round it to 16 inches. The 16 inches, works as multiple fractions across the HF, HAM band spectrum, up to, and including 51 Mhz (6 mtrs).

Wire spacing is not a critical dimension, and can vary +/- 2 inches MOL.

A 30 to 35 degree angle enables the antenna to be sensitive for horizontally polarized, as well as vertical polarized signals. This feature is where the BTFD exhibits one of its inherent properties; *Reduced signal fading.*

Although the 1606TR is designed for transmitting and receiving, for reception the balanced termination, folded dipole is incomparable: For receiving purposes the balanced termination, folded dipole (BTFD) has an extra advantage. It is immune to man-made and low atmospheric (terrestrial) noise. On shortwave, this noise can be so high, that it decides the signal to noise ratio, in turn, the intelligibility of the received station.

ANTENNA ARCHIVES #37



When properly installed, the balanced termination, folded dipole (BTFD) is nearly omni-directional over most of its operating range.

The balanced termination, folded dipole (BTFD) Antenna:
BUXCOMM has experimented with the balanced termination, folded dipole (BTFD) for several years, and from time to time, we have improved on the original design. By analyzing the problems from different angles, and trying various materials, the good points of the original design could be improved upon. The move from a 600 ohm termination resistor and adding the 9:1 BALUN was the greatest improvement. The latest design means that common coaxial cable can be used as a lead-in to the transceiver, eliminating ingressed interference from equipment such as computers, power lines, and fluorescent lights.

Photo 1: We make the characteristic impedance of the BUXCOMM balanced termination, folded dipole 450 ohms by using the BUXCOMM model 800TR.

LEFT, Photo 2: Thanks to the development of our wide-band 9:1 BALUN, the antenna is matched to the 50 Ohm coaxial cable and the input impedance of most transceivers.

This BALUN not only ensures symmetry in the antenna across its frequency range, it also isolates the coaxial cable from the antenna, reducing interfering signals that might be picked up by the shield of the coaxial cable.

Static discharge protection:

In addition, the BUXCOMM 9:1 BALUN is a current type BALUN. This ensures that the antenna-wire on the balanced termination, folded dipole (BTFD) is grounded, so that any static buildup during thunderstorms, is discharged to earth. This not only protects the sensitive input circuitry of the transreceiver, it reduces the atmospheric noise which is generated as a result. The BUXCOMM balanced termination, folded dipole (BTFD) is designed to withstand harse weather conditions and has survived wind's with speeds over 150 mph.

Again, the higher impedances tend to balance the power in each leg more evenly. We old timers have always used 800 ohm non-inductive balancing terminating resistors (BTR) for Rhombics, and 600 ohms for the terminated folded dipoles. However since 1965 I have found that better bandwidth and VSWR is best when using 450 ohm termination resistors and a 9 to 1 BALUN. I have written several books and articles about these antennas. In my writings I have demonstrated and illustrated the advantages of using the different impedances. In tests we have found that higher feed-point impedances tend to lose bandwidth at the higher frequencies, e.g. 20 to 30 Mhz. While using a BTR below 500 ohms, we've discovered that better bandwidth occurs along with *less* TVI. After a lot of trial and error, design changes, bridge, and grid-dip meter testing, we found a happy medium! Therefore, my focus has been to make these antenna(s) as broad as possible, while maintaining a relative smooth VSWR from 1.5 to 55 Mhz. The "happy medium" is to use a 9:1 BALUN and a *Balanced Termination Resistor* (BTR) at, or near 450 ohms.

To support the low frequencies, a BTR of 450 ohms with a BUXCOMM B15K91, 9 TO 1 BALUN provides a good match over wide HF frequencies that range from 1.8 to 30 Mhz while still minimizing TVI, and maintaining the antenna's inherent immunity to terrestrial (man-made) noise. To optimize the T2FD for the best of all worlds, 1.8 to 55 Mhz, we recommend the use of a 9 to 1 BALUN with an 450 ohm termination resistor.

The balanced termination, folded dipole (BTFD), or Tilted Terminated Folded Dipole (T2FD), is related to another well known antenna... the rhombic, known for its extraordinary performance and reproducibility of its radiation patterns. A balanced termination, folded dipole (BTFD) is "terminated" like the rhombic, a NON-INDUCTIVE RESISTOR is placed at the end of antenna, something which provides a LOAD or TERMINATION to the RF propagating along the antenna. But, the big differences between the balanced termination, folded dipole (BTFD) and the rhombic, are that the first is much smaller, has little or no directivity and fits into a rather small real-estate space, while a rhombic antenna may be several football field sizes, and transmits a narrow horizontal radiation pattern. The balanced termination, folded dipole (BTFD) is a very practical broadband antenna.

Wire size and mechanical concerns:
Building a balanced termination, folded dipole (BTFD) for the 1.8 to 30 Mhz frequency range requires taking into account some mechanical design considerations. For example, you can't use a smaller wire size for the antenna, as its span is such, that number (AWG) 16, or AWG 14 can be used.

In the late 1950s, we used bamboo or cured cane poles to make our wire spacers. In 1963, some of us decided to try different spacing, different (non-inductive) resistances, and finally settling on the design with optimum performance. Using a 450 ohm *balanced termination resistor*, a 9 to 1 BALUN and 1.4 ft (15-1/2 inch) spacers, a happy medium was within our grasps. Today, upper and lower wires of the balanced termination, folded dipole (T2FD) are kept at a uniform distance, we achieve this with fiber-glass spacers or spreaders. This length will vary when using half-inch (or small diameter) PVC.

Over the years, when I've had available real-estate, the WINDOM is my favorite, however when antenna property space is limited, I've turned to the Balanced Termination Folded Dipole (BTFD), or T2FD. *The reason these two are my favorites, I don't need an antenna tuner to cover the HF spectrum, and only one antenna meets all my HF operating requirements.* This one HF antenna will enable you to forget that collection of rhombic's, log-periodic, wideband dipoles and similar antenna arrays! Building your own balanced termination, folded dipole (BTFD) will be like having a number of dipole antennas for many bands all in a single antenna and fed with only one cable.

Yes, in addition to the formula for the 450 ohm T2FD and 9:1 BALUN shown here, here is a formula for the 450 ohm balanced termination, folded dipole that uses a 9:1 BALUN with a similar (BTFD) overall length: 166 divided by the frequency in megahertz = antenna length (Ft); thus **166/1.85 Mhz** = 89.73 feet. For meters, divide feet by 3.28, or 89.73 ft divided by 3.28 (**89.73/3.28**) = 27.36 meters.

Rather than zig-zag'n all over the place, we have calculated a "happy-medium" for spacing the top and bottom elements of the T2FD. To determine spacing between the wire elements of the T2FD, we use a constant of 30/Fmhz the formula is: **30/freq Mhz** = inches; thus **30/1.85 Mhz** = 16.2 inches. Since the spacing is not critical, we round it to 16 inches. The 16 inches, works as multiple fractions across the HF, HAM band spectrum, up to, and including 51 Mhz (6 mtrs).

73 de BucK4ABT Visit: www.HAMqrp.com

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EQUIPMENT FOR SALE BY AB3ME

These items were purchased by myself for field day 2018 and have not been used since. Have been kept in weatherproof storage cases with desiccant since. I have kept the removed pluck foam for all weatherproof cases.

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1. 1 each Dentron Super Tuner, 1000 watt, w/ balun, wire or coax feeds 5 star eham rating..... Price = $175.00 see pic,excellent condition.

2. 1 each Dentron Junior Tuner, 300 watt, w/balun, wire or coax feeds 4.9 star eham rating..... Price = $125.00 see pic, excellent condition.

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