WATTS NEWS

The Best of Amateur Radio

OARC e-Magazine

www.OgdenArc.org

OCTOBER 2020

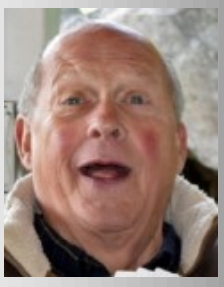
Next Club Meeting/Activity

Inside...

Dave Mamanakis KD7GR
President

Justin Hall KB7LAK
Vice President

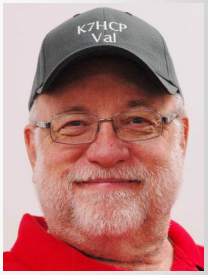
Barbara Siddle KB7FWW
Secretary



J. Siddle KG7CJN
Treasurer

Mike Wilde KJ7HEX
Program Director

Todd Shobe KW7TES
Activity Director



Val Campbell K7HCP
Webmaster/NL Editor

PREVIOUS CLUB MEETING/ACTIVITY

September Activity

JOINT SWAP MEET

OARC/DCARC/UARC

NEXT CLUB MEETING/ACTIVITY

OARC

October Activity

Keep clicking...

PREVIOUS MEETINGS PICS

Photos by … photographers have been quarantined

“Previous Meeting - pictures” ...

Photos located on the club web site home page.

OARC ‘s new Centennial Club Logo

OARC COMING EVENTS

Next Activity

One more click...

Next VE Test Session

1st Wednesday 07 October 2020 @ 6:00 PM

CLUB NEWS

OARC

October Activity

Details are still being worked out for a Covid Safe club meeting on the 3rd Saturday 17th October 2020.

Stay tuned to the Club Website and the Ham & Eggs Net.

Next OARC - VE Test Session

1st Wednesday 07 October 2020 @ 6 pm

2720 Jefferson Ave, Ogden, UT 84403

Social distancing observed. Bring your mask.

Dave's Rag Chew

Dave Mamanakis KD7GR

My Good Friends!

Here we are, October! Really? Already?

There is sooooo much going on in October! My favorite holiday, Halloween, is happening! I'm SOOOO excited!!!
And we have the Test Session on Wednesday the 7th! See the website for the location! It is a great time to upgrade! (We'll be following all Health Department and CDC rules: Masks, Hand Sanitizer, and Social Distancing)

I'm going to be headed to Moab. I'm helping run radio for the Moab 240 (the Endurance Run for the crazy). Camping and Ham Radio for a whole week! What could be better?

I may also use HF, maybe some 10m… just to see if I can make some contacts.

I don't know if any of you have done POTA (Parks On The Air) but if you like contesting, it is worth looking at.

So, if you happen to be General Class, you might want to listen in to 20 and 40 and maybe we might make a contact! I'm not sure of the exact frequency I'll be on, but plan on somewhere right in the middle of the Phone band … makes it easy (I hope).

Which brings me around to another topic, Identifying your Station. I know, a terrible segue. But it is something we all need to be sure of in the Ham Radio world!

I'm the first to admit, I fail at Station ID in a net. We need to remember, EVERY 10 MINUTES and AT THE END OF THE TRANSMISSION. So when you say, "back to you net control", it should actually be, "this is [call sign], back to you net control."

We SHOULD also be using the phonetic alphabet for clarity when identifying our stations, Kilo Delta Seven Golf Romeo.

FCC Regulations

97.119 Station Identification

(a) Each amateur station … must transmit its assigned call sign on its transmitting channel at the end of each communication, and at lease every 10 minutes during a communication…

(b) … use of a phonetic alphabet as an aid for correct station identification is encouraged;

Then there is the difference between the letter of the law and "best practices".

Above is the actual "letter of the law", and that is fine and good, but we also have "Ham Radio Best Practices". We add a little to the "letter of the law" to make communication happen better! Which is why we usually start with our identification, identify every 10 minutes, and at the end of our transmission. That way people know who we are from the very beginning! It is just better and easier for everyone.

This all works great for Phone(Voice) communications, but then we have all kinds of Digital modes… FT8, etc. These are usually pretty easy, as you program your call sign into the tool you are using (FLDigi, etc) and it transmits your call sign for you… every time you transmit. So you don't have to worry about remembering to identify yourself every 10 minutes.

But what about Digital Voice Modes? Like with our Yaesu System Fusion Repeaters, or with IRLP, D-Star, etc? Because, as with Yaesu System Fusion, you program your call sign into the radio and it sends it along with your transmission. So, do you still have to identify yourself every 10 minutes and at the end of your transmission?

I couldn't find a good answer to that question. But here is my advice:

Once you get used to Phone(Voice) communication in the Analog world, and you move to D-Star, System Fusion, DMR, or any of the other Digital Voice Modes, I would suggest you keep doing what works in the Analog world. There is no need to reinvent the wheel, and if you stay in practice, it is easy to remember and easy to stay in the habit… AND you don't make mistakes when you go back to Analog communications.

I need to work on this.

Don't forget! We have our Club Meeting on the 17th. We will give you more information as time rolls on. Follow us on the Ham & Eggs Net and on the club web site. I am sure it'll be a good one! At a minimum, I'll have some stories to tell from my Moab experience!

Oh, and if you are interested, we will be holding our Board Meeting via Zoom on the 14th at 6pm. If you'd like to join us, send me an email, I'll send you the Zoom Link!

Thank you all for supporting the club through these difficult times! We wouldn't be much of a club without you!

--Dave (KD7GR)

CLUB NEWS

HAM and EGGS Net

Tuesday Evenings at 6:30 PM Mountain Time

Mt Ogden 70 cm repeater 448.600 MHz (- offset, 123.0 PL Tone)

New, Intermediate & Old Timers. Elmering, Education, General Ham Discussion and Rag Chew.

New hams encouraged to check in. Get connected, learn new things and ask questions.

Questions: Larry Griffin AD7GL, ad7gl@arrl.net

Stan Sjol W0KP, stansjol@xmission.com

CLUB NEWS

10 Meter Net

Thursday Evenings at 0200 UTC (7:00 PM MT)

10 Meters HF - 28.385 MHz SSB (USB)

Purpose is to promote activity on the 10 meter band (especially during low sunspot activity).

To give technician class operators an opportunity to operate phone, and to provide a venue for conversation and experimentation with antenna and ground wave propagation.

Questions and Net Control: Gene WB7RLX, ee_morgan@outlook.com

CLUB NEWS

Ogden Amateur Radio Club

Centennial 2021

QSL Card Contest

The Ogden Amateur Radio Club Centennial Committee would like to announce a QSL card contest. The Centennial committee will be scheduling a special event station to celebrate the 100-year mark for the OARC. Tentative date May 15, 2021. The final card design will be printed and mailed to all over the air radio contacts who request a card.

This contest is open to all club members. Contest will run from September 1, 2020 until April 15, 2021. Voting for the winning design will be held online to determine the final card design. In the event of a tie, the final winner will be determined by the board.

Original artwork, photographs, and drawings are all welcome. Desired theme should be radio related, and emphasize the Centennial milestone of the club.

Scoring will be based on: Originality. Centennial Theme. Aesthetic quality.

Grand Prize

$100

All entries will become the sole property of the Ogden Amateur Radio Club.

Submit all entries electronically to:

w7su@arrl.net

CLUB NEWS

Choosing a new OARC Logo

17 of the 22 OARC Board Members voted.
16 voted to go with this new logo.

You will be seeing more about this as we approach 2021, OARC's 100th year.

CLUB NEWS

Ham Shack Photos

Last month the unidentified Ham Shack Photo was …

Jason Miles KE7IET

CLUB NEWS

Ham Shack Photos

The next in the series of unidentified ham shacks is shown below.

Do you know whose ham shack this is?

.

CLUB NEWS

STILL WANTED

Ham Shack Photos

We want you to submit pictures of your ham shack to us for future publication in the club newsletter. Submit home ham shack, mobile ham shack, handheld ham shack. Antennas too.

I will keep the submissions anonymous if you prefer.

My thinking is that I would publish one-set of ham shack pictures each month with the idea that all viewers could privately try to guess whose ham shack was featured that month.

I think it will be interesting to see the wide variety of equipment that each of us has chosen to populate our hobby work space with. This could be invaluable to each of us as we make future decisions about equipment upgrades.

Thank you in advance. 73, Val K7HCP

Submit to

k7hcp@arrl.net or w7su@arrl.net

Or

801.389.0690

So How About it?

Send me your Ham Shack Photos soon.

CLUB NEWS

AMAZON SMILE PROGRAM

A few months ago I mentioned that I had joined Amazon's SMILE program, a program where a small portion of my Amazon purchases are contributed to ARRL.

Simply log into Amazon as http://smile.amazon.com and then proceed as usual.

My contribution notice from Amazon follows:

Every little bit counts

You have generated donations of $4.82 as of September 09, 2020

ARRL Foundation received new donations this quarter of **$335.82**.

Amazon Smile's donations to **ARRL Foundation** to date: **$1,150.95**

73, Val K7HCP

CLUB NEWS

Brad Bate - N7SWW

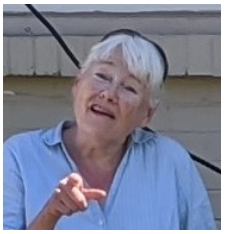
May 30, 1953 ~ July 24, 2020 (age 67)

Obituary

Brad Bate was born on May 30th 1953 in Ogden Utah to George (Dean) and Fae Bate and departed this life on July 24th 2020 (67 years old).
After high school he joined the Army and was stationed in Germany along with Fort Leonard Wood as my dad called it (Fort Lost In The Woods). He married Christina (Nalder) in 1977. They had a son Michael Bate and they later divorced.
He was currently working at Hill Air Force Base. He loved the outdoors fishing, camping, shooting, skiing. He helped take care of both his elderly parents at the end of their lives. He loved HAM radios, and working on anything to do with computers. He was always helping family and friends with their computers. He was sarcastic, funny, quick witted, and stubborn. He always offered to help neighbor's on projects. A lover of animals all of his life. He had been fighting Cancer for almost 2 years and lost his battle on July 24th 2020.
He was proceeded in death by his parents Dean and Fae Bate.
He is survived by: Son Michael (Amber) Bate, Grandchildren Jaydon, Braxton, & Dakota. Siblings Leslie (Gus) Peterson, Brent Bate, Shawnree Edwards, and Bart Bate.
Condolences can be made via the Aaron's Mortuary website
at www.aaronsmortuary.com one this has been update still working on this.
In lieu of flowers & gifts the family requests that money donations be made to help with any funeral, home and final wishes expenses via our family Venmo or directly to the family, if needed you can also mail these to FPA P.O. Box 963 Bountiful, UT 84011-0963

Featured Member

Colleen Pike - KJ7EAY



COLLEEN PIKE – KJ7EAY

Colleen was licensed Technician class on 20 February 2019. Later upgraded to General Class on 08 October 2019. She joined OARC in August 2019.

Hi OARC,

On the weekend of September 5, 2020, a group of OARC club members helped me (Colleen, KJ7EAY) install my new antennas:

Gene WB7RLX (led the installation)

Alan N7SHA

Jarad W7FMJ

Bill K7VIA

A VHF/UHF Diamond DMN-X300A was placed on my roof attached to the chimney. An HF Comet CMA-H-422 antenna was installed in my yard. My property is near high tension wires to the south and the lot size restricted use of some other antenna possibilities. The Comet was installed with north-south orientation because of the mountain to the east.

Then the big wind storm came and rotated the Comet antenna into an east-west direction! I was able to easily return it to the original position by twisting the lower part of the mast. So the antenna survived its first strong winds very well. I have listened to stations from California, Colorado and further east and successfully joined the 10 meter net last week. Thanks everyone for your help.

Attached is the picture of my "small" but growing radio shack. And, Princess, seems to prefer HF transmissions. Maybe all that "snow" in the background and the weird sounds while tuning are like music to her ears? Ha,ha.

I am glad my first HF radio, Yaesu FT-920, does not have a waterfall so I am learning to search bands. Until this used FT-920 crossed my path, I was planning to purchase a Yaesu FT-991A next year. I will probably still get one, but I can wait awhile now.

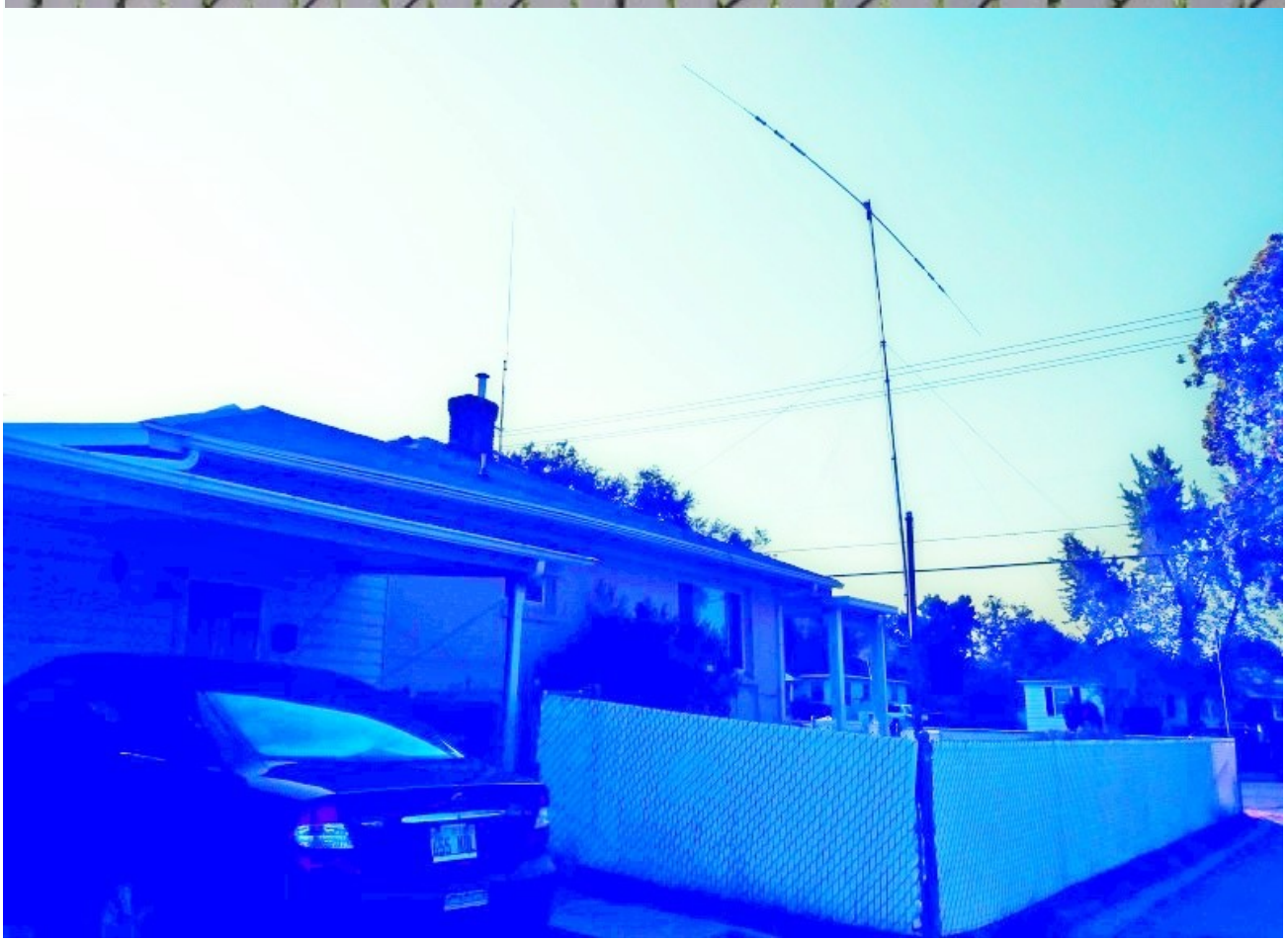
My first "real" radio was purchased used through the OARC. It is a Yaesu FT-897 which belonged to Dr. Steve Kammeyer. Though I didn't personally know Dr. Kammeyer, we must have passed in the hospital hallways dozens of times as I worked at McKay-Dee Hospital for 31 years, mostly in the medical record department. Knowing this radio was his makes my FT-897 extra special to me. I understand that the FT-897 can do VHF/UHF and HF, but I like to keep it dedicated to the ARES bands and talking with local hams via the repeater.

Last but not least, I called the FT-897 my first "real" radio because I started in the ham radio world with the inexpensive UV5R Baofeng. It is sitting sideways in a stand right next to the FT-897 so it is barely visible in the picture. No matter what anyone says, I love my Baofeng.

My interest in ham radio use sprang from a desire to be prepared for emergencies as an individual, as a family unit, and as a community . Once I really got involved I discovered a wonderful group of people who love to share their hobby. Now I love the hobby, too, and keep trying to recruit my family members.

My father was a Southern Pacific station agent and telegrapher. When I was growing up the family living quarters was attached to the train station office. As a child, I could hear the dits and dahs of the telegraph key while I was playing. In the evenings, as my father read me bedtime stories, he would pause only briefly to listen when a message came through. Now I have a desire to learn CW so I can understand the dit/dah messages, too.

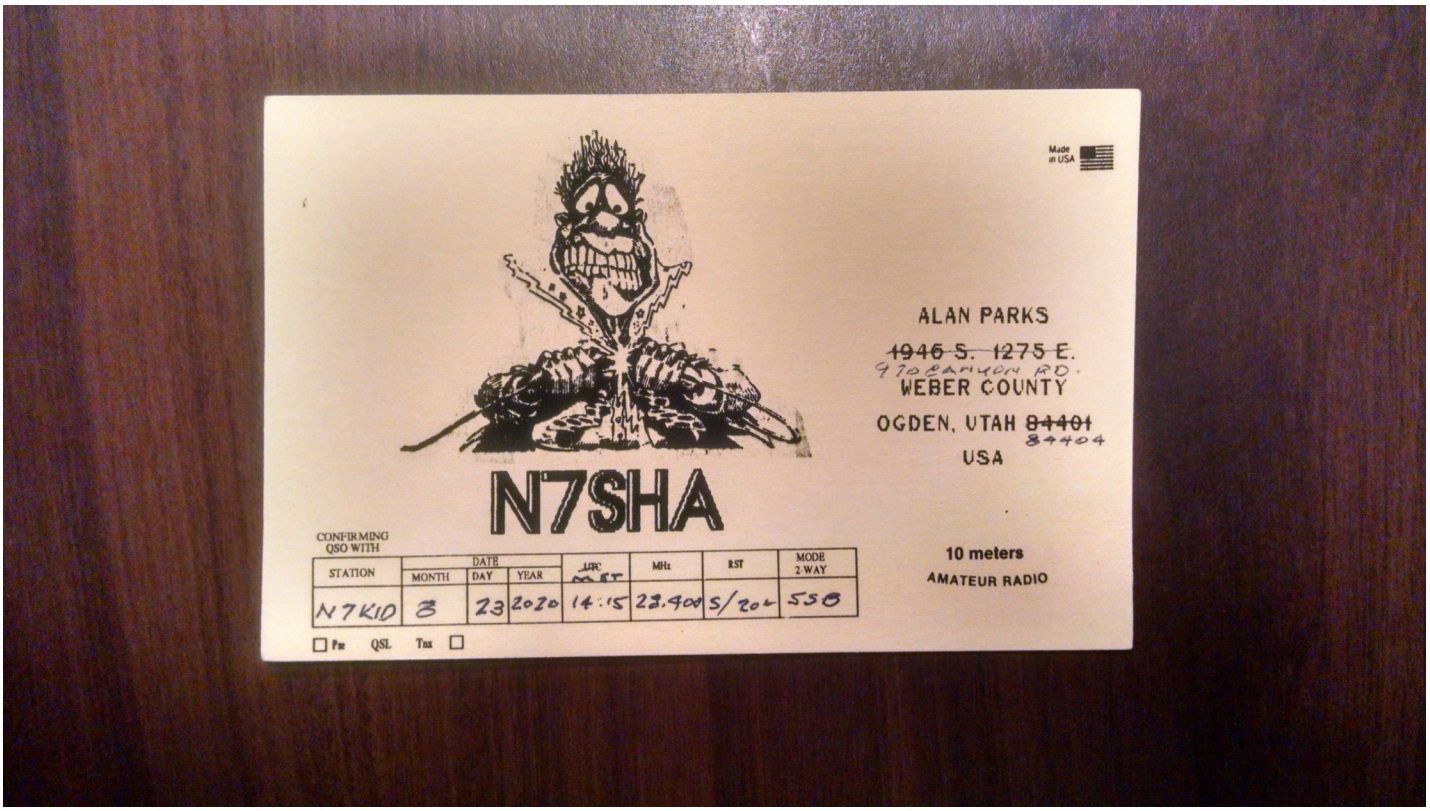
73, Colleen KJ7EAY




MFJ DELUXE VERSA TUNER II
YAESU

CLUB NEWS

Another original QSL by N7SHA



HOBBY NEWS

Swaptober Fest Swap Meet

Logan UT

Saturday 10 October 2020

Good morning friends of OARC

Would you be willing to share the following with OARC club members about the Swaptober Fest Swap meet happening in Logan on October 10th?

October 10th 9:00 AM – 1:00 PM

Cache County Fair Grounds

Tables: Free. (can also bring your own)

Entrance: Free

More information including Map.

https://barconline.org/swaptoberfest/

Thank you

Kevin Reeve N7RXE

435.770.0220

HOBBY NEWS

Technician Licensing Course

The Davis County Amateur Radio Club is pleased to announce that they will be sponsoring a Technician Licensing Course.

It will be held at Layton City Office 437 Wasatch Dr., Layton 84041.

There is no cost to take the course. Pre-registration is required due to social distancing limitations.

We will be using The Technician License Course (2018-2022 Pool) book by Stu Turner. The books sell for $22.95 plus shipping if you order them online. The Davis County Amateur Radio Club has some available for $20.00 at the class.

The course starts on 21 Oct 2020 every Wednesday evening from 6:00 – 8:30 PM thru 25 Nov 2020.

For more information contact Spencer Mark at ae7io@arrl.net or 801-564-8054.

O’bay SWAP

GAP Titan DX 8 Band Multiband Vertical HF Antenna

http://gapantenna.com/shop/antennas/titan-dx/

Members,

I lost my antenna again in the last wind storm. I will be replacing it with a new one, but the old titan dx can be repaired with $130 in parts from GAP.

I would like to know if someone would like a great Gap titan dx antenna for $130ish in parts.

Anyone interested can contact me at jsclarkeiv@gmail.com
James Clarke k7JSC

Needs the following:

"A replacement lower section is $49.95. An 80" counterpoise rod is $17.00. And a standoff is $4.75. Because of the length of those parts shipping will be about $50 depending upon where you live. Is it the longer of the 4 standoffs that broke or one of the 3 slightly shorter ones (it's a shorter one that is broken). Also if you have a PayPal account and you send me your PayPal email address I can send you an invoice otherwise you will have to call us (772) 571-9922 to order" from Rich at Gap Antenna.

O’bay SWAP

Hi Utah ARRL Club Contacts,

I have a pneumatic Ham Radio Antenna at my home in Layton, UT.

Would you know of anyone who might be interested in it or have a referral for any resource to sell it?

>>> $100 OBO <<<

Please feel free to share my contact info: Thank you,

Christopher Robinson: 303-257-4454 pangeaao@hotmail.com

Esther Robinson: 720-577-8704 estherdrobinson@hotmail.com

Mast height: ~16 ft (above ground), ~ 13.5 ft to first knuckle

Mast circumference: 20.5 in

Four tiered, presumed extended height ~ 40 ft

Anchored in ground

O’bay SWAP

OARC O’Bay

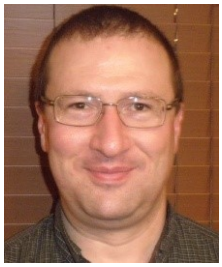
www.OgdenArc.org

Steve Kammeyer, K7EMD (sk)

ESTATE SALE continues

FEATURE ARTICLE

by Jason Miles KE7IET



A Quick 2m Moxon Antenna

A few years ago, I found a Kenwood TS-700A at a swap meet. It's a 2 meter, all-mode transceiver that is probably nearly as old as I am. I thought it might be interesting to try 2m CW and sideband, so I purchased the rig. Unfortunately, at the time, I didn't pursue the idea for very long after the swap meet.

Recently, Gil Leonard NG7IL mentioned that he had been participating in a 2m SSB net on Monday nights at 9 p.m. local time. I thought it would be a perfect way to make sure the rig worked. However, I needed an antenna. Since the net is simplex over long distances, I needed a directional antenna. I have a 2m Yagi, but it had been damaged because of poor storage. I would like to repair it, but I needed another antenna in the meantime.

I decided to try a Moxon antenna. It is essentially a two-element Yagi antenna with the ends of the elements folded inward toward each other. I chose it because it would be simple to build.

There are many Moxon calculators online. I chose the one at https://www.ac6la.com/moxgen1.html. It is pretty simple. I just had to enter the element conductor size and center frequency, and it calculates the dimensions of the elements and rectangle. Since I had it available, I chose to use 14 AWG Romex for my project. It was nice that the software let me specify the wire gauge instead of having to look up its diameter.

Here are the materials I used for my project. I built my antenna for 145 MHz. Other frequencies will require different material sizes.

- 36" x 17" piece of hardboard
- Around 45 inches of 14/2 solid Romex
- Panel-mount SO-239 connector
- Ring terminal sized for a 4/40 screw
- Section of 1 1/2" schedule 40 PVC
- Zip ties

Four 4/40 screws and nuts

First, I prepared the hardboard. I used a circular saw to cut the piece I needed from a larger piece. I drew the Moxon rectangle on the hardboard, thenI drilled holes for the SO-239 connector and the zip ties. I read that the gaps between the elements are important. Now that I've completed the antenna, I'd recommend ensuring those gaps are correct first before drilling the holes for the zip ties.

Next, I prepared the SO-239 connector. The driven element should be two separate lengths of wire. I soldered one half of the driven element to the center conductor of the SO-239 connector. I soldered the ring terminal to the other half of the driven element. Finally, I mounted the SO-239 connector to my hole in the hardboard. Because I wanted the ring terminal to make direct contact with the body of the SO-239 connector, I had to drill a hole next to the connector so one of the wires could pass from the bottom side of the hardboard to the top.

I used the drawing on the hardboard and a yardstick to shape both the driven element and the reflector. The results weren't as precise as I wanted, but it seemed to work well enough. I used zip ties through more holes in the hardboard to keep the elements in place.

When I checked the SWR the first time, it was about 1.5:1 at my intended frequency. As I decreased the frequency on my antenna analyzer, the SWR decreased slightly. The antenna seemed a little too long, so I trimmed a few millimeters from each side of the driven element. That didn't seem to make a difference in the SWR. At this point, I decided that perfection wasn't necessary and left the antenna alone.

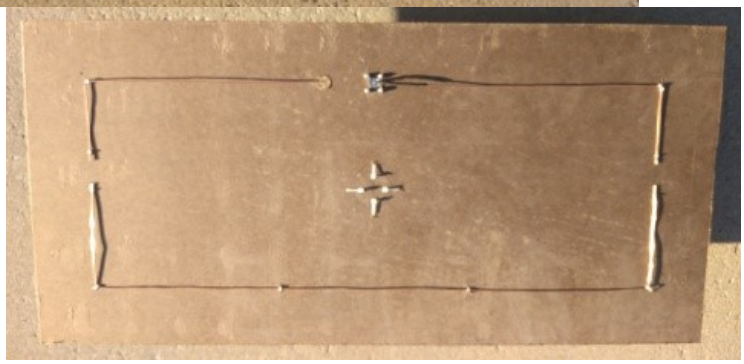
I wanted my antenna to mount to the top of a four-foot military surplus fiberglass pole available from Smith & Edwards. It turns out that the plastic connector at the top of the fiberglass pole fits well into 1-1/2" schedule 40 PVC pipe. I cut a section of PVC and mounted it to the center of my hardboard using zip ties.

It should be noted that this antenna is not weatherproof and should not be permanently installed outdoors. It would fall apart after exposure to the first good rainstorm.

I used the antenna for the first time the week after Labor Day. Net control is David Felgar NJ7A in West Jordan. When I first checked into the net, his 2m beam was pointed away from me. My TS-700A only produces 10 watts, but, with this antenna, he could still hear me. My weak signal reached from Roy to West Jordan.

I still intend to repair my 2m Yagi, but this antenna should work in the meantime.

Jason KE7IET



FEATURE ARTICLE

by Eugene Morgan WB7RLX

An Antenna Autopsy

By Eugene Morgan (WB7RLX)

When buying an antenna usually our first priority is with regard to its performance as an antenna. I mean this seems logical. It is after all the key thing an antenna does, radiate energy and collect energy. But we often overlook the other aspects of an antenna, its mechanical engineering and its physical components. As a rule as much thought has to go into the mechanical engineering of an antenna as does its electrical engineering. The mechanical part of an antenna should not be over looked or discounted. It is after all what allows an antenna to do its thing.

The assembly of an antenna should also not be overlooked or trivialized. The proper assemble is critical to the *long term* performance of the antenna. Notice I used the phrase, "Long Term". Almost every antenna will perform as expected after it is first installed. But it's after an antenna has survived a few Utah winters and our hurricane like winds that we get from time to time, that skipped steps and shortcuts in assemble will start to show up. They will show up as intermittent performance in most cases and in the worst case the antenna will just mysteriously stop working and the SWR goes to infinity. In the very worst case there is a physical failure that results in the whole antenna tumbling to the ground putting a nice big scratch in your shiny new red truck. It is hoped the takeaways from this article will help you to not experience these kinds of issues with your antenna. Granted this article is about vertical antennas but the same rules apply to all antennas.

Over the summer I have had several opportunities to take down antennas that have been up for several years. In two cases they were my own antennas, a Comet X300 UHF/VHF antenna and a Butternut HF4V. And most recently a Hustler 4BTV that had been up for an undetermined time, judging from the condition it was in I would speculate at least couple of centuries.

This article will go step by step though what I found, the good the bad and the ugly. In some ways this article will sound like a review of the Hustler 4BTV, the Butternut, and the Comet, but that is not my intention. My intention is to document the condition of each antenna and point out the deterioration that has taken place over time and how to prevent some of the deterioration. I will also draw attention to areas where the manufacture should have used different materials to improve the antennas ability to survive long term exposure to weather and sun.

From this, my goal is to provide all of us with insights into choosing a good antenna solution for our particular situation. And to consider not only the performance aspects of an antenna but also it physical and mechanical aspects as well. And finally my goal is to educate us about how to maximize and optimize our antennas by using a best practice approach to installing our antennas so they will endure years of exposure to the elements with little to no degradation in performance or loss of structural integrity.

The Comet X300 – the Good

The Comet X300 is my UHF/VHF antenna. I purchased it new and mounted it to our chimney when we first move into our home on Buchanan Ave in 2005. Early this summer I needed to take it down given that we were going to have a new roof installed.

As many of you know the comet is a collinear vertical. The actual antenna elements are enclosed inside a fiberglass tube that is joined in the middle by a stainless steel fitting. The feed point is located at the bottom of the antenna and is enclosed inside an aluminum tube. Surrounding the base of the antenna are three radial elements.

Findings: When I disconnected the coaxial from the SO239 the connection looked as good as the day it was installed. The connection had been filled with dielectric grease. There was no sign of any corrosion. Given that the fitting is housed inside of the aluminum tube I didn't wrap the fitting with any tape, even so the inside of the connection showed no signs of corrosion. The assumption is that the dielectric grease prevented the formation of any corrosion.

I wanted to inspect the connection point inside of the fiberglass housing where the two halves of the antenna are joined. To do this I had to first loosen the stainless steel fitting. It came apart without binding or being forcing. I expected this given the use of an anti-seizing compound that was put on the threads when the antenna was assembled.

After exposing the antenna connection point I was able to easily loosen the screws that secures the two elements together. Again I was looking for signs of corrosion. Once again I found none. In this case I had use an anti-oxidant compound before assembling the antenna connection point.

I also inspected the radials to see if any had come loose, they hadn't. I attribute this to the use of thread lock when I assembled the antenna.

Conclusion: I found the antenna to be in like new condition. There was no corrosion on any of the electrical connection points. Further, the fiberglass was smooth and felt like new in spite of being in the outdoors for 15 years. Normally I observed that fiberglass tends to break down and can become prickly with fiberglass splinters over time. I found no such deterioration on the Comet X-300. Whatever they use it seems to work.

The Comet was reassembled as before taking due care to use anti-oxidant compound on the antenna elements, dielectric grease on the PL259/SO239 connection and anti-seizing compound on the stainless steel coupling and LocTite on the radials. Unlike my initial installation I wrapped the stainless steel coupling with Scotch brand white vinyl electrical tape. I expect this antenna will last another decade with no change in performance or appearance.

The Okay – the Butternut HF4V

It may be a bit unfair to critique my own installations, but I find that I do learn from both my mistakes and my successes and my hope is that you will too. The Butternut was my go to HF antenna. It was a less than ideal installation given that it's only radial was a foot wide metal ridge vent that ran the full length of the house. I'm not even sure that the vent sections were bonded. Given the feed point impedance it was pretty clear that it was a marginal installation at best. I mounted the Butternut on the roof of my house in 2010 where it stayed until 2019. In 2019 I moved it from the top of my house to a 7' fence post on the edge of my yard and added a set of tuned radials for the intended bands. Its performance was much improved.

In 2020 I took this antenna down and replaced it with a full length ¼ vertical for the 40 and 30 meters and a ¾ wave vertical for the 10 meter band. I dissembled the Butternut and carefully packed it and promptly sold it on KSL.COM to a young man that lives in Brigham. Although I didn't document it's disassembly I remember it well.

Findings: Once again this is an antenna I assembled following my usual best practices. I assembled the aluminum elements using *Jet-Lube SS-30* to ensure the electrical connection between the elements would not corrode, they hadn't and to make sure that the antenna would come apart easily, which it did. The one area that I had not considered was the nuts and bolts that secure the loading coils and shorting bars to the vertical element. I didn't lubricate the fasteners and consequently a few of them were very hard to loosen. In the future I'll put a dab of anti-seizing compound on the bolts before assembly. As to the feed point, here again I followed best practices. The SO239/PL259 connection was filled with dielectric grease and the whole joint wrapped with self-vulcanizing tape and over wrapped with Scotch brand vinyl electrical tape. When I took this joint apart after laying for on my roof for 10 years I found no traces of corrosion.

The other thing I over looked was the small fiberglass rod at the base of the antenna. As fiberglass will do it will begin to deteriorate after prolonged exposure to the elements and it starts shedding fiberglass, in short it gets prickly. This element is perhaps the weakest point of the entire antenna. It supports the weight of the entire antenna and must not break as the antenna moves in the wind. The exposed surface of the fiberglass rod should be wrapped in electrical tape to protect it from exposure to the sun, I missed this step.

Summary: After ten years of exposure to the elements I found no corrosion on any of the antenna components or in the electrical connection between the feedline and the antenna. Validation came when the fellow that bought the antenna from me called and asked me what I had used. He said that unlike other used antennas he had bought the joints looked new. And finally, and already mentioned, is to wrap the fiberglass rod at the base of the antenna with electrical tape to protect it from the sun. If you do that it should last decades in the harshest environment.

The Bad and the Ugly – the Hustler 4BTV

The Hustler 4-BTV is a four-band trap vertical antenna. The 4-BTV is designed as a self-supporting vertical to provide optimum operation in the 10,15, 20 and 40 meter bands. It can also be adapted to operate in the 75/80 meter band. This antenna is designed for installations with restricted space.

The Hustler 4BTV is one of those classic vertical antennas that has been around for decades. I actually have one of the very early models of this antenna that I bought for parts. It was interesting to compare my "parts antenna" with this clearly newer version of the 4BTV. Below is a little history on the Hustler 4BTV that I got from the assembly instructions that come with all BTV's purchased from DX Engineering.

It's proper that I attribute them for the following information:

This particular antenna was included in a sale of a very nice Yaesu HF radio to one of our club members. It's was gifted to me for my efforts. I have no information on this antenna as to its history, who owned it, who assembled it, or how long it had been up or where it has been since it was sold to our peer.

Over 50 Years Ago!

The Hustler HF Base Four Band Trap Vertical antenna was a new concept in 1959. This unique multiband antenna with an exclusive low-loss trap design was developed and introduced to Amateurs by Hustler, Inc. of Cleveland, Ohio, offering quarter-wave antenna performance for 40, 20 15 and 10 meters , but requiring no band switching!

Later, the Hustler Four Band Trap Vertical, known around the world as the 4-BTV, was made available with an 80 meter resonator, and the 5-BTV was born. When the Amateur bands expanded in 1979, the last of the series offerings designed by Hustler, the 6-BTV, added 30 meters, for an unequalled vertical antenna. Since 1985 the New-Tronics Antenna Corporation in Mineral Wells, Texas, has been making high quality antennas for HF, VHF and UHF Amateur and Commercial customers, including the "Hustler BTV Series".

Since 2003, DX Engineering has offered Hustler Antennas and has developed a complete system of innovative accessories and Add-On Kits specifically for the Hustler BTV series. Amateurs now have the choice of complete Hustler BTV Series High Performance packages for their HF needs, including the ability to turn their Hustler into a "9-BTV" covering all bands 80 through 10 meters.

DX Engineering joins New-Tronics Antenna Corporation in celebrating over 50 years of service with the famous Hustler HF Base Four Band Trap Vertical – The Hustler 4-BTV.

To say this antenna was in bad shape is an understatement. If antennas were conscious entities I would have had pity on this poor, neglected example of a proud tradition of antennas. I give the Hustler verticals the same reverence and respect as I do the Mosley Classic beam antennas. To see one of these fine antennas in such disrepair was heart breaking. Once it hit my work bench I decided that I was going to resurrect it and bring it back to a fully operational state albeit with some wear and tarnish that would only add to its classic character but would not affect its performance. I would not let this antenna go to the scrap heap.

Findings: I began by separating the antenna at each of it joints. At each joint where one element slips into the other I found extensive corrosion. Of particular note is at the first joint at the base of the antenna. For extra strength hustler used what I believe is a stainless steel pipe that extends through the base and at least a foot into the first aluminum element. There the corrosion was at it worse. I suspect the issue is what we call galvanic action. Although the picture below is not of the specific corrosion I was referring to it is representative of the corrosion I found on virtually every connection point on the antenna. Corrosion inhibits the flow of power throughout the antenna and can waste valuable energy. In the worst case it can inhibit the flow of energy altogether. This kind of corrosion is why we sometimes see fluctuation in SWR and intermittent performance. This kind of corrosion can be minimized by using an anti-oxidizing compound like Penetrox or Jet-Lub and where possible sealing the connection with self-vulcanizing tape in an effort to keep water out of the connection.

Figure 1: Extreme Corrosion at element connection points

Figure 2: Examples of more corrosion found inside the traps

The second issue I found was the use of non-stainless steel components. In most cases this is the fault of the manufacture more than the builder. In the case of the Hustler antenna there were several examples of this. The screws had so badly rusted that it was not possible to unscrew the fasteners and instead a chisel had to be used to remove the screws.

Figure 3: Rusted U Bolts. I hate to think how many of these I've seen twist off because the bolts were so baldy rusted

Figure 4: A view of the spider hub. The slots in the screws have all but rusted away!

Figure 5: Badly rusted metal fasteners – These aren't the worst ones

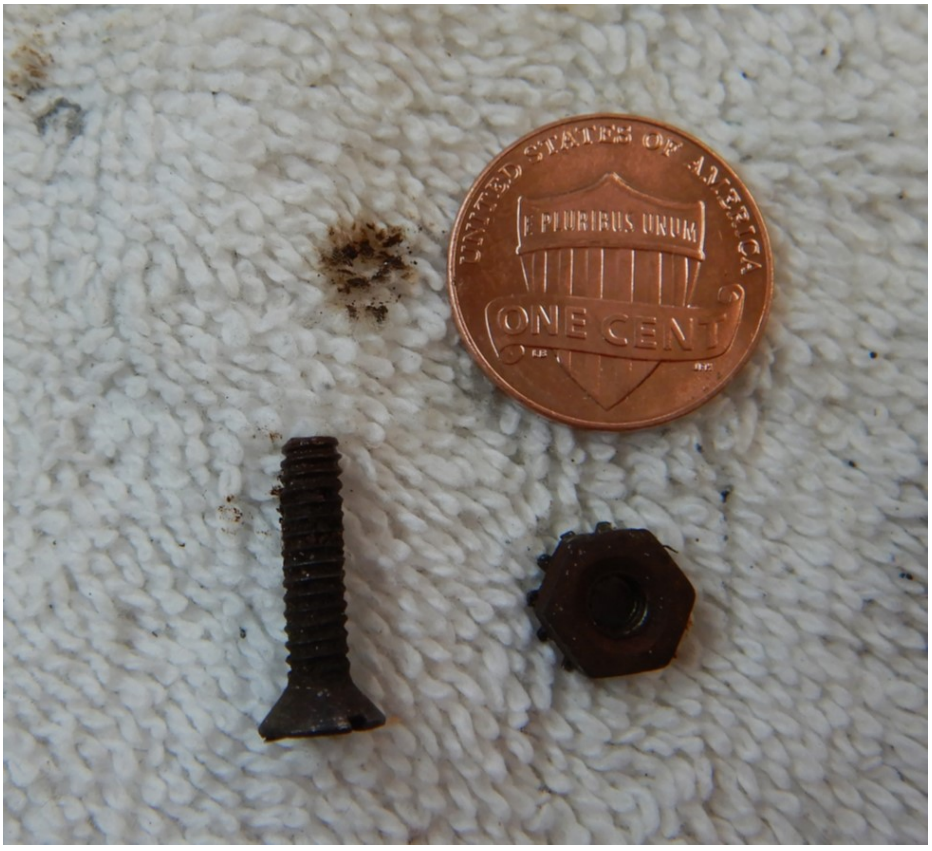


Figure 6: These are the worst examples – This one had enough of a slot left I could unscrew it.

The other five screws had to be cut with a chisel

The Restoration: After doing an assessment of the antenna I ordered a new spider assembly (HSR-9471) and a full set of trap caps (HSR-TRAPCVR-P). I also made a 3/8 x 24 bolt for the top element so I could attach a 75 meter resonator that I happened to have. I also fabricated a three element spider that sits just below the 75 meter resonator this allowed me to turn my 4BTV into a 5BTV. I was able to use the old 6 spoke hub to hold the 3 elements that I made from some scrap aluminum tubing I had left over from another project.

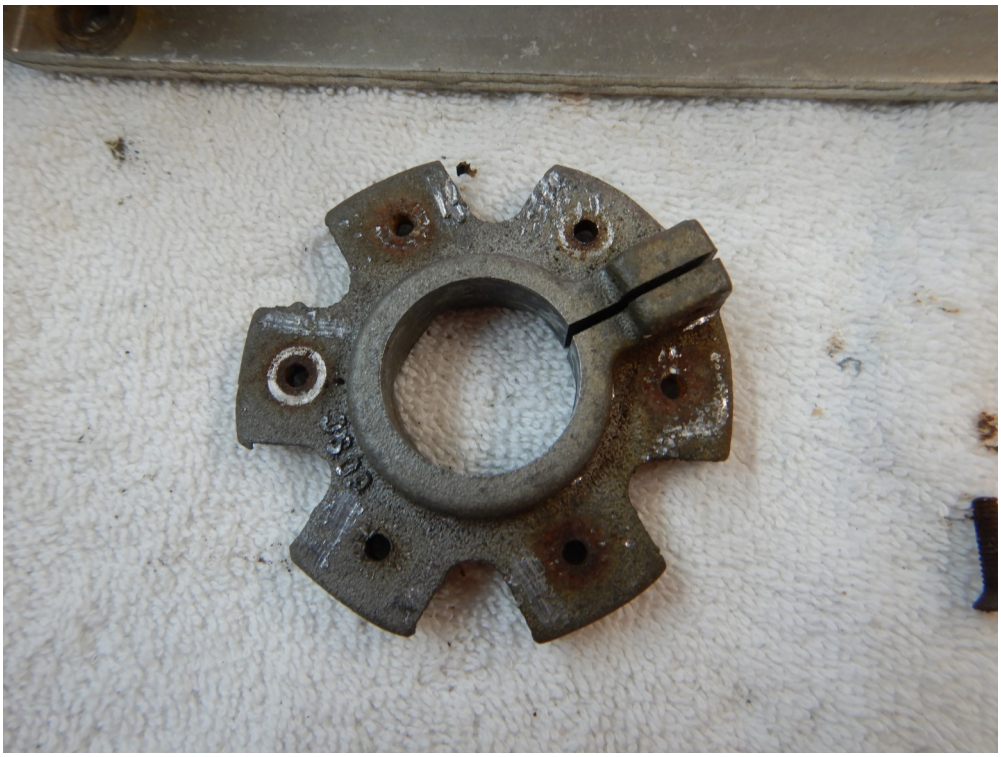


Figure 7: The spider hub before restoration

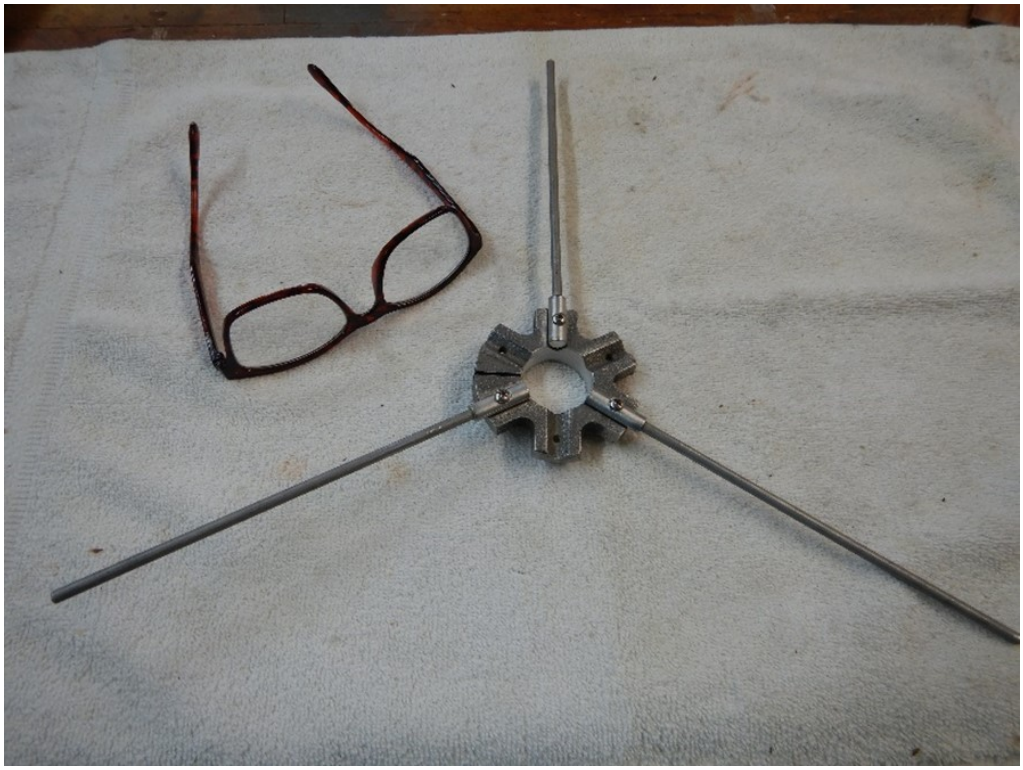


Figure 8: The new spider for 80 meters

I began my restoration at the base by removing the feedline attachment bolt at the very bottom of the antenna. I cleaned it removing all rust and corrosion and reattached it using Ox-Gard (an anti-oxidant compound) on the threads and replace all none-stainless nuts and washers with their stainless steel equivalent.

I carefully disabled each trap, cleaned them with a damp cloth and compressed air. I then checked each for resistance. They all checked out healthy. I then reassemble using Penetrox and the new plastic trap caps. I also made sure to set each metal trap cover back to the factory settings. One of the tuning steps I was not aware of with the BTV is the ability to adjust the metal trap covers.

I used a metal tubing cleaner on the end of a drill to clean out the inside of each element and remove corrosion. I use brass wool to clean and polish the outside of each element. The goal was to ensure that all corrosion had been removed from each connection point. To ensure a long lasting solid electrical connection between each antenna section I applied a liberal coating of Penetrox and installed new stainless steel hose clamps.

Figure 9: Tubing Cleaner attachment

I replaced all non-stainless steel nuts and bolts with a proper stainless steel equivalent. To each bolt I put a dab of anti-seize compound before assembly. I also replace all the element clamps with new stainless steel hose clamps.

Estimated total cost of restoration: about $60 and about 10 hours of elbow grease. Note that the cost of this antenna new around $200.

Summary: Taking this antenna apart drove home for me the importance of following a best practice approach to assembling an antenna. To restate the key points:

1. Follow the manufactures instructions.
2. Measure twice.
3. Determine the service life of your installation and build in accordance to that time frame. Example: a temporary installation such as for field day may not require the extra steps I'll outline below but installations that have an expected service life measure in years absolutely should.
4. Use an anti-oxidant compound on all aluminum tubing connections.
5. Use all stainless steel hardware where possible. You will need to also apply anti-sizing compound on stainless nut and bolts to avoid galling.
6. Use a dielectric grease on all coaxial fittings.
7. Use an anti-oxidant compound on all expose electrical connections.
8. Tighten all PL259 connections slightly more than hand tight. I use a pair of pliers to tighten the fitting slightly more than hand tight.
9. Seal all coaxial fittings with self-vulcanizing tape.

Some Thoughts on the BVT Vertical: Although I'm not a big fan of any antenna with traps I must say the Hustler is one of the best built verticals I've ever worked with. Given its very sturdy construction it should be able to stand up to a hurricane without guying provided that the base (the part that goes into the ground) was properly built. The other big advantage of the Hustler is the availability of replacement parts. DX Engineering stocks virtually every part one would need to repair, restore or even convert a 4 BTV into a 5 BTV or even a 6 BTV. One final point, I was able to obtain an early copy of the BTV manual. I was also able to get the latest version of the manual from DX engineering. I must say the DX Engineering version of the manual is one of the finest and most complete manuals I've ever seen. Note that even they recommend the use of Penetrox ;-)

Figure 10: The finished antenna ready to be put back into service.

If you are the proud owner of one of these classic antennas take some time and assess your installation. If you were not careful in the assembly or didn't followed a best practice approach maybe it's time you took it down and inspected it for corrosion and wear. This is a very well-made antenna with a rich heritage, it deserves a little TLC every decade or so….

If you have any questions please don't hesitate to ask.

73, Gene (WB7RLX)

Gene Morgan WB7RLX has contributed to date the following Antenna articles.

If you missed any of them you can download them from the club “downloads” page. His articles are listed in the left hand column midway down.

http://OgdenArc.org/downloads.html

ANTENNA BEST PRACTICES

BUILD AN ENDFEED ANTENNA

AN ANTENNA AUTOPSY

GUEST ARTICLE

by Dan KB6NU

Want to take a General class?

Hi--

I've finally set the date for the online General Class. The class will start on Monday, October 5, 2020 and consist of eight, two-hour sessions starting at 9 pm EDT (6pm PDT) and running until 11 pm EDT (8pm PDT). The eight sessions will take place on the following dates:

- **Monday, October 5**
- **Thursday, October 8**
- **Monday, October 12**
- **Thursday, October 15**
- **Monday, October 19**
- **Thursday, October 22**
- **Monday, October 26**
- **Thursday, October 29**

The cost is $25 for adults. High school and college students can attend for free. If you're a student, all you have to do to register is send an email to cwgeek@kb6nu.com stating that you want to take the class. All others can register using PayPal or Amazon Pay here.

I'll be using my *No-Nonsense General-Class License Study Guide (for tests given between July 2019 and June 2023)*. It's available as an ebook, paperback book, or audiobook.

If you have any questions, please contact me.

Dan KB6NU

Register for the online General class starting Monday, October 5

Support ARRL by Shopping at AmazonSmile

If you already shop on Amazon, or if you're looking for the perfect gift for a family member or friend, we invite you to shop at smile.amazon.com and choose American Radio Relay League Inc. (ARRL) as your charity of choice. With every purchase you make at AmazonSmile, Amazon will make a contribution to ARRL which allows us to extend our reach in areas of public service, advocacy, education and membership. We hope you will take the opportunity to support ARRL and Amateur Radio with your eligible purchases on smile.amazon.com today!

AmazonSmile is the same Amazon you already know, with the same products, prices and service. Visit smile.amazon.com and login to your Amazon account (if you're new to Amazon, you'll need to create one).

FCC Application Fee Proposal Proceeding is Open for Comments

09/03/2020

Comments are being accepted on the *Notice of Proposed Rulemaking* (***NPRM***) in MD Docket 20-270, which proposes application fees for radio amateurs. Formal deadlines for comments and reply comments will be determined once the *NPRM* appears in the *Federal Register*. Comments may be filed now, however, by using the FCC's Electronic Comment Filing System (**ECFS**), posting to MD Docket No. 20-270. The docket is already open for accepting comments, even though deadlines have not yet been set.

White House Pulls Renomination of Michael O'Rielly to FCC

10/01/2020

The White House has withdrawn the nomination of Republican FCC member Michael O'Rielly for a second term on the Commission. President Donald Trump had nominated O'Rielly for another 5-year term on the Commission last March. No reason was given for withdrawing the O'Rielly nomination, who was initially appointed to the FCC in 2013 by President Barack Obama. The White House has nominated a senior advisor at the National Telecommunications and Information Administration (NTIA), Nathan Simington, to the FCC in O'Rielly's stead. The FCC has five members. Its chairman is nominated by the President.

Maine Radio Amateur Dies after Fall from Tower

James Larner, N1ATO, of Bangor, Maine, died on Wednesday, September 2, after apparently falling a reported 80 feet from an amateur radio tower in the rural Knox County town of Union. The incident happened just before 1 PM local time. Said to have been a tower professional who had done a lot of work for many Maine broadcasters, Larner, an ARRL member, was 74.

According to news accounts, Larner was disassembling an antenna on a tower located on Olson Farm Lane. The Knox County Sheriff's Office and Union Fire and Rescue responded, and the rescue squad pronounced Larner dead at the scene. The deceased was equipped with a harness and carabiner, a close friend on the scene told authorities.

Larner worked part-time as an engineer at News Center Maine's outlet in Bangor. A News Center Maine article paid tribute to Larner. "Jim was a lot of fun, always happy to talk, share a story. A smart, hard-working, real Maine guy," said News Center reporter Don Carrigan. "One of those people the audience never sees, but whose work was critical to them being able to watch TV for many, many years."

The Occupational Safety and Health Administration was contacted and will conduct a follow-up investigation along with the Maine Medical Examiner's office. -- *Thanks to the* Bangor Daily News, News Center Maine, *the* Rockland Courier-Gazette, *and to Norman Blake, W1ITT*

CLUB REPEATER NEWS

Scott Willis KD7EKO

Mike Fullmer KZ7O

Scott Willis KD7EKO and Mike Fullmer KZ7O are the OARC repeater engineers that keep our club repeaters at Mt Ogden and Little Mountain operational.

OARC MEMBERSHIP DRIVE

SUPPORT YOUR RADIO CLUB

Don't forget to signup/renew your OARC membership now ($15) which runs August to August. Consider signing up your spouse as well.

Ham + Spouse = $15 + $10 = $25

THANK YOU FOR YOUR SUPPORT

Join OARC

Join or Renew your membership now!

Joining & Renewal is easy. On the club website home page click Join/Renew tab and fill out the membership form. You can pay using your PayPal or mail a Check or Money Order to the club PO Box listed. Or print a hardcopy of the membership form, fill it out and mail it to the PO Box along with your payment. Better yet, Come to a club meeting and bring the completed membership form with you.

DUES: Dues are $15.00 per person and runs August - August. (Ham + spouse = $25.) More than one ham in the family? Consider the OARC Family plan for $25.

NOTE: New Hams >>> Membership in OARC is complimentary for remainder of 1st year licensed.

Membership in the Ogden Amateur Radio Club is open to anyone interested in Amateur Radio. You do not need an amateur license to join us. You do not need to join the club to participate with us. Dues are used to operate the club, field day activities, and repeater equipment maintenance.

Club Badges

OARC Club badges are available for all licensed club members.

The cost is $10.00 each. The badge comes with a “MAGNETIC” clip. Badge includes your Call Sign in large letters and your First Name in a somewhat smaller font in white lettering on a pitch black background with the club logo. See example below.

Place your order along with $10.00 prepaid in advance for each badge ordered and specify Call Sign and First Name.

Visit the club website home page Join/Renew tab and fill out a membership application form to order your badge.

Or come to our next club meeting or event and make contact with our club treasurer via club website email to order your club badge.

Club Badges

UNCLAIMED OARC CLUB BADGES

New members have ordered pre-paid club badges that have not been claimed. You can claim your badge at any club function, meeting, activity or event or contact the club badge czar / club treasurer J. Siddle KG7CJN via club website email. If you are reading this and you are one of the following hams, please collect your badge. Even if you are not reading this, come collect your badge.

NO UNCLAIMED OARC CLUB BADGES…

Not sure how to handle this. It has never happened before!

OARC YAHOO GROUP

Did you know that OARC has a Yahoo Group?

We occasionally communicate with our OARC members via the Yahoo Group. Receive email notices regarding upcoming club meetings and future e-newsletter release notices and much more like CHAT items of interest.

You can also send/receive notices to/from other group members yourself.

It's easy to sign up…

Just click on the 

icon at the bottom of the club website home page and then follow the Yahoo Group instructions to create yourself a user ID and password.

OARC You Tube Channel

Did you know that OARC has a You Tube Channel ?

A lot of our meeting presentations are recorded and posted to our OARC You Tube channel for you to view at a later date.

It's easy to view missed **meetings…**

Just click on the icon on the bottom of the club website home page to view recorded meetings preserved for your viewing pleasure.

ANNOUNCEMENTS

Next Club Meeting:

3rd Saturday of each Month

The Ogden Amateur Radio Club meetings are usually held on the **3rd Saturday** of each month.

Meeting/Activity:

See notices above

Talk-in: -146.82 (pl 123.0)

Check OARC web site for details

www.ogdenarc.org

Please invite a friend to join you. You do not have to be a member of the club to participate in our club meetings or activities. We invite all to join us.

If anyone is interested in doing a presentation on something or just have something unique to show at the meetings. - Please get a hold of any of the officers and let us know.

Next Weber Co VE Test Session:

1st Wednesday Feb, Jun & Oct

Exam sessions are held in Ogden every few months, ***usually*** the first Wednesday in February, June, and October.

Time: 06:00 PM *Walk-ins allowed*

Location: Permanent location

Weber County Sheriff Office
Training Room
712 W 12th Street Ogden Utah

Contact: VE Liaison:

Rick Morrison W7RIK (Liaison)

morrisonri@msn.com (801-791-9364)

Jason Miles KE7IET (IT)

Cost: **$ 14.00**

Two forms of **ID**, one of which must be a **picture ID**.
For "Upgrades" bring current **license** and a **copy** of current license, and any **CSCE**'s

Most **calculators** allowed. Calculator memories must be cleared before use.

Club Web Site

Be sure to visit our club web site.

www.OgdenARC.org

Club membership is open to anyone interested in Amateur Radio. You do not need an amateur license to join us. Dues are used to operate the club, field day activities, and repeater equipment maintenance.

Club Call Sign

Listen to the club repeaters for this very familiar CW ID. You do know Morse Code don't you?

W7SU

ARRL Field Day is held on the last full weekend of June every year.

Location may vary each year so watch this notice for details as time draws near.

See you there.

OARC REPEATERS			
(*) Yaesu Fusion digital/FM compatible			
FREQ	CLUB	TONE	LOCATION
146.900-	OARC (*)	125 DCS	Mt Ogden (w/WiresX)
448.600-	OARC (*)	123.0	Mt Ogden
146.820-	OARC (*) "Talk-in"	123.0	Little Mtn
448.575-	OARC	100.0	Little Mtn (w/auto patch)

OTHER AREA REPEATERS			
FREQ	CLUB	TONE	LOCATION
146.620-	UARC	none	Farnsworth Pk
147.120+	UARC	100.0	Farnsworth Pk
449.100-	UARC	146.2	Farnsworth Pk
449.500-	UARC	100.0	Farnsworth Pk
147.040+	DCARC	123.0	Antelope Isl
447.200-	DCARC	127.3	Antelope Isl
449.925-	DCARC	100.0	No Salt Lake
145.290-	GSARC	123.0	Brigham City
145.430-	GSARC	123.0	Brigham City
147.220+	GSARC	123.0	Brigham City
448.300-	GSARC	123.0	Brigham City
146.640-	BARC	none	Logan
146.720-	BARC	103.5	Mt Logan
147.260+	BARC	103.5	Promontory Pt
449.625-	BARC	103.5	Mt Logan
145.250-	WSU	123.0	* coming soon
449.250-	WSU	123.0	* coming soon
145.490-	K7HEN	123.0	Promontory Pt
146.920-	N7TOP	123.0	Promontory Pt
449.775-	N7TOP	123.0	Promontory Pt
147.100+	Morgan	123.0	Morgan Co
448.825-	IRLP/Echo	123.0	Clearfield City
449.950-	IRLP	123.0	Clearfield City
449.425-	IRLP	100.0	Nelson Peak
147.360+	Summit Co	100.0	Lewis Peak

AREA CLUB MEETINGS & WEB SITES

CLUB	WEB SITE	DATE/TIME	LOCATION
OgdenARC	ogdenarc.org	3rd Saturday 09:00 am	Check OARC web site …
WC Sheriff Comm-O		1st Saturday 10:00 am	Weber Co. Sheriff Complex West 12th Street Ogden Utah
Barc	barconline.org	2nd Saturday 10:00 am	Cache Co. Sheriffs Complex 200 North 1400 West Logan Ut
CSERG	dcarc.net /ares.htm/	Last Wednesday 8:30pm	Clearfield City Hall Clearfield Utah
DCarc	dcarc.net	2nd Saturday 10:00 am	Davis Co. Sheriff Complex Farmington Utah
NU Ares	home.comcast.net/ ~noutares/	3rd Wednesday 7:00 pm	Cache Co. Sheriff Office Logan Utah
Uarc	xmission.com /~uarc/	1st Thursday 7:30 pm	UofU EMC Bldg Room 101 Salt Lake City Utah
UVarc	https://uvarc.club	1st Thursday 6:30 pm	Orem City Council Chamber Room 56 North State St. Orem Utah
GSarc	Ubetarc.org	Check Website	Check Website
Utah DX Association	udxa.org	3rd Wednesday check web page for details	check web page for details Salt Lake City area
UvhfS	ussc.com /~uvhfs/	Each Tuesday 8:00 pm (refer to web site)	Weekly 2 meter net (no eye ball meetings)
WDArc	westdesertarc.org/	1st Tuesday 7:00 pm	Tooele County Courthouse Tooele Utah
WsuArc	https:groups.google.com/forum/#!forum/wsuarc	3rd Thursday 5:30 pm	WSU Blding #4 Room ? Ogden Utah

LOCAL AREA NETS

DATE	CLUB	FREQ
Daily @ 12:30 PM mt	Utah Beehive net HF	7.272 Mhz HF LSB
Daily @ 07:30 PM mt	Utah Code net HF	3.570 Mhz HF CW
Daily @ 02:00 UTC	Utah Farm net HF	3.937 Mhz HF LSB
Sunday @ 8:45 AM	Ogden Old Timers HF net	7.193 Mhz HF LSB
Sunday @ 7:30 PM	GS ARC	145.430 - 123.0 (training net)
Sunday @ 8:30 PM	SATERN Net	145.900 - 123.0
Sunday @ 9:00 PM	Morgan Co Net	147.100 +123.0
Sunday @ 9:00 PM	UARC Info net	146.620- no PL tone required
Monday @ 9:00 PM	2-meter SSB net	144.250 Mhz 2-meter USB
Tuesday @ 6:30 PM	OARC—Ham & Eggs Net	448.600 -123.0
Tuesday @ 8:00 PM	Weber ARES	448.600 - 123.0
Tuesday @ 8:00 PM	VHF Society Swap	147.120 + 100.0
Tuesday @ 9:00 PM	Bridgerland ARC	147.260 + 103.5
Wednesday @ 7:00 PM	Am-Con Northern Utah	448.600 –123.0
Wednesday @ 8:00 PM	GS ARC	145.290-, 145.430-, 448.300- (all 123.0)
Wednesday @ 8:30 PM	CSERG	145.770 simplex
Wednesday @ 9:00 PM	No. Utah 10m HF net	28.313 Mhz HF USB
Wednesday @ 9:00 PM	6-meter SSB net	50.125 Mhz 6-meter USB
Thursday @ 7:00 PM	OARC - 10 Meter Net	28.385 MHz USB (all hams invited)
Thursday @ 6:30 PM	Davis Co Elmers Net	147.040 + 123.0 New Hams
Thursday @ 8:00 PM	Weber State ARC	146.820 - 123.0 (coming soon)
Thursday @ 8:00PM	State RACES VHF/IRLP	145.490 - 123.0, 146.680 - 123.0 3rd Thursday - even months only
Thursday @ 8:30 PM	Davis ARES	147.420 = simplex
Thursday @ 9:00PM	Wasatch Back Net	147.360 + 100.0
Saturday @ 8:00AM mst	RACES State HF	3.920 Mhz HF LSB 3rd Saturday – odd months only
Saturday @ 11:00AM mst	QCWA net HF	7.272 Mhz HF LSB

OARC OFFICERS

President: Dave Mamanakis KD7GR

Vice President: Justin Hall KB7LAK

Secretary: Barbara Siddle WB7FWW

Treasurer: J. Siddle KG7CJN

Program Director: Mike Wilde KJ7HEX

Activity Director: Todd Shobe KW7TES

"WATTS NEWS" e-Magazine

NL Editor: Val Campbell K7HCP

"OARC" web site

Webmaster: Val Campbell K7HCP

OTHER CLUB APPOINTMENTS

VE Liaisons: Richard Morrison W7RIK
Jason Miles KE7IET (IT)

Repeater Engineers: Mike Fullmer KZ7O
Scott Willis KD7EKO

Photographer: Tim Samuelson KE7DOA

Asst Photographer: Rick Hansen N7EGA

QSL Manager: Pete Heisig WB6WGS

Historian: Kent Gardner WA7AHY

Equipment Manager: Val Campbell K7HCP

Club Call Sign Trustee: Larry Griffin AD7GL

Club Elmer: Stan Sjol W0KP

Centennial Committee Chair:
Gil Leonard NG7IL

Advisors: Mike Fullmer KZ7O
Kent Gardner WA7AHY
Kim Owen KO7U
Larry Griffin AD7GL
Gil Leonard NG7IL
Jason Miles K7IET

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73 de W7SU

www.OgdenArc.org