



Squelch Tales



Newsletter from the Merrymeeting Amateur Radio Association for May 2015

AA4AK and K1PN demonstrate how voice and video can be transmitted in C4FM digital mode

Steve Kercel, AA4AK provided the following report



AA4AK showing how video can be transmitted via the C4FM digital process. Photo provided by KX1I

The backstory on the above photo that Marjorie provided is from the March MARA meeting where Rex, K1PN, and I were demonstrating the capabilities of Yaesu's C4FM digital mode. In the scene my FTM-400 is receiving a photo transmitted by Rex's Yaesu FT-1 handheld on 2 meter digital simplex. If you get the camera-mike (as Rex and I both have), you can do digital data communications including picture transmission right out of the box.

Unlike D-STAR, it is very easy to do. To this day, nobody in the club has figured out how to send a picture between two D-STAR radios via simplex.

Since the club has purchased two C4FM repeaters, we are encouraging the members to put them to good use. Unlike D-STAR, which emphasizes linked communications and is heavily dependent on the internet, C4FM emphasizes all sorts of versatile communications (integrating APRS, GPS, texting, pictures, etc.) within local groups, and is far more relevant to practical emergency communications than D-STAR.

Here is a picture taken of Harry, N1TTT

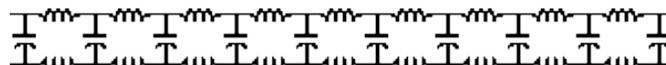


taken at the March MARA meeting by Rex, K1PN with his FT-1 camera-mike and transmitted it to me via

C4FM digital on 2-meter simplex.

We are expecting to do another demonstration at the QCWA fall meeting in Auburn. As I'm sure you know, the Andy club also has a C4FM repeater running in Auburn.

73, Steve, AA4AK



Should we weep for amateur radio?

Editorial By Dan Romanchik, KB6NU

On an amateur radio mailing list that I subscribe to, one fellow wrote, "I weep for the state of amateur radio in the US, since this dispatch is apparently necessary..." He then pointed to an article on the ARRL website that reminded hams that while their local time may be switching to daylight time, Universal Coordinated Time did not change

(<http://www.arrl.org/news/view/change-local-clocks-this-weekend-but-not-utc>).

The implication, of course, was that we have dumbed down ham radio so much that a reminder like this was necessary.

This thread went on and on, eventually garnering 17 different replies. Before it morphed into a discussion of whether or not DST is a good idea in the first place, the replies echoed the sentiment in the original e-mail:

"It's become a push button, nanny state world, what do you expect, competence?"

"We are truly in a time of appliance operating, not only in ham radio, but in practically every aspect of our lives. :-("

At first, I had the same reaction. I thought to myself, "How dumb are we getting in ham radio, if guys have to be reminded that UTC doesn't change when we switch to daylight savings time?" After thinking about this for a while, though, I've completely change my mind on this.

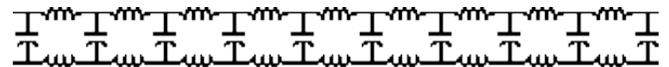
I work with a lot of newcomers to amateur radio, and many of them just don't

know how UTC works. This is not their fault—they just haven't had the opportunity to deal with UTC. What these old timers (old farts?) didn't realize is that the ARRL article is not directed at them, but at the newcomers to ham radio.

I'll even go one step further. It's easy for us old-timers to be dismissive of newcomers' lack of knowledge, and then complain that amateur radio is getting dumber, but knee-jerk reactions don't usually help anyone involved. A much better approach would be to roll up your sleeves and teach them something. The only way newcomers are going to get to be old timers like us is if we help them learn stuff like this.

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When not teaching newbies about UTC, you'll find KB6NU working on updates to his "No Nonsense" study guides, teaching one-day Tech classes, or blogging about amateur radio at www.kb6nu.com.



Fun with toroid's,

Part 1

By J. Bruce Randall, W1ZE



This past winter while basking in the southern California sunshine I started thinking of nice portable antennas I could use while camping in our fifth-wheel RV, Field Day or during ARES field activities.

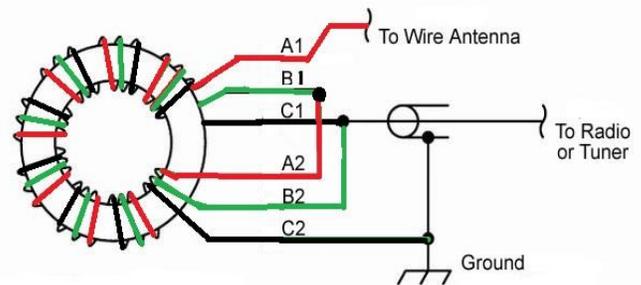
I have a nice multi-band/multi-mode transceiver in the truck and it is attached to a small Tiny Tarheel II screwdriver antenna but I would like to use of my Yaesu FT-

897D which was designed for portable operation while in the RV or under the RV awning with an adult beverage and just running 100-watts or less. I was thinking small, lightweight and easy to setup and take down antenna(s).

Online there were lots of portable antennas that caught my fancy like magnetic loops, portable verticals using portable fiberglass poles, wire dipoles, ransom wire, etc.. I noted that most of the wire antennas that claimed good results employed a RF Balun or UnUn transformers feeding the antenna. If you Google “End Fed wire Antennas,” you will get a very long list of things to look at. I noted that a lot of portable operations recommend an end fed wire that is fed with a 9:1 UnUn. The UnUn transformer brings down the wire feed impedance (approx.. 450-ohms) to a place where the average transceivers with a 3:1 internal antenna tuner or external transmatch could get the SWR down to or close to 1:1. They also indicate that on some designs a ground or counterpoise wire may not be necessary if you feed the UnUn with a long length of 50-ohm coax and wind a 10” multi-turn air choke coil in the feed coax close to the input of the UnUn. These portable or limited space stationary end fed wire antennas are available from a verity of suppliers and most for under \$100. However, there was a lot of information on how to roll your own 9:1 UnUn and make a usable portable end fed wire antenna out of easily available toroid cores, plastic box and hardware from Radio Shack and your local hardware store.



I collected all the parts needed and built a 9:1 UnUn and housed it in weatherproof plastic electrical outlet box and just added a few extra parts like a SO-239 coax connector, an antenna binding post and some stainless steel hardware. Winding the toroid transformer was east and only took a few minutes



I found a good online source for toroids at CWS ByteKark and in my case a T106-2 (Red) toroid will handle up to 200-watts of RF and will cover 2 to 30 MHz, plus they are relatively inexpensive. About a buck each . A 9:1 UnUn consists of nine turns of three in parallel insulated No.18 or 20 wire wires. I found that Radio Shack sells a spool of four conductor ribbon wire and each wire is a different color, white/black/green/red. I cut a length of ribbon wire about 20 inches and pulled off the white wire, leaving a flat ribbon of black, green and red. The flat ribbon made it easy to tight wind the toroid and keep things uniform.

When is a BALUN not a BALUN?

By W1ZE

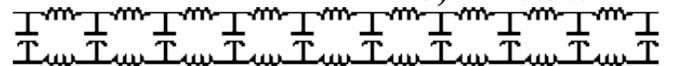
We hear new hams and even some older hams call any RF transformer in a transmission line a BALUN. Sometimes they are correct and a lot of times not. The word BALUN is a contraction of the two words BALANCED and UNBALANCED. A 1:1 or 4:1 BALUN is a transformer that converts RF in a transmission line, say coax (unbalanced) to twin-lead or ladder/window line (balanced) or vice-versa.

When a transmission line RF transformer matches coax (unbalanced) to another unbalanced antenna like an end fed wire it is not a BALUN. It is a UnUn, the contraction of the two like words Unbalanced and Unbalanced.

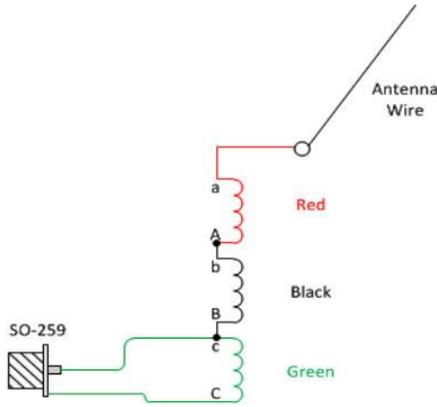
A coaxial RF choke made out of feed line coax wound into a large coil to prevent RF from running back down the coax into the shack is often called a coax BALUN, maybe. It does sometimes go from a unbalanced feed line to a balanced antenna load but sometimes not. It is just a coaxial RF choke.

I hope this helps you call a Balun a Balun, UnUn a UnUn or a spade a spade .

73, Bruce/W1ZE



Editors Note: This month the XYL and I will be commuting from California to Maine in our truck and 5th-wheel and sightseeing on the way. We will not be in town until the 20th of May so the June issue of Squelch Tales may be a few days late arriving in your inbox.



I mounted the toroid transformer in the electrical box and secured it to the back of the box with some RTV calk.



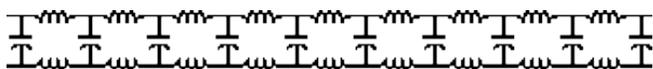
All that is needed is to connect your end fed wire and check it out. It is recommended that wire lengths of 24.5, 36 or 55-feet in length seem to work best for 40 to 6 meters with an SWR 3:1 or less.



In following newsletters I will have some more toroid

projects that are fun to build.

73, Bruce/ W1ZE



Hy-Tower goes up in Harpswell

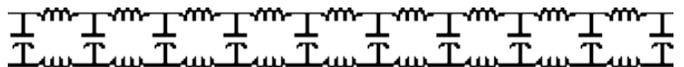
Joe Warren, AB1RA on Pinkham Point in Harpswell has found a unique way of providing a good foundation to support his new HyGain, AV18HT Hy-Tower multi-band vertical. Joe used his QTH's well head casing to support the towers base bracket by welding on three steel support brackets.



With that antenna and Joe's QTH being close to saltwater Joe should have a big DX signal.



Needless to say that that foundation footing is not going to move. Also the well casing should provide an additional grounding point for the hefty vertical.



What is a Ham in Maine to do without a Radio Shack in the local mall?

By Bruce Randall, W1ZE

Like many of you up here in the Great State of Maine I railed against the lack of electronics parts selection and electronics knowledge of the sales staff at the local Rat Shack (Radio Shack) store. But on a regular occasion I found myself in their store peering in their pullout drawers looking for common parts for projects in the shack. Well folks those days are over. Most of the Radio Shack stores have now closed their doors and gone the way of the Dodo Bird.

As the column title asks, “*What’s a Ham in Maine to do without a Radio Shack in the local mall?*” The only semi decent electronics parts supplier in Maine is HR Distributors in Portland and that is it. Like many of you, I make out a shopping list of parts I need before I go the Hamfest and flea-markets like NEARfest and hope I can find what I am looking for.

What I have done recently is set up a good database of online suppliers so I can order needed parts and supplies over the Internet. Below are some of the sites I frequent: For the

- **All Electronics** – <http://www.allelectronic.com>
- **Dan's Small Parts and Kits** – <http://www.danssmallpartsandkits.net>
- **Mouser Corp.** – <http://www.mouser.com>
- **Jameco Electronics** - <http://www.jameco.com/>
- **Digi-Key** - <http://www.digikey.com/>
- **Allied Electronics** - <http://www.alliedelec.com/>

- **Micro Center** - <http://www.microcenter.com>
- **The WireMan** - <http://thewireman.com/products.html>
- **RF Parts** – <http://www.rfparts.com/>
- **HSC Electronics** - <http://www.halted.com/>
- **Willy’s Electronics Supply-** <http://www.we-supply.com/>

I have found some needed parts on eBay and Amazon but check around on price before you buy. When shopping on line I recommend that you use a secure payment system such as Pay-Pal to protect yourself.

OK, it isn't as convenient as stopping at the local Radio Shack for a PL-259, but parts are available and a lot of times, cheaper if you do not mind the shipping delay. It is just a minor inconvenience for the pleasure of living in Vacation Land.

73, Bruce W1ZE



N1TRC TO PUT SAGADAHOC COUNTY ON THE AIR FOR THE NEW ENGLAND QSO PARTY

By Steve AA4AK

For the 2015 New England QSO Party, MARA will be running a multi-single (one transmitter several operators) operation from the Red Cross Chapter House operating as N1TRC. Since Sagadahoc is a rare multiplier in the contest, the station will be hotly sought after.

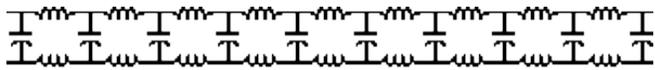
Operating hours are Saturday May 2 from 4 pm to 1 am, and Sunday May 3 from 9 am to 8 pm. We will be operating on 80 through 10 meters both SSB and CW. It is our intention to keep the station active for

the entire operating period. All MARA members are invited to come and take a turn operating. If you are new to HF contesting, this would give you a first look.

The station will use a fully tricked out Elecraft K2 with an autotuner. It will be computer controlled using the N1MM logger. We will use the existing antennas at the Red Cross.

Food arrangements are strictly "bring your own munchies." As with other MARA operating events, alcohol is not welcome.

73, Steve



Write Now: HR-1301 Has Special Significance for Emergency/Disaster Operators

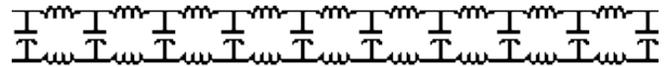
From ARRL HQ, Newington, CT, April 14th

The *Amateur Radio Parity Act of 2015* -- H.R.1301 -- has been introduced in the US House of Representatives. The measure would direct the FCC to extend its rules relating to reasonable accommodation of Amateur Service communications to private land use restrictions. HR 1301 would require the FCC to amend its Part 97 Amateur Service rules to apply the three-part test of the [PRB-1](#) federal pre-emption policy to include homeowners' association regulations and deed restrictions, often referred to as "covenants, conditions, and restrictions" (CC&Rs). At present, PRB-1 only applies to state and local zoning laws and ordinances. The FCC has been reluctant to extend the same legal protections to include such

private land-use agreements without direction from Congress.

ARES members are urged to contact their US House members and ask them to sign on to the bill as a co-sponsor. We provide, on a volunteer basis, public service, emergency, and disaster relief communications using radio stations located in our homes. Our services cost taxpayers nothing. They are provided at no cost to any served agency or to any government entity. FEMA has stated that when Amateur Radio operators are needed in an emergency or disaster, they are really needed.

Land use restrictions that prohibit the installation of outdoor antenna systems are the largest threat to Amateur Radio emergency and public service communications. -- *ARRL*



2015 Tour de Cure of the Kennebunks

This year's American Diabetes Association bike event, the Tour de Cure, will be held on Sunday, June 14, 2015. The Start/Finish will be at the Wells Reserve at Laudholm in Wells, Maine.

This will be an all day event. The event will include five different length courses 5K (3 mi), 25K (16 mi), 50K (32 mi), 100K (62 mi) and 100 mile. We are looking for many ham radio operators to man communications at Rest Stops and in SAG vehicles. Required equipment would be a 2 meter mobile or a good hand held with an external antenna (rubber duck antennas will not provide good communications in the terrain covered by these courses).

For more information or to volunteer please contact Barry Kray, KB1VX at KB1VX@arrl.net.