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FOXHUNT!

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The new ZeroBeat Newsletter, the official publication of the Montgomery Amateur Radio Club published on the first day of each month. Contents: Articles about new products - antennas - techniques and ideas – items for sale – humor - announcements and upcoming events – letters to the editor – articles about old products – profiles of club members – event pictures.

The ZeroBeat wants your contributions! Email articles to me at CASKYWARN@GMAIL.COM in Microsoft Word format or plain text. Comments and letters to the editor are welcome!

ZerO Beat

The Foxhunt Championship Series Starts August 7, 2021

Announcing the 2021 Foxhunt Championship Series: a foxhunt every month, with the winner announced at the Hamfest. First prize will be a \$ 50.00 certificate to spend on goodies at the Hamfest.

Foxhunts are scheduled for Saturday mornings from 8:00 AM to 11:00 AM on these dates: August 7, September 4, October 9, and November 6. Some of the foxhunts will be area foxhunts where hunters try to locate the Skywarn Tahoe. Other foxhunts will be close-in foxhunts conducted in a park where hunters have to locate a fox transmitting a weak signal from a hidden location. As usual, the close-in fox will be marked by a stuffed fox.



The fun starts August 7 with an area fox hunt. Area fox hunts involve foxes that transmit strong signals. The fox is obvious ... it will be the Skywarn Tahoe. The fox will transmit a signal on 146.565 MHz.



This foxhunt will be in the area of the zip code 36093 in Elmore County. This zip code covers Elmore County mostly to the south and east of Wetumpka, south of Highway 14 and west of Ware Road. It includes such neighborhoods as Harrogate Springs, Jasmine Hill, Blue Ridge, Redland, Willow Springs, Azalia Woods, John Lee Acres, Emerald

Mountain, Hidden Forest, and New Bingham. It includes Redland Road, Rifle Range Road, Dozier Road, and Jackson Road.

Members will get points for their finishes. In November the points will be tallied, and the winner will be announced at the Hamfest.

The Spiderbeam 12m Fiberglass Mast

Otto Arnoscht N4UZZ

The Spiderbeam 12m Fiberglass mast is a lightweight highly portable collapsible mast useful for putting up inverted V antennas. This 12m (almost 40-foot) mast has a collapsed length of less than 4 feet, and consists of 12 sections. Each section has a taper towards the top, and a rough section at the bottom. When extended, the tapered top on one section grips the rough section of the section above it. A firm pull is all that is needed to extend the mast and keep it extended. With this method the mast saves weight and bulk by not using clamps. Accessory clamps are available to hold the extended mast for longer term deployment.



In this deployment the top two sections of the mast had been removed and the resulting top of the mast is at 34 feet. The inverted V antenna was anchored so that the wire pulled the mast in one direction. A guy rope was then attached to counter this pull, resulting in a reasonably stable installation. The mast sits on an MFJ tripod. A role-up J-pole antenna made of 450-ohm open line, with RG-8X coax can be attached at the 25-foot level of this mast for VHF/UHF operations.

As you go up past the 25-foot level, the mast gets “whippy” and flexible. This mast is limited to handling wire antennas. It can be used to build a highly effective 40m vertical with elevated radials.

Set-up and breakdown can be accomplished by a single person, usually within about 20 minutes. The mast is available from Vibroplex for under \$ 100.00.

Most operators place the mast directly on the ground and guy the first section as a base before extending the mast. In most cases no additional guying is required.

Rather than using a guy rope, most operators keep the weight of their inverted V antennas very low. For instance, the Packtenna 40-10 endfed antenna system weighs only 4 oz, and that includes the transformer. By limiting the pull on the wires, the mast is kept vertical without additional guy ropes. I have also used this mast to put up a 40m quarter-wave vertical with elevated radials. It did very well during a SOTA activation of Horn Mountain in the Talladega Forest.

The TennTenna Endfed Transformer

03/12/2021 Otto Arnoscht N4UZZ

The TennTenna 49:1 transformer is designed to feed endfed half-wave wires with lengths of 66 feet (to work 40m – 10m) or 132 feet (for 80m – 10m) or 264 Feet (for 160m – 10m). It is a low cost alternative available for \$ 59.95 on eBay.



This transformer comes in a 3D printed box that is fastened with screws. It is closed and reasonably protected from weather but is not sealed. It has an SO-239 connector for coax, wire connectors for the antenna and for ground, and – as part of the box – a loop that can be used to suspend the transformer. The bottom side of the transformer is held in place by screws and can be opened easily. The inside reveals why this little box has some respectable heft to it: a large FT240-43 ferrite toroid with windings and a small capacitor to help in handling upper bands.

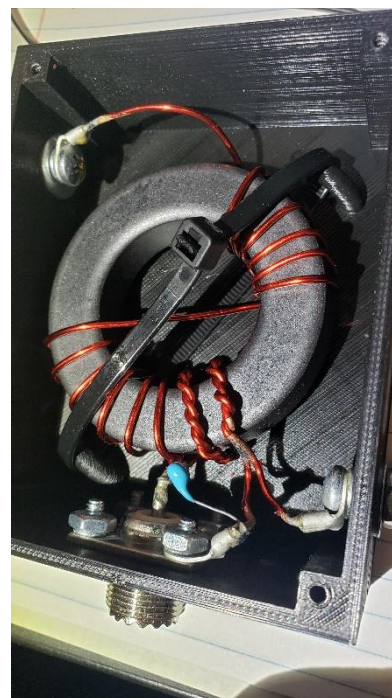
A zip tie is used to hold the assembly in place in the box. Workmanship appears excellent. The solder joints are well done. The wire winding is carefully placed. This unit should bring many years of good performance.

Attaching a 132 foot 16-gauge insulated wire reveals reasonable resonance on all bands. The toroid is big enough to give confidence that

it will handle 200 watts PEP on SSB and 100 watts on cw. I probably would not do much more than 50 watts in digital mode. To help in keeping the toroid cool it would not hurt to just operate without the back cover on. All bands are within easy range of the tuners found in modern transceivers. I operated this unit with 33 feet of ground wire attached as a counter poise.

Using this unit, 132 feet of 16-gauge wire, and a 12m Spilderbeam mast make for an extremely light, compact portable station that produces a decent presence on the air.

This transformer also has a little brother, a unit that has the same built but uses the smaller FT140-43 toroid, rated for 60 watts SSB, with a BNC connector.



An Equipment Question

Here is a puzzle regarding ham radio equipment. Email responses to CASKYWARN@GMAIL.COM and make sure to put the word “puzzle” into the subject line. Your answers will be published in the newsletter (with possible editing).

Randolph, a ham in Colorado, is planning on several major hikes in the Rocky Mountains to activate several SOTAs (summits on the air). Some of these hikes are long ones, so he wants to keep his radio equipment light and compact. Money is not an issue for Randolph. Some of the summits he plans to activate have never been activated before, so he wants to make sure that he can reach other stations to make the required number of contacts. He has decided that he needs to run 100 watts of power and use cw. He is bringing a LifePo4 10 amp-hour lithium battery that will just barely run a 100-watt radio for a couple of hours. He intends to charge this battery with flexible solar panels. A bigger battery would become too heavy and large.

He has an Icom IC-7300 transceiver that puts out 100 watts. He also has a Yaesu FTDX10 that puts out the same power. But he chooses an Elecraft KX3 QRP radio along with the KPA100 100-watt amplifier. Together, the KX3 and the amplifier weigh about the same as the Icom or Yaesu radios. Obviously, all three options put out 100 watts. And they are all equally competent receivers. In fact Randolph believes that all three radios receive about equally well. Randolph is also not bothered by the fact that the Icom and the Yaesu use relays for cw key switching (the Elecraft uses pin diodes).

So, why did he choose the Elecraft? Randolph had a very specific reason. What is it?

A Trivia Question About FCC Enforcement

Otto Arnoscht, N4UZZ

Baofeng UV-5R radios are the darlings of many amateur radio operators, especially the ones that have leanings towards being preppers (persons that prepare for cataclysmic natural or societal disasters). These little 5-watt radios not only cover (receive and transmit) the ham bands on VHF and UHF, but they can transmit on GMRS (General Mobile Radio Service), FRS (Family Radio Service), and some public service bands. Hunting parties and ATV enthusiasts often use these radios on FRS frequencies to keep in touch.

It is a violation of FCC rules to use any radio on FRS and GMRS that is not type-accepted for that service. It is a violation of FCC rules to use an amateur radio transceiver – which is what the UV-5R is – on any frequencies other than those designated for the amateur radio service. For this trivia question I am not going to go into the details of Part 90, 95, and 97 certifications.

Question: How many FCC enforcement actions have been initiated against amateur radio operators for using a Baofeng UV-5R outside the ham bands? How many of such actions included a fine? How many of such actions included forfeiture? How many actions included loss of amateur license?

(Answer in next month's Zero Beat.)

Zero Beat

My Saga Learning About Anderson Powerpoles

Otto Arnoscht, N4UZZ

(Another episode in my dedicated pursuit of the WAWA Certificate ... Worked All Whoopsie Awards).

It has been a long time since I worked with Anderson powerpoles. The other day I needed to do some rewiring of power cords in preparation for Field Day. So I got out my trusty box of powerpole stuff, including a crimper.

I stripped about 1/4 of an inch of insulation from two wires and tried to crimp the metal insides of the powerpole connectors to them but the crimper would not budge. It turned out that the crimper has three crimping positions, one each for the 15 amp, 30 amp, and 45 amp connectors. I was trying to crimp in the wrong position. After I



figured that out, the crimping job went easily.

Pushing the connector inside the housing went well and I heard the famous click that you are supposed to listen for. Each connector has grooves on the sides that you can use to pair them together and make a complete connection. I slid the two housings together which was quite difficult and required a lot of force. That should have been a hint, but when you don't know what you don't know, hints don't help. So, the connection completed, I looked at it and I was proud.



When I tried to plug this connector into a powerpole distribution box, it would not for the life of me connect. I was puzzled. I was trying to connect red with red and black with black, and powerpoles are not supposed to have any other kinds of polarity requirements. I fumbled around, trying to find a way to plug this connector in. I turned things around every which way, and suddenly, the connector plugged into the distribution box perfectly. I heard a little pop from the radio. It sounded like the kind of pop you get out of a speaker when power is disconnected. It was quite odd. I looked closely at the connection between the cord and the distribution box. It turns out that I

Nothing like inadvertently conducting a reverse polarity protection test!

had pushed the connection in backwards, so that red was now connected to black, and black was connected to red. The pop I heard was the reverse polarity protection circuit in the radio cutting off the radio. Nothing like inadvertently conducting a reverse polarity protection test! I disconnected the power cord and then painstakingly compared the connector that I had assembled with published pictures. I found my error: looking at the connection from the viewpoint of the wires, red needs to be on the right and black needs to be on the left, and the larger case structure (kind of like an overhang) needs to be on top. Now the housings slid together easily. So look at the pictures and remember: that is the wrong way to wire powerpoles!

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The MARC Repeater Equipment Update
Fred Springall, KR4YK
Selected slides from Fred's PowerPoint presentation

Bald Knob

Since the Jan report- The temporary mast and antenna has been removed.

Next Step at Bald Knob

- Replace bad VHF antenna with a new antenna at top of the tower.
- This will be a major job and we may have to contract this work out.

147.180 Repeater

The Luverne Site

Luverne Site for 147.180 Repeater

- We are using an existing VHF antenna at approximately 200' on a radio station tower at no charge. Ground elevation is 366'.
- Thanks to Chris WB4UQT for use of the site and help with the installation.

The Ramer Site

147.180 Repeater General Info

The offset and tone configuration will be the same as the original WSFA and Luverne site.

+600 KHz and 123 Hz tone

147.180 Repeater General Info

- This repeater will be linked to the Jim Bell Wireless repeater, in Georgiana, via a platform mounted UHF antenna.
- The linking equipment is being provided by the Jim Bell Wireless Association.

147.180 Repeater Nine Steps to Completion

Note: The order of work requires most steps to be completed in order to proceed to the next step.

147.180 Repeater Nine Steps to Completion

1. Agreement for use of site completed in mid-December 2020.
2. VHF antenna mounting post welded on top in early February 2021.

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147.180 Repeater Nine Steps to Completion

3. All other tank work completed in mid March 2021.
4. Equipment cabinet installation completed in early April 2021.

147.180 Repeater Nine Steps to Completion

5. Electrical work completed in mid April 2021.
6. Cabinet bonding and grounding completed in late April 2021.

Electrical Surge Protection

- Individual AC surge protectors on both 120VAC circuits powering the repeater and linking equipment.
- Separate AC surge protector on the fan circuit.

Cabinet Bonding and Grounding

- Cabinet bonded in four places and a direct connection to dedicated 8' ground rod with #4 copper.
- Additional ground rod at tank leg base bonded to tank ground and equipment cabinet with #4 copper.



At the center of the tank you can see the mounting for the new antenna. To the left in the background you can see an old obsolete antenna that will be removed. Note the view from this tower and the favorability of this location for a VHF repeater.

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Club Happenings for August 2021

The Lunchbunch meeting schedule:

Aug 4, 2021	Pizza Perfect, 428 Coliseum Blvd, Montgomery, AL 36109 meet at 11:00 AM
Aug 11, 2021	Patriot's Grill, 1961 Bell Street Montgomery, AL 36104 at 11:00 AM
Aug 18, 2021	Sommer's Place, 7972 Vaughn Road meet at 11:00 AM CT
Aug 25, 2021	Gail's Down the Street Café, 2741 Zelda Road, meet at 11:00 AM CT

To join the club or Lunchbunch email list, send request to CASKYWARN@GMAIL.COM

From time to time, members will gather at Vicki's Lunch Van for the best burgers in town. Those announcements are usually made on the club email list.

Skywarn Training Net	meets every Thursday 7:00 PM CT on 146.84 W4AP
Club Breakfast	Chappy's, Carmichael and Perry Hill Road, 8:30 AM Aug 14, 2021
Club Meeting	Aug 16, 2021 7:00 PM
CAVEC Testing	Aug 9, 2021, 6:30 pm, Scottish Rite Temple 565 Eastern Blvd
ARRL-VE Testing	prelim. scheduled for Aug 28, 2021 9:00 AM
MARC Foxhunt	Sat, Aug 7, 2021 8:00 AM – 11:00 AM

Facebook page: <https://www.facebook.com/groups/1412939275643917/>

Club Membership Renewal

Yes, we are accepting membership renewals for 2021. They are overdue, but we take all comers and welcome any renewals. We need your membership to keep up our efforts to maintain several repeaters in the area and to have Field Day and the Hamfest as well as many other events and activities. To renew your membership go to W4AP.ORG, then click on [Enter Website] then click on "About Us" which brings up a drop-down list and click on "Join MARC." In the center of the page you will find a link to the renewal form and instructions. You can pay via paypal by sending money to Treasurer@W4AP.COM

Club Officers

President:	Otto Arnoscht N4UZZ
Vice-President:	Ken Brittin AK4KN
Treasurer:	Fidel Cintron KK4KGO
Secretary:	Steven Bragg KA9MVA
Public Information Officer:	Clay Redden KC4YAU
Trustee:	Paul St. John NA4MM
Trustee:	Philip Salley K4PO
Trustee:	Fred Springall KR4YK
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