The QUARAE

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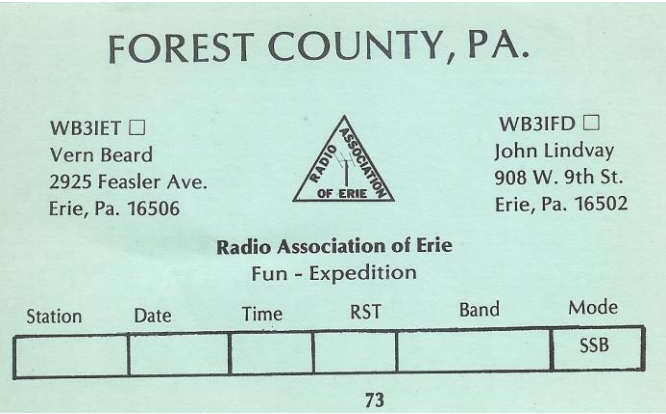
My DX Expeditions

by John Lindvay

Well they are not really DX Expeditions, but they did take place where we were rare and always busy answering calls. The first expedition took place years ago , in Forest County, with Vern and June Beard and myself. We set up a portable station in a camp ground during the Pennsylvania QSO party. We even had a special QSL card printed. Forest county was kind of rare for the Pennsylvania QSO party and we had a ball giving out the rare county to others. I can remember the rain



pounding on the roof of the camper. It was fun.

The second expedition was at my son-in-laws hunting camp in Warren County. Cell phone didn't work and the only way to communicate from the camp was by ham radio. My wife Debbie, KB3RUD, my daughter, Emily KB3PPG and my son-in-law, Wes KB3PPH set up 80 meter and 40 meter dipoles connected to a Yaesu FT-857 radio on an army surplus fiberglass 30 foot mast. We tried to go higher but the mast bent so much trying to get it up that one of the poles cracked. We connected two pulleys and rope to pull up the antennae. We took turns working 40 and 80 meters during the contest. It was really nice to set outside and enjoy nature and participate in the PA QSO Party.

The third expedition took place Cattaraugus County, New York during the NY QSO Party in 2011. More children and spouses had their ham licenses. So many relatives with ham licenses that we formed our own club, KB3WLX, and that is the call we used during the contest. We rented a chateau in the woods and near a stream in a rural part of the county. We ran two radios this time, a Yaesu FT-857 and a Yaesu FT-100. My son-in-law Bill, KC2YPJ, worked PSK31 and all his contacts were in Europe. The rest of us took turns on the Yaesu FT-857 and worked counties in New York and around the USA. We were first in Cattaraugus County and received a nice certificate for our efforts. More importantly, it was very nice to work a radio event and spend time with my children.

Dayton was a Blast this Year

A couple of weeks ago, I made my annual pilgrimmage to Dayton for the 2015 Hamvention. This year, I had even more fun than in the past, and

Radio Association of Erie Club Meeting at the Club House on Wagner Rd

Thursday June 4

Program: TBA

that's saying a lot.

I started Dayton 2015 on Thursday by attending the QRP-ARCI's Four Days in May (http://www.qrparci.org/fdim/) seminar. George Dobbs, G3RJV, gave a very nice talk that not only talked about circuits, but also the people he's met over the years and the places he's been. Paul, M0XPD, gave an interesting talk on crystal filters and using an Arduino to control a QRP rig. The final talk, by Glen, KW5GP, was also about using an Arduino to control a QRP rig. Other talks covered transmission lines and SWR and adventures in PCB making. I learned something in every single one.

That evening, I participated in Vendor's Night. I sold quite a few copies of my CW Geek's Guide to Having Fun with Morse Code and gave out quite a few "I'm a CW Geek" buttons and "Hams Obey Ohm's Law" stickers.

Friday and Saturday were all about the Hamvention. As far as new products go, there were a couple of interesting announcements. Elecraft introduced the K3S, an updated and upgraded K3 HF Transceiver, and FlexRadio introduced the Maestro, a "front end" with knobs, dials, and LCD screen for their software-driven radios. Apparently, hams like knobs and dials after all.

It seemed to me that there were more people at this year's Hamvention. There were certainly more sellers out in the flea market. And deals were to be had. I picked up a Bencher BY-1 for only $50. I also found a Hallicrafters HA-1 T.O. Keyer (http://www.ai4fr.com/main/page_ham_radio_hallicrafters_ha1.html), which I believe to be the first commercially-available electronic keyer. Produced in the 1960s, it uses tubes to generate dots and dashes.

Dayton usually has a great lineup of forums, but aside from perhaps the TAPR forum, the Antennas forum, and maybe the ATV forum, none of them really called to me. Also, I was really busy talking to people I know, meeting readers, and trying to get the dealers to carry my books, so I didn't get to a single one.

Being the CW geek that I am, I'm hoping to hold a CW forum at next year's Hamvention. I've already contacted the forum people, and while they haven't committed to giving me time, I did get a very positive response. C U THR?

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When he's not attending the Dayton Hamvention, Dan, KB6NU enjoys working CW on the HF bands and teaching ham radio classes. For more information about his operating activities and his "No-Nonsense" series of amateur radio license study guides, go to KB6NU.Com or e-mail cwgeek@kb6nu.com

TI announces 1st transistor radio, October 18, 1954

Texas Instruments announced plans for the Regency TR-1, the first transistor radio to be commercially sold, on October 18, 1954.

The move was a major one in tech history that would help propel transistors into mainstream use and also give new definition to portable electronics.

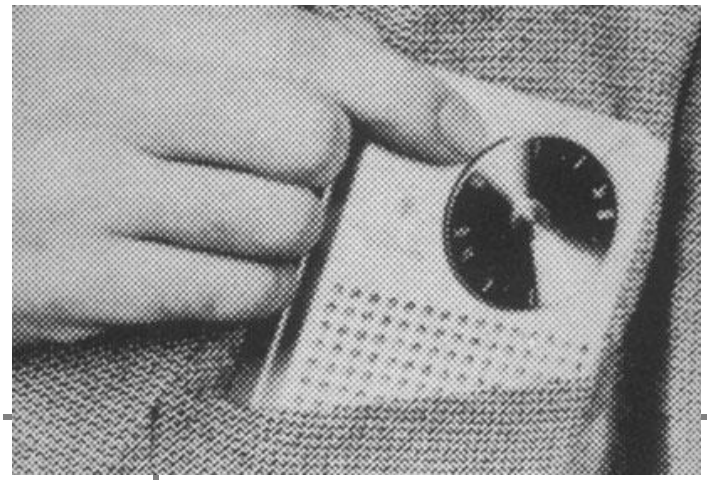
TI was producing germanium transistors at the time, but the market had been slow to respond, comfortable with vacuum tubes.

However, the use of transistors instead of vacuum tubes as the amplifier elements meant that the device was much smaller, required less power to operate, and was more shock-resistant. Transistor use also allowed "instant-on" operation because there were no filaments to heat up.

As to mobility, the typical portable tube radio of the 1950s was about the size and weight of a lunchbox, and was powered by several heavy, non-rechargeable batteries. A transistor radio could fit in a pocket, weighed half a pound, and was powered by a single compact 9V battery.
With these pros in mind, TI's executive vice president Pat Haggerty "decided that the electronics industry needed a transistor wake-up call and that a small radio would provide it," according to **TI's Web site**.

Haggerty decided TI would develop the transistor radio business and the company's semiconductor products division took on the challenge of developing a method for mass-producing germanium transistors.

In the spring of 1954 and with a prototype in hand, TI searched out an established radio manufacturer to develop and market a radio using its transistors. TI soon partnered with the Regency Division of Industrial Development Engineering Associates (IDEA). The "transistor radio apparatus" was patented by IDEA's Richard Koch in 1955. You can view the patent and schematics **here**.



Prototype transistor radios built prior to the TR-1 required manually selecting and matching electrical components to make them work, which in turn created a prohibitive cost per unit for large-scale production. Koch designed a feedback circuit that accommodated the tolerance of production-run components and let them be soldered directly into the boards without manual selection.

The new transistor radio would be introduced in New York and Los Angeles by mid-October to take advantage of holiday sales. The 5×3×1¼-inch radio used four TI transistors and a TI subminiature output transformer, according to a **TI press release issued on October 18, 1954**.

When it went on sale on November 1, the Regency TR-1 cost $49.95. Although its price was high in terms of 1950s dollars, nearly 100,000 of the pocket radios were sold in a year.

The transistor radio remains one of the most popular communications devices. Some estimates suggest that there are more than seven billion transistor radios in existence. This article was repeated from http://www.edn.com/electronics-blogs/edn-moments/4398895/TI-announces-1st-transistor-radio--October-18--1954

Making a multi-band antenna using traps

A few tips on using traps

The introduction of our easy-to-tune antenna traps has encouraged a whole host of people to try making their own multi-band antennas. That's great as making antennas is fun and can be very satisfying. Most folks start with a co-ax fed dipole - which is generally a single band antenna.

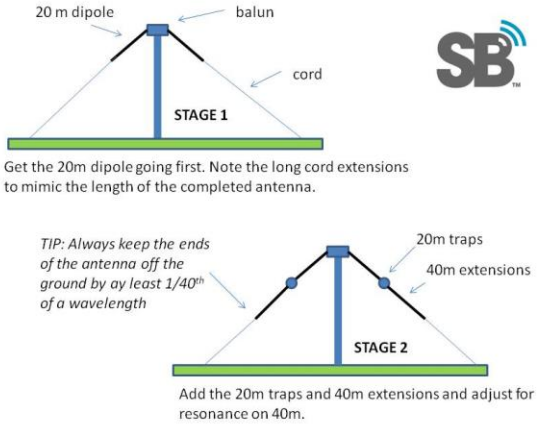
It's an easy antenna to make and is a great performer. Adding bands using traps takes the fun to a new level, plus you will learn a little about tuned circuits too.

Let's dive straight in and make ourselves a multi-bander. We will make a trapped dipole for 20 m and 40 m. The first stage will be to make a 20 m dipole. The RSGB has a useful page of tips for that right here. The RSGB suggest that a balun is not really necessary in most portable situations, I agree. However my experience suggests that a balun is essential with a trapped dipole as getting the adjustments right is very hard if the feeder is too closely coupled into the antenna system. Note that we make the dipole for the highest frequency band first. In this case 20 m is 14 MHz and 40 m is 7 MHz so we make a 20 m dipole.

[Handy hint] If you are intending to use your multi-bander as an inverted vee antenna, make sure that you use the same apex angle for your 20m dipole that you will have when the complete antenna is made, the apex angle of an inverted vee will affect how it works. There is a useful page on making an inverted vee here. The author uses single strand wire, I would use multi-stranded wire for a portable antenna for easier handling.

Once your 20 m dipole is working you can prepare for the next stage. We want our traps to act like end insulators for our 20 m dipole so that adding the 40 m extensions does not affect its resonant frequency.

Traps are a parallel tuned circuit - a capacitor in



parallel with an inductor. This type of circuit has a very high impedance (i.e. looks like an insulator) at its resonant frequency; therefore we want a resonant frequency of about 14 MHz. It's a good idea to have the resonant frequency of your trap a free percent BELOW the band as this reduced any potential trap losses. Thus we will adjust our 20 m traps for resonance at about 13.7 MHz. The exact frequency is not critical but do try to make both traps resonant on about the same frequency (say +/- 25kHz).

Once you have your traps adjusted, they can be attached to the ends of your 20m dipole: now the fun begins. You need to add some additional wire onto the traps to extend your antenna to get it to work on 40 m - but how much wire do you need? It's easy to work it out with a calculator. Just work out the length of each leg of your 20 m dipole (about 5 m) and then work out the length of a 40 m dipole (about 10 m of wire) and take one away from the other... 10 - 5= 5 m. So you need to add another 5 m of wire to traps for 40 m.

Once you have added the 40 m extensions. put the antenna up again and check that it still works on 20 m. It should work on 20 m just as before. If not, **something is wrong**. You must sort out the 20 m problem before doing anything else. If 20 m is working as before check out 40 m. If the traps are

working properly you will notice that your antenna is resonant below 40 m. ***Why?*** Tuned circuits look like an inductor (coil) below their resonant frequency so your traps look like little loading coils on 40 m. That's handy as it's easy to shorten the 40 m sections by cutting a little wire off the ends. Do this until your antenna is resonant where you want it on 40 m. Because of the loading effect of the traps, the usable bandwidth of the 40 m section of your antenna will be a little less than that for a full-sized 40 m antenna.

[Pro-tip] By changing the L-C ratio of your traps you can trade off bandwidth vs antenna length. Note that the L-C ratio of co-ax traps is not adjustable.

Making your new two-bander into a three-bander is also possible by adding additional traps and extensions. In this case, you can only easily add a band lower in frequency than 7 MHz so you could add 80 m (3.5 MHz). The bandwidth on this third band will be even less. My experience is that three bands is about the maximum for a trapped dipole system. Beyond that the adjustments get increasingly tricky. on behalf of; Richard G3CWI richard@sotabeams.co.uk

Ham Radio Calendar

June 4 - RAE Meeting

June 7 – Alabama QSO Party. See www.alabamaqsoparty.org

June 9 – Wattsburg Wireless Club Meeting

June 11 – Union City Club Meeting.

June 13 – ARRL June VHF Contest. See www.arrl.org/june-vhf

June 14 – Flag Day

June 15 – Conneaut Club Meeting

June 20 – Erie Bay Swim

June 20 – West Virginia QSO Party. See www.qsl.net/wvsarc/wvqp/

June 20 – VE Session at Greene Township Bldg. Walk-in invited. Last chance for old General questions.

June 21 – Father's Day

June 28 – Field Day

July 4 – Independence Day