

K9YA Telegraph

Robert F. Heytow Memorial Radio Club

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“Our Radio Amateurs”

Carl Dreher and Zeh Bouck, October 1941

Philip Cala-Lazar, K9PL

“Our Radio Amateurs” appeared in the October 1941 issue of *Harpers Monthly*. It offered contemporary readers a concise history and overview of amateur radio from the time of Marconi, who spoke of himself as an amateur, to American hams’ role in a war

already enveloping Europe, North Africa and Asia and soon to involve the U.S. Today’s readers are afforded an intimate look back at the pre-WWII amateur radio service: its highlights, personalities and, engagingly, its peculiarities.

Authors Carl Dreher (1896-1976) and Zeh Bouck, W2PI, (1901-1946) were prolific and admired writers on technical subjects. Dreher, in addition to authoring technical articles and political commentary, worked in Hollywood as a sound engineer and as associate writer on two screenplays: *The Crime of Dr. Hallett* (1938) and *Strange Conquest* (1946). He received two Academy Award nominations for sound recording for *The Gay Divorcee* (1935) and *I Dream Too Much* (1936).

During his short life Zeh Bouck was the radio operator of W2XBQ aboard the first New York to Bermuda flight and on the *Pilot Radio* South American Goodwill Flight to Buenos Aires. Much published, he was a vocational book author; contributed articles and columns to the New York Times and New York Sun; operated 2UO, the Times’ “amateur” radio station; magazine columnist for *Boys’ Life*, *Radio Broadcasting* and more; and pulp fiction writer. (*K9YA Telegraph*: November 2005, “Zeh Bouck” and January 2012, “Defending Our Bands”)

In recent years this article was quoted in two books that explored America’s love affair with radio in its commercial and non-commercial manifestations: *Listening In: Radio and the American Imagination* by Susan J. Douglas and *Ham Radio’s Technical Culture* by Kristen Haring. (*K9YA Telegraph*: December 2005, “A Place of One’s Own” and January 2008, “A Scholar’s View...”)

Looking Back

What can we learn from this 72-year-old document?

In its first few paragraphs we learn over 80% of the world’s hams were located in the United States and their average age was 35. That early radio enthusiasts and they were not all hams, often homebrewed their coherers for 15 cents—the metal filings from that era’s nickel (copper/nickel) and dime (silver/copper) coins. And that while silicon and Carborundum detectors were most

desirable and pricey, a carefully chosen, sensitive piece of anthracite coal would often suffice.

Hams organized early, with the 1909 founding of the Junior Wireless Club Ltd. (two years later renamed the Radio Club of America) in New York City. The

“What can we
learn...?”

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Philip Cala-Lazar, K9PL
Editor

Mike Dinelli, N9BOR
Layout

Dick Sylvan, W9CBT
Staff Cartoonist

Rod Newkirk, VA3ZBB (SK)
Contributing Editor
2004 - 2012



Robert F. Heytow
Memorial Radio Club

www.k9ya.org
telegraph@k9ya.org

Enigma-E

The Kit

John Swartz, WA9AQN



Enigma-E
Images: WD9F

Why would a ham build an electronic kit that he can't use in the ham shack? Because he wanted one, that's all.

A real Enigma machine was beyond my budget when I first found out about the kit, and, I really discounted one's value as an investment as well. Of course, after one hit a price in excess of \$200K at a very well known auction house in London a few years ago, I wondered about my

decision. There was a time when you could have had a fully functioning original for about the price of a top-of-the line HF transceiver, about 10 or 15 years ago. That's a contemporary version of the story our grandfathers told about passing up the opportunity to be one of the original owners of Coca Cola stock.

At the time I bought the kit and built it, I did not realize the electronic version of the Enigma machine would have a port so that its output could be used to key a transceiver in CW mode. It would be fun, but the encrypted product would be illegal under FCC regulations. So much for that idea! Three of us in our area have these kits, and have used them to advance our understanding of cryptology and the role of the cryptologists in World War II and the post-war world. We have wondered whether, in today's world, the NSA could crack messages we might generate to each other any more easily than the British did at Bletchley Park in the war. We hope so. But, from all the literature we have reviewed, if used properly, the Enigma machine is still a pretty decent cryptological device (and it is a lot cooler than the Captain Midnight secret decoder ring most of us started with).

The Enigma machine had its origins in the commercial world. Its inventor wanted to supply a method for businesses to provide secure communication with

their outposts using the telegraph system of the day. Military and diplomatic uses were not really the major motivator, but it did not take long for those applications to become apparent. The Enigma is not just one machine, but like most technological developments was the subject of refinement and an evolutionary process over its history from its origins in pre-WWI Europe through the Second World War. The story is a fascinating one, and once you have command of the history of the development of the machine, and an understanding of how the machine worked in its various forms, the study of how it was used by the German military and of how the Allies cracked and used the decrypted intelligence in the prosecution of the war it becomes ever more fascinating.

The kit provides a wonderful introduction to that history. Building the kit takes a bit of time, patience, and soldering skill. While the kit is promoted as being suitable for those with basic soldering skill, the level of care required is a bit more sophisticated. To me, basic soldering skills recall the assembly of old Heathkits, with parts that you could identify, hold and solder without surgical forceps and magnifying glasses. The kit builder has to be meticulous in following the well prepared printed directions, and in using the minimum amount of solder to avoid bridging some very fine solder traces on the board. As with all kit building, having a well-lit area that will not be

*"cooler than
the Captain
Midnight
decoder ring."*



Robert F. Heytow
Memorial Radio Club

www.k9ya.org
telegraph@k9ya.org



disturbed by the family cat helps. A good magnifier is almost a necessity in verifying the proper insertion of leads through the circuit board and the absence of solder bridges.

When completed, there are options in how the kit can be set up that demonstrate fully the complexity of the original machine. One option permits the display of each conversion of the input to another letter as the current or signal passes through the complex electromechanical systems of the original Enigma machine. You can see the original A turn into P as it exits the plugboard, and becomes Q after it exits the first rotor, then Z from the second rotor, and so on as it continues its path through the machine's circuitry. Of course, this could not have been done with a real Enigma machine. The electronic kit can be configured by the user in as many different configurations as were available in the inventory of Enigma machines used by the German military during the war. The machine can be set up as a three or four rotor machine, the different reflector configurations are selectable, the plugboard is fully functional and wired exactly as the original was, and the memory contains the full inventory of eight possible wheels from which the user can select and set the order in which they are placed. In short, the Enigma-E is a fully functioning electronic replica of the original. These options are changeable via switches and board-mounted jumpers.

The Enigma-E can be powered from batteries or house mains with a wall wart. The cabinet is not included and that permits the builder some options for displaying the machine and in demonstrating how the original machine would have been used. Out of the box, there is a single circuit board, which is very well made with accurate information guiding parts placement and orientation. For the user who

*"diabolical
complexity"*

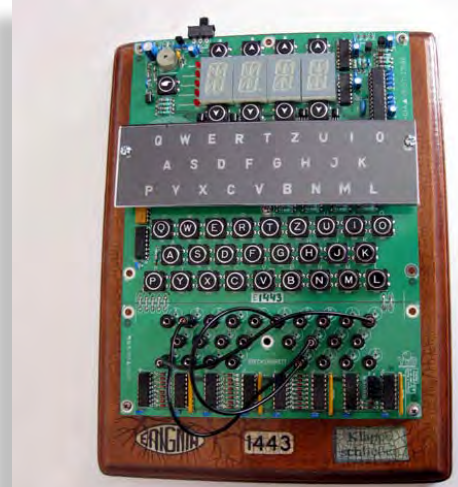
wants to separate the plugboard for installation in a cabinet that resembles an original machine, separation of the plugboard portion of the circuit board is straightforward. While not necessary, it is probably safer to make the separation before assembly is begun than to wait until later, when the placement of components might make it more difficult to cleanly separate the portions of the board. The board is scored where the separation is to occur, but we preferred to have bracing on both pieces to prevent any possible shattering or damage from flexing.

The literature covering this aspect of WWII history contains many descriptions and diagrams of the Enigma machine, its component parts and functions. But for anyone seriously interested, the Enigma-E kit adds a new dimension of understanding to the diabolical complexity of the machine and its inner workings. One cannot help but admire and marvel at the skill and engineering that went into the design and production of the original machines.

The kit is available through the Jan Corver Museum in the Netherlands (www.jancorver.org/en). More information is available on the developer's Web site www.cryptomuseum.com/kits. The price of the kit is €150, excluding shipping, from Museum Jan Corver.

So, what do we do with them?

We finally figured out they would be harder to use without the teacher seeing them than the old Captain Midnight decoder ring. (It never dawned on us the teacher might understand how simple substitution ciphers worked, or that she might have actually had a Secret Decoder Ring herself!) However, we see the potential for the day when we must retreat from our ham-friendly QTHs to an undoubtedly antenna-restricted retirement "centre" and will want to communicate in secret with each other again. Will the administrator have one, or still be using her secret decoder ring? She'll probably be younger than we are so she may never have heard of the Secret Decoder Ring. But she'll have a PC. Oh, well... ■



Completed Kit with Diffuser

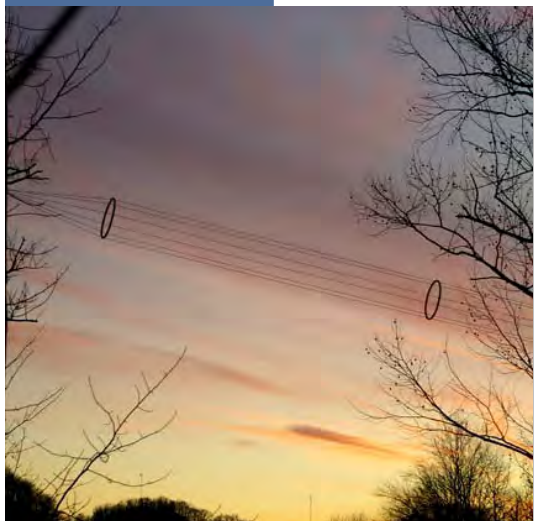


Robert F. Heytow
Memorial Radio Club

www.k9ya.org
telegraph@k9ya.org

New May Sometimes Be Better

Hal Mandel, W4HBM



The QTH here is not at the head of the hollow, but down a bit, into the “bottom.” The creek behind the house is in a further depression, the majority of fifty feet down, and the water has been as high as ten feet from the porch, but my neighbor says before our houses float away, all of downtown Podunk is under water—very reassuring, except downtown’s been under water more than once. The geezers like to talk about it, cackling.

This story is about antennas, though. There’s plenty of room for a full-boat 160-meter dipole. (One neighbor across the way saw my buddy and I struggling with the antenna, and came out of his trailer dragging an old baby buggy out from underneath, and blasted it two or three times with his favorite Sears 12ga. shotgun. No problem. He’s as proud of his target as we were of ours.

The original antenna was a 160-meter, five-eighths-wave dipole fed with 600 ohm open wire ladder line and it tuned up with the external tuner, but hearing stations more than a couple of miles away was rare. (Somehow, I wondered if the problem wasn’t the 69,500-volt transmission line running through the valley, but NO, I was in denial.)

So twelve years later I decide to replace the wire (after it came down in a storm and the horses ate it) with a “cage dipole.”

The cage design is right out of the 1921 *Handbook*. They weren’t in the 1914 book, so it must be a modern marvel.

This company called “DXBlasters.com” manufactures cage dipoles and they say they are the cat’s meow. They are made out of six parallel conductors of size 14 AWG stranded THHN-type wire with round, plastic hoops that determine the cage’s attributes. They feed from

the middle with a PVC plumbing TEE where holes cut in the ends support the wires going off into two distances. The two distant ends use pieces of PVC pipe with holes drilled through the sides for the wires to pass through before clamping all together with copper bug nuts. Since this is a 238-foot (73 meters) long affair, 7/16” (11mm) double Dacron-polyester milspec rope was used. It has a 1,400-pound, (522kg) rating, and both ends used three pulleys that formed a “gun carriage” hoist. The antenna has a pulley on the end, and there’s another pulley on the hoisting end, with a third pulley to hoist the dead end and the fixed pulley up into a tree branch. There are a total of eight pulleys, with the ends being gun carriage hoists and the center just being a halyard with a pulley to hoist the sheave into the tree branch.

To make this dreary tale shorter I need to say the first attempt to put up an antenna that wasn’t too sensitive about the high tension line ran perpendicular to the power line and picked up 90 volts on that leg alone. No tuning that animal up anywhere on any frequency!

The two helpers in the original crew thought it was going to be a cakewalk. One guy somehow landed on a tree branch in a very uncomfortable way and he was lucky to not fall, and lucky to get back in his car. Some sort of spider bit my other helper, and a few weeks later

had to go to the hospital for surgery.

Five weeks later I convinced two other buddies to help. Both these guys are retired U.S. Army Ranger operators. You know, guys who can jump out of airplanes with ‘chutes the size of handkerchiefs and who can kill with a rolled-up QST.

I tell them this QTH has already taken its pound of flesh from everyone who goes into its little jungle. After twelve years I know I come out with poison ivy, minimum, even in mid-winter.

We drop the east-west cage and schlep it around to north-south. “Mr. Neodd Sweven” is telling us how to throw through the trees. Nine, yes nine hours later

“...they are the
cat’s meow.”



Robert F. Heytow
Memorial Radio Club

www.k9ya.org
telegraph@k9ya.org

Radio Row Lives!

By Bob Ballantine, W8SU



Just when we think the NYC Radio Row archives dried up, we find more! The 13-block takeover by the New York Port Authority didn't remove Sylvan/Wellington Electronics at 269 Canal Street in the Radio Row district! The same company operated the store up into the 1990s. It was described as a classic parts store with the old guys serving you in blue shirts and suspenders! The S/W sign is still out front, said Lino in February 2010 in a short Internet script. Is that the present owner, Mr. Wong, in the light trousers, standing out front? The walk traffic is pretty brisk. Wong has the reputation of being a good electronics service man.

Actually Sylvan/Wellington never stopped! It is now called 269 Electronics of 269 Canal Street, NYC phone: 212-625-0405. The proprietor, one Mr. Wong, had been a loyal employee at S/W for over 30 years and advanced from employee to owner; they still maintain excellent service. Checking over at the BBB, the store has a very nice rating.

What could we call The 269? "The Last Holdout?" "We Got Valves?" "Lite 'Em Up?" You Go 269!

At any rate, the Port Authority footprint did leave a few souls even though "Get them out of there was the rule of the day." I can't bear to think of the tons of war surplus and rubble pushed out into the Hudson adding to the expanse of the Island of Manhattan, visible from the air.

So, to Mr. Wong. A toast to you sir! May it be so.

Thanks to Robert K. Chin at nychinatown.org for the use of his image. ■

Defining Moment

By Ken Muggli, KØHL



When I was a 10-year-old boy (a long, long time ago, in a land far away) I somehow obtained a crystal radio kit. I wound the coil on a toilet paper tube (I can still see how it looked in my mind), and hooked up the few components. The detector was a cat's whisker on a crystal. A small variable capacitor served as the VFO. I used a convenient water pipe for my ground. In those days, all plumbing was metal.

My dad put up a long-wire antenna for me. It was indeed a long-wire; about 200 feet long, 20'-40' high. The wire ran from my basement (shack) to the top of the roof of our farmhouse, to a TV mast above the shop, to a 4 X 4 mounted on top of a Quonset hut utility building.

To this day, the 4 X 4 on top of the Quonset hut is still there. I am without a doubt the only living human being that knows why that 4 X 4 is up there. It has been there for over 50 years. Every time I see that old 4 X 4 pointing at the sky, memories from my youth come pouring back to me in a wave of pleasant nostalgia.

I still clearly remember the first time I tuned my radio and had sounds come out of the little ear-bud. OH Boy! Was I excited. To hear sounds come out of the air, into my ear-bud was simply magic. THAT WAS THE DEFINING MOMENT, that was the exact moment—I knew I wanted to be a ham.

Aha! The magic of radio! I am still intrigued to this day. Dit Dit. ■

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Robert F. Heytow
Memorial Radio Club

www.k9ya.org
telegraph@k9ya.org

American Radio Relay League established 1914 in Hartford, Connecticut, served and continues to serve the U.S. amateur radio community.

The first transcontinental relay occurred in January 1917. Amateur radio message handling was defined as, "a free public message service which, while it does not compete seriously with commercial communication facilities does carry a considerable volume of traffic." Individual hams commonly passed 200-300 messages per month.

Sending messages via amateur radio was a very popular activity for visitors to world's and state fairs; 23,000 messages sent from the 1939 New York World's Fair, W2USA, and 4,000 messages passed in two

weeks at the Florida state fair. Amateur radio was frequently employed to exchange traffic between the U.S. mainland and its far-flung "government outposts" including "the Philippines, Panama Canal, Puerto Rico, Guam, [and] Hawaii." Army-amateur stations offered draftees a radiogram alternative for their weekly postcard messages home.

Frank Conrad, 8XK

Hams were instrumental in founding the broadcast radio industry. The industry expanded exponentially from Reginald Fessenden's Christmas Eve 1906 transmission to Lee DeForest's 1912 Metropolitan Opera broadcast to Frank Conrad's station-in-a-garage 8XK licensed in 1916. Conrad, an assistant chief engineer at Westinghouse, inaugurated scheduled musical programming to the Pittsburgh area. Those transmissions captured the public's fancy and spurred the sale of receivers. In 1920 Westinghouse started commercial broadcasts from its newly licensed station KDKA sited in East Pittsburgh. 8XK as W8XK lived on as KDKA's shortwave outlet.

Ripples in the Ether

Ironically, Conrad's fellow hams were targeted for interfering with the programs he helped make possible. Any noise or hitch in listening, QRM, QRN, even QSB, was blamed on hams. The authors included a

long list of non-amateur radio generated noise sources issuing from most any electrical device: neon lights and diathermy machines to automobile-ignition systems and traffic lights to incinerators and smoke precipitators. Their advice to listeners, "If you are bothered with strange radio noises call a radio serviceman—don't bother the local radio inspector or your senator in Washington."

Adding to the public's negative perception of amateur operators was the proximity of the 160-meter band: *Most broadcast listeners are introduced to him [ham operators] through the back door of amateur radio the "160-meter fone band," close to State police and high-fidelity broadcast channels. Here the opinion one receives of the ham is truly sad. He appears to be a moron broadcasting his idiotic jargon on a spectrum of the ether that might be used for better purposes.* Remember, this is the band we today refer to as "the gentleman's band."

The authors explained the cause, as they saw it, for 160's poor reputation: *The least experienced and lowliest amateurs gravitate to that band because of government restriction and natural limitations. Only amateurs possessing the highest of the three grades of government licenses are permitted to operate fone on the more desirable ham bands, and many of those lacking the IQ to pass the relatively rigid examination for the Class A ticket continue to display their limitations on 160 meters.*

A short list of that "jargon" embraced a few Q-signals, QSO, QRM and QRN, and several abbreviations: HI, OM, OB, YL, XYL, DX and CQ. By 1941 OW for "Old Woman" "was quickly shelved as soon as a few girl operators appeared on the scene."

Today we decry "Q" signals on voice modes; in 1941 AM ops were misusing prosigns, saying "K" instead of "go ahead" and "SK" for "signing-off."

Meet the Stars

Discussing celebrity hams, actress Judy Garland's name comes up. Not so. More likely a conflation effected by the 1938 film *Love Finds Andy Hardy* wherein 12-year-old ham radio operator James MacMahon, Jr. (Gene Reynolds), passes a message from Judge Hardy (Lewis Stone) to his wife (Fay Holden) sojourning in Canada as Andy Hardy (Mickey Rooney), who suggested the traffic, stands by. *Love Finds Andy Hardy* marked Judy Garland's first appearance in an Andy Hardy series film.

CONTINUED - "OUR RADIO AMATEURS" ON PAGE 7



Carl Dreher

*"don't bother
the local radio
inspector"*



Robert F. Heytow
Memorial Radio Club

www.k9ya.org
telegraph@k9ya.org

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Cinematographer Clyde De Vinna, W6OJ, was a globe-hopping and enthusiastic ham whose real life misadventure scored a scene in the 1939 Pete Smith short *Radio Hams* (<http://www.youtube.com/watch?v=vBGIdf0VjQ4>). The film relates the story of De Vinna's long distance, multi-route, rescue from asphyxiation in a remote Alaskan cabin and has been told many times most notably in Clinton Desoto's 1941 book, *Calling CQ*. De Vinna was in the then U.S. territory while filming *Eskimo* (1933). In 1931 he operated portable from Africa while shooting *Trader Horn*.

Speaking of globe hoppers, amateur radio's longtime participation in expeditions and scientific investigations began in 1923 when Don Mix, 1TS, served as radio operator aboard MacMillan's schooner *Bowdoin* on a voyage of arctic exploration. Kingsford-Smith's Pacific-spanning flight aboard the tri-motor *Southern Cross* was erroneously attributed to Sir Hubert Wilkins. Sir Hubert sold some of the Fokker aircraft components that comprised *Southern Cross* to Kingsford-Smith, but did not participate in the flight. Wilkins' submarine *Nautilus* expedition to the North Pole is mentioned. Amateur radio's close cooperation with the U.S. military included the 1924-1925 cruises of the U.S. Navy airship USS *Shenandoah*. (*K9YA Telegraph*: July 2008, "USS Shenandoah"; March 2010, "Nautilus to the Pole"; March and April 2012, "Flight of the Southern Cross," Parts I & II)

Brink of War

The authors expressed concern about amateur radio's status and the nation's security. Fears of radio amateurs as fifth columnists were largely misplaced: "It is much more likely that treasonable communications would be carried on through unlicensed and illegal stations, and that the American ham will be of material service in detecting and locating them."

The article maintains its optimistic tone by suggesting the service might not be suspended for the war's duration as in WWI. By the time this article was published increasingly severe restrictions had already been placed on U.S. amateur radio operators, they were: "forbidden to communicate with any foreign country," "forbidden to converse in any language other than English," restrictions were placed on the "use of portable and mobile equipment," and "all operators, commercial and amateur, are fingerprinted and must definitely establish their citizenship."

It was suggested that, at the very least, army amateur stations, university stations, and National Guard amateur radio stations would continue to serve in times of domestic emergencies and natural disasters neither of which events were respecters of war or peace. (*K9YA Telegraph*: September 2006, "Ham Radio on the Home Front" and June 2013, "Byron Price and the Wartime Amateur Ban")

The Selective Service questionnaire filled out by every draftee asks him only two questions in reference to special qualifications—one of these: Is radio your hobby?

Army amateur draftees "by order of the Chief Signal Officer, are automatically inducted into the Signal Corps." As of "August, 1941, there were 10,000 hams in the U.S. armed services"

The article closes with a paean to the amateur radio service. There existed within the service no barriers arising from age, sex, educational level or social status.

Ham radio was lauded "the most educational of scientific hobbies." It required knowledge of "electricity, electronics, and the laws of electromagnetic radiation." Adepts soon became "well-grounded in physics—light, heat, acoustics; in mechanics, chemistry, and mathematics" In time, experienced hams acquired a working knowledge of "meteorology, the Stratosphere, and sun spots."

In closing, consider the poignancy of the authors' title, "Our Radio Amateurs." It powerfully conveys the many privileges and responsibilities American hams assumed upon earning their licenses and the myriad services they rendered in return. It also powerfully states the differences between our radio amateurs and "Their Radio Amateurs," those hams living under regimes whose laws regulating amateur radio were highly restrictive, dismissive or proscriptive. "No amateur transmitters are permitted to-day in any of the belligerent nations...."

Footnote

Zeh Bouck's article "Hams—Past—Present—Future," in the January 1945 issue of *CQ* magazine restated

CONTINUED - "OUR RADIO AMATEURS" ON PAGE 8



Zeh Bouck, W2PI

*"Hams—Past—
Present—Future"*



Robert F. Heytow
Memorial Radio Club

www.k9ya.org
telegraph@k9ya.org

much the same material in "Our Radio Hams" albeit in an abbreviated version. A CQ editor noted the article was offered as a brief introduction to amateur radio. "Thousands of ex-GIs will want to carry on with the knowledge of radio they gained in the armed services" and "Manufacturers forced into some form of radio production in the war effort, will find their reconversion problem simplified by recognition of the expanding ham market." ■

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Ham Quips

DICK SYLVAN, W9CBT



"ONE THING I CAN PROMISE YOU IS REALLY HOT RADIO CONDITIONS."

we get to sit down, knowing we've left it high enough so the horses won't eat it.

One of them was in the barn all day because he was an especially bad boy, and he was yelling across the upper meadow to the rest of the herd, trying to get them to mess with us all day. For some unknown reason they ignored him and played in the sun.

The feed point uses open ladder line, calculated at 550 ohms using the *Handbook* tables for open wire feeds. The length had to be doubled from the east-west layout, and the method of tying the two feedlines together and using a grid-dip oscillator lightly coupled to the tickler coils showed no resonances in any of the ham bands, even with the ground rod-spark plug lightning drainer.

Now just because I had a house get hit with lightning and burn it all out doesn't necessarily mean I'm paranoid, but the last step was to install welding cable quick-disconnects, two males on the feedline, and two females on some cables going to the beehives. It even looks like rain and them puppies are twisted apart and the feedline lying on the grass.

Tune up is way different now the power line doesn't cross the antenna. The matcher actually sees a sweet spot in ham radio world. My first attempt had N1FSX out in Colorado give me a 4X5 on 20 in the late afternoon, and his buddy in sunny California says he heard me on the long path, 3X2 (beam facing west).

The next challenge is Field Day. I need my two grandsons down here, and maybe their mom who's a great cook, and we're going mountain topping! ■

What's Your Story?

Like what you're reading in this month's *K9YA Telegraph*? If so, you're in good company, as amateur radio operators in more than 100 countries agree with you. Know what else? Hams just like you write the *K9YA Telegraph*. Hams participating in the enthralling lifestyle that is the amateur radio experience.

Those operators want to read your story. Evidenced by your feedback and our expanding worldwide subscriber base we know we've hit on a winning formula: **YOU + K9YA Telegraph = A Great Read**. But without your side of the equation, it just doesn't add up.

Not sure of your writing skills? No problem, the *Telegraph's* staff will edit your manuscript. The important thing is to share your story. Remember: "A good story is a terrible thing to go untold."

http://www.k9ya.org/write_for_us.htm



Robert F. Heytow
Memorial Radio Club

www.k9ya.org
telegraph@k9ya.org