SK CC
Straight Key Century Club

The official newsletter of the Straight Key Century Club

Volume 9 Issue 3 **September, 2017**

Field Day 2017

So another Field Day is in the books and what did some SKCCers do? Here you are, this was Field Day for several members of SKCC.

Frank AA2XB #1681s sent along some great pictures of his operation with his friends.

After our group arrived deep in the State forest in upstate NY our leader Les, KB2KNX, SKCC 140, checked out the propagation by observing the direction of the smoke emanating from the grill.

Then Ken, KB2NBY, with his atomic fishing pole, who is able to leap tall buildings in a single bound and able to launch an antenna to 90 feet in the air, went to work.

Then Frank, AA2XB, SKCC 1681S makes a FB contact using his Icom-703 QRP rig , battery pack and J-38 straight key. Note his ground rod and radials for his Hamstick 20 meter vertical

Here is Ken, a USCG radio op. always prepared for rough seas, operating his Icom-706 and J-38 straight key.

When trouble rears its ugly head Les comes to the rescue.

Here Carl, K2MMW, an old Merchant Marine radio op. is swinging his Vibroplex bug. Note the absence of paddles which were broken many years ago while on shipboard and he now says he sends better without them.

We're here for the weekend and Anmari, N2YGG, keeps an eye on things while the rest of us are working hard (having fun) .

Hope you enjoyed my story.

The End-Until next year.

Submitted by Frank, AA2XB, SKCC 1681S

Ed….No doubt Frank and friends had a great time at Field Day 2017. We'll look forward to hearing about 2018 Field Day from Frank. Maybe next year we'll hear about YOUR Field Day experience?

KE8CEW Field Day 2017

Field Day 2017 was a great time for Greg KE8CEW #15805t and his son Jeremy KD8VSQ #13072t. Their setup was in a local camping park and was very impressive. They used a 30 foot portable tower trailer that supported a 2 element "crappie" pole 20m yagi and a 2 element modified 40m ZL Special antenna. The weather was perfect, sun and only about 75 degrees.

The station was a two transmitter station with both running QRO, transceivers, computers and of course using the

bandpass filters built by KD8VSQ and appearing earlier in issues of the *Rag Chew*. Interstation interference was not a problem with both stations running 500 watts.

The best part of Field Day was the camaraderie with many local hams showing up both

SKCC members and non-members. Greg and Jeremy did it up right when it came to eating. A most excellent smoked pulled pork was available along with many side dishes. Tanya KE8TLD, Greg's XYL sure made sure the food table was full of all kinds of goodies!

Greg's camper was se up and provided a great place

to gather and swap stories of Field Days past and enjoy that great food. Left to tight in this photo are Tanya KE8TLD, Ted K8AQM #1629s, Judy WD8LCH and Donna W8DIY #13166 and Jeremy KD8VSQ's leg! Show-off!

Lots of "radio talk" took most of the late afternoon away from operating. Sitting at the picnic table are Brian KG8CO #6362 (in the straw hat), Jeremy KD8VSQ #13072t (in the red shirt...a Field Day 2017 shirt!), Bill KD8TTM #11614 (Cabela's shirt), Stan W8ATE #13165 and Max W8KBW standing.

Here are the faces of the "guilty" not shown in the previous picture.

Don't know how many QSOs were made and really don't care, it was great fun and all of us are looking forward to Field Day 2018!

Field Day 2017 at AH6AX

Larry's 'Radio Ranch' (aka: AH6AX) was in full swing over the Field Day weekend, with six local SKCC members manning three stations under the ALOHA Hawaii callsign. Our illustrious crew consisted of:

Larry (AH6AX), SKCC 11165S
Jim (WA3MEJ), SKCC 13305T
Curt (WB8YYY), SKCC 2580S
Ron (AC2C), SKCC 2748S
John (N2JKA), SKCC 15058
Jim (K3YMI), SKCC 16055

We didn't set any world records (or even ANY record); however, our mantra was "HAVE FUN"… and we did! Between the burgers, brats, beans and snacks, sodas and beer – we actually made some Field Day contacts and we managed to pull in a respectable number. Look for us at the top of the list (not!).. We'll be somewhere in the 3E MDC. Sorry, but I never took a single picture during the festivities… lesson learned!

73!
Larry

Ed...Although no pictures, it sure sounds like it must have been a good time!

Tramming an Antenna Up

Getting antennas to the top of towers or side mounted can be a struggle, here is a great You Tube video of how the "big guys" do it. The technique is simple and can easily be applied to 30 and 40 foot towers.

https://www.youtube.com/watch?v=umMZaTVrYV4

and

https://www.youtube.com/watch?time_continue=2&v=gA0Z-fLyr5Y

Although this is a "super station" the principle has been applied at many stations….much cheaper than getting a crane!

SKCC and Great Lakes Hamcom

The newest major hamfest in our region will debut October 7/8, 2017 at Michigan International Speedway. The Great Lakes Ham Convention, GLHamCon for short. It aims to be one of the biggest and best Amateur Radio gatherings in the country.

Our Mission Statement

Who are we?

Great Lakes HamCon is being organized by the Great Lakes Amateur Radio Association. GLARA was formed to coordinate the activities of a consortium of local amateur radio clubs interested is supporting an event too large for one club. Proceeds from the Great Lakes HamCon will support amateur radio in the local area. GLARA is a Michigan non-profit corporation exempt under
section 501(c)(3) of the IRS code.

> GLHamCon is also the 2017 ARRL Great Lakes Division Convention.
>
> ARRL President Rick Roderick K5UR is attending.

SKCC will have a presence at this hamfest. The site will be in the flea market along pit row. This facility is "huge" and will have tremendous growth potential. Come visit the SKCC tables, (sites 1006-1007)rest your feet, swap lies with us, sign in and be there for the group photo. There will be keys to test (Viz Key will have a full display), some to buy (at least one Junker) and some to order. Don't miss this inaugural hamfest event! Contact K8AQM for more SKCC details at: k8aqm1629t@comcast.net

The W3NP 160 Meter Horizontal Loop Project

With the declining sunspot activity looming as we continue toward the bottom of this solar cycle and the resultant loss of reliable long distance propagation on the higher bands, I decided to try something I have always wanted to try, and that is to put up a full size 160 meter horizontal loop for use primarily on the lower bands from 160 through 30. I have a KLM-34A tri-bander up at 51' and a Cushcraft A3WS for 17 and 12 at 42' but having lived through several solar cycles in my 58 years as a ham, I knew they would be getting less and less use for the foreseeable future. Back in 1977 I took down my Mosley TA-33 and put up a 4 element 20 meter monobander when 15 and 10 were pretty much useless.

So, back to the loop – I got this idea in late winter/early spring and was hoping to get it up in the air before the leaves fully came out but that didn't happen. This turned out to be a slow time consuming process as I had to cut down some trees, trim some others, and then get 8 ropes up to support the loop before even beginning to thread the 500' plus of wire around the property. I could have done with less supports but wanted to make the loop as "near round" as possible.

I won't go into much technical or construction detail as you can search 160 meter "Skywire" or horizontal loop on the net and find out all you need in order to build the antenna and check out the experiences of others using horizontal loops. I have been using a Easy Hang slingshot for years to launch a sinker with fishing line but have since acquired an "Air Boss" antenna launcher from www.kr4loairboss.com and I am very impressed with it. Maybe I will do a review of the "Air Boss" for the next newsletter.

I had to take down my 80 meter center fed "zepp" as well as my ½ wave coaxial fed dipole for 160 (also used on 30 meters) to make room for the loop. Well, I could have left them up but didn't want them to interact with the loop. It would have been nice to have kept them up for comparative reasons.

I happened to have a large spool of #14 stranded copper wire with Teflon insulation and a box full of dogbone insulators as well as some older 450 ohm ladder line to use initially before installing 600 ohm open wire line when the antenna was near completion.

The only things I needed to purchase was about 1500' of 3/16" Dacron rope and a new set of latex bands for my Easy Hang slingshot. I also acquired a DX Engineering heavy duty 5KW remote current balun. A 1:1 balun is recommended for the lower impedance feedpoint of a closed loop antenna.

Using the standard full wave loop formula of 1005/freq as well as some suggested starting lengths for the antenna, I cut a piece of wire to 574' which should have been resonant just below the 160 meter band (1750 or so).

I found out that I didn't have enough room for that much wire, so I started with 525' and even that turned out to be way too long. The final length of the loop ***for me- here on my land- at my height*** turned out to be 464' with a 600 OWL length of 52.5.

The fundamental resonant freq on 160 is just at 1.9 MHz now with 80 coming in at 3580 Khz. The harmonic relationship seems to fall apart on 40 with it being resonant at 6.9 Mhz there. The bottom line is that my loop, unlike my many dipoles and wire antennas I have built over the years, does not follow the formula for length or show the same harmonic characteristics on all bands so, you may have to experiment and go the "trial and error" route. As I was going to use low loss open wire line along with a matching unit (tuner), I didn't need the antenna to be dead on all bands which would be pretty much impossible anyway. The feed-line

length will impact the impedance that your matching network sees. I pruned my feed-line for the best compromise length for all 11 bands that the loop might be useable on. I strongly suggest that anyone wanting to play with a loop antenna like this to keep extensive notes on the length of the antenna and feed-line vs frequencies of lowest vswr. I used my MFJ-259B antenna analyzer to keep track of where things were going.

I included a photo of the system I use for splicing, breaking the loop, or attaching the feed-line. It is simply a piece 3/4" OD plastic water tubing (available at Lowe's in 2' lengths) with some holes drilled in it and a waterproof/heat shrink butt connector of the proper size. Very easy to prune the antenna without untwisting and unsoldering the wire. I used regular cheap butt connectors while experimenting with length.

The dimension I used gave me a loop that was good for 160 through 6 meters, including the WARC bands and also 60 meters. The VSWR present at the ATU is below 10:1 on all of those bands except 30 meters. 160, 80, 20, 15, 10, and 6 meters are all less than 5:1. The Elecraft KTA-500 external ATU as well as the K3's built in tuner will make the rig happy on all bands including 30. The balun connects to the ATU via a 5' length of high quality RG-8 coax.

Since I have some high powered AM gear in the basement that I occasionally use, I added a knife switch to change the open wire line between the 1:1 balun and the Viking KW Matchbox for use on 80 and 40.

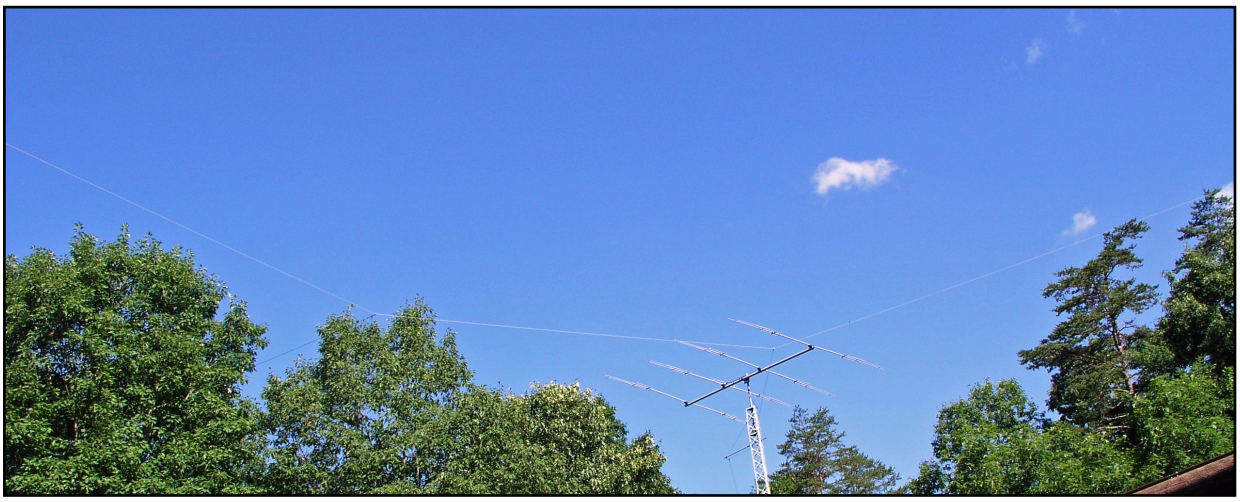
As a bonus I found the Matchbox when set to 20 meters would bring 30 meters down to 7:1 which the ATU liked even more. Note: I had 30 meters down to near 3:1 at one time during my experimentation but at the cost of other bands going high.

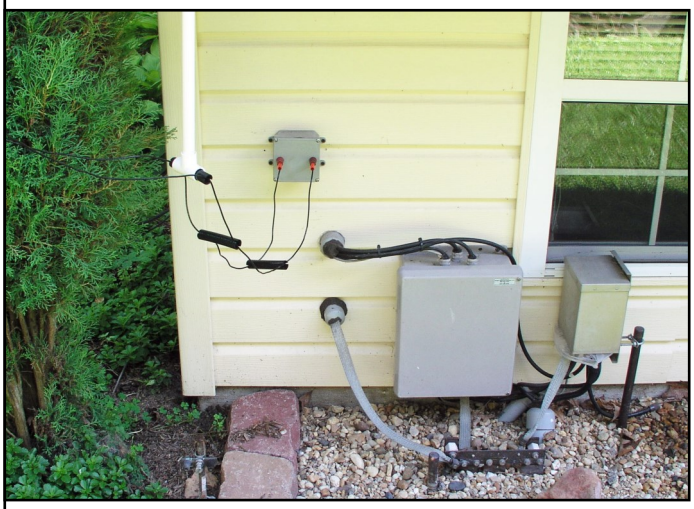
I have not had any heating of the balun or tuner even when running 500 watts – they run stone cold. The mismatch on the very low loss OWL is pretty much a non-issue. I use the 600 ohm (W7FG type) OWL as opposed to the 450 ohm ladder line due to it's lower wet weather sensitivity.

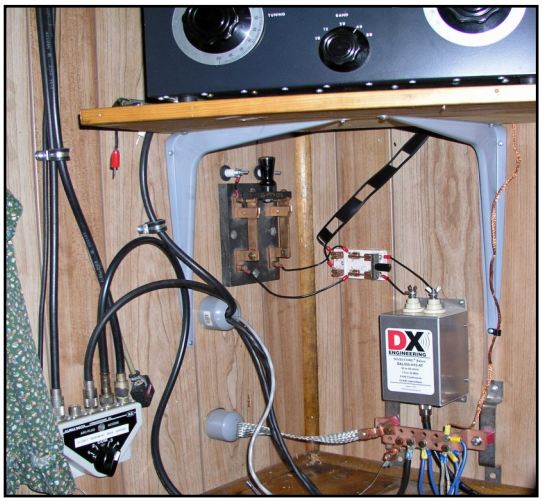
I have not had the chance to actually test the antenna on 160 other than to make a few close in contacts, but performance on 80 has been very good and I am extremely pleased with the way it works on 60, 40, 30, and 20. As a bonus, the loop beats or equals the yagis when short skip conditions prevail and with the recent sporadic E openings on 10, the loop came in as much as 4 S units over the beam regardless of which way it was pointed.
The loop is definitely quieter on receive than my dipoles were – at least here at my QTH.

The loop is up at an average height of 45' and is shaped somewhere between a jagged circle and an octagon. I am fortunate to have a lot of trees around the perimeter of my property. My lot is about 3 acres but most of it is heavily wooded.

As a side note: I am surprised that so many members don't have antennas up for 80 as that is a great low sunspot activity band, especially in the winter with good propagation even in the daylight hours. Even with a small city lot there are a lot of antennas that will work well on 80 with little space and can be made to be barely noticeable.







At my former QTH in Cumberland, MD, my lot was 60x118' and I had up a somewhat bent 80 meter dipole as well as a 160 meter Inverted L worked against a single insulted counterpoise wire hidden in a fence and a hedge. It worked surprisingly well.

A loop cut for 80 is really not that large and although it may be a cloud warmer or NVIS antenna on that band (whose low 80 meter dipole isn't?), it will do great on shorter range 80 meter work and should do very well on 40 and up where it will have a lower take off angle.

This article is not intended to be a technical treatise on horizontal loop antennas but is just a report on my experience with the particular one I put up. I have always enjoyed playing with new antennas or new ways to put them up. I am basically an experimenter at heart.

73, Dave – W3NP – 3182S

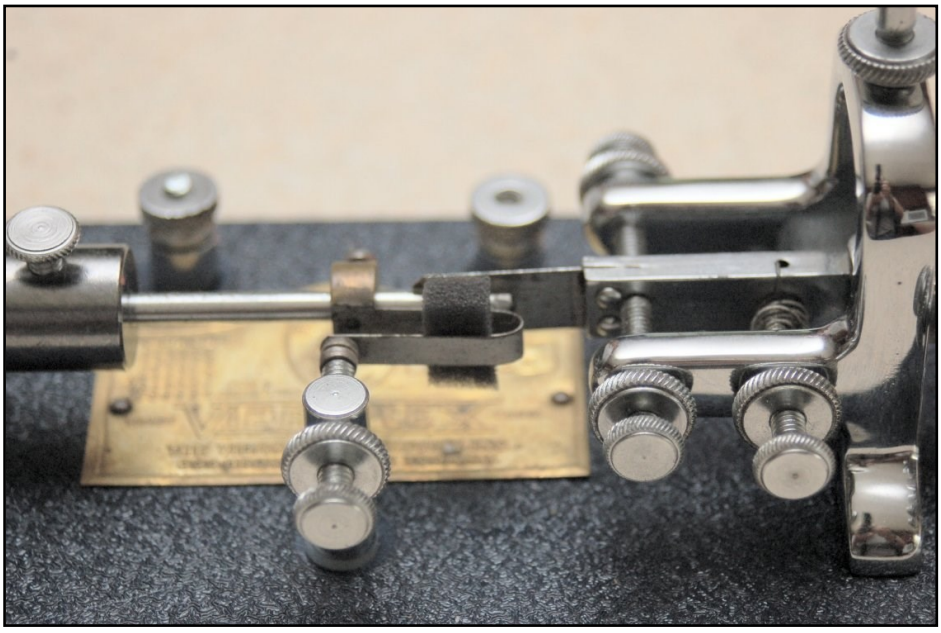
Ed….if you have been in any SKS, WES, K3Y or been on any SKCC frequency you must have heard/worked Dave. Dave always has a big signal and hears extremely well...a first class operator and station!

Try the Bug

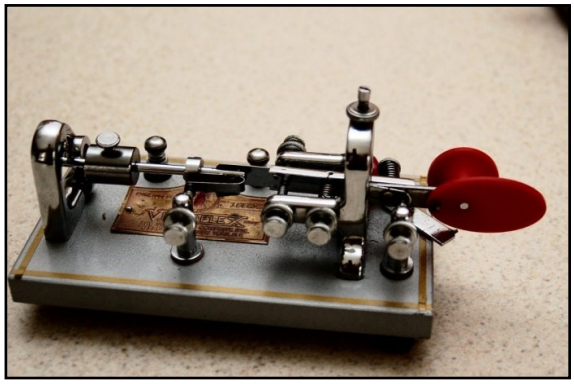
By Bob Swarm K3CKO

Have you always wanted to try sending CW with a Bug but can't afford $209.95 for a shiny new Vibroplex Bug? That was me two years ago. I had a Vibroplex Bug years ago, when I was a new General class operator in the late 1950's. But I couldn't make the fool thing do what I wanted it to so I gave it away. Then two years ago I spotted a Vibroplex Bug on eBay for under 50 bucks. It had a broken finger piece and paint job on the base was in bad shape. I thought I would purchase it and fix it up. It would be a nice decoration for the shack.

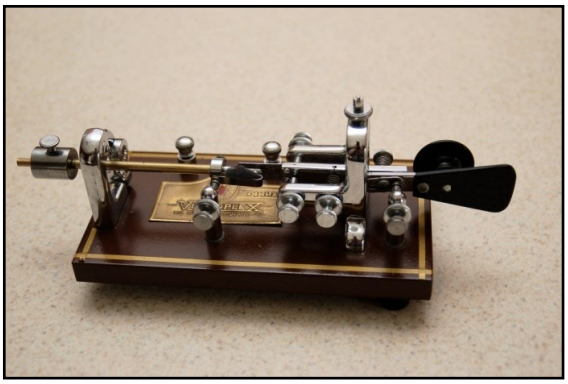
I disassembled the bug and used paint stripper to clean the base and repainted it with grey hammertone paint. I cleaned all of the hardware with the XYL's Wal-Mart jewelry cleaner and rinsed it well with water. When I put it together again it looked great. For the finger piece I went to the Vibroplex page and found they stock replacement parts for their keys except for the Champion and Blue Racer. The finger piece cost me $9.00. While I was on the Vibroplex page I found an article titled "*SEMI-AUTOMATIC KEY ADJUSTMENT*" and printed it out. You know what? The reason I couldn't master the bug back in the 1950's was because I didn't know how to set it up. It seems the two magic things to make a bug work are a .015" feeler gauge and a foam paint brush. When I got my finger piece installed I set up the bug per the instruction sheet. Wow! I can now send CW with the bug. The slowest speed was too fast for my 80 year old fingers so I fabricated an extension to move the speed weight out beyond the damper. That put the bug down in my 10 to 13 words per minute. I have been using this bug or one of the others in every SKCC sprint ever since. I have restored six other bugs since that first one. I have found that the same adjustments work on all Vibroplex and Speedex models. The spacing of the lever arm from the lever arm stop screw must be .015" and a small piece of foam rubber from a paint brush should be inserted in the dot contact spring to damp high frequency vibration that can cause scratchy dots.



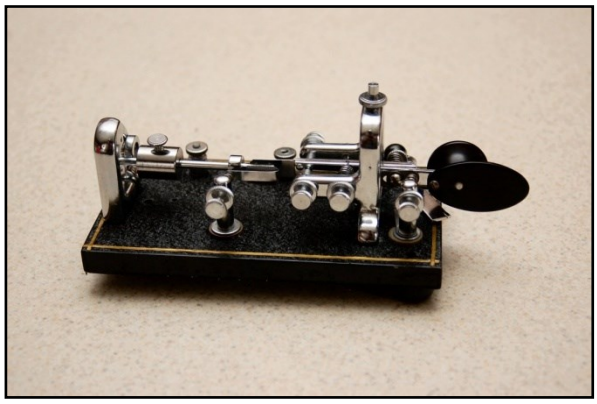
Note the Paint brush foam in the dot hairpin spring.



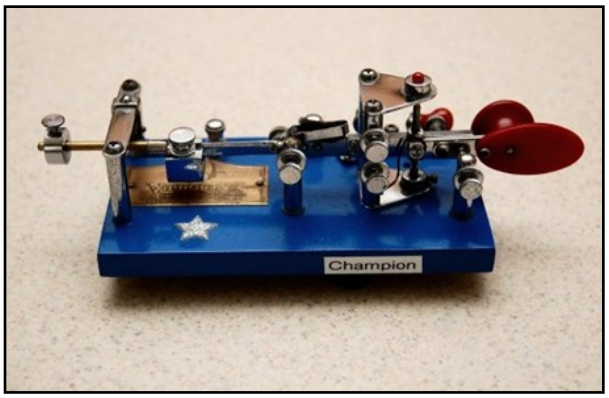
My first bug in grey hammertone and pinstripe



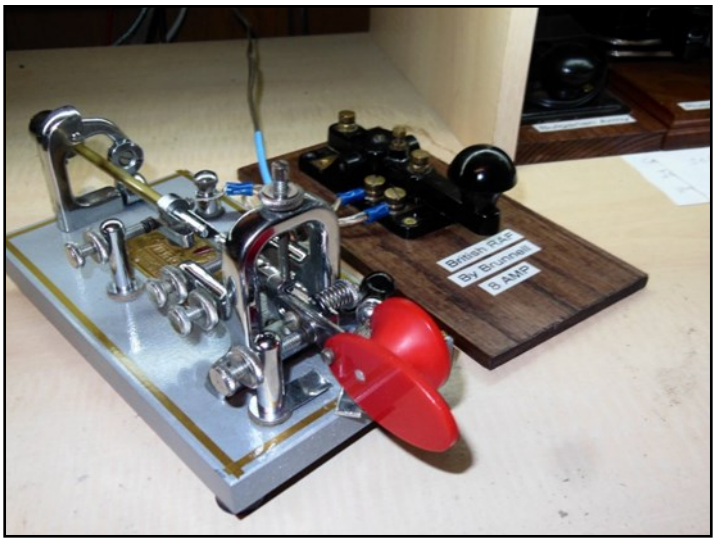
This bug is set up for 10 WPM.



Black wrinkle paint looks fine



This is a Champion set up for 10 WPM



I mount a Vibroplex Bug and a strait key in parallel so I can switch from one to the other as needed.

Get Yourself A Vanity Call

By Urb LeJeune W1UL urb@ham-cram.com

Introduction

When you receive your first call from the FCC it is sequentially issued depending on the class of your license and your call area. If you receive a Technician or General call in the second call area it takes the form of KD2NZZ. This is called a 2 X 3 call, that is, two letters before the number and three letters after the number. If your initial license class is Extra you receive a 2 X 2 call such as KA2BB.

Picking a Vanity Call

Once you have received your sequentially assigned call you can apply for a call to your liking, subject to certain rules. As a generalization, the higher the level of your license the shorter your eligible call signs. All classes of licenses can choose a 1 X 3 call such as W2ABC, the only limitation is that the call you are selecting is not currently issued or in the two year grace period.

The most common 1 X 3 calls are people's initials. My wife is Patricia K. Vogel and her call is W2PKV. The call of a SK (Silent Key) mentor or first name suffix, such as W2JIM, are also popular as are SK family members.

An Advanced Class (no longer issued) holder may select a 2 X 2 format such as NJ2UL, there are some limitations as shown in the resource list below. An Extra Class holder may select a 2 X 1, a 1 X 2 or a 2 X 2. Don't waste you time applying for any of the 1 X 2 or 2 X 1 calls. There are currently none available and when one rarely becomes available there may be 20 or more applicants for the call. When I obtained W1UL in 2012 there were 16 applicants for the call and the situation has become worse.

You can also apply for the call of a deceased member of your immediate family. It is a special application and must be appropriate for your license class. You cannot apply for your father's 1 X 2 call if you are a Technician or a General.

The next step is determining if the call(s) you want are available. Go to the first link in the resource section below. Build a list of 2 or 3 choices, although I must admit the last three vanity application I submitted contained only one choice and all were successful.

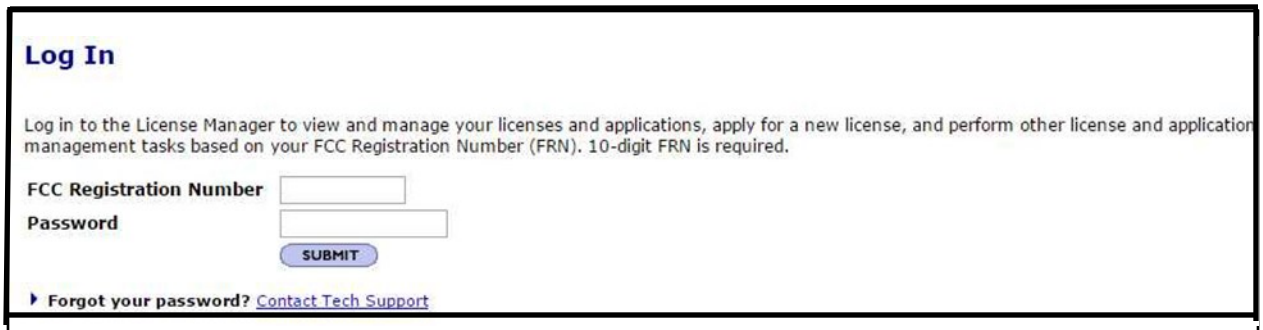
Resources

FCC lookup by call or name
FCC Vanity Call Guidelines
ARRL Website Click on the link Call Signs Choices not Available.
Wonderful Vanity Call Data Source

Actually Filing for Your Vanity Call

Go to:
Online application login

Figure one shows the login page.



Enter your FRN number and just continue on.

Do You Need Help?

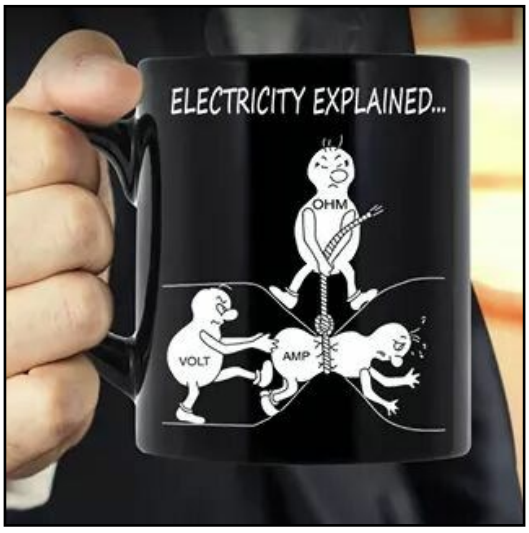
If the process seems too daunting, or you run into problems, or you would like an easy way to apply for a vanity call, I would be happy to file your application for FREE. All I need is your current call, your FCC password and a couple of proposed vanity calls listed in your order of preference. If you don't have, or don't remember, your FCC password email with your phone number or call me. I'll get back to you we can discuss the next step.

73 Urb W1UL urb@ham-cram.com - 609-937-5487

When Urb isn't writing articles for newsletters he is usually writing for http:ham-cram.com which is the best ham radio license preparation site on the Internet.

Amazon Smile Information

Clicking on https://smile.amazon.com/ch/47-1959776 will take you to the Amazon Smile shopping site and set your preferred Charity to SKCC.



Understanding

Many new amateurs are sometimes confused regarding the relationship between voltage, amperage and resistance. This relationship is expressed pretty clearly on this coffee cup!

I wonder if there are cups explaining series formulas and parallel formulas for voltage, resistance, amperage, capacitance, inductance and power?

Thanks Jeremy KD8VSQ #13072t for the photo.

40m "Death Ray" Antenna

In the Midwest we say "there are no meters like 40 meters." Why, because 40m gives us access to large populations of amateurs when we're trying to enjoy a day making QSOs in WES or an evening run at the SKS. There is much to be learned from the major contest stations that compete in the ARRL Sweepstakes. Here is a very old article (1983)written by Tim K3LR, about an extremely effective 40m antenna. By the way, it's used here at the Dit-Dah CW Gang station (aka K8AQM).

Sweepstakes Preparations
Tim Duffy, K3LR

It is not too early to start getting things ready for the 1983 SS! If you do your antenna work now you can take advantage of the good weather, and have plenty of time to experiment with your antennas prior to the contest season.

In our area of the country, 40 meters is the big QSO band for SS: some 70% of my QSOs are made on 40 meters. The most significant factor is the antenna, and although this may be the most productive band, it has the simplest antenna. 95% of my QSOs on 40 meters over the past three years have been made using a dipole at 35 feet.

Now the rest of the story ....

To have an effective signal on 40 meters, you must be able to dominate a 1000-mile diameter of signal area. This 1000-mile circle is important to us because it include the high-density Amateur population centers in W1-W2-W3-W4-W8-W9 and a part of WO. To understand how to dominate this area, take a look at the geometry of the signal path involved.

On 7 MHz, we reflect off of the F2 layer of the ionosphere, which is approximately 230 miles high. We must first go through the D layer (approximately 50 miles high), which absorbs 7 MHz energy. Our goal is to minimize radiation at "useless" angles and maximize radiation at those angles which improves our signal in the 1000-mile circle.

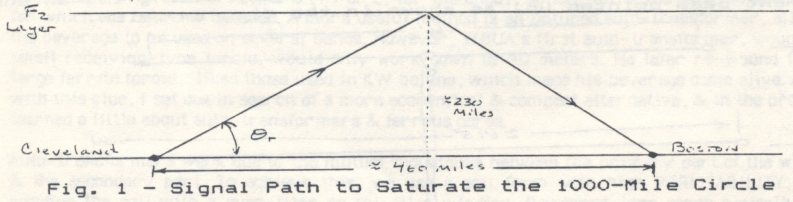


Fig. 1 – Signal Path to Saturate the 1000-Mile Circle

At the longest distance in which we are interested, about 500 miles, the lowest radiation angle that we need is approximately 45 degrees: we need an antenna that has good radiation between 40 and 80 degrees. The closer the station is to us, the higher is the required radiation angle.

A 4-element beam at 3/4 wavelength (100 feet) has -10 dBi gain at 65 degrees. A 2-element yagi at 100 feet also has a substantial gain reduction in the 40 to 90 degree range when mounted in the horizontal plane. What should our antenna be?

Contesters believe "in being loud," the Death Ray will give you a very loud signal in the footprint of 400-500 mile radius. From the midwest (southern Michigan) that footprint takes in the east coast, much of the south and west to Colorado. Does it hear any better than a regular dipole...no. This is an antenna designed for one purpose... 40m transmit gain within a limited footprint. That does not mean you signal stops at the edge of the footprint, just the gain it gives does.

For the technical types, here is the reasoning and math for Tim's "Death Ray." Basically you want a low antenna to give you a high angle of radiation (figures A on both sets of graphs). A low yagi would work well too but not everyone can put a 40m yagi up and then it would still be quite directional. The dipole at 1/4 wave height (roughly 35 feet) is the answer. Tim says to add a wire (insulated from the ground) roughly 5% longer than the dipole and about 7 feet above the ground. This gives you essentially a 2 element 40m yagi pointing straight up.

Here at this station the wire is only 4 feet above the ground and seems to work very well at that height. The actually dipole is an inverted V (at 30 ft) with the ends about 15 off the ground and the center using a 1:1 balun. There is a second high dipole at 60 feet available and some thought is being given to making it into a Death Ray antenna. Additional antennas are available for fast switching; a low modified ZL Special, 2 2 element 40 yagis, and a 40m bi-square….you just can't have too many antennas! All this being said, when it comes to state-side QSOs the Death Ray and the low ZL Special are the operators' favorites.

et: Monday 8:30 3825 KHz GO MAD RIVER! 5 Months 'til SS!

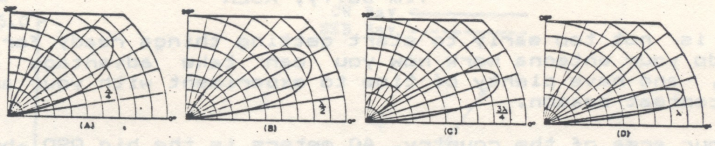


Fig. 2 - Vertical radiation patterns for yagi antennas at various heights above ground, as marked.

The antenna which shows good radiation at the angles that we are interested in is a dipole, mounted at a relatively low height to take advantage of the ground. A dipole mounted at 1/4 wavelength (approximately 35 feet) over perfect ground has +8 dBi gain at 65 degrees, a gain of +18 dB at 65 degrees over the 4-element beam!

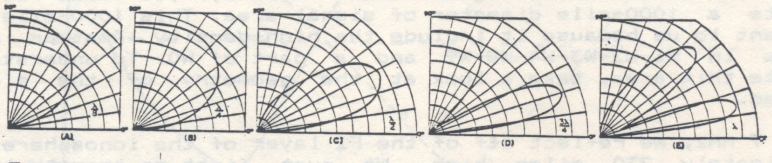


Fig. 3 - Vertical radiation patterns for dipole antennas at various heights above ground, as marked.

The earth is not a perfect ground, of course, so a reflecting element should be placed directly underneath the dipole, making the antenna into a 2-element beam pointed up, as shown in the diagram below.

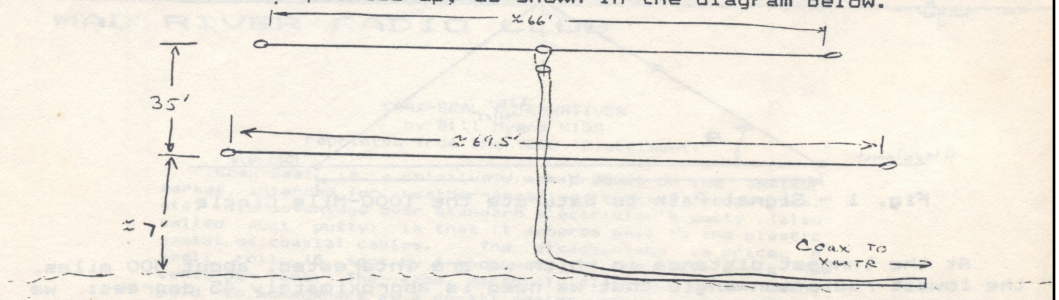


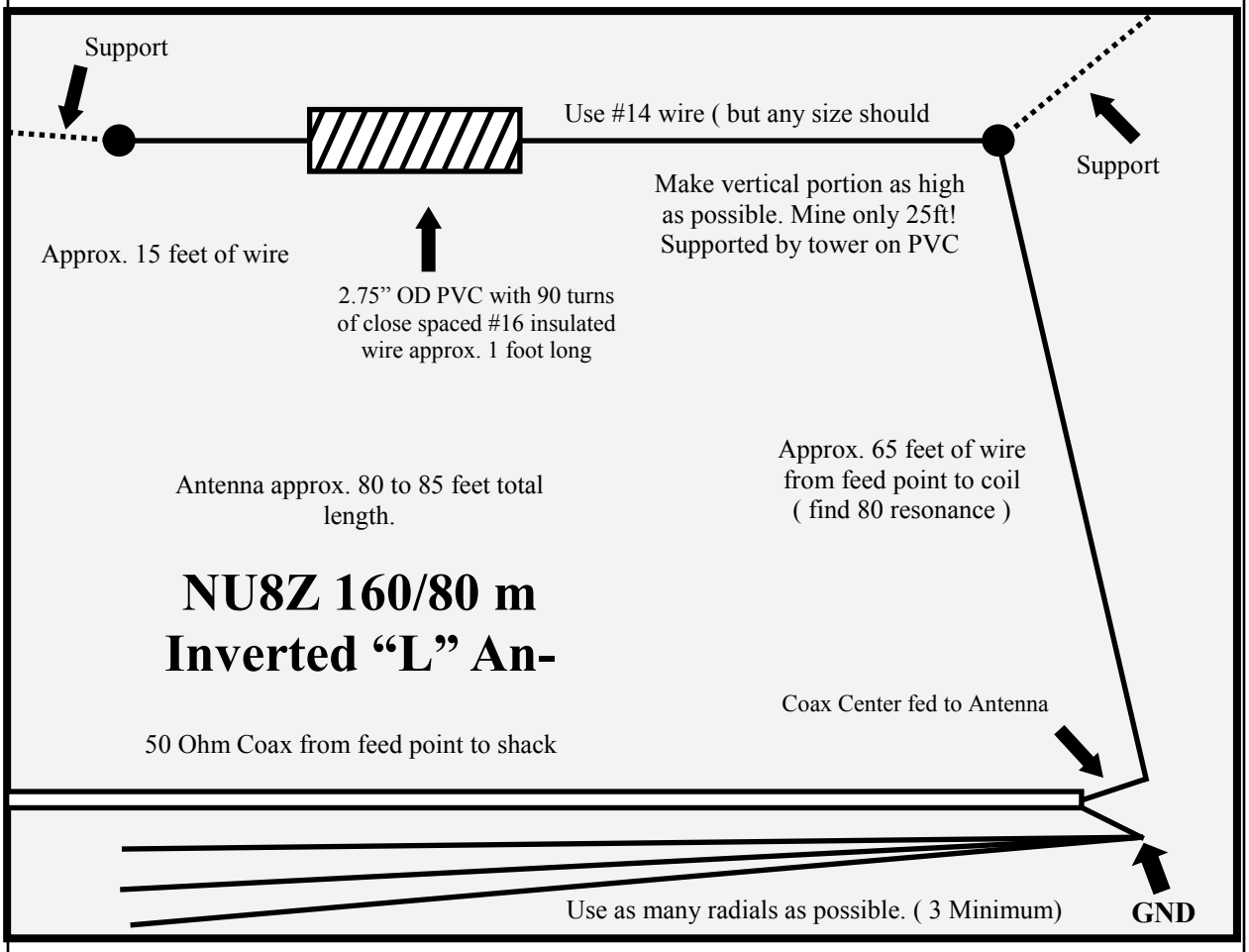
Fig. 4 - The K3LR 40-Meter "Deathray" Sweepstakes Antenna

A dipole mounted this close to the ground shows very little horizontal directivity (it is more or less omnidirectional), so our only concerns are to get it in the clear and as far as possible from other 40 meter and 15 meter antennas.

Final conclusion: this is a simple way to improve your 40m signal. Hope you can handle the pileup!

Adding 160m and 80m...Easily!

Ed...Here is a very simple and easy way for you to get on 160m as well as 80m with a very good signal. The idea comes for Mark NU8Z, #11237t. Mark is on the DXCC Honor Roll and knows what he's talking about when he says, "this is a very good idea."



With the summer coming to an end, it will soon be time for the low bands to quite down from the summer time static and for darkness to start displacing daylight as the days shorten. Not good for some things, but great news for those that want to work 80 and 160 meters DX. I live on a small city lot. It is not possible to have a full size inverted "L". I have solved this problem with the NU8Z shortened inverted "L" antenna. This antenna is loosely based on the old W9INN designs and the use of the co called "resonactor" traps. This antenna will get you on the band and allow to work both stateside and DX. I have been able to work about 120 countries on 160 meters in the last three years. It also works just as well on 80 meters. If you should decide to build this antenna and have any questions, please do not hesitate to ask me. Have Fun! NU8Z

Antenna Notes:

- I used two 6ft ground rods and 2 full size 1/4 wave radial bent around my fence line.
- May need to tweak dimensions. The position of the coil on the wire determines the 80 meter

- meter resonance point. And the number of turns on the coil determines how much wire you will need downstream of the coil to achieve 160 meters resonance. (See Diagram)
- Make sure the wire on the coil is close spaced. This means one turn touching the other. The only separation is the
- thickness of the insulation on the wire.
- The PVC coil is not critical. Dimensions may vary a bit, but will affect the length of wire beyond the coil. In general the coil has to be substantial enough to provide high impedance on 80 meters so that it functions somewhat like a trap or switch.

VE9AQM Trip

Your editor will be off on another operating adventure for the November WES. My friend VE9CB David #12520, has invited me to come use my Canadian call sign (VE9AQM) from his home in New Brunswick. David and I will operate as a multi-multi during this operation from his "stellar" DX and contesting station. I know New Brunswick isn't especially rare but should provide a nice multiplier during the WES. I hope to catch many of you during this trip. QSL to VE9AQM via the SKCC bureau or directly to K8AQM. I will QSL all QSOs to calls on file at the SKCC bureau. No eQSL nor Log Book of the World.

Dave VE9CB/W8SR #12520

Ted K8AQM/VE9AQM #1629s

KS8KCC, The Dit-Dah Gang...and "Cronies"

Getting together with friends is great but getting together with fellow ham operators is awesome! If you have worked any of the below calls then you may have worked us as a multi-multi team. We operate together often and meet regularly at a local "Mom and Pop" diner for an enjoyable dinner. WD8LCH, K2RLY, and KB8MXX are not SKCC members yet but we're pressuring them to join the fun.

Does your gang get together? Send along a photo and listing, I'm sure there are more out there.

L to R: WD8LCH, K8AQM, K2RLY, KB8MXX, W8ATE, W8DIY, KE8TLD, KE8CEW..KD8VSQ taking the photo, members not in the picture, K8KIC and NU8Z

Here is an interesting note from my friend David VE9CB/W8SR #12520. Got any ideas to help him out?

The "Buzz" Over My Tower
Or
"To Bee or Not To Bee"

Yesterday, Rick VE9HF came over to do some antenna work for me. I have a TH5 atop one of my towers that is not working, and I have to take it down to diagnose the problem.

So, as Rick is about to start climbing, he noticed a huge nest of hornets right at the top of my tower, just under the bearing plate, 70 ft above ground. The hornets were swarming around the nest, menacingly.

What a dilemma! While I have spray to destroy a hornet net, you can only use it within a few feet of the nest. Climbing the tower to do this would be suicidal - the surviving hornets would certainly find the sprayer and attack, and you should not risk rushing down a tower. Waiting until dark is not an option - climbing towers at night is just plain stupid. I reckon we'll just have to wait until a good frost, and even then, it's risky.

Bloody hornets!
73,
Dave VE9CB/W8SR #12520

SKCC Club Banners and Handouts

SKCC has made banner promoting the club which are available "free" to club members who wish to use them at hamfest (flea market or inside tables). These are vinyl banners 5' x 2' and 4' x 6' with grommets for easy hanging. The banners will be shipped in a tube container and should be returned the same way (SKCC pays you for the return shipping too!). There are three types of banners as shown below; two separate or one single banner, you decide which to borrow. We have three sets to loan and a geographical coordinator. Contact your coordinator to determine your date for borrowing and for more information. Promote SKCC at any and all amateur events!

SK CC
Straight Key Century Club

The Straight Key Century Club is the fastest growing group of mechanical-key CW operators in the world. Founded in 2006, it now has thousands of members world-wide who are dedicated to the use of straight keys, "bugs", and "side-swipers".

-- Membership is free.
-- Monthly Operating Events
-- Operating Awards: WAS, DX, Ragchew, QRP MPW, etc.
-- Quarterly Newsletter
-- QSL Bureau
-- 24-hour Scheduling/Chat page: sked.skccgroup.com
-- Please visit our website at *www.skccgroup.com*

Coordinators

East...Phil N1DN
West…Pete NM5PS
South...Randy KB4QQJ
Mid west…Ted K8AQM

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Ed...This article appeared in 73 Magazine back in February 1984 and was written-up by W4HDX. Here at K8AQM we use modified versions of this antenna (wires cut for the specific bands) on 30m and 80m and they do work extremely well. This will be an edited version of the article, check out the original if you can for full details. NU8Z Mark #11237t, also uses this antenna and Ken N8KR #7599s also used this antenna in the past.

This Antenna Is Too Good To Be True

It's cheap, it works well on all bands and it radiates a super signal!

Would you like to have an antenna that is capable of working all the HF bands, or any combination of the HF bands including the new WARC bands, with excellent results, at a fraction of the cost of any of the commercially-available multi-band antennas now on the market? Would you also like to have an antenna with an extremely low noise factor? I'm about to describe an antenna that is just what you've been looking for.

This antenna is a combination of the old reliable Zepp with the addition of a balanced, shielded feeder system which has been described in various articles in past years.

This antenna has been in use at this QTH as well as other locations for over two years and has yielded many fine DX contacts and many good reports stateside.

To determine the comparable merit of this antenna, I erected separate dipoles cut for the center of each band and fed with a single coaxial cable. Then I connected all antennas so they could be switched rapidly to determine the comparable signal strength of each as compared to the Zepp antenna.

In addition to the favorable signal strength comparisons, I also found that the noise level on the Zepp antenna was as much as 5 S-units lower than the noise on the cut-to-frequency dipole with single coax feed. I noticed this particularly on

Desired Bands of Operation	Length of Each Side of Antenna From Center to Each End
160–10 meters	108 feet
80–10 meters	54 feet
40–10 meters	27 feet
30–10 meters	18.7 feet
20–10 meters	13.5 feet
17–10 meters	10.4 feet
15–10 meters	9 feet
12–10 meters	7.8 feet

the model of this antenna which was erected inside the attic of the house in close proximity to the ac wiring of the building, where the noise level dropped from an S-7 on the regular dipole to an S-2 on the Zepp antenna.

To erect this antenna, you simply figure the length of each side of the flat-top from the center to one end by using the figures shown in Table 1.

This antenna can be cut for operation an any combination of the HF ham bands, including the WARC bands which have not yet been released. For example, if your space is limited, you could put an antenna in the attic of the house, as I did at one location where I had an attic length of only about 30 feet, by figuring the antenna for operation on the bands from 30 through 10 meters, resulting in a length each side of center of 18.67 feet. Then I ran the wire in a Z configuration through the attic to compress it into the available space.

I have used various configurations on this antenna, such as the halo and the inverted vee, and all give good results. If you can get the wire running in a fairly straight line, though, your radiation pattern will be more predictable.

The flat-top portion is designed so that it is non-resonant on all bands of operation, thereby avoiding any extremely high or extremely low impedance points at the feedpoint. It is designed to be resonant between the one-quarter, half, three-quarter, and full-wave points on each band, thereby presenting an impedance to the antenna tuner which is well within range of the tuner on each band and will not cause any loading problems. An antenna tuner is required which has a built-in balun or you must use a 4-to-1 balun at the bottom end of the line if you don't have one built in the tuner itself.

The feedline is made of two runs of RG-8/U cable for powers up to 2 kW PEP, or for low-power operation under 100 Watts output, RG-58/U cable may be used. The lower loss of the larger cable is to be desired, however, even if low power is used.

At the top end of the feedline, you connect the shields of the two coax cables together but *do not* connect them to anything else. Then at the bottom end of the line, the shields are tied together and connected to the ground connection in the shack and to the frame of the tuner.

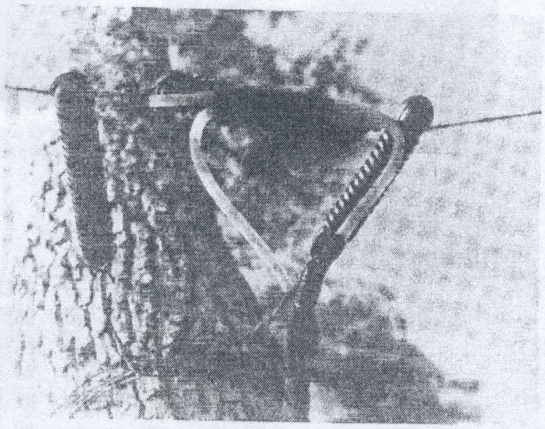
The inner conductors of the coax cables are tied to each leg of the antenna wire at the top of the line, and at the bottom end of the line they are connected to each of the balanced-output terminals of the antenna tuner.

The feedline can be run anywhere—underground, through metal or vinyl conduit, or in the open. The advantage of this arrangement, however, is that unlike the old open-wire feedline previously used on Zepp antennas, it does not have to be kept clear of surrounding objects and is not affected by anything it lies against.

There is only one precaution that must be observed, and that is to cut both runs of the cable exactly the same length. They do not have to be run together, however, as the shield on the cables provides exact electrical separation of the inner conductors even if the two cables are widely separated.

As to the length of the feedline, I found that best results were observed with line lengths of a little more than one-quarter wavelength at the lowest frequency of operation (or anything longer than that). Try to avoid making the feedline resonant at any particular frequency you are operating on, particularly the quarter-wave points, or you may have a bit of trouble tuning on this band. Optimum length seemed to be about 55 feet for 80-through-10-meter operation.

As for the mechanical construction, it is a good idea to use a long insulator, the same type used on the ends of the antenna, at the center of the antenna. Then slip the end of another insulator of the same type over the wire on either side of the center insulator, coming off at right angles to the wire and tying the support wire to these two side insulators so that equal pull is achieved on either side of the center insulator. Then



Center support and coaxial connections.

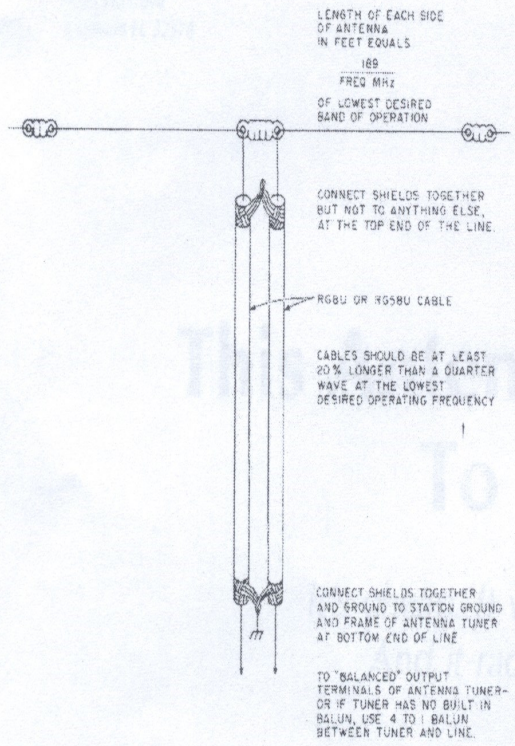


Fig. 3. Allband trapless antenna for HF.

at the point where you need to support the two coax cables, just strip off about 2 feet of the braid, leaving the plastic inner insulation, and bend this part along the center insulator on each side and tape securely to the insulator. This will make a very solid support for the coax cables and will prevent wind damage.

It is also a good idea to bring the coax up the support mast a little higher than the antenna wire and bend it over in a loop and down about a foot or so to prevent the water from leaking into and running down the inside of the shield on the cables.

To separate the braid from the inner conductor on the coax, strip the outside plastic covering off about two feet from the end, then take the end of the shield and push it down, compressing it so that it becomes larger in diameter. Then take an awl or the tip of a small screwdriver and carefully spread the strands of the braid apart, opening up a hole in one side of the braid. At this point, bend the coax in a U shape and pull the plastic insulated center conductor out through the hole in the side of the braid, U-end first. This will eliminate the need for making a solder connection directly next to the plastic where it might create a weak spot.

I have used this antenna in various situations cut for all different combinations of bands and have had excellent results with all of them. I have also made up a portable version of this antenna using stranded insulated wire such as zip-cord and RG-58/U cables which I use in conjunction with a small antenna tuner for operation on 20 through 10 meters. This one is only 13.5 feet long either side of center with two runs of coax 20 feet long. It is ideal for stringing up in a motel room or apartment by supporting it with nylon fishing line. Just keep the antenna out a foot or so from the wall and support it by anything you can find to tie it to. Try it. You'll like it!■

Ed...Sorry the article isn't all that clear, scanning from a photo copy (old one too) leaves a lot to be desired!

The antennas really do work on the bands they were made for (30 and 80m). Here at the multi-multi station, antennas that cover more than one band cause interstation interference so mono-banders only are used here. With this antenna a 4:1 balun is used at the station, no antenna tuners are used. A 17m version of this antenna will be in place for K3Y.

I see that W4HDX is an expired license (2013) so it may be impossible to contact W4HDX. If you need a copy of this article issues of 73 magazine are available on the web or I can supply a photo copy of my photo copy.

Tuning a Yagi...the Easy Way!

I like to build antennas. Using EZNEC I have designed and built and designed seven different monobanders from 40m-6m. Although all checked out beautifully on the computer, not one of them was "perfect" when installed on towers! Close-by antennas, guy wires and building all affected the original design! I got tired of climbing lowering and retuning the elements and matching section. I can live with anything below 1.5 to 1 but beyond that...no way! Getting older has seriously affected my

climbing but has made me a bit smarter. With the help of my friends Jeremy KD8VSQ #13072t and Greg KE8CEW #15805t, I now have a new system. Greg redesigned and greatly improved an old trailer with a 30 foot aluminum tower that we now use to preset antennas "before" tramming and lifting up a tower into place. Of course that tower trailer is also used for Field Day and other field activities. Now EZNEC designs and KE8CEW, KD8VSQ and K8AQM "tune."

San Francisco Bay Area 2 M CW Rag Chew NET

We are looking for new members to join our 2 M CW Rag Chew Net. The net is not affiliated with any club and is simply Hams getting together to rag chew on CW. If you enjoy CW and want to improve or maintain your skill level we want you.

Our CW net runs daily accept Wednesday and Sunday on 147.450 simplex at 4 PM. You will need an all mode radio with 2 M capacity. We start on FM on voice to check in then go to CW then come back to FM to finish up and sign off. The net runs for 15 minutes to a half hour depending on traffic. We are operating from Hayward, Ca.

We had five members and they have all dropped out for various reasons. We would like reactivate the net to get back to 5 +/- members to join in. Is this you or do you know someone that might be interested? Please contact me (aa6mk1@gmail.com) for further information or join us on the air.

Hope you will join us. Bring a friend with you.

73,
Mike Kelly AA6MK
aa6mk1@gmail.com

FlexRadio...uh, oh!

Ed note… a bit off topic but certainly fun to read...tnx W8ATE #13165 for the chuckle!

July 27 2017 - Pornography has long been blamed as the top source of distraction in the workplace resulting in reduced worker productivity. Thanks to Austin Texas based high tech company FlexRadio Systems, an amateur radio application is quickly becoming a major distraction that may give porno a run for its money. Since the release of the company's latest version of its Smart SDR v2.0 software, amateur radio operators (aka Hams) are using the software to login to their radios from workplace to their homes. IT managers are baffled over the dramatic increase in requests and modest increase in streaming from employees' workstations and tablets and may even be concerned with any security ramifications.

Reports from all over the country and overseas indicate employees are missing meetings, taking longer lunches and breaks, staying behind locked office doors. Last time a craze like this happened was the release of Pokemon. In one incident Atlanta police had to be called late yesterday to break down the door of one office worker who was arrested and later released. The workday for this high-tech firm ended at 6 PM local time but not for Fred. The worker's full name is being withheld at this time. Co-workers and security staff tried for several hours to get Fred to open his door. Fred would not respond but they hear him talking to someone and what was described as "strange codes" as Fred would occasional yell "59 59 73 and CQ. Fearing he was suffering some kind of health issue or what one unnamed co-worker suspected he's a Russian spy, the police were called along with paramedics. When all negotiating attempts to communicate with Fred failed as he just kept repeating, "CQ, CQ, CQ", policed busted the door entering the office to find a startled Fred with headphones on his head. When officers saw he was no immediate threat and after the paramedics checked him out ok Fred was immediately handcuffed. What was thought a medical emergency was now a police matter, Fred was taken into custody. He was heard saying as he was escorted out of the building to the police car, "It's only radio, Ham Radio Matters". Then blurted more coded messages, "where's maestro, I want my maestro".

Fred was detained by Atlanta police overnight for observation and release this morning into the custody of his wife. We have learned there will be no charges filed as it was a big misunderstanding, besides Fred has his wife to deal with. A crowd of two people with "Ham Radio Matters" t-shirts were there to greet Fred and he left county jail with his wife tugging him by his ear.

If you have heard of similar accounts please report them here. What is this phenomenon? Are these secrets codes communications a prequel to an alien invasion?

When this reporter attempted to contact Flexradio Systems for a comment, there was only a recorded message where it sounded like a big party going on, a celebration of some kind, then you hear someone say, "Tim is finally getting that drink and no we have no release date for version 3". Whatever that means.

Upon further investigation (ok I Googled it), these ham radio people use their radios to talk to each other. Go figure. No security threats, no alien invasion. Just some *fake news, created by VE3CKO.*

N4OW

Ed...Al has one of the consistent big signals heard during the SKS events. Here in Michigan N4OW can be counted on for an FL multiplier often on at least two bands. Check out Al's bio I snagged from QRZ.

First licensed in 1955 - KN4DAS, 1956 General Class K4DAS. Extra Class 1972 - Changed call to N4OW.

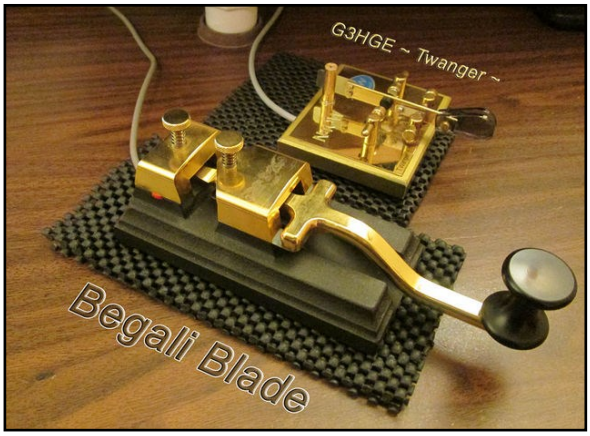
SKCC 11375 S, NAQCC 7700, ~~ A1-Op, 5B DXCC, 5B WAS, CW DXCC No.57 ~~

USAF 1963 to 1967 - Bitburg AB, Germany (F105D/F105F/F4D) Radar/Fire Control Tech.

1967 to 1985 Avionics Tech National Airlines ------ 1989 to 2009 Radio Tech , Miami Dade County, Florida.

If you enjoy CW and like working with a Straight Key, Bug or Cootie, Join SKCC, it is a great CW Club !

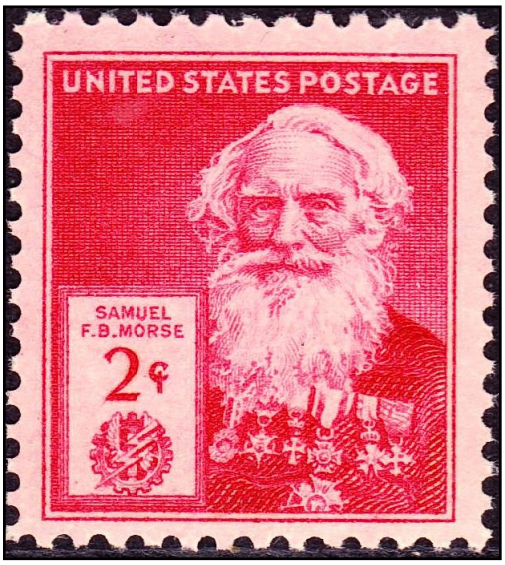
Al's very "clean" and efficient station, note….no paddle shown for DXing!....ed



"TWANGER" Side Swiper / Cootie Key made by Tom, G3HGE (This one is No.60) Begali "Swing" (Sideswiper/Cootie) A very fine key to send on.

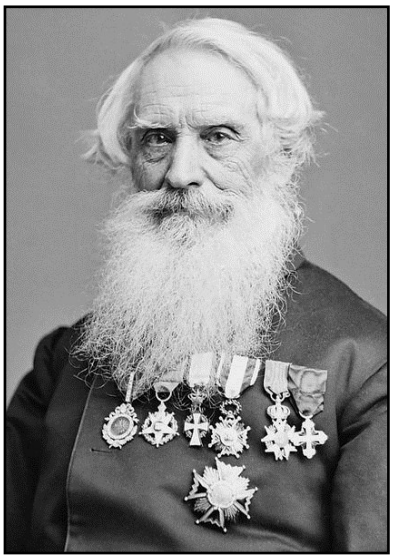
Al says, "My new 80 meter loop, elevated Section all other parts run on the top of the wooden fence. A big improvement over the Hustler Mobile I was using. Loads well on 80 thru 10 with the FT 950 internal tuner. Adding the MFJ 914 Tuner extender the loop loads on 160 and 6 meters. Fed with a 4:1 balun and a short run of 450 ohm ladder line."

Ed...Nice antenna setup for those in tight places...loud in Michigan!



Ed... Never saw this stamp before but must be very old for the $.02 cost of postage.

Bet these medals are all for his contribution of the development of "Morse" code.



K5BZH

Ed...Here is another signal often heard here in Michigan. Jim is often worked on 80m which speaks well for his station to hear us and for hearing him. Again, his bio snatched from his QRZ page.

My first rig was homebrew, it was made out of cardboard, hung under my handlebars. The knobs were also cardboard, cut in triangular shapes, held on the "front panel" with bent straight pins from my mother's sewing basket. I was about 5 years of age and living with my parents and brother at the Shell Pipeline Station near Eldorado, TX in the late 40s. There were 5 kids living in the housing area. Apparently one of them had been exposed to ham radio, probably a mobile station. Most of us had "handle bar rigs." Wish I had a picture to show off. Move forward to the 21st century, at least 3 of those 5 kids have ham tickets, all extra class. One we know didn't develop an interest. The other, a YL, we don't know about.

My "real" interest in amateur radio developed when I was a youngster in the fifth grade after my father had retired and we had moved three miles east of Goldthwaite, TX, to a 151 acre farm. Max Donnell, W5HSE, of Brownwood, TX, administered my "mail order" exam. The ticket with the call KN5BZH was issued by the FCC in July of 1955. I was 11 years of age. Don Fox, KN5BBM, of O'Brien, Texas, provided my first on the air contact on 80 meters at 8 a.m. CST on 02 AUG 1955. Most likely my code was the sloppiest he had ever encountered, I was a pure case of nerves. It was his QSO #207. Don's transmitter and receiver were both homebrew. His QSL card (now framed) is now more prized than any of my DX cards.

During my novice years I was able to use a rig my brother, W5FIT,owned and graciously shared with me, this was the first RF emitting rig that I used. The receiver was a Hallicrafters S-40B, the transmitter was an Eldico TR-75TV. Maybe not a "choice" setup, but significantly better than the typical novice station of that era. The transmitter was a two stage affair, it used a crystal controlled 6AG7 Colpits oscillator driving a Class C 1625 final. Eldico advertised it as using a pi-network, not true, it used plug-in coils that were link coupled. The final had a LC network that was fed to another network by the use of link coupling that served as an antenna coupler. To change bands one needed to swap out 3 coils and reinsert the links. Not a bad old rig though. It had 8 crystal sockets that allowed one to quickly switch between several rocks. Our antenna was a Windom feed with 300 ohm twinlead. The typical novice rig in 1955 was a Hallicrafters S-38C and a Heathkit AT-1.

After a year as a novice, I acquired my conditional license ("mail order" general that existed back in those days for folks living over 125 miles from an official FCC testing center, the exams were sent via U.S. Mail in sealed envelopes to be handed to an amateur that met the FCC requirements to administer the specific exam).

Many years later I upgraded to advanced, then extra. Somewhere on the way I acquired a First Class Commercial Radiotelephone ticket.

Upon graduating from Goldthwaite High School in May of 1962, I elected to join the Navy. After recruit training in San Diego, I was sent to ET School at Treasure Island to gain the required skills to become a Communications Technician (CTM). After graduating I was sent to NAVCOMSTA in Guam where I signed the club call KG6AAY. My next tour was at the NAVCOMSTA at Adak, Alaska where I spent many off duty hours operating KL7AIZ.

After being discharged from the regular Navy in 1966, Carol Jan Carter (courted her on the air from KL7AIZ) and I were married. We are still together, have 4 grown children, have lived in Texas, Alaska, and Tennessee. Carol's call is WD5DCZ. She isn't on the air a lot, but she does chase states (close to a WAS) plus a little DX.

Like many others, I had periods of inactivity, but somehow I always found my way back to the ham bands. Even with all of the changes, there have been many, amateur radio has this attraction that never seems to disappear.

My professional life includes Texas Nuclear, Austin, TX; Collins Radio, Dallas, TX; Texas Instruments, Austin, TX; RCA Service Company, Fairbanks, AK; Texas Instruments Austin TX; Texas Instruments, Plano, TX; Texas Instruments, Dallas, TX; Texas Instruments, Johnson City, TN; Texas Instruments, Lubbock, TX; Motorola Fort Worth, TX; Motorola Austin, TX; and back toMotorola Fort Worth, TX where I retired with 21 years of service from Motorola as a test engineer.

In the fall of 2003, after retiring from Motorola in Fort Worth, we moved back to my old hometown (Goldthwaite) in central Texas. My radio activity reached significant levels again in June of 2004. For the first time I started chasing awards. I completed a mixed mode WAS, WAS-90, WAC, and confirmed 73 countries towards a DXCC using a GAP Eagle DX vertical antenna from that QTH.

In July of 2005 we relocated to the Texas Panhandle. Got back on the air in August with a wire in the attic and a 20 meter dipole tacked to the eaves of the house, later I erected a 12AVQ vertical, then a 40 meter dipole. Worked All States on CW from Amarillo plus Worked All States on SSB. Like to chase U.S. counties too. My Mixed Mode DXCC was awarded September 2006. Relocated on the east side of Amarillo's Airport in the summer of 2009 where I am currently using a ground mounted 14AVQ vertical. Am 15.5 miles from our previous QTH by road. This change moved us from Randall County to Potter County.

Current focus is a 5 Band WAS

Currently have over 1200 U.S. counties confirmed, lots left to chase. Thanks to my good friend Mike Heenan, W7MH, we worked together at NAVCOMSTA in Guam, I now have Mariposa County California confirmed which completes California. Wish I could say the same about Texas.

73,

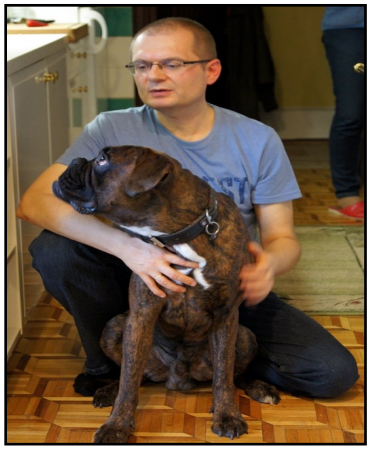
K5BZH

FISTS# 11526. CC# 1929. SKCC# 447T.

SKS Eu

Ed...The SKS Eu is the first Thursday of each month, check the SKCC homepage for the exact times, rules and other important information. Basically the SKS Eu is run the same as the SKS and is quite an enjoyable event. The following pages are QRZ.com bios of some of the regulars you'll run across in this event.

SP2DNI



Mariusz and his dog Jiim

Hello, my name is Mariusz. I was born in 1967. I have been licensed since 1990.

I'm a big fan of working **QRP CW** (with **5 Watts** or less). Sometimes (when there is poor propagation) I increase the power a little. The station is quite basic. I using simple wire and vertical antennas. Member of SKCC #14331C and FISTS #18176. I only use a straight key, bug or other mechanical device.

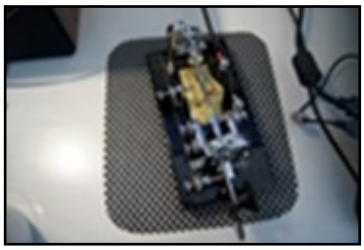
My primary transceiver now is a K2 built in November 2014. It really is the perfect QRP radio. Crystal filter works perfectly! Audio filter (KAF2) also works great.

In addition, I installed the K6XX CW Tuning Indicator. Very useful.

I like to use straight keys and bugs. Most often I use old Soviet Army **TK** Straight key and TKF keys were manufactured in Cherkassy, Ukraine, for the Soviet Army. It has silver contacts. Key got the basis of stainless steel. I glued it with double-sided tape to the desk. Now works really well. I like the work of TK. I use also from time to time the **Junker DBGM** Straight Key

Increasingly (but still a little clumsy) I use **Vibroplex 100th Anniversary Original** Bug (No. 100A-364):



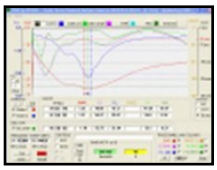


Same movement and parts as Vibroplex Original Standard model, but with "japanned base" (high-gloss black lacquer finish with gold-leaf and stripe pattern). Works very precisely. Good bug.

Homebrew GP for 20m band. Monoband vertical antenna for 20 m band (full size λ/4 ground plane antenna with 7 radials λ/4 sloped down about 35-40°).







Aluminum pipe (from λ/2 CB antenna) ~5.10m long and stranded copper wire 4mm^2 (~12 AWG) 5.15m long. SWR: 1.25@14000kHz, 1.18@14240kHz, 1.21@14350kHz.

Sloping Trap Dipole for 40m and 30m band. Model: Kelemen DP-4030-H. Length: 16.8m.





PVC-coated copper wire - cross section: 2.5mm^2 (~14AWG). Current balun 1:1. Trap coils made from Teflon cable, have a high Q and therefore low losses. Antenna sloping at an angle of about 20-25 degrees from horizontal (10m up side and 3m down side). SWR: 1.9@7000kHz, 1.4@7100kHz, 1.8@7200kHz, 1.4@10100kHz, 1.35@10125kHz, 1.4@10150kHz.

GM3ZDH

Ed...Meet Robert Dixon. Another very active of the SKS Eu operators, Robert is often mobile cw and a very nice DX catch as well as rag chewing with other SKS members. Nice to have these biographies available on QRZ.com.

SKCC- 6027C

Introduced to Amateur Radio by stumbling across AM QSO's on 7MHz when a young teenager. gained my license in February 1970. Served as Radio Officer at WickRadio/GKR then manager at the same station and at ObanRadio/GNE.

In 1977 moved back to Glasgow to the Ship Radio Inspection Office so beloved of the many who took their Morse test there and in the various temporary morse-testing outposts where Morse testing was conducted from time to time! Was instrumental in introducing the concept of Morse testing at various rallies.

Morse Testing at the Scottish Amateur Radio Convention
Cardonald College, Glasgow, 1983

GM3ZDH

Professionally involved in Maritime radio since 1972, took leave of British Telecom in the Autumn of 2000 to run own business for 10 years and now slowly winding down towards retirement (UK government permitting) and working part-time in Community Safety with a Scottish Local Authority.

Primarily active on HFCW, particularly with **SKCC**, also active on vhf/uhf FM.

Bob on occasion shows up as EA6/GM3ZDH from the relatively rare SKCC DXCC location of the Balearic Islands and his QTH on the Island of Mallorca. The next scheduled visit to the island is not until Christmas and New Year when he should be active from around 19th December until 7th January, which will include the January 2018 SKSE.

Ed…..The following "story" was sent to me via K8TEZ #8426t, Larry. It may or may not be true but it sure is a good story...TKS Larry!

THE CAR RADIO

Seems like cars have always had radios, but they didn't. Here's the story:

One evening, in1929,Ttwo young men named William Lear and Elmer Wavering drove their girlfriends to a lookout point high above the Mississippi River town of Quincy, Illinois, to watch the sunset. It was a romantic night to be sure, but one of the women observed that it would be even nicer if they could listen to music in the car. Lear and Wavering liked the idea. Both men had tinkered with radios (Lear served as a radio operator in the U.S. Navy during World War I) and it wasn't long before they were taking apart a home radio and trying to get it to working a car.

But it wasn't easy: automobiles have ignition switches, generators, spark plugs, and other electrical equipment that generates noisy static interference, making it nearly impossible to listen to the radio when the engine was running. One by one, Lear and Wavering identified and eliminated each source of electrical interference. When they finally got their radio to work, they took it to a radio convention in Chicago.

There they met Paul Galvin, owner of Galvin Manufacturing Corporation. He made a product called a "battery eliminator," device that allowed battery-powered radios to run on household AC current. As more homes were wired for electricity, more radio manufacturers made AC-powered radios. Galvin needed a new product to manufacture. When he met Lear and Wavering at the radio convention, he found it. He believed that mass-produced, affordable car radios had the potential to become a mass business. Lear and Wavering set up shop in Galvin's factory, and when they perfected their first radio, they installed it in his Studebaker. Then Galvin went to a local banker to apply for a loan. Thinking it might sweeten the deal, he had his men install a radio in the banker's Packerd. Good idea, but it didn't work half an hour after the installation, the banker's Packard caught on fire. They didn't get the loan.

Galvin didn't give up. He drove his Studebaker nearly 800 miles to Atlantic City to show off the radio at the1930 Radio Manufacturers Association convention. Too broke to afford a booth, he parked the car outside the convention hall and cranked up the radio so that passing conventioneers could hear it. That idea worked -- He got enough orders to put the radio into
production.

WHAT'S IN A NAME

That first production model was called the 5T71. Galvin decided he needed to come up with something a little catchier. In those days many companies in the phonograph and radio businesses used the suffix "ola" for their names - *Radiola, Columbiola, and Victrola* were three of the biggest. Galvin decided to do the same thing, and since his radio was intended for use in a motor vehicle, he decided to call it the *Motorola.* But even with the name change, the radio still had problems: when Motorola went on sale in 1930, it cost about $110 uninstalled, at a time when you could buy a brand-new car for $650, and the country was sliding into the Great Depression. (By that measure, a radio for a new car would cost about $3,000 today.)

In 1930, it took two men several days to put in a car radio the dashboard had to be taken apart so that the receiver and a single speaker could be installed, and the ceiling had to be cut open to install the antenna. These early radios ran on their own batteries, not on the car battery, so holes had to be cut into the floorboard to accommodate them. The installation manual had eight complete diagrams and 28 pages of instructions. Selling complicated car radios that cost 20 percent of the price of a brand-new car wouldn't have been easy in the best of times, let alone during the Great Depression.

Galvin lost money in 1930 and struggled for a couple of years after that. But things picked up in 1933 when Ford began offering Motorola pre-installed at the factory. In 1934 they got another boost when Galvin struck a deal with B.F. Goodrich Tire Company. By then the price of the radio, with installation included, had dropped to $55. The Motorola car radio was off and running (the name of the company would be officially changed from Galvin Manufacturing to "Motorola" in 1947).

In 1940 he developed the first handheld two-way radio-- The Handy-Talkie--for the U. S. Army. A lot of the communications technologies that we take for granted today were born in Motorola labs in the years that followed World War II. In 1947 they came out with the first television for under $200. In 1956 the company introduced the world's first pager; in 1969 came the radio and television equipment that was used to televise Neil Armstrong's first steps on the Moon. In 1973 it invented the world's first handheld cellular phone. Today Motorola is one of the largest cell phone manufacturers in the world. And it all started with the car radio.

What ever happened to the two men who installed the first radio in Paul Galvin's car? Elmer Wavering and William Lear, ended up taking very different paths in life. Wavering stayed with Motorola. In the 1950s he helped change the automobile experience again when he developed the first automotive alternator, replacing inefficient and unreliable generators. The invention lead to such luxuries as power windows, power seats, and, eventually, air-conditioning. Lear also continued inventing. He holds more than 150 patients. Remember eight-track tape players? Lear invented that. But what he's really famous for are his contributions to the field of aviation. He invented radio direction finders for planes, aided in the invention of the auto pilot, designed the first fully automatic aircraft landing system, and in 1963 introduced his most famous invention of all, the Lear jet, the world's first mass-produced affordable business jet (Not bad for a guy who dropped out of school after the eighth grade).

Sometimes it is fun to
find out how some of the
many things that we take
for granted actually
came into
being!
AND
It all started with a
woman's suggestion!!,

COOTIE CORNER

By Mike Pilgrim, K5MP, SKCC #1537S

When Ted invited my input on an article talking about the SKCC Cootie Key Users List I have created, I was immediately interested. But where to begin suddenly loomed as a challenge, so here is what I came up with. Please follow along.

For all of you asking what the heck is a Cootie Key, let me share with you the following narrative submitted by Tom Desaulniers, K4VIZ, SKCC #589. This ought to be a reasonable start:

What's a "cootie key?"

Some of the other names for a cootie key might be more familiar– sideswiper, double-speed key, and slap key. The simplest definition is a double-sided straight key, operated horizontally.

Around 1910, during the heyday of manual telegraphy, it was common for telegraphers to spend entire shifts either sending or receiving, often at the same speed and with the same operator on the other end of the line. The incidence of RSI (**http://en.wikipedia.org/wiki/Repetitive_strain_injury**) or "glass fist" became a serious problem. The solution was to eliminate the vertical motion of the wrist typical of straight key operation and replace it with a horizontal movement of the entire hand. The two devices developed with this in mind were the "bug" or semi-automatic key, and the "cootie key." Both feature a horizontal motion in which the lever is held (not tapped). The thumb and fingers do not flex and the hand is rocked back and forth on the "heel" of the palm. Since there is no flexing of fingers or wrist, there is very little chance of RSI.

The cootie key consists of a single lever which can be swung back and forth between two contacts, either of which will close the circuit like a straight key. Thus the return stroke of a dot or a dash can become the stroke of the following element, almost doubling the speed of operation. You start each character on one side, and each subsequent dot or dash is made on the opposite side, in a back and forth motion. If you'd like more information about using a cootie key, read Jerry Bartachek's "The Art of Side-Swipery." **http://www.mtechnologies.com/cootie.htm** or see **http://www.youtube.com/watch?v=ZfLrgYHIpjo**

A cootie key can easily be made using a hacksaw blade. Bugs were very expensive by comparison, so most cootie keys were home-made. The few commercial cootie keys were also relatively expensive and with a few exceptions are very hard to find today.

Now let me confess that while I have been a member in SKCC since the 2nd month of its inception, I actually did not become active until about 18 months ago. It was soon thereafter when I began to recognize a few members commenting in the Sked page about their Cootie keying, and I had no idea what they were referring to. After a bit of research on the web I found my answer and decided to give it a try. You can check out my progress at my QRZ page as I moved from an old fashioned straight key through several steps including the world famous Vibroplex Bug, then finally into the realm of Sideswiper, also known as Cootie keying.

Soon I was right at home with this new-to-me style of Morse Code technology which actually has been around a lot longer than I. How I've not known of its existence in my 60 years of hamming is a true puzzle to me.

So I can thank SKCC for introducing me to what has become my keying methodology of choice, and I soon began to notice I was not alone in this community of manual key enthusiasts. After a bit of chatter on the SKED page the Cootie gang began coming out of the woodwork, and through the suggestion of Al, N4OW I began constructing a list for all of our SKCC Cootie users to be recognized and to have a place for their "bragging rights" and display of their choices for Cootie keys. The list as originally published at the beginning of this year initially contained only 36 members as I recall; presently it numbers in the mid-80s and grows a little each week. I have published a link to that list near the bottom of my QRZ page where I invite all interested persons with a Cootie key to please respond to my instructions to be added to that list. I ask each of you for help to promote the list and to encourage its continued growth and popularity.

Attached is a snap shot of the SKCC Cootie Users list as it appears today. I hope this discussion has answered your own questions as you puzzle over the Cootie key language often seen on the SKED page. I welcome your comments, questions, and/or suggestions, and I look forward to seeing your name on the list. Also, please visit the Cootie Corner on the SKCC Yahoo Groups where you can join in and share with others with similar interests.

72/73,

Mike Pilgrim, K5MP, SKCC #1537S mpilgrim@bellsouth.net

Attachments: SKCC Cootie Users List

Last update:	**SKCC**	**Firstname**	**SPC**	**Type of key**
7/B0/2017	85 cootie users		40 unique SPC	**To be added to this list, please provide Call sign, SKCC#, Name, SPC, Cootie Key description(s) to K5MP@ARRL.net** **14:33:10**
	AA2XB	1681S	Frank	NY	Swedish Kungsimport Cootie
	AA7FV	14313T	Darrel	AZ	GHD GH-GF501A
	AC8LJ	9371	Eric	WV	
	AD7GR	30T	Ed	OR	Begali HST, Homebrew brass sideswiper
	AG6V	6933T	Donna	WA	Begali HST, Homebrew Hacksaw Blade
	DF5JL	11445	Tom	GER	Begali Simplex Mono wired as a Cootie Key
	DL7GEM	4120	Marcus	GER	Vizkey Cootie
	EA7HAA	11263	Jose	ESP	Kent SP-1, G3HGE Twanger, FM-32 Jablonski, ZN-SLR
	EA8BVP	645T	Bal	ECI	Kent SP-1
	F5DE	62475	Bernard	FR	Japanese Hy-Mound MK701, French Dyna Maniflex, various homebrew sawblade cooties
	F5UQE	13468T	Due	FR	Begali HST
	KOMC	5241S	Mike	CO	Homebrew mechanic's ruler Cootie, modified Bencher
	K2PI	13782T	Flarv	VA	Homebrew hacksaw blade cootie
	K3WW	149625	Chas	PA	GHD GF-501A
	K3ZGA	12392T	Bob	FL	Kent SP-1, N3ZN ZN-SL single paddles wired as cooties
	K4ARQ	82055	John	FL	Frattini Dyna Maniflex
	K5MP	15375	Mike	FL	hacksaw blade cooties
	K6ELQ	102505	Tony	Ca	Begali Sculpture Swing
	K6JEB	60095	Jack	CA	
	K7MJG	92955	Mark	AZ	Begali Sculpture Swing #53, Palm Single
	K7QBW	5733	Bob	OR	Begali HST
	K7WXW	16316	Bill	OR	Vizkey Cootie with the larger base

K8FAC	25065	Frank	OH	
K9TJL	2965	TJ	IL	
K9TJL	2965	T.J.	IL	Viz Key, LLaves (from Spain), GHD GH-GF501A
K9ZMD	891T	Gary	WA	Modified Vibrokeyer
KA3LOC	6605	Ric	KS	GHD GF-501A, modified Bencher BY-1
KA5TJS	5172T	Allen	TX	Homebrew Cootie, Begali Sculpture Swing #50
KB1WOD	105305	Dave	VT	Modified Vibroplex
KB3VQU	16032	Cliff	Del	Homebrew Hacksaw Blade Cootie
KC1RL	11071	Ric	MA	Begali Sculpture Swing #14, Begali Mono #150, Begali HST #391
KDODK	126355	Dave	la	Vizkey, Kent SP-1 modified
KD8AZO	22165	Dave	OH	AME Bushwhacker single leer paddle wired as a sideswiper
KD9VT	15315T	Dave	IL	Homebrew Cootie
KF5YU	4224	Roy	TX	Modified Vibrokey
KG4BYN	4519	Ben	TN	Viz Key "Bigfoot" Cootie
KG4MTN	11556T	Mike	TN	GDH GF-501A, VIZ-KEY Cootie
KI4EZL	12343	Steve	NC	Begali HST
KK4KO	1517T	Jay	AL	Autronic Single Lever Paddle
KM5HM	3354	Rik	TX	Various home brew Cooties
KM9N	5975	Charles	IL	Kent SP-1
NOJRN	8701S	Jerry	MO	Home brew Torsion Bar Cootie
N1EA	587	David	MA	Kungsimport Cootie, modified Vibroplex, Twanger, and others
N2TRJ	9330T	Tom	NY	Begali HST
N3HEE	6594T	Joe	MD	
N4API	116735	Brian	GA	GHD GH-GF-501A
N40W	113755	Al	FL	G3HGE Twanger, Begali Sculpture Swing #41
N4RAY	2855	Rodney	AL	Begali HST
N5DWI	48	John	TX	Twanger, various Homebrew Hacksaw blade cooties
N6VL	2383T	Steve	CA	
N9SE	127535	Marty	IN	Begali Sculpture Swing #5
NA7C	8182T	Ted	UT	Modified Bencher BY-1, and Vibrokeyer
NA9F	11172T	Ron	IN	
NB8F	13949T	Andy	MI	Begali Sculpture Swing #51, Begali HST
NE5DL	50815	Dave	TX	Begali HST
NM1W	13718	Jim	NH	Begali Sculpture Swing #33, N3ZN-SLR
NNOSS	111375	Steve	MN	
NQORP	1155T	Wayne	KS	Hacksaw Blade homebrew
NT9K	1926T	Bill	FL	Multiple Cooties
NX1K	110245	Mark	WI	Kent SP1
NZ8Y	98545	Gary	OH	Kent SP1
PA1FOX	8265T	Alex	NED	Kent SP-1, Homebrew Polar Relay Key
PA3CLQ	2765	Jan	NED	Cootie Keys too numerous to list. I counted at least 9
VA3NU	5215T	Larry	ON'	Homebrew Hacksaw Blade Cootie
VK7CW	10820T	Steve	AUS	G3HGE Twanger, Homebrew Hacksaw Blade cootie
WOSJS	1078	Steve	MO	
WOSZV	49995	Eldon	MO	
W1SFR	91035	Steve	VT	TBKII
W2NRA	116345	Art	NY	Begali Signature Swing
				GHD-501A, Twanger, Vizkey Cootie, Homebrew steel ruler

W2RAN	10505	Randy	NH	Cootie
W4FOA	641T	Tony	GA	Brunnells (2) Homebrew by K4KP (SK), GHD GF601MP
W4GWS	15686	George	NC	Vibroplex (modified for cootie use)
W4KA	1260	David	SC	Hacksaw Blade Homebrew
W4RQ	86995	Rich	FL	Begali Sculpture Swing, Serial #4
W5IQS	85195	Evan	TX	Hacksaw Blade Homebrew
W5PEH	2398T	Pete	TX	Multiple cooties
W8AIM	91045	Jay	WV	Vizkey S/n C135N, home brew hacksaw blade Cootie
W9EBE	35115	Chip	IL	Vibroplex Deluxe (converted for Cootie use
W9HJW	11767	Steve	TX	
WA3ED	11547	Ed	MD	GHD GF-501A
WA7RCT	498T	Cleon	UT	Homebrew Cootie
WB9CAC	3830T	Bill	AZ	Homebrew Cootie
WI5H	117705	Mike	TX	American Morse Bushwacker Sideswiper (modified)
WL7WH	29405	Bob	AK	Saws-all Blade Homebrew Cootie
WS1K	12959T	Jon	MA	Bigfoot Viz Cootie plus multiple hombrew hacksaw blade Cooties

Using QRL...Correctly

The meaning of QRL is "Are you busy?" if followed with a question mark. A reply of QRL in answer means "I am busy, please don't interfere." So what's the problem?

The problem in some cases is twofold. First, if you do not send QRL? You may be right on top of another QSO and interfere with the QSO when you start sending your CQ. Just because you hear nothing when you start does not mean no one is there. This is especially true on the higher hf frequencies (20m and up) where often only the distant station can be heard while the sending closer station cannot be heard. A simple "QRL?" "**should"** let you know the frequency is in use from the distant station.

And here begins what can be the "second" problem when sending "QRL?" If the frequency is in use and you send "QRL?" and get no immediate response **just wait a bit.** That distant station may be in the middle of copying some piece of information from the station you can't hear and cannot immediately respond. I have had this happen many times, just when a station is sending their name or QTH a very strong "QRL?" is sent and before I can respond or finish my copying another "QRL" is sent thus I miss more of the message sent in my QSO! This can be frustrating for many ops and I have heard stations respond with something other than "QRL!" to the offending station.

The correct use of Q codes make operating easier but a bit of patience can make that operation even easier. Send "QRL?" after you listen and then **WAIT** 10-15 seconds before you send it again. You might be surprised and the other station will be impressed with your good operating practice.

Some "rare" Q codes I've not heard on the air...ever:

QRA….Shall I repeat the call on the calling frequency?
QSD…..Is my keying defective? (heard this as "QLF"…"are you sending with your left foot!")
QSV…..Shall I send a series of Vs on this frequency?
QSW….Will you send on this frequency or on…..

An Rx Dream Situation!

Ed...David N4IVE, #14202t sent an interesting post to the reflector:

"Every homestead should have access to a radio. It's sometimes a wonder what makes a good antenna. I'm experimenting with using an apple orchard as an antenna. I seek advice from antenna experts on the best way to connect these rows and rows of suspended wires for the optimal antenna.

https://youtu.be/xiUh_BW8qpE"

After watching David's video I couldn't resist responding and checking in occasionally to see what David has done. Here are some of David's updates on his rx setup.

" My goal is to use it as an rx antenna and to tx from my usual antennas. (mostly dipoles). I envision a remote controlled SDR up on the mountain sending its data over IP to the shack.

Contesting is not my primary goal but it is one of them :) I'm not a big gun. In fact, I much prefer the challenge of low power. DX Contacts are nice, but its rare those DXers want to chat. I prefer conversations over simple contacts.

I ordered 200 alligator clips from China and they just arrived this week. I've got to make 40 jumper wires with clips soldered on and then I plan to go to town with experimenting on different ways to hook the rows up.

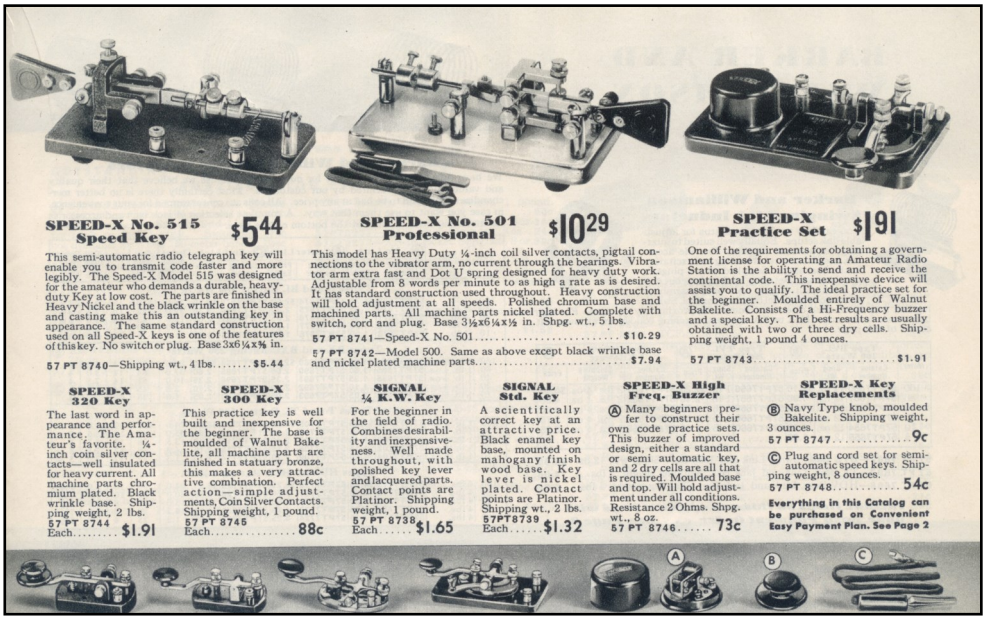
In the mean time I have been documenting sw stations I have received and distant CW signals heard on a 160m dipole which I'm using as a ℓ'eference antenna." Every night about 11pm I just make a list of all stations heard. Of my three antennas, it receives best for SW stations.

So as soon as I get the clips soldered onto some wire, I'll be doing more testing :) Thank you so much for checking in with me. My end goal will be to plop an SDR up there from time to time and send it's signals back to the shack over IP."

What a great opportunity to experiment with listening antennas! So checkout the picture of this potentially awesome rx field!

What a Deal!

What a deal! From my "Sears 1940 Amateur Radio Catalogue" just check out these prices for both bugs and keys! $10 for a Speed-X bug! $1.91 for a Speed-X straight key! It would be interesting to see what these prices convert to in today's dollars.



SPEED-X No. 515 Speed Key $5.44

This semi-automatic radio telegraph key will enable you to transmit code faster and more legibly. The Speed-X Model 515 was designed for the amateur who demands a durable, heavy-duty Key at low cost. The parts are finished in Heavy Nickel and the black wrinkle on the base and casting make this an outstanding key in appearance. The same standard construction used on all Speed-X keys is one of the features of this key. No switch or plug. Base 3x6 ¼ x ⅝ in.

57 PT 8740—Shipping wt., 4 lbs. $5.44

SPEED-X No. 501 Professional $10.29

This model has Heavy Duty ¼-inch coil silver contacts, pigtail connections to the vibrator arm, no current through the bearings. Vibrator arm extra fast and Dot U spring designed for heavy duty work. Adjustable from 8 words per minute to as high a rate as is desired. It has standard construction used throughout. Heavy construction will hold adjustment at all speeds. Polished chromium base and machined parts. All machine parts nickel plated. Complete with switch, cord and plug. Base 3½x6¼x½ in. Shpg. wt., 5 lbs.

57 PT 8741—Speed-X No. 501 ..... $10.29

57 PT 8742—Model 500. Same as above except black wrinkle base and nickel plated machine parts. $7.94

SPEED-X Practice Set $1.91

One of the requirements for obtaining a government license for operating an Amateur Radio Station is the ability to send and receive the continental code. This inexpensive device will assist you to qualify. The ideal practice set for the beginner. Moulded entirely of Walnut Bakelite. Consists of a Hi-Frequency buzzer and a special key. The best results are usually obtained with two or three dry cells. Shipping weight, 1 pound 4 ounces.

57 PT 8743 ..... $1.91

SPEED-X 320 Key

The last word in appearance and performance. The Amateur's favorite. ¼-inch coin silver contacts—well insulated for heavy current. All machine parts chromium plated. Black wrinkle base. Shipping weight, 2 lbs.

57 PT 8744 Each $1.91

SPEED-X 300 Key

This practice key is well built and inexpensive for the beginner. The base is moulded of Walnut Bakelite, all machine parts are finished in statuary bronze, this makes a very attractive combination. Perfect action—simple adjustments, Coin Silver Contacts. Shipping weight, 1 pound.

57 PT 8745 Each 88c

SIGNAL ¼ K.W. Key

For the beginner in the field of radio. Combines desirability and inexpensiveness. Well made throughout, with polished key lever and lacquered parts. Contact points are Platinor. Shipping weight, 1 pound.

57 PT 8738 Each $1.65

SIGNAL Std. Key

A scientifically correct key at an attractive price. Black enamel key base, mounted on mahogany finish wood base. Key lever is nickel plated. Contact points are Platinor. Shipping wt., 2 lbs.

57PT8739 Each $1.32

SPEED-X High Freq. Buzzer

Ⓐ Many beginners prefer to construct their own code practice sets. This buzzer of improved design, either a standard or semi automatic key, and 2 dry cells are all that is required. Moulded base and top. Will hold adjustment under all conditions. Resistance 2 Ohms. Shpg. wt., 8 oz.

57 PT 8746 ..... 73c

SPEED-X Key Replacements

Ⓑ Navy Type knob, moulded Bakelite. Shipping weight, 3 ounces.

57 PT 8747 ..... 9c

Ⓒ Plug and cord set for semi-automatic speed keys. Shipping weight, 8 ounces.

57 PT 8748 ..... 54c

Everything in this Catalog can be purchased on Convenient Easy Payment Plan. See Page 2

STANCOR 110-CM Transmitter Kit

$48.75 Cash For Easy Terms See Page 2

The application of cathode modulation in the 110-CM permits the construction of a complete 100-watt phone-CW transmitter on a standard 17x10x3-in. chassis.

The 6L6 crystal oscillator is of the regenerative type which will give harmonic output. For this reason only three crystals, one 160-meter, one 40-meter and one 10-meter will provide operation on all five bands.

The audio channel for cathode modulation employs a 6SJ7 high gain input amplifier, permitting the use of low level microphones, such as the crystal type. A 6C5 tube is used as a driver for the push-pull 6V6G tubes in Class AB1. The audio output easily attains 100 per cent modulation of the R.F. amplifier.

In shifting operating frequencies from one band to another, merely change both the oscillator and amplifier plug-in coils. Two switches in the power supply are arranged to permit pre-heating of filaments. For 110-volt 50-60-cycle A.C.

57 PT 08095—Complete Kit of parts for building except tubes, cabinet, coils, crystal, and meter. Shipping weight, 42 lbs. Cash Price $48.75

57 PT 8096—Oscillator Coil. (State band.) Shpg. wt., 1 lb. Each 99c

57 PT 8097—Tank Coil. (State band.) Shpg. wt., 1 lb. Each 93c

57 PT 08093—Cabinet as illustrated. Shipping weight, 30 lbs. Each $7.36

57 PT 08448—Kit of 8 Tubes. (1—812, 1—6L6, 1—6SJ7, 1—6C5, 2—6V6G, 1—RK60, 1—5Z3.) Shipping weight, 5 lbs.

STANCOR 60-P Transmitter Kit

$44.80 Cash For Easy Terms See Page 2

A complete 60 watt phone-CW transmitter on a standard 17x10x3 inch chassis. The regenerative type crystal oscillator produces harmonic output and, for this reason, only three crystals will provide operation on all five bands, from 10 to 160 meters inclusive. The HK24 tube in the amplifier circuit is easy to drive and provides high efficiency.

A high fidelity audio channel employing a 6SJ7 high gain input amplifier allows the use of low level microphones, such as the crystal type. A 6N7 tube in Class A makes a desirable driver for the push-pull 6L6 tubes in Class AB1. Thirty-two watts of audio permits one hundred per cent modulation of the Class C amplifier to be easily attained. The desired speech level is obtained by adjustment of the gain control. For CW operation, the key is plugged into J2, opening the oscillator cathode circuit to permit break-in procedure. For 110-volt 50-60-cycle A.C.

57 PT 08092—All parts for building except coils, meter, crystal, cabinet and tubes. Shpg. wt., 43 lbs. Cash Price. $44.80

57 PT 08093—Cabinet as illustrated. Shipping weight, 30 lbs. Each $7.36

57 PT 08447—Kit of 8 Tubes. (1—HK24, 3—6L6, 1—6SJ7, 1—6N7, 1—5Z3, 1—RK60.) Shipping weight, 5 lbs. Cash Price $10.87

57 PT 08331—Triplett 327 0-200 D.C. Milliammeter. Square Type. Shipping weight, 2 pounds. Each $3.75

STANCOR 100-MB Transmitter Kit

$42.00 Cash For Easy Terms See Page 2

A novel band switching 100-watt (final plate and screen input) transmitter, using a 6L6G oscillator in a tritet circuit and a pair of beam power tetrodes operating as an R.F. amplifier. The exciter, the amplifier, and the antenna circuits are simultaneously changed with a single switch. Frequency range 1.7 to 30 MC. Switching of one meter gives three important readings during adjustments. Amplifier designed as high efficiency natural doubler on higher frequencies and as a straight push-pull amplifier on the two lower frequency bands. A separate linked tank coil is used for each band. Terminals on back of chassis accommodate the secondary winding of a modulator's output transformer, an extension for remote switching of the plate power of the transmitter, and a telegraph key. For 110-volt 60-cycle A.C.

57 PT 08098—All parts for building except tubes, coils, meter, cabinet, and crystals. Shpg. wt., 35 lbs. Cash Price. . $42.00

57 PT 08093—Cabinet as illustrated. Shipping weight, 30 lbs. Each. $7.36

57 PT 08449—Kit of 4 Tubes. (1—6L6G, 2—807, 1—5Z3.) Shpg. wt., 3 lbs. Kit $8.22

57 PT 08331—Triplett 327 0-200 D.C. Milliammeter. Square Type. Shipping weight, 2 pounds. Each $3.75

57 PT 8094—Oscillator Coil. (State band.) Shpg. wt., 1 lb. Each 95c

Tank Coils. Use Barker and Williamson 100-watt center linked type. See Page 16 for prices.

STANCOR 10-P Transmitter Kit

$21.00 Cash Terms $2.50 Down

A compact, low power phone-CW transmitter kit, covering five band operation. Uses a 6J5 tube in an untuned crystal oscillator circuit and a 6L6 as an R.F. amplifier. Audio-section consists of a 6L6 in Class A-1 plate and screen modulating the 6L6 R.F. amplifier. Kit includes single button carbon mike. High percentage of modulation can be obtained with a class "C" R.F. amplifier input of 12 Watts. For CW operation an amplifier input up to 20 watts is allowable. Frequency range 1.7 to 30 MC. Crystal controlled. Cabinet size: 10¼ x 6½ x 6½ inches. For 110-volt 50-60-cycle A.C.

57 PT 8090—Complete Kit of parts and Instructions for assembling. No tubes, crystal, coils, meter or key. Shpg. wt., 14 lbs. Cash Price $21.00

57 PT 8091—Plug-in Coil with Link. (State band.) Shpg. wt., 1 lb. Ea. 95c

57 PT 8351—0-100 D.C. Triplett, Square type Milliammeter. Shpg. wt., 2

For you boat anchor collectors here's a page of "rare" transmitters you don't find in flea markets very often. The Stancor is rare but highly collectable today.