

HAM-MAG



October 2009

[**N.9**]

F5SLD's Free HAM radio magazine

Discover
the New Design
of
HAM-MAG !

HH7 - HAÏTI STORY



TABLE OF CONTENTS



The Haiti Story



P.04



[EVENT]

JAMBOREE
On the Air 9



P.9

[ANTENNA]

40 meters Tak-tenna 13



P.13

The DX News 20

DX Calendar 40

A hundred years of
Amateur Radio 32



P.32

[HOMEBREW]

HF/VHF Portable
Mini-Tuner 16



P.16

[CATEGORIES]

POST-IT! 3

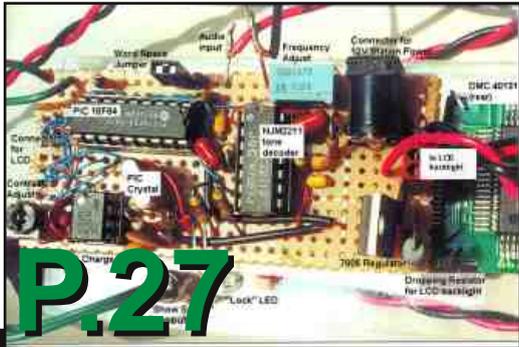
Comic's HAM 36

The HAM-MAG's
Hall of Fame 19

[DX EXPEDITION]

The Haiti Story 4

A PIC16F84 based
CW Decoder 27



P.27



P.04



POST-IT !



The Breaking NEWS



* **N1MM Contest Logger Update Version 9.9.6**

<http://www.pi4dec.nl/n1mm/RevisionHistory.htm>

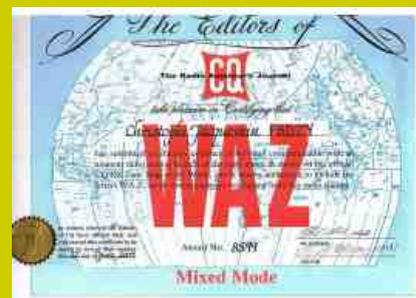
* **D-Star frequencies in the Netherlands**

Abraham van den Berg, PB0AOK - VERON's VHF manager, has clarified the D-Star issue in the Netherlands. VERON is the Dutch IARU society. It is untrue that the Dutch administration is thinking about D-Star repeaters operating in the 437-438 MHz band. Presently, the amateur service in the Netherlands and neighbouring countries suffers from harmful interference, caused by what can be seen as a regrettable implementation of the Radiolocation service in the 438-440 MHz band. For that reason, usage of D-Star repeaters with output frequencies in the upper 2 MHz part of the Region 1 70cm band, is hampered.

To solve this problem, recently the Dutch D-Star community came up with a proposal to plan the output frequencies of D-Star repeaters just below 438MHz and has asked VERON to support this proposal. VERON has decided not to do so, due to incompatibility between the amateur service and amateur-satellite service. Moreover, the proposal deviates significantly from the IARU-R1 band plan. In the meantime VERON has made an alternative proposition to amend the Dutch national frequency plan in such a way, that it fully complies with article 5 RR, the European Common Allocation table, as well as the IARU-R1 band plan.

* **CQ announces 75th anniversary Worked All Zones award**

The November, 1934, issue of R/9 magazine announced a new operating award for radio amateurs, designed to encourage the growing popularity of contacting stations across the globe, what we know today as DXing. The award was called Worked All Zones and was to be granted for making confirmed contacts with hams in each of the 40 zones into which the world had been divided by R/9's editors. Today, 75 years later, R/9 has been succeeded by CQ magazine and WAZ - Worked All Zones - sponsored by CQ since 1945, continues to be one of amateur radio's most prestigious operating awards. In celebration of the WAZ's 75th anniversary, CQ magazine is announcing a limited-term "Diamond Jubilee WAZ" award. A special certificate will be issued to amateurs who make contacts in all 40 CQ Zones of the World between November 1, 2009 and December 31, 2010. Certificates will be numbered but there will be no endorsements. Confirmations will not be required. However, it is expected that applicants will continue to uphold amateur radio's long-standing tradition of honesty and self-regulation. Standard WAZ application fees will apply. Complete details on the Diamond Jubilee WAZ Award will be in the October 2009 issue of CQ, and are posted on the CQ website, www.cq-amateur-radio.com, with a link from the October issue highlights page. WAZ is the second-oldest amateur radio operating award still offered today. The only current award that is older is the International Amateur Radio Union's Worked All Continents award. The ARRL's DX Century Club (DXCC) award was introduced in 1936. To date, more than 8,600 basic WAZ awards have been issued.



More information on the WAZ award program is available on the CQ website at www.cq-amateur-radio.com/awards.html

[DX EXPEDITION]

HH7 THE HAITI STORY

By N3BNA - Dale

WHAT TO DO WHEN EVERYTHING GOES WRONG? ...

Keep Trying.

In late 2006 I committed to going on a February 2007 worktrip to Haiti. I later realized it would coincide with the ARRL-CW contest...That's when I got really excited. Then I was invited to go to visit my friends in Paraguay...could I somehow do both? After a lot of scheduling, I was able to fit it in. Paraguay was wonderful, beautiful and quite modern country with good infrastructure, and I operated from the superstation of ZP5AZL/ZP0R.

Then I went to Haiti. I had prepared for everything, because I have often gone on dxpeditions to remote spots on the globe. But first of all, I was traveling with a work group. Our work project was to replace the baseplate and insulator of a 240 foot broadcast tower. With only hand tools and no electricity, we jacked up the old rusty tower. This was truly crazy and this would never be attempted by tower engineers. Fortunately we were not engineers and were desperate enough to try such an impossible task. (You can find photo and additional details of this crazy tower project here)



Because of our workload we did not get back until after dark every night and I had no time to erect antennas. Finally I had a few daylight hours, and nothing went right...Trees were in wrong places, Ropes tore, insulators caught in other trees, antenna too long, and very frustrating, finally after dark I threw an old 40m dipole over a low palm tree and finally I was on....or so I thought. After working a few, I found that my radio kept sticking in transmit...Just would not work...Next day I took it apart and resoldered the T/R relay to see if I could free it up. No change! I had all the gear for a decent operation in a rare location and my radio didn't work !

After sharing this problem with my local host, he suggested a missionary friend who might have a radio...Later (when the workteam was in transit, we went to visit him, but found only his wife...We went back the next day, the last day before the contest, and John, HH2VA had an old TS50. I was thankful for anything but it was not a contest rig and I had only Icom accessories....What this meant was that my frequency control cable and my keying cable were useless, and I had to send by hand for the whole contest. In addition, my headphones could not work because they had ¼ inch plug, not the 2.5mm plug. This made operating very difficult...BUT I HAD TO TRY.



All this time, I had been wanting to operate from the village, but our project leader was suggesting I stay in the mission compound and operate from the Radio station, which houses a FM station...I had ordered a small generator to come from Port-au Prince, but our leader suggested it would be inconvenient and I should call the guy and tell him not to bring it...I didn't like that idea, and fortunately, we didn't contact him, as I needed a generator later.

I began the contest in the radio station, with a half-square wave antenna for 40 that worked acceptable well on 15m...But when evening arrived I found 10 over 9 local noise. I discovered that there was local line noise that made it very difficult to hear anyone, and my hearing is not very good.

Finally, late Saturday morning, I got good news. The generator had arrived and there was a way to the village. I jumped at the chance, and took a custom made multiband RadioWorks antenna. In the hour before dusk, I used my slingshot to make a perfect cast over a huge mango tree, and a local climber climbed an enormous breadfruit tree, and I had a perfectly erected antenna in short order.

But my operating position was extremely difficult...I was seated outdoors on a low cement step, leaning low over a chair which held my radio, with my only hearing ear cocked toward the speaker... My Heil headphones had a ¼ inch plug and would not fit the TS50, which was dirty and rusty. In addition, my glasses had broken, so I tried to keep them on like monocles, or switch to my shades...At night, I held a flashlight in order to see to enter the callsigns...I was using a very small generator that was a bit testy to run my PS and the old laptop....Unfortunately there were power problems, and my helper tried to wire the PS and car battery in parallel and there was a bang, and that was the end of my PS...Rest of the contest, I was dependent on the car battery, which I had purchased for the project, knowing that I might need it myself. And there were the mosquitos. All the time I was sending by hand. And some guy claimed that I was not sending correctly and other guys (in their comfortable shacks) complained of chirp on my signal. They were absolutely right!



I got to the village with 200 odd contacts and finished the contest with 1176 QSOs...at times I could run, but most of the time it was a slow process grinding out the QSOs. Because so many amateurs chase the callouts, a low power station needs those callouts, and there were well-known contesters who neglected to call me out. I suffered for hours with few callers. It is too bad that people do not listen any more, but just chase the callouts.

Immediately after the contest I made a big effort to work Europe. Monday it was back to work, and I made an effort to be on in the evenings...Again when I tried from town the noise level was high.. So I decided to overnight in the village...The first night was good, but wanted to try 160...Got some good advice from AA1K and WT3Q on the rare lunchbreaks when the shared computer was open. I had asked the local guys to buy me some stuff including 50m of wire, but it was Mardi Gras all week and everything was closed in the town.

So I patched a few pieces of wire together and put up an 80m dipole on the north face of the 240 foot tower...Fortunately I had taken a whole roll of military green rope and about 250 feet of RG8X..I needed it all. That night was my biggest success of the trip...Before nightfall I had to carry all the equipment and the generator about ¼ mile out in the middle of a field of manioc and sweet potatoes, and lots of goats...I was under the huge tower, with my sloping dipole starting at 220 feet...well away from the tower. On 80m with less than 100 watts, I was LOUD !!! I ran to my hearts delight and made a special effort for EU and West Coast stations. Was great fun while it lasted...About 2 AM we got a rain squall...did I mention that we were ¼ mile in the middle of a field? Everything got drenched including the laptop and radio...We ran back to the village and I overnighted in someone else's bed, in a very simple house with no electricity or plumbing. But I could not sleep....and the roosters crowed all night.



Next morning was our last day. Was up early and ready for work...During lunch I returned the TS50 and a broken FT847 that the kind missionary had lent it to me, because I would be leaving at 4:30 AM...Against everyones advice I wanted to go one more night to the village and be LOUD on 160...Had to take down antenna at the station and do all packing and return loaned radios at lunchtime. I decided (sadly) to scavenge my 40m half square to make the 160m dipole...After work, I quickly worked to cut the wire and make several solder joints...Soldering was difficult with little power from the decrepit generator. Had help from some young boys who enjoyed helping...Got the antenna up on the 240- foot tower at nightfall and ready for a great night...Turned on the radio, and at 1811 I heard a SSB signal...then I heard SSB all over the band...I tried calling on CW, but noone could hear me over the ruckus. What a terrible coincidence, my only day on 160 was the first night of the SSB contest. Horrors. Finally I gave up and tried SSB. I worked W4PV, N4PN when he announced he was listening south, and NJ2F who called me along with HI3C on the same island. I could get no run going and could not break the USA din...W3BGN and W4MYA were running stateside...BGN was running fast, and MYA was saying hello to friends...But couldn't break the pileups...worked a few other Carribeans and that was that...Then my radio stuck in transmit again...I tried and tried and could not find a way to make it work...I decided to wait a while, but that did not help...The radio started to go blank screen on transmit...Finally I had to give up, with only a handful of QSOs...My dream to be LOUD on 160 was not to be. But I tried and tried and tried some more...Did I mention that there were mosquitos? Yes there were mosquitos...



And then there was the 35 minute riding shotgun on a decrepit motorcycle with bad transmission and almost no brakes (not to mention suspension) over incredible rutted and bumpy dirt roads at 4:00 AM hanging on to my ham radio gear...I lost all feeling in my one arm from the bag I was carrying on my shoulder, but just gritted my teeth and finally we got there....There was no time for a shower, but I had taken a "bucket bath" in the village...A real experience for those of you who have never done it...I am not as limber as I used to be when I did that in Africa years ago.

Finally we made a mad dash for the airport and waited 30 minutes for the guard to open the gate...I felt very sad leaving Haiti. It had been difficult but I met some wonderful people and I saw that Haiti is a beautiful place, despite the problems that it is having. I left behind lots of equipment and tools for the radio station and local technician...and I left a 160m dipole sloping down from 240 feet on the big tower...If only I could have stayed longer...

The one thing I learned is that it is incredibly difficult when everything is uncertain...You cannot depend on what will happen next and everything seems to fail...But I know I did my best, and I know I was a new one for some guys. And made a couple points for the my club. And most of all, I thank God for that our work project was a success. We repaired the base of a 240 foot tower, by jacking up the tower. It was a lot of work with only hand tools, and rather dangerous project, But it was wonderful to experience success in such an "impossible" project. I will remember Haiti always, and already I am anxious to go back.



73's from N3BNA !

[EVENT]

52nd Jamboree-on-the-Air **OCTOBER 17-18, 2009**



By KA6KBC, Bill

What Is Jamboree-on-the-Air?

The Jamboree-on-the-Air, or JOTA, is an annual Scouting and amateur radio event sponsored by the World Scout Bureau of the World Organization of the Scout Movement. Thousands of amateur radio stations around the world participate. If the conditions are right, it is common to contact a hundred Scouting countries during the weekend.

In the United States, Cub Scout dens and Boy Scout patrols visit a local amateur's ham shack during JOTA. Many districts and councils hold events that coincide with JOTA, where amateurs set up stations giving Scouts and leaders a chance to exchange greetings with Scouts from other areas.

The exchanges typically include information such as

- Name
- Location (QTH)
- Scout rank
- Hobbies
- Age

Some exchanges lead to long-lasting friendships and the exchange of photos, badges, pins, and patches. The usual communications method calls for speaking into a microphone. However, the following specialized communications are also used during JOTA:

- Slow Scan TV, or SSTV
- Amateur TV, or ATV
- Orbiting Satellite Carrying Amateur Radio, or OSCAR
- Packet radio, or modem communication without a phone—PSK-31
- Radio Teletype, or RTTY
- Earth-Moon-Earth, or EME, contacts
- EchoLink

There will be many stations operating, including the following:

- K2BSA/5 at National Scouting Museum in Irving, Texas
- Additional K2BSA stations assigned to other areas, such as K2BSA/0, 2BSA/1, etc.
- HB95, the World Scout Bureau headquarters in Switzerland
- GB2GP at Gilwell Park, England

Listen for other special call signs from many countries.

Who JOTA welcomes participation by Scouting and amateur radio enthusiasts of all ages:

- Cub Scouts
- Boy Scouts
- Venturers
- Brownie Scouts
- Girl Scouts
- Former Scouts and Scouters
- Amateur radio operators
- Anyone interested in doing a Good

Turn for Scouting and amateur radio When:

JOTA always falls on the third full weekend in October.

JOTA will begin on Saturday, October 17, 2009, at 00:01 hours local time, and end on Sunday, October, 18, 2009, at 23:59 hours local time.



WHERE:

JOTA Scout Frequencies

Band SSB (phone) C W (Morse code)

80-meter 3.690* and 3.940 MHz 3.570 MHz

40-meter 7.090* and 7.190 MHz 7.030 MHz

20-meter 14.290 MHz 14.060 MHz

17-meter 18.140 MHz 18.080 MHz

15-meter 21.360 MHz 21.140 MHz

12-meter 24.960 MHz 24.910 MHz

10-meter 28.390 MHz 28.190 MHz

6-meter 50.160 MHz 50-160 MHz

* Not authorized to transmit in the United States (Region 2); however, you may listen



Note: Remember that others use these frequencies, so move off the listed frequency if another group is operating there. Always be courteous; others will find you.

HOW:

Scouts and leaders should follow some of the following tips for help in preparing for participation in the JOTA program:

- Contact a local amateur radio operator.
- Contact a local amateur radio club.
- Put a notice in the local newspaper.
- Run an article in the local council newsletter; almost every local council has a Scouter involved in amateur radio.
- Contact the American Radio Relay League's Field and Educational Activities Department toll free at 800-326-3942; or visit the ARRL Web site:
<http://www.arrl.org/ead/jota.html>.
- Request the More About Jamboree-on-the-Air (JOTA) guide from the International Department at Boy Scouts of America, International Department S221, 1325 West Walnut Hill Lane, P.O. Box 152079, Irving, TX 75015-2079.

Radio amateurs should

- Invite Scouts and Scout units to their radio shack.
- Radio amateurs who do not know any units should contact the nearest BSA local council service center for the names of Scout unit leaders in the area. Local councils can be found in the phone book under "Boy Scouts of America."
- Volunteer to set up a station at a district or council camporee, Scout show, or other event. Contact the nearest BSA local council service center for more information.
 - Call "CQ Jamboree," or respond to such calls.
 - K2BSA/? is available throughout the year for organized Scout events. K2BSA/? may be available for use during JOTA. Contact Ray Moyer for details by e-mail at ray.moyer@sbcglobal.net, or by mail at Boy Scouts of America, Ray Moyer, c/o International, S221, 1325 West Walnut Hill Lane, P.O. Box 152079, Irving, TX 75015-0279.



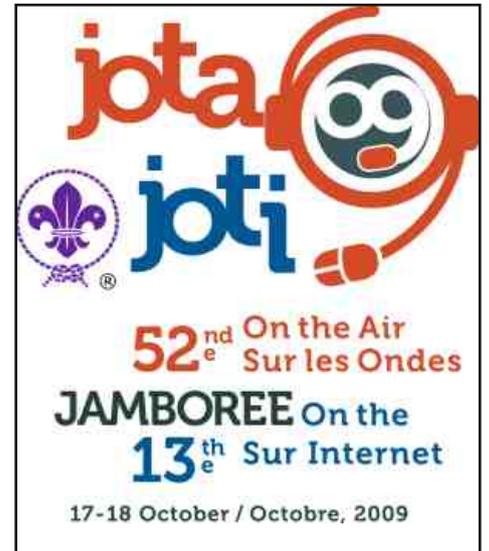
Please make plans early to reserve K2BSA/? for your event. Share this fact sheet and a copy of More About Jamboree-on-the-Air (request this publication from the International Department) with other radio amateurs and radio clubs.

What Is or Is Not Required

- No reports in the form of logs are necessary. (This is not a contest.)
- Make the exchange of information simple, related to Scouting and amateur radio.
- Brief reports are requested. See the sample report Format on this fact sheet.

This report should include:

- Unit number and local council name and number
- Amateur call used
- Calls heard and worked
- Number of participants
- Interesting incidents and exchanges, etc.
- Photos with captions (small group, uniformed Scout at mike)



JOTA CONTACT CARDS

These cards are free and are available to anyone participating. They may be ordered beforehand for recording contacts talked to or heard during JOTA, or they may be awarded at Scouting or amateur radio club meetings later. Send requests (specifying the number of cards needed) to Boy Scouts of America, Jamboree-on-the-Air, S221, 1325 West Walnut Hill Lane, P.O. Box 152079, Irving, TX 75015-2079.

POCKET PATCHES

Temporary insignia to wear on the right pocket of the Scout uniform or on jackets/vests will be available after August 1 for \$4 each (total). This insignia, like the contact cards, will be available in LIMITED QUANTITY only and will not be reordered when supplies are exhausted.

ORDER EARLY. Allow FOUR weeks for delivery on all orders. Checks or money orders will be accepted and must be made payable to the Boy Scouts of America. Credit cards are also accepted. We cannot accept cash for payment. Orders for patches are to be sent to the same address as for the cards.

JOTA REPORT

The JOTA report on the following pages is very important in working on the next JOTA event. Your combined information will be forwarded to the World Scout Bureau and will be used to improve the overall event. Include anything that was funny, interesting, or learned, along with your ideas or suggestions to help improve the event. If you include pictures, put them on a disk using JPG format so they can be forwarded with the report. Make sure you have the full names of all those in the picture. Scouts in uniform would be really great. Please provide anything that would be of interest to others. An example of a story: "The snow was two feet deep but we drank hot chocolate and talked to Scouts from New-Zealand.

They had just gotten back from swimming."

<http://www.scouting.org/filestore/intl/pdf/130-218.pdf>

73's from KA6KBC



HomeBrewed 40 Meter TAK-tenna

By KA6KBC, bill



Project Overview:

So I've been reading about this Small Space antenna that is being sold as the TAK-Tenna. Really neat idea - Has a 30 inch boom and Spiral Coils on the ends. See a picture at <http://www.taktenna.com/>

Looks easy to build -- Right?

So I Built my version out of wood - Mine is very ugly as compared to the store bought one (See Picture).

Materials and Tools • Parts:

- 1.) 3 - Wooden sections - 1 1/2 in X 1/2 in X 8 ft - Cost 92 Cents each - Home Depot
- 2.) 1 - 100' Spool of Steel Guide/fence Wire - Cost - \$7 - Home Depot - The purchased version uses some type of "Special" patented wire, but this seemed fine. I tried Copper, but it was not stiff enough to make the Spiral Coils. Again from quick test it did not seem critical - From what I read larger gauge wire is better for improved band width.
- 3.) 1 - 25 foot RG8 coax with PL259 - Radio Shack - Close Out - \$5
- 4.) 2 - Packages - Nuts/Bolts - \$2 - Home Depot
- 5.) 2 - Alligator Clips - Free from my junk Box.
- 6.) Few Feet of Electrical Tape - Free from my junk Box.

Total Material Cost: \$16.76

The commercial version uses PVC and tie wraps, which would have been much easier.



Tools:

- a.) Saw - I just used a simple hand saw.
- b.) Drill with wood bits - I just used a simple hand electric drill.
- c.) Flat Screw Driver and Rubber Mallet.
- d.) Wire Cutters.
- e.) Gloves and Eye Protection.

Fab Time:

For my version was about 4 hours - Drilling Lots of Holes and feeding the wire in to make the Spiral Coils was most of the work.



Testing:

However -- Test wise it isn't bad I got it tuned up on 40 meters at about 8 feet off the ground and it has an SWR 1:2 to 1:5 from 7.30 to 7.175 MHZ (Without a Transmatch). Also does ok on 15 meter - Tune up wise. Bad news the performance is not Great - Signal pick up is several S units below my Dipole, but it does work. From what I have read the Antenna has problems in that most of the performance is based on feedline radiation (See the links below):

<http://lists.conting.com/archives//html/Towertalk/2008-04/msg00339.html>

http://groups.google.ie/group/rec.radio.amateur.antenna/browse_thread/thread/167fb7a34305cf3e

Summary of Results:

I'm still testing and it was an interesting experiment. The Antenna fits into a small space 25 inch X 30 inch. Hey it works. If you have no space it might be worth \$20 and a few hours of your time or If you aren't a Homebrewer Buy one. If you make your own one point - I needed more wire than the 468/7.2 MHZ = 65 Feet Total or 32.5 Feet per side - I had to add wire after the fact. So I would make it about 33.5 per side.

Measurements:

One more added item - Someone had a question about my dimensions: Boom = 30 inches meaning Cross Pieces are about 30 inches a part. Cross Pieces = 25 Inches Across or 12.5 Inches from center Hole Spacing from Center, but this did not seem critical, but I used: 12 in 11 in 10 in 9 in 8 in 7 in 6 in 5 in 4 in 3 in Total Turns = 10

Tuning:

- a.) Put the antenna in the expected operating position (Mine was about 8 feet in the air).
- b.) Connect the Coax via the Alligator Clips about 2 inches from the end of the smallest inner Spiral Coils.
- c.) Measure SWR in the Center of the 40 Meter Band (SSB or CW) you intend to use most. If the SWR is too high move to Step d.
- d.) Move the Alligator Clips/Coax out evenly about 2 inches on each Spiral Coil.
- e.) Repeat Step c.

I was able to achieve acceptable SWR after about 3 cycles of adjustment without a Transmatch.

Construction Steps:

- a.) Measure/Cut - (1) - 30 inch boom section.
- b.) Measure/Cut (4) - Cross members - 25 inches sections.
- c.) Measure/Notch @ about 12.5 Inches - I just cut with a hand saw then tapped out with a Flat Screw Driver and Rubber Mallet.
- d.) Drill holes in Cross members as noted above - Starting 3 inches from center then working out in 1 inch steps out to 12 inches. If you are careful you can save sometime by drilling two parts at a time.
- e.) Here is the Hard part - Put the Notched Cross members together then start feeding the wire to create the Spiral Coils. I started from the biggest to the smallest. I would recommend Gloves and Eye Protection.
- f.) Once the Spiral Coils are completed bolt them to the Boom.
- g.) I then used the last section of wood for mast and bolted the Boom to this part.

Credit Where Credit is Due:

Very important work on this original Design was done first by: Bill Petlowany, K6NO
<http://www.qsl.net/wa2lqo/nlaug03.html>

Older Patent Info (Same Last Name, but no relation):

- http://bvarc.freeshell.org/newsletter/BVARC_December_2007.pdf
- <http://www.google.com/patents?id=aZluAAAAEBAJ&printsec=abstract&zoom=4&dq=3432858#PPA1,M1>

Then Refined by: Steve -- WA2TAK

<http://www.tak-tenna.com/>

Also some very interesting Recent work from WBillJohnson - Looking at Boom Lengths and Coils Spacing:

<http://wbilljohnson.com/zmvantenna/zmvantenna.htm#intro>

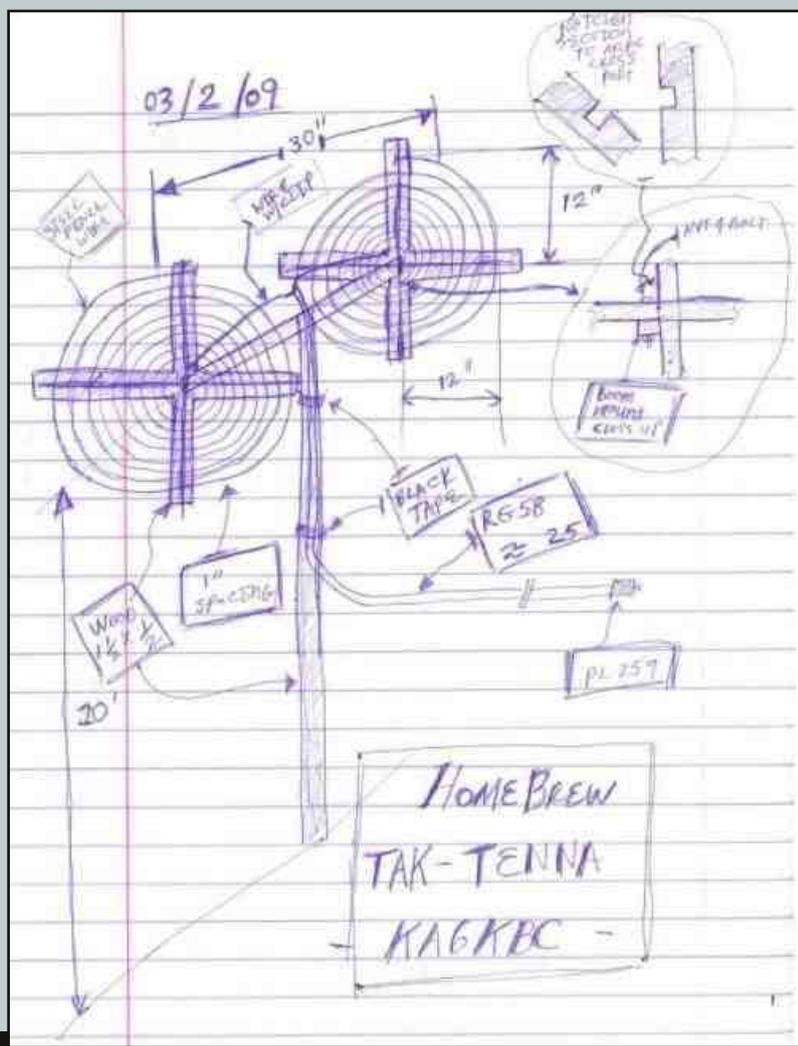
My latest work/updates:

<http://billbrwn.tripod.com/id3.html>

73 Bill -- KA6KBC



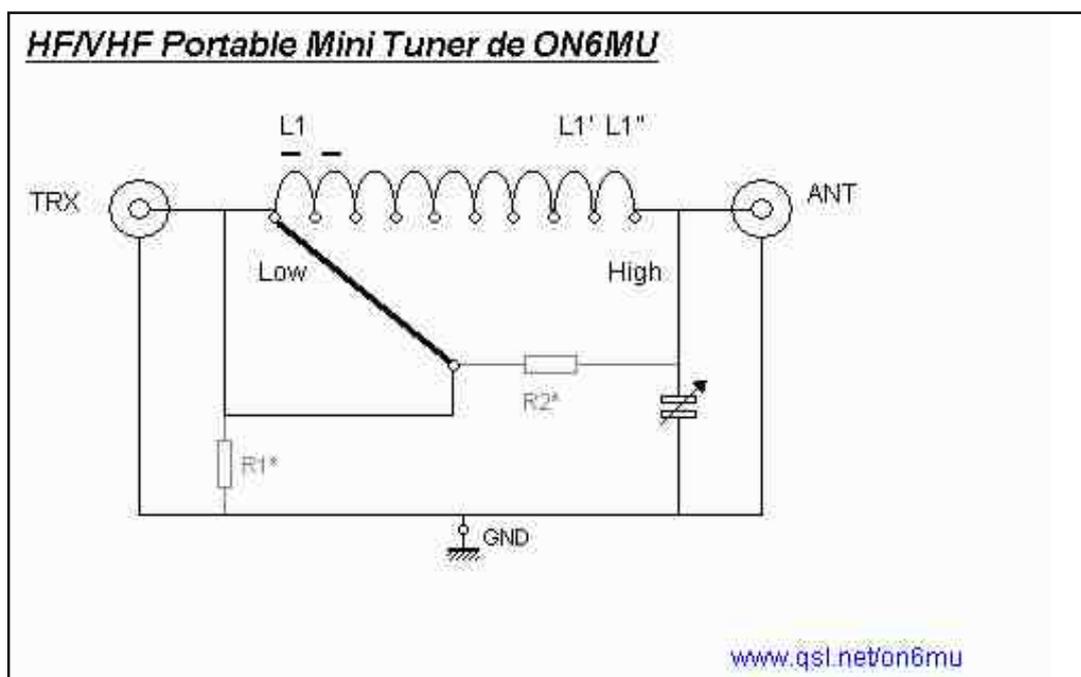
Ken KI6RHR with Homebrewed Tak Tenna



HOME BREW
TAK-TENNA
- KA6KBC -

HF/VHF Portable Mini Tuner

By ON6MU



Parts list

alu box of 70mm X 40mm X 33mm

2 female PL 259 chassis

C1 = variable capacitor of at least 300pF or better 500 pF

S1 = 10 or more position rotary switch

L1 = 0,7mm insulated copper wire, 6 turns par connection closely together, 9mm outside diameter (8mm inside) taps every 6 turns and the last two sections (L1' and L1'') 4 turns spaced at 1mm and 3turns spaced by 2 mm.

The first two sections has a ferrite core inside. Could be that lower frequencies needs higher inductance, experiment with by adding a core in the last few sections (see fig2)

I added two bolts on the alu-box chassis to - if needed - connect the tuner to ground or for using a counterpoise.

R1: 1.5k carbon 1/4w; optional to allow drain of possible static build-up on the antenna (or use a 10mH inductor)

R2: 2 x 470 carbon 1/2w parallel; optional to have some little protection during switching when using a carier, as the switch could open the the connection for a fraction of a second during switching.

The coil

Wind 6 turns x - 2 connections on your switch (in this project a 10-position rotary switch is used, being 8 times $6 = 48 + 4 + 3 = 55$ turns) over a 7mm screwdriver (or similar object) and make a tap every connection. Solder each tap.



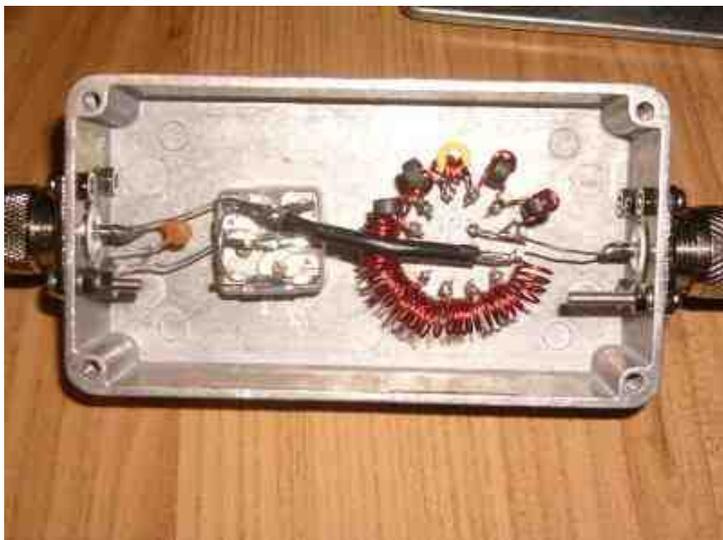
Solder each tap to each connection of your switch and stretch L1' (being 4 turns) at 1mm spacing and L1'' (being only 3 turns) at 2 mm spacing. You can replace L1'' by 3 turns of silver wire to allow better Q on higher frequencies (VHF).

Minituner insides...



Fig.2

Alex VE7DXW changed 5 of the lower 6 wdg air coils with 1 wdg, 2wdg, 4wdg, 4wdg, 6wdg ferrite core coils, which gives higher L values
Thanks Alex!



Specifications

manual operation

frequency range (depending on the coil min & max inductance): 160m...6m

(Up to 150Mc if: L1'' is silver(plated) wire, High Q switch, minimum capacitance of C is small enough and close connections are used in respect to 50 Ohms impedance)

10 Watt +/-

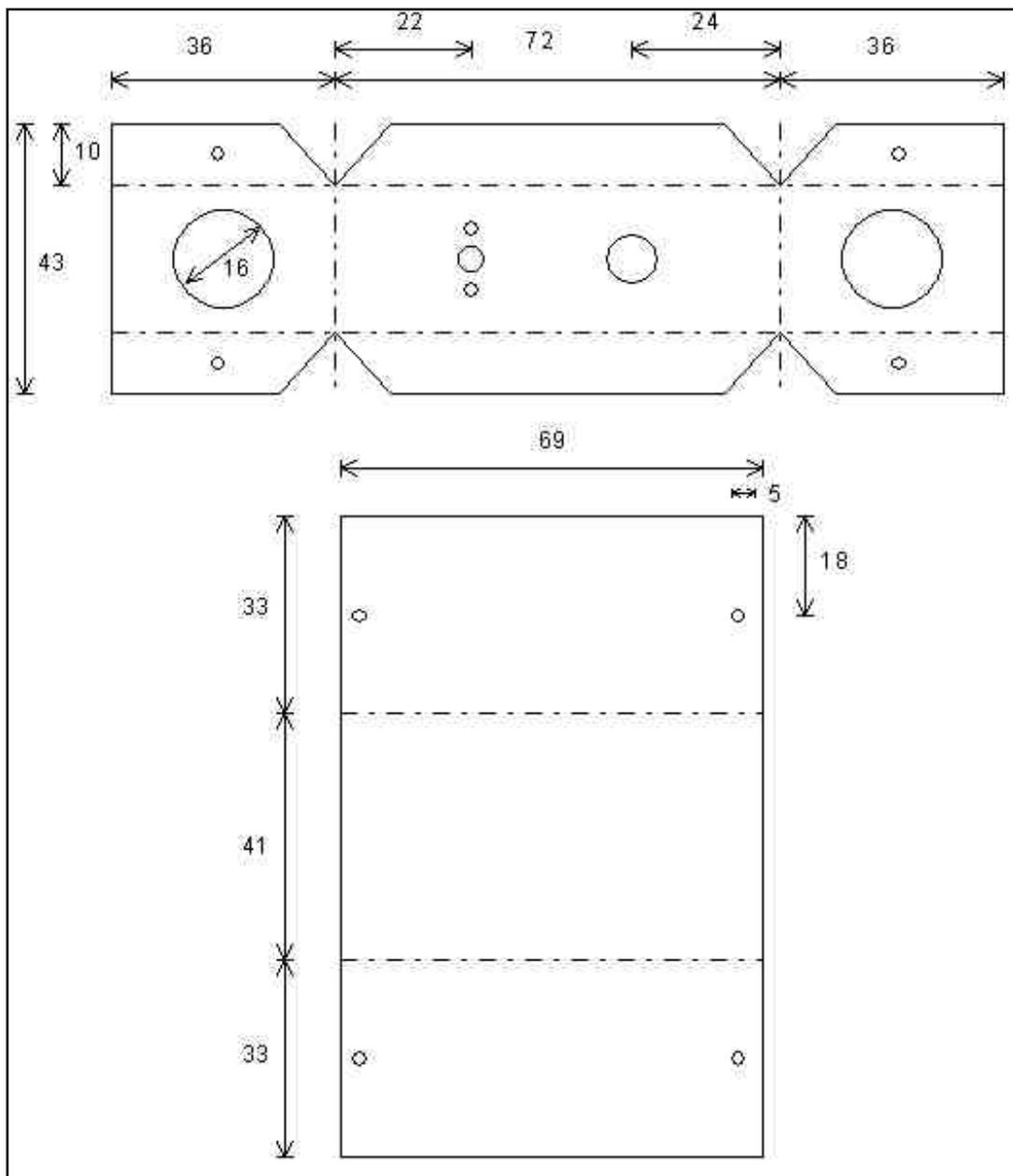
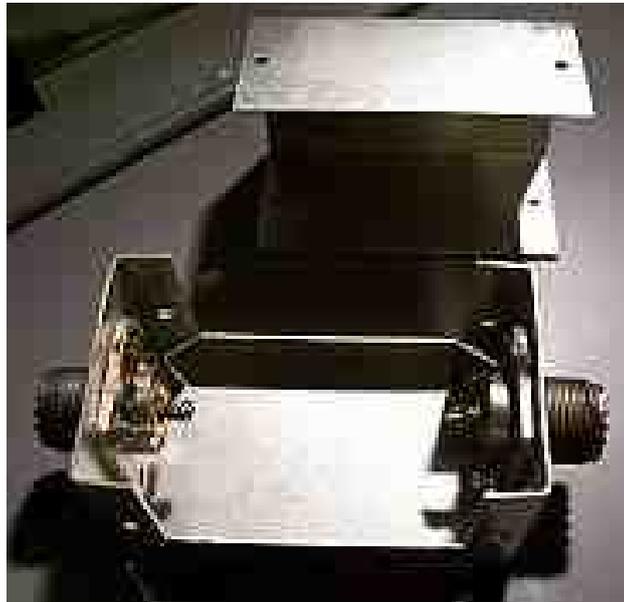
direct feed through

small and compact design ideal for low power QRP transceivers, like the Yaesu FT-817, or of course for receivers...

connection for counterpoise/ground

Notes: If you elect to use an antenna tuner, it is extremely important that you understand exactly how to use tuners and what they can and cannot do. A few watts of RF can easily become lost in an incorrectly adjusted antenna matching device. The whole idea of a QRP station is to keep things simple and economical, so I cannot overemphasize the priority of a clean, efficient connection of the amplifier output to a resonant antenna.

Homemade aluminum box



THE HAM-MAG'S HALL OF FAME

This is the list of all the generous donators. Thanks a lot.

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THE DX-NEWS From the Web



3D2/C, CONWAY REEF (Update)

Jan, DJ8NK, informs us "all is prepared for our DXpedition to Conway Reef (3D20CR), the rigs, antennas and gear are all packed and a pre-shipment by air will leave Hamburg tomorrow (September 15th). The crew will fly out on September 24th, and we plan to start operation on October 1st." The DXpedition is still looking for sponsors. The total amount of the operation is estimated at 64,000 USDs. For details/updates and how to donate funds for this operation, please visit their Web page at: <http://www.conwayreef2009.de>



3W, VIETNAM (Update [VERY RARE IOTA - #2])

An international group of operators will be active as 3W6C from Con Co Island (AS-185), Vietnam, in April 10-18th, 2010. This multi-national project, being coordinated by Swiss ham-radio operators, consists of roughly 20 individuals including one woman with members not only from Switzerland but also from Vietnam, Germany, USA and Japan. Operators mentioned as of today: Team Leader Hans-Peter/HB9BXE, Jan/DJ8NK, Hans/HB9BHW, Rene/HB9BQI, Christine/HB9BQW, Markus/HB9DIZ, Hans-Jurg/HB9DKZ, Paul/HB9DST/AA1MI, Leo/HB9DWL, Hans-Peter/HB9EHP, Matthias/HB9JCI, Peter/HB9PJT, Eddy/XV1X and Michal/XV9DX. During their stay, they plan to have 4 stations on the air. Their goal is to make contacts on as many different frequencies as possible, even on the 80 meter and 160 meter bands, which makes this DXpedition very special. But this goal also means that the group must transfer considerable amounts of equipment including radios, antennas, power generators, computers, and various ancillary supplies with them to the island. The team is looking for sponsors (whether individuals, ham-radio clubs or commercial) to help offset the costs. Complete details are available at: <http://www.3w6c.qrv.ch>



7Q, MALAWI

Barrie, G4AHK, will once again be active as 7Q7BJ between September 23rd and October 12th. Activity will be on all HF bands, mainly CW and SSB. QSL via his home callsign, direct or by the Bureau.

Ely, IN3VZE, informs OPDX that he will be active once again as 7Q7CE from the southwest shore of Lake Malawi from the shack of his good friend Harry, 7Q7HB, between October 2-20th. Activity will be holiday style with planned operations on all bands using SSB and RTTY. QSL via his home callsign, direct or by the Bureau.



9M6, EAST MALAYSIA

Tony, KM00, will be active as 9M6/KM00 during the CQWW DX CW Contest (November 28-29th) as a Single-Op entry. QSL route TBA.

9M8, EAST MALAYSIA (IOTA Op)

Steve, 9M6DXX, from the Island of Borneo (OC-088) plans to busy from East Malaysia over next two months. Look for Steve to be active as 9M8Z from Sarawak, East Malaysia (OC-088), between October 22-26th. Activity will be SSB only but will also include operations in the CQWW DX SSB Contest (October 24-25th) as a Single-Op/All-Band/High-Power/Unassisted entry. QSL via LoTW, or QSL direct or by the Bureau to M0URX (or request direct or bureau cards on-line info at: <http://www.m0urx.com/direct-a-bureau-instructions.html>)

In early November, Steve/9M6DXX will be joined by John/9M6XRO and the operators will activate Pulau Labuan Island (OC-133) between November 6-8th (and possibly for one or two hours on November 9th after 0000z). The callsigns and operations will be as follows:

9M6DXX/P - On 80-10 meters; SSB only.

9M6XRO/P - On 160-10 meters; CW and RTTY.

QSL both 9M6DXX/P and 9M6XRO/P via M0URX, either direct, by the bureau or LoTW.



A5, BHUTAN

Yasuo, JA1FJJ, will be active as A52FJJ between October 8-20th. Activity will be on 80-10 meters using SSB, RTTY and PSK31. He plans to use 500 watts into a G5RV antenna. QSL via his home callsign, direct or by the Bureau.



C9, MOZAMBIQUE

Marco, IK1RAE, will be active as C91VM between October 5-23rd. Activity will be on 40-10 meters using SSB and running 100 watts into a vertical. Marco plans (if possible) to activate IOTA groups AF-061, AF-066, AF-072 and AF-088. QSL only direct.

PLEASE NOTE: All proceeds will be donated to a charity project in the village of Malangute - check (QRZ.com) for the official QSL info.



EA8, CANARY ISLANDS

Jyrki, OH6CS, will be active as EA8/OH6CS during the CQWW DX SSB Contest (October 24-25th) as a Single-OP/Single-Band (TBA) entry. He will be in the Canary Islands (AF-004) between October 21-27th. QSL via LoTW or to his home callsign direct. Visit his Web site at:

<http://personal.inet.fi/cool/sierra/>

EF8, CANARY ISLANDS

Val, RD3AF, will be active as EF8M from Santa Maria de Guia, Las Palmas Gran Canaria (AF-004, DIE S-005, WLOTA L 0969) during the CQWW RTTY DX Contest (September 26-27th). QSL via UA3DX.



FO8, FRENCH POLYNESIA (Update)

Phil, F5PHW, who will be in Tahiti for the next two years and active as FO8RZ, has reported that he has installed the 160 meter kit on his HF6V antenna. It is suggested to start looking for him on 160m. Over the past week Phil has been on 40/30/20 meters CW, with some RTTY. QSL via LoTW. QSL is also 'OK' via F8BPN, either direct or via the French Ref-Union Bureau.



JW, SVALBARD

Operators Arne/LA7WCA, Maurits/LA3XIA and John/G4ATA will be active as JW7WCA, JW3ZIA and JW/G4ATA, respectively, between October 8-13th. Activity will be on most bands using SSB and RTTY. QSL via the operator's home callsign.



P4, ARUBA

Marty, W2CG, will once again vacation and operate in Aruba between January 5-26th, 2010. Look for him to use a special callsign, either P40C or P40CG (awaiting approval). Activity will be primarily CW/RTTY on 80-6 meters, usually between 1200-1400z and 2000-2400z, other times as schedule permits. QSL is via the LoTW (prefers), or via his home callsign, by the Bureau or direct (U.S. stations, if not LoTW then SASE via CBA).



VC, CANADA (Special Event)

Look for OPP officer Bob Cooke/VE3BDB and other current or retired uniform or civilian members of the OPP, to activate the special callsign VC3COPP between October 2-31st. Activity is to celebrate the 100th anniversary of the Ontario Provincial Police Force (OPP). Since its formation on October 13, 1909, the OPP has grown to become one of the largest deployed police forces in North America. Activity will be on the HF bands, possibly 6 meters, and using CW and SSB. QSL via VE3BDB only direct. Visit the special VC3COPP Web site at: <http://www.qsl.net/ve3bdb/vc3copp.htm>



VP2M, MONTSERRAT

Operators Tom/DL2RUM (as VP2MUM), Rudi/DM2XO (as VP2MXO) and 3D20CR op Jan/DJ8NK (as VP2MNK) will operate from Montserrat between November 3-15th. Activity will be on 160-10 meters using CW, SSB and RTTY. QSL via their home callsigns per the QRZ.com address or by the Bureau.



YM, TURKEY

Nick, LZ1NK, will be active from Asian Turkey (Zone 20) as YM3A during both the CQWW DX SSB Contest (October 24-25th) as a Single- Op/Single-Band (40 or 20m) entry and the CQWW DX CW Contest (November 28-29th) as a Single-Op/Single-Band (40m) entry. QSL via LZ1NK.

ADDED NOTE: Look for Nick as TA3/LZ1NK before each contest.



YS4, EL SALVADOR

Operators Gregor/DF7OGO, Tom/K3WT, Ron/N0AT, Vlad/N0STL and Bill/W0OR will be active as YS4U during the CQWW DX CW Contest (November 28-29th) as a Multi-Single entry. QSL via N0AT. Look for activity outside of the contest. Operators will be in YS-land between November 20th and December 1st.



ZF, CAYMAN ISLANDS

Joe, W6VNR, will once again be active as ZF2AH from Grand Cayman Island. Activity will include the CQWW DX SSB Contest (October 24-25th). QSL via his home callsign.



ZM2, NEW ZEALAND

Operators Lee/ZL2AL, Stan/ZL2ST, Peter/ZL2LF, John/ZL2QM, Mike/ZL2CC, Gary/ZL2IFB and Wayne/ZL2WG will be active as ZM2M from Napier, New Zealand (OC-036, also counts for WLOTA LH-0069) for the CQWW DX SSB Contest (October 24-25th), as a Multi-2R entry. QSL via ZL2AL, direct or by the bureau.



CONTESTS OF OCTOBER

Date begin	UTC begin	Date end	UTC end	Contest	Mode
3/10/2009	7:00	3/10/2009	9:59	Deutscher Telegraphie Contest	CW
3/10/2009	0:00	3/10/2009	0:00	TARA PSK31 Rumble	PSK31
3/10/2009	8:00	4/10/2009	8:00	Oceania DX Contest	SSB
3/10/2009	16:00	3/10/2009	19:59	EU Sprint Autumn	SSB
3/10/2009	16:00	3/10/2009	18:00	PRO-CW-Contest (1)*	CW
4/10/2009	6:00	4/10/2009	8:00	PRO-CW-Contest (2)*	CW
4/10/2009	6:00	4/10/2009	10:00	ON Contest 80 Meter	CW
4/10/2009	7:00	4/10/2009	19:00	RSGB 21/28 MHz Contest	SSB/CW
10/10/2009	0:00	10/10/2009	7:59	The Makrothen Contest (1)	RTTY
10/10/2009	8:00	11/10/2009	8:00	Oceania DX Contest	CW
10/10/2009	16:00	10/10/2009	23:59	The Makrothen Contest (2)	RTTY
10/10/2009	16:00	10/10/2009	19:59	EU Sprint Autumn	CW
11/10/2009	8:00	11/10/2009	15:59	The Makrothen Contest (3)	RTTY
11/10/2009	0:00	11/10/2009	4:00	North America Sprint Contest	RTTY
11/10/2009	6:00	11/10/2009	10:00	ON Contest 80 Meters	SSB
17/10/2009	0:00	18/10/2009	0:00	JARTS WW RTTY Contest	RTTY
17/10/2009	15:00	18/10/2009	14:59	Worked All Germany Contest	SSB/CW
19/10/2009	13:00	23/10/2009	23:59	School Club Roundup	CW/SSB
24/10/2009	0:00	25/10/2009	23:59	CQ WW DX Contest	SSB
24/10/2009	0:00	25/10/2009	23:59	VERON SLP Comp.-Part 8 SWL	SSB
24/10/2009	0:00	25/10/2009	23:59	CQ WW SWL Challenge SWL -	SSB



1/10 - 29/10 FIJI; 3D2MJ and 3D2KJ OC-016)

from Viti Levu by SP5EAQ and SP5DRH. Activity will be on all bands, but with an emphasis on the lower bands. They plan to use two stations with small amps and vertical antennas. QSL via their home callsigns.

4/10 - 6/10 W. KIRIBATI; T3ØM and T3ØW

by YT1AD (T3ØM) and (T3ØW) YU1DW planning a Pacific tour in September and October of 2010. More details will be forthcoming at <http://www.yt1ad.info/t31/>

5/10 - 10/10 CENTRAL KIRIBATI; T31

A multi-national team of 14 operators led YT1AD. Details are expected in due course. Updates will be posted to the expedition's website at <http://www.yt1ad.info/t31/index.html>

5/10 - 30/10 S. COOK Is; E51NOU OC-013

from Rarotonga Island by N7OU during his spare time. Activity will be on 80-10 meters, CW only, using 100w into a vertical. QSL via N7OU.

6/10 - 8/10 FIJI; 3D2AD and 3D2DW

by YT1AD (3D2AD) and (3D2DW) YU1DW planning a Pacific tour in September and October of 2010. More details will be forthcoming at <http://www.yt1ad.info/t31/>

9/10 - 19/10 MIDWAY I.; K4M OC-030

After a seven-year hiatus, in late January 2009 the U.S. Fish & Wildlife Service announced that they would once again allow amateur radio operations from Midway Atoll "on a trial basis". A multi national team will be active for ten days. They will have 5-6 stations active on 160-6 metres, with at least one station on 20m around the clock. Further information, including details on how contribute to this expensive expedition, can be found at <http://www.midway2009.com/>

10/10 - 18/10 VANUATU; YJ0PX OC-035

Activity from all locations will be mostly CW on all HF bands. QSL via his home callsign, direct or by the Bureau.

10/10 - 27/10 BENIN; TY1MS

from Grand Popo by PA8AD, PA3AN, PA3AWW and PD0CAV including an entry in the CQ WW DX SSB Contest. Their goals are to activate this DXCC Entity on 160-10 metres, to provide onsite help and raise funds for the Mercy Ships Charity Project. QSL via PA3AWW, direct or bureau. Further information (including OQRS for direct QSLing) can be found at <http://www.benin2009.com/>

11/10 - 25/10 MALDIVES; 8Q7AK AS-013

from Embudu by G7COD. He plans to operate CW and SSB on 80-12 metres (suggested frequencies and operating schedule at <http://www.qrz.com/db/8q7ak/>)
QSL via home call, direct or bureau.

12/10 - 14/10 WALLIS & FUTUNA IS.; FW

A multi-national team of 14 operators led by YT1AD. Details are expected in due course. Updates will be posted to the expedition's website at <http://www.yt1ad.info/t31/index.html>

12/10 - 25/10 MALDIVES; 8Q7AK AS-013

from Embudu Village, Embudu Island, WLOTA L-3911 by G7COD. Activity will be on 80-12 meters including 30/17/12m using CW and SSB. Operating schedule (everyday) is as follows: 0730-0830z, 0900-1030z, 1300-1500z and 1730-1800z. Suggested frequencies are: CW - 3503, 7003, 10103, 14003, 18073, 21003 and 24893 kHz SSB - 3795, 7063, 14147, 18133, 21253 and 24953 kHz

QSL via his home callsign, direct or by the bureau. Look for complete details at QRZ.com under 8Q7AK.

15/10 - 30/10 SENEGAL; 6W

by F8IJV will be honeymooning at Le Calao, Senegal, He will participate in the CQ WW DX SSB Contest as 6V7Q. He might also be active (SSB and digital modes) before and after the contest. QSL via F8IJV, direct or bureau.

16/10 - 22/10 MARQUESAS IS.; TX5SPM (requested call) OC-027

by SP3DOI, SP3CYY, SP9PT, SP9-31029 and FO5QB. They will have three stations and will operate CW, SSB, RTTY and possibly PSK31 on 160-10 metres, with an emphasis on working Europe on the low bands. QSL via SP9PT. The web site for the expedition is at <http://fo2009sp.pl/>

17/10 - 18/10 UNITED STATES OF AMERICA; K4L NA-110

from Hunting Island, Beaufort County, South Carolina by KA1DF, KI4ROL, K3LLH, N2EIO, AI4JA and W3HEA. The activity is to commemorate the 150th anniversary of the lighthouse. QSL via K3LLH. An online log will be available after the event. Further information can be found at <http://pws.prserv.net/K4L/>

17/10 - 1/11 SENEGAL; 6V7Q

by F8IJV on his honeymoon. He plans to be active in the CQWW DX SSB Contest. He will try to operate before and after the contest on 160-6 meters, mainly on SSB and the Digital modes. He will be operating from Jean-Francois, 6W7RV, QTH in La Somone. QSL via F8IJV. More details will be forthcoming.

19/10 - 28/10 ANTIGUA & BARBUDA; V25Z NA-100

from Yepton Estate Cottages, Antigua, by K7ZZ. Activity will be on all bands and modes. QSL via K7ZZ, direct only.

19/10 - 7/11 NIUE; ZK2DL OC-040

by DL2FAG. He plans to operate mainly RTTY, PSK and SSB on 10-80 metres, using a Triple leg multiband and dipoles. After Niue and before Samoa he will be visiting New Zealand's South Island (OC-134) and be active sporadically as ZL4/DL2FAG. QSL via home call. Log searches will be available at www.qsl.net/dl2fag/

19/10 - 17/11 AUSTRALIA; VK7ACG OC-006

from Tasmania by GØWFH. He will operate SSB on 160-10 metres, with a focus on the low bands. QSL via home call, direct or bureau.

21/10 - 26/10 SEYCHELLES; S79MI AF-024

from Praslin Island by HB9ENI CQ WW DX SSB Contest included. He plans to operate SSB and RTTY on the HF bands and 6 metres. QSL via home call, direct or bureau. He will upload his log to LoTW.

19/10 - 26/10 SABLE I.; NØTG/CYØ, WA4DAN/CYØ and AA4VK/CYØ NA-063

The Sable Island DXpedition has been postponed. They will leave the website up and updates will be posted as our plans to reschedule the DX-pedition to CY0.

They plan to have three complete HF stations, with three verticals, one "strategically placed" yagi and at least one wire antenna, and to operate CW and SSB on 160-10 metres, with an emphasis on Asia. Twenty metres are likely to provide most contacts, and they will try to have two stations (CW and SSB) on that band at the same time. The CY0 Team will provide a CY0 country multiplier to testers during the CQWW DX SSB Contest weekend. The team plans to operate only one station in the contest and also continue to maintain CW and 30/17/12m operations for those DXers who are not in the contest. QSL for all callsigns via NØTG. The website for the expedition is at <http://www.cy0dxpedition.com/>

20/10 - 27/10 ST. PIERRE AND MIQUELON; FP/KV1J NA-032

from Miquelon by KV1J and W8TOM during the CQWW DX SSB Contest. QSL via KV1J, direct, by the Bureau or LoTW. Activity outside of the contest will be on 160-6 meters using CW, SSB, RTTY and PSK31, generally on the highest frequency band that is open (no permission for 60M). Visit Eric's Web page at <http://www.kv1j.com/fp/october09.html>

20/10 - 30/10 ST. LUCIA; J68JA NA-108

by W5JON. He will use an ICOM IC-7000, KL-400 Amp (350 watts) into the following antennas: Alpha Delta DX-LB and DX-EE Dipoles, and a 3 element yagi on 6m. Activity will also include the CQWW DX SSB Contest (October 24-25th) as a Single-Op/All-Band entry. QSL via W5JON.

21/10 - 28/10 TURKS & CAICOS IS.; VP5/N2VW NA-002

from Providenciales Island by N2VW. His activity will include an entry in the CQWW DX SSB Contest (October 25-26th) possibly using a special callsign. Outside of the contest he will be on all bands (160-6 meters) and modes. QSL via his home callsign.

22/10 - 26/10 BAHAMAS; C6AQO and C6AXD NA-113

from Crooked Island by W2GJ, K3IXD, W3PP and K4QO including the CQ WW SSB contest as C6APR from the Crooked Island Lodge (Grid FL22). Before and after the contest look for C6AQO on HF CW and SSB and C6AXD on HF RTTY. Both C6AQO and C6AXD will be on 160m thru 10m including the WARC bands. All QSLs via K3IXD.

22/10 - 29/10 SURINAME; PZ5M

by AJ9C. His callsign will be announced when it is assigned. He is expected to be active on 160-6 meters using CW, SSB and RTTY, as well as an entry in the CQWW DX SSB Contest (October 24-25th). QSL to his home callsign with SASE/USD(s) for return postage.

22/10 - 31/10 NORFOLK I.; AI5P/VK9N OC-005

Activity from all locations will be mostly CW on all HF bands. QSL via his home callsign, direct or by the Bureau

22/10 - 9/11 PAPUA NEW GUINEA; P2 OC-102, OC-231 and OC-205

G3KHZ (P29NI) has announced a new IOTA DXpedition from the Tanga Islands (OC-102), the Green Islands (OC-231) and the Woodlark Group (OC-205). He and other four operators, CT1AGF, G3USR, G4EDG and SM6CVX) will operate CW, SSB and RTTY on 160-15 metres, using new single band vertical dipoles for 30-15m and a ground plane for 40m.

The announced schedule and callsigns are as follows:

OC-102 - Tanga Island; callsign P29VCX (via SM6CVX); October 22-26th

OC-231 - Green Island; callsign P29VLR (via SM6CVX); October 27-31st

OC-205 - Woodlark Island; callsign P29NI (via G3KHZ); November 2-9th

Further information is expected in due course. The web pages for the expedition are at http://www.425dxn.org/dxped/p29_2009/index.html

30/10 - 5/11 VANUATU; YJ

by VK2CCC (LY1F). Callsign is to be announced later. Activity will be "part time", but mainly on 160 and 80 meters CW. QSL via VK2CC, by the Bureau or direct.

31/10 - 4/11 GUYANA; 8R1PY

from Lethem, Guyana by members of the "Amateur Brazilian Team". Activity will be on 160-6 meters, including 30/17/12 meters, using CW, SSB, RTTY and PSK31. Operators mentioned are PU8TEP, PV8AZ, PV8DX, PV8IG, PY1YB, PY2TNT and PY2WAS. QSL via PY2WAS.

31/10 - 15/11 EASTER I.; XRØY SA-001

by a six team members with Europe as main target running for almost two weeks. They plan to focus on 160, 80, 40 and above all 30 metres (CW only, as digital modes on 30m are not allowed). Working Europe on 30 metres will be their priority during the first week on the island. XRØYA will have three stations with two amplifiers and several antennas. Although SSB will not be neglected, CW will be the main operating mode, with some RTTY being planned as well. QSL route TBA. Further information can be found on the expedition's web site <http://rapanui2009.org/>

2/11 - 9/11 UNITED STATES OF AMERICA: KG8DP NA-062

from Grasse Key. Operations will be stationary at Grasse Key and mobile as he travels to Key West and all points on the ocean. He will use the callsign KG8DP, as well as his club callsign NA8KD. This will be a week trip. QSL both KG8DP/NA8KD via info on QRZ.com (w/SASE). Mark will be using an IC-7000, 1.2 kw amp mobile and GLA-1000B portable amp. Antennas were not mentioned.

4/11 - 17/11 VIET NAM; XV AS-128

from the Island of Phu Quoc by DL7DF, who will lead a crew of operators. Their callsign has not been announced yet, but it is expected to be the XV prefix. Activity will be on 160-10 meters using CW and SSB with several stations on the air. One station will be exclusively dedicated to RTTY, PSK31 and SSTV. Their equipment consists of 3 transceivers (two K2 and one IC7000) with three kW linears into two 18m lowband verticals, a 2 element vertical for 40m, a 2 element vertical for 30m, two Spiderbeam for 20/17/15/12/10m, and some beverage antennas. Operators mentioned are: DK1BT, DL4WK, DL5CW, DL7DF and DL7UFR. Pilot station for this DXpedition is Bernd, DF3CB. QSL via DL7DF, by the German QSL Bureau or direct to: Sigi Presch, Wilhelmsmuehlenweg 123, D-12621 Berlin, Germany. For complete details, visit <http://www.dl7df.com/xv/index.html>

7/11 - 16/11 SENEGAL; 6W/EI6DX

from Somone which is located 70 km southeast of Dakar. He will concentrate on the lower bands and CW. QSL via RX3RC, by the Bureau or direct. Look for updates at <http://www.ei6dx.com/senegal/>

11/11 - 13/11 PAPUA NEW GUINEA; P29VCX OC-117

from Hastings Island by SM6CVX. QSL via home call. The web page for the expedition is at http://www.425dxn.org/dxped/p29_2009/

11/11 - 18/11 SAMOA; 5W OC-097

from the Island of Upolu by IK1PMR, K2LEO/PA3LEO, PA0BWL, AA4NN, OE2SNL, DJ5IW and OZ1IKY are planning a DXpedition to three semi-rare entities (and possibly some other operations) in the Pacific between November 11th and December 13th. Callsigns have not been announced yet. Focus will be on the lower bands, but activity is planned for 160-10 meters using CW, SSB and the Digital modes. The team will use three Elecraft K2/100 with DSP and amps. For more information and updates, watch: <http://www.ik1pmr.com/plans/a3/index.php?s=intro/>

A PIC16F84 based CW Decoder

By IK3OIL



The project in few words

I propose a simple CW decoder which makes use of a PIC16F84 microprocessor with a 16x2 chars LCD display. It is equipped with an audio frequency input from your receiver, an input for a straight key and an audio output locked to the input signal. It automatically adapts itself to the CW rate and may be employed for learning purpose substituting the traditional tone generator and offering the capability of displaying the keyed code.

Introduction

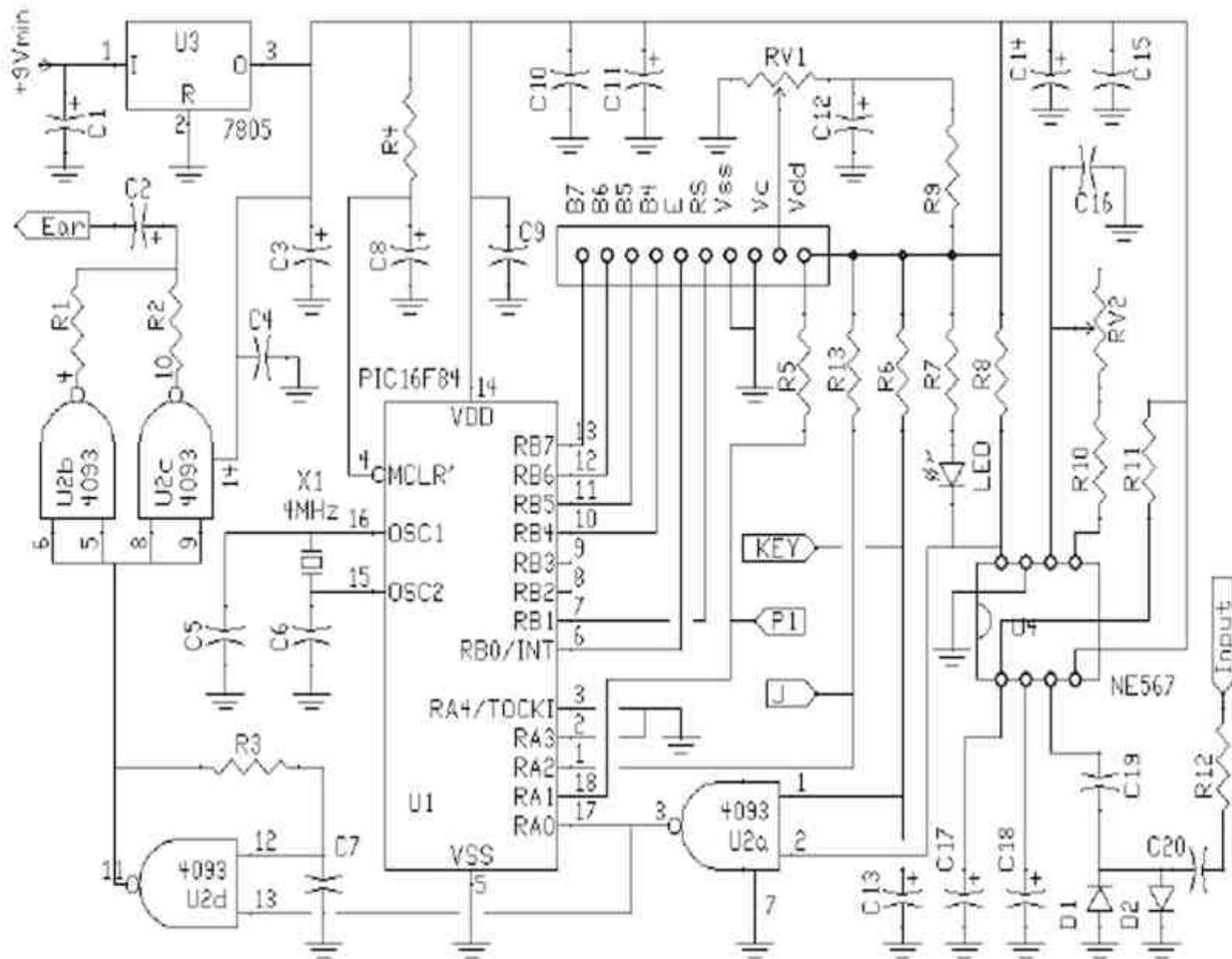
This project arises from a twofold need connected with CW learning, first of all to enhance the performance of the traditional oscillator providing it with a display on which you can verify the correctness of your keying, and then the need to have an instrument you can couple to the receiver so as to help those who, being still novices, are in a great trouble trying to deal with their early CW QSOs.

However it should be clear that, in my opinion, neither this device can substitute the ear's and brain's interpretation capability nor other similar instruments can do that. At the most they can help in quickening the code learning. The decoding capabilities are essentially connected to the received signal quality, it must be clear and strong enough, so don't think you can decode a weak and vanishing signal in the QRM, if this is your goal, you should much better make use of your ears. If however the signal is good and stable enough, then this equipment can succeed in doing its job well, adapting also itself to the CW rate, provided that it is sufficiently regular.

Specifications

The device is equipped with a 2x16 LCD display, the text shifts from left to the right starting from the end of the second row. An inter-words automatic spacing function is provided, based on a regular timing of the pauses in the sent code. This function may be inhibited grounding the J pin if the device is used for training purpose or while receiving an improperly sent code. The audio input must be at least 100 mV pp, a clipper is provided to cut large signals. The band width is about 100 Hz and the center frequency may be adjusted between 700 and 1000 Hz by a trimmer. A service push button (P1) displays the keying rate in chars/min, this measure is refreshed every N received characters (N is a settable software parameter). An input is provided for a straight Key, and both inputs (audio and key) activate the code display and the audio monitor function, a LED is operative while receiving code and shows the correct lock to the audio input, these two monitoring functions are very helpful to adjust the receiver tune because of the narrow bandwidth of the decoder. The BF monitor can drive a 32 Ohm earphone with the two sides series connected. The Vcc can be supplied by a 9V transistor battery and requires about 15 mA. An external supply (min 9V) is however recommended for long time use. When powered on, the microprocessor is setted for an intermediate keying rate, some characters may be therefore required to reach the lock with the received signal if it is very slow or very fast.

Electrical Schematic



R1 : 1.8 K Ω	R11 : 33 K Ω	C8 : 1 μ F	C18 : 0.5 μ F
R2 : 1.8 K Ω	R12 : 3.3 K Ω	C9 : 100 nF	C19 : 100 nF
R3 : 18 K Ω	R13 : 18 K Ω	C10 : 100 nF	C20 : 100 nF
R4 : 22 K Ω	C1 : 47 μ F - 25 V	C11 : 220 μ F	U1 : PIC16F84
R5 : 18 K Ω	C2 : 4.7 μ F	C12 : 22 μ F	U2 : 4093 CMOS
R6 : 18 K Ω	C3 : 100 μ F	C13 : 1 μ F	U3 : 78L05
R7 : 820 Ω	C4 : 100 nF	C14 : 220 μ F	U4 : NE567
R8 : 10 K Ω	C5 : 82 pF	C15 : 100 nF	RV1-RV2 : 4.7 K Ω
R9 : 10 K Ω	C6 : 82 pF	C16 : 100 nF	D1-D2 : OA95 - AA118
R10 : 10 K Ω	C7 : 100 nF	C17 : 1.5 μ F	X1 : 4 MHz xtal

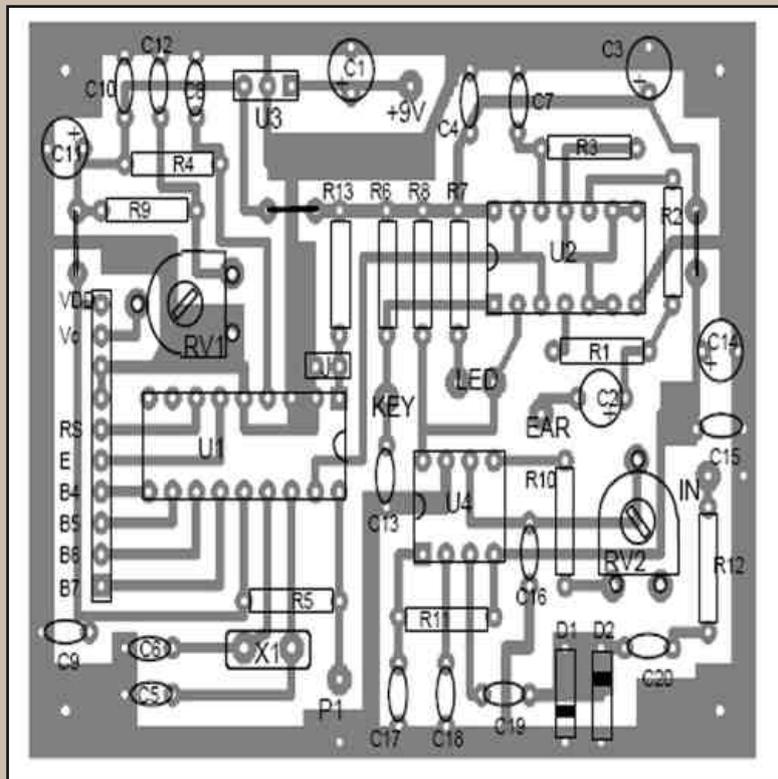
The schematic appears very simple, actually almost all of the functions are performed by the microprocessor software, while an NE567 tone decoder takes charge of processing the audio input signal. This IC contains a PLL circuit whose lock frequency may be adjusted between 700 and 1000 Hz by the RV2 trimmer.

With the listed component values it is obtained a band width of about 100 Hz. The minimum accepted input signal amplitude is 100 mV pp and its time duration would be at least 20 mS. The PLL measured lock delay is about 10 mS.

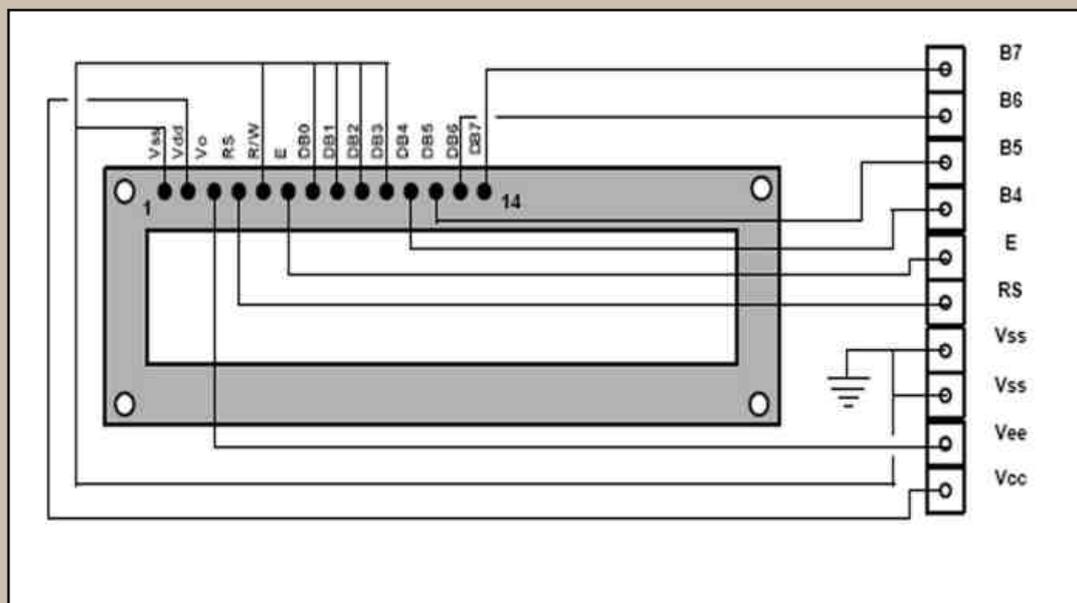
A clipper is provided to limit the input signal amplitude, it is obtained by 2 germanium diodes (OA95, AA118, not critical).

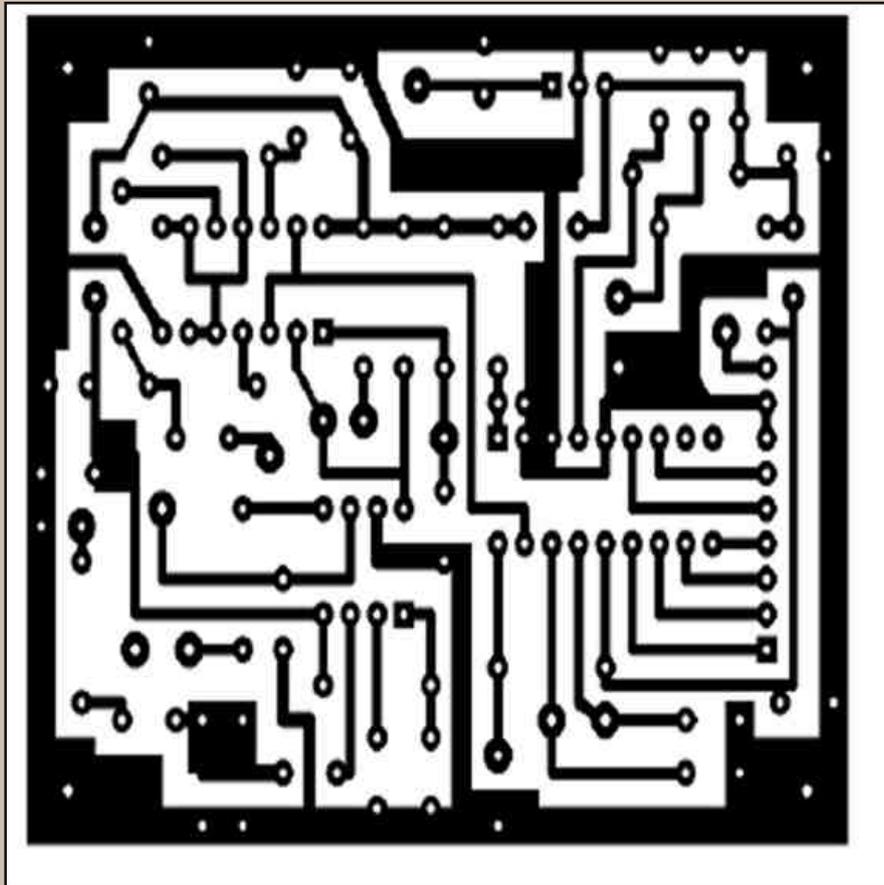
A LED is connected to the pin 8 of the PLL to show the correct frequency lock. The same pin 8 drives one gate (pin 2) of the CMOS trigger NAND 4093 whose output (pin 3) is connected both to the microprocessor PA0 gate and to a second CMOS gate (pin 13) working as an audio generator. The remaining two 4093 gates are used to implement a buffer capable of driving a medium impedance load (64 Ohm). A 78L05 regulator supplies both the decoder module and the LCD display, the RV1 trimmer is used to adjust the display brightness. The only required tuning is an RV2 trimmer adjustment so as to obtain the best frequency lock using an input CW signal strong and clear from your receiver

Component Layout



The whole circuit is mounted on a 60x80 mm PCB board. It is recommended to make use of small sized components (ceramic multilayers capacitors, low voltage electrolytics, ...) so as to make easier the assembling. The LCD display is connected by a 10 pole flat cable soldered to 2.54 mm standard connectors, as shown below





The PIC16F84 development tool

You may find several commercial development tools for the PIC16F84 micro (see for example the Microchip Starter Kits). However if you are interested in a low cost solution, you can download from the Microchip WEB site:

<http://www.microchip2.com/index.html>

The assembler software MPASM:

<http://www.microchip.com/10/Tools/pTools/MPASM/index.htm>

and the simulator MPSIM:

<http://www.microchip.com/10/Tools/Archive/index.htm>

Together with the technical documentation. Regarding to the hardware programmer construction, it is easy to find many references on Internet (I'll be glad to provide some informations). You can download a shareware version of the CIRCAD software from the Holophase WEB site:

<http://www.holophase.com/>

Final notes

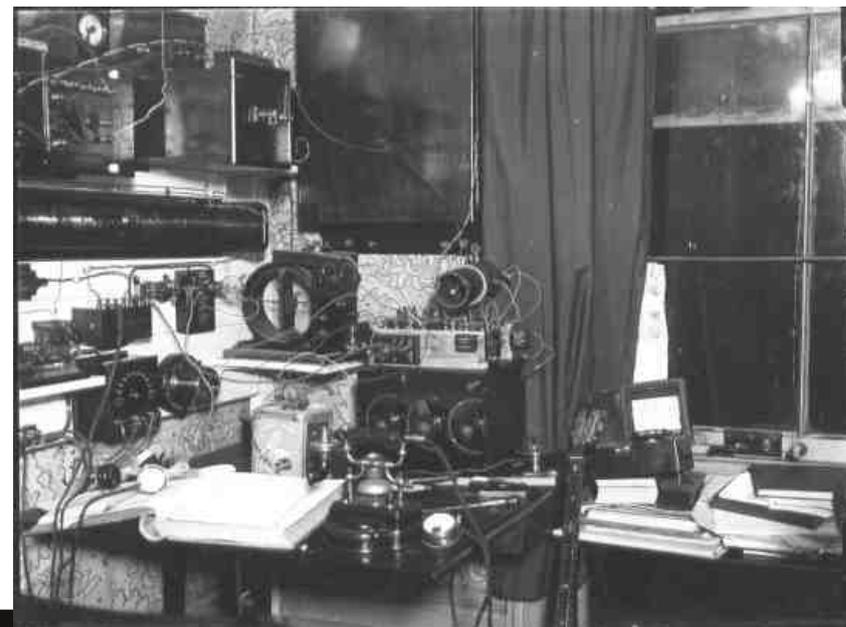
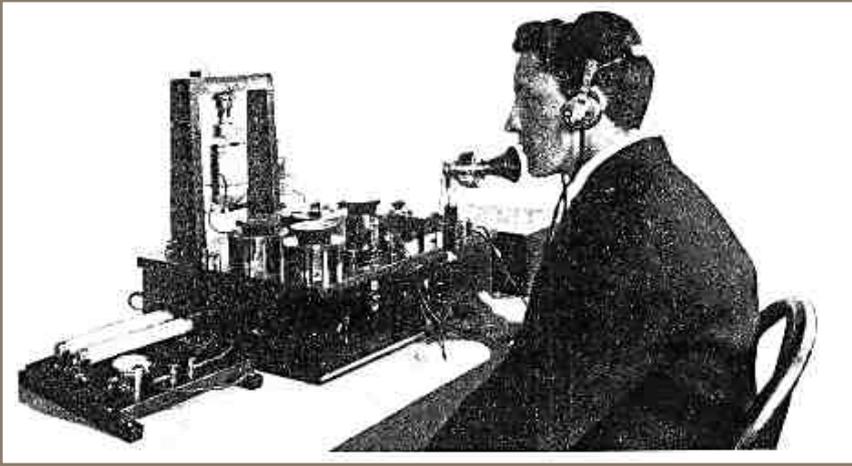
No particular difficulty should arise in the realization, neither in the finding of the components nor in the assembling of the decoder. If you are interested in obtaining more informations, a copy of the PIC software or the CIRCAD PCB files, you may contact me at my E-mail box : ik3oil@arrl.net.

Best 73's IK3OIL

A Hundred Years of Amateur Radio

By G3NGD

First Part: The first fifty years



The conception of the transmission of electromagnetic waves from one point to another, with no material connected between them is just over a century old.

From the last decade of the nineteenth century, scientists, amateurs, experimenters and engineers have worked together to develop radio as a practical means of communication.

This miniature thesis tells the story of the pursuit of one of the most fascinating hobbies - Amateur Radio - in which many people living in the United Kingdom played a pioneer role.

The term "Radio Amateur" can be defined as the practice of two-way short-wave radio communication, not as a business or means of profit, but as a hobby, pursued for the pleasure to be derived from an interest in the radio technique, construction and operation for the ensuing friendships which can be made with people all over the world.

The beginnings of amateur radio, as of radio itself, lie deep in the past, indeed one could begin thousands of years ago with those persons whose curiosity was aroused by the attraction of small particles by beads that had been rubbed. This was not really investigated until Gilberts' experiments in electricity during the reign of Queen Elizabeth I, followed by the discoveries of Ampere, Volta, Faraday and Maxwell, which prepared the world for what was to be one of the greatest revelations of all time - the means of telecommunication by wireless telegraphy.

Michael Faraday was the first to suggest that this relationship existed between light and the new "electromagnetism", but it was Heinrich Hertz at Karlsruhe, Germany who in 1887 finally established by experiment the principle of radiation. This was called Hertzian wave wireless communication.

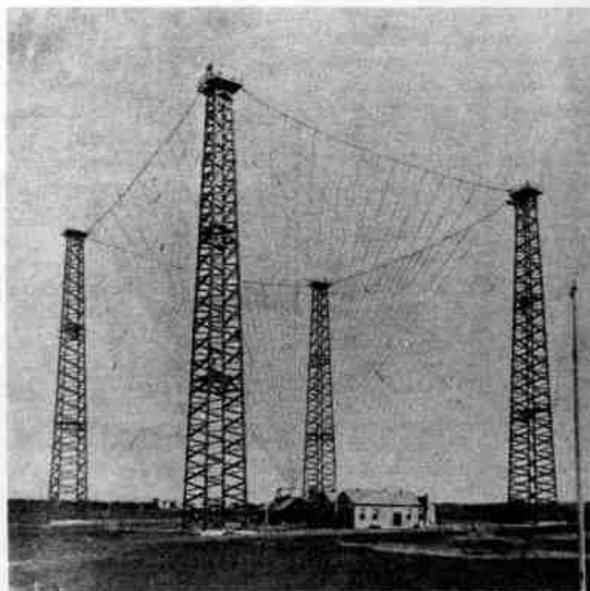
Marconi's first wireless system (patented in 1896) was based directly on the experiments conducted by Hertz some eight years earlier. In 1897 Marconi succeeded in transmitting signals across a distance of eight miles; the following year a distance of eighty-five miles was achieved.

In December 1901, the world was startled by the news that Marconi at St. Johns, Newfoundland, had received the Morse letter "S" transmitted by Ambrose Fleming at Poldhu, Cornwall. And so, as the twentieth century began to take shape, hundreds of people, young and old, possessed of a scientific bent and thrilled by the news that transatlantic wireless communication had indeed taken place, accepted the challenge of the unknown laid down for them by their illustrious forbears and became the world's first radio amateurs.

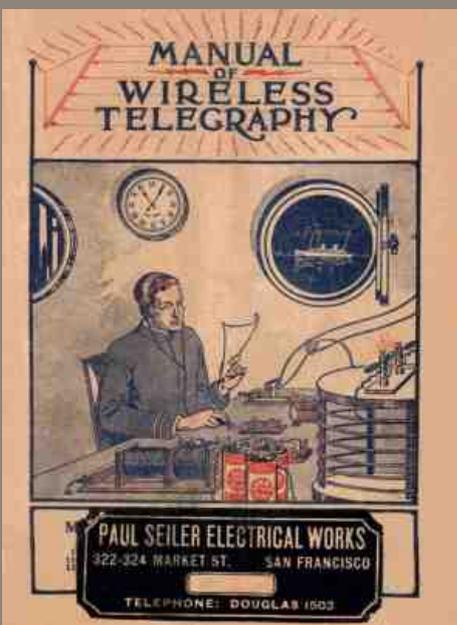
The Postmaster General (Lord Stanley) in his Report to parliament for the year 1903-04 recalled that he had recently introduced in the house of Commons, a bill for the purpose of requiring all wireless stations to be licensed. He gave as a reason the Government's decision to secure an adequate control of all wireless telegraphy installations.

The Wireless Telegraphy Act 1904 became law on August 15 of that year, and was the first piece of legislation of its kind in history. It remained in force until July 31, 1906, after which it was extended on a year - to - year basis under the Expiring Laws Continuance Act until replaced by the Wireless Telegraphy Act of 1924.

The Postmaster General, in his Report to Parliament for 1904-05 referred to the strategic importance of Wireless Telegraphy. He reported that he had received numerous applications for licences under the terms of the Act; the majority being from persons who desired to use wireless telegraphy for experimental purposes. His desire to encourage the wireless experimenter was confirmed when he said, "the class with whom I have the greatest sympathy are those who wish to go in for experiments in this science. I have been able to frame a clause which will give absolute freedom in that direction, merely requiring registration on the part of those who wish to engage in experiments. In a matter of this description the House will doubtless desire that the Act should be administered as liberally as possible and I shall certainly do my best in that direction. For what it is worth, I will give an understanding that no request for a licence for experiments shall be refused unless the refusal has been approved by me personally".



Marconi station at Poldhu, Cornwall, England, about 1905. The four wooden towers support a network of wires which converge to a point just above the transmitting and receiving buildings between the towers.





Quoting this speech by Lord Stanley at the opening of the Fourth RSBG Amateur Radio Exhibition on November 22, 1950, Mr Hugh S. Pocock MIEE (then Editor of Wireless World Magazine), suggested that if it had not been for this sympathetic attitude to the amateurs on part of the then Postmaster General, it was conceivable that private experimental licences would never have been granted.

Although Lord Stanley had indicated that those who wished to experiment would merely be required to register, Section 2(1)

of the Act stated that "where the applicant for a licence proves to the satisfaction of the Postmaster General that the sole object of obtaining the licence is to enable him to conduct experiments in Wireless Telegraphy, a licence for that purpose shall be granted, subject to special terms, conditions and restrictions as the Postmaster General may think proper, but shall not be subject to any rent or royalty.

On May 29, 1906, the then Postmaster General (Sydney Buxton MP) was ordered by the House of Commons to render a Return "applications for Licences under the Wireless Telegraph Act 1904, showing how each Application had been dealt with". This Return dated June 13, 1906 is of interest because it gives the name and addresses of sixty-eight persons to whom an Experimental Licence had been issued - the first such list ever published.

From Encouragement to Restriction

In April 1913, the Postmaster General announced that the number of licences for experimental purposes had increased to almost two thousand. It was certain that certain people in high places began to show concern, and Parliament was informed that new licence conditions were to be introduced. The new conditions would ensure, as far as possible, that licences to conduct experiments would only be issued to persons having the necessary qualifications. In addition, the Post Office would impose a licence charge of one guinea.

Each station was to be allocated a call-sign which was to be used for identification purposes.

It was with the knowledge that new conditions were to be introduced that wireless enthusiasts up and down the country began to realize the urgent necessity for taking collective action. Against the background the London Wireless Club was formed (later to become the Radio Society of Great Britain - RSGB).

Then the war clouds rolled up, bringing in their train a telegram to all licence holder that was destined to put an end to amateur wireless experiments for a very long while.

The First World War culminated with the signing of an armistice on November 11, 1918. The enthusiastic amateurs looked forward to the return of their licences. Months passed by with no word from the Government of their intention in regard to the wireless amateur. The pages of Wireless World Magazine throughout the period from January until December 1919 were alive with references to "Amateur Radio Position".

Senatore Marconi wrote:

"In my opinion it would be a mistaken policy to introduce legislation to prevent amateurs experimenting with wireless telegraphy. Had it not been for amateurs, wireless telegraphy as a great world-fact might not have existed at all. A great deal of the development and progress of wireless telegraphy is due to the efforts of amateurs". Late in November 1919 the Post Office announced that a new Wireless Telegraphy Bill would shortly be introduced into Parliament.

The new licences were issued in April 1920, and contained additional conditions to the previous licence. The applicant must now satisfy the Post Office that he/she has "some definite object of scientific value in view". Applicants must "have a knowledge of the regulations insofar as they relate to interference". A Morse operating speed of at least twelve words per minute sending and receiving would be required.

Many and strange were the applications composed to fulfil the requirement as to the object of scientific value. Perhaps it was fortunate for many that once the experimental licence was issued, the authorities seemed to lose interest in those "experiments".

An "Artificial Aerial" licence was available which required no examinations to be taken. This licence gave no right to radiate signals, but merely to install or build transmitters. Sometimes it seemed the Post Office had engaged the applicant in a form of chess. The applicant would-be amateur would submit a list of proposed experiments to improve transmitter design the Post Office would counter by declaring such experiments could be equally well carried out with an artificial aerial permit. The frustrated applicant would consult one of the fortunate, who had already obtained a licence, and together they would concoct a new thesis, this time bringing in some mention of aerials and propagation.

After a licence had been held for a period of six months, a permit to run high power could be applied for. This usually meant that the applicant would have to dream up some more "experiments" that would justify the application. One of the main developments in radio after 1918 was the discovery of the usefulness of the shortwave-bands. It was generally considered that wavelengths below 200 metres (1.5MHz) were useless except for short distance transmission, though cases were known of long ranges being obtained on short waves.

These were regarded as freaks, however, and wavelengths below 200 metres were after 1918, allocated to amateurs who encouraged by these "freak" results, arranged trial broadcasts from America to England. Their success showed that short-wave low power broadcasts could be heard over long distances. The first American amateur stations were heard in Britain during November 1921, and the next year, amateur stations in London and Manchester were heard in America. A year later, in November 1923, the first amateur two-way trans-Atlantic contact took place on about 110 metres between France and America; and within a few days of this event British amateurs reduced their wavelength and began to communicate across the Atlantic. With valves and components then available it was no simple matter to achieve operation on wavelengths of 100 metres and below. By the following autumn, two-way contacts between Britain and New Zealand on the eighty metre band represented the longest distance of communication possible on the globe.

Soon operation on the forty and twenty metre bands were producing long-distance contacts at all times of the day and night, and there began a flood of commercial stations opening up to exploit those discoveries which had stemmed directly from amateur radio. By 1928 the Atlantic was spanned on ten metres, and even five metres was being used by amateurs before the end of the 'twenties. The authorities became alarmed at the ease with which the amateurs were working one another throughout the world and introduced a ban on international working by British amateurs. These restrictions were eventually removed, but not until after a tough fight with officialdom.

In June 1933 a National Field Day was held at many locations in the British Isles. The purpose was to demonstrate that low power portable stations set up at short notice out of doors were capable of maintaining reliable communications with other low-power portable stations in different parts of the British Isles. The results showed "that if the necessity arose, the Amateur Radio Movement in the United Kingdom could place into operation an emergency network at short notice". Six years later, many radio amateurs who were among the first of the many thousands of R.A.F. reservists to go abroad, were grateful for this experience.

During the summer of 1938, a civilian reserve was established, and licensed radio amateurs between the ages of eighteen and fifty-five were recruited. As part of their training, they visited R.A.F. stations and studied R.A.F. procedure and servicing. On passing the Morse examination at eighteen words per minute, a grant was made of two pounds sterling, and opportunities were provided for promotion to commissioned rank.

The blow came suddenly but not unexpectedly. A notice in the London Gazette of Thursday 31 August 1939 proclaimed:

"I Major George Clement Tyron, His Majesty's Postmaster General, hereby give notice that ... all licences for the establishment of wireless telegraphy sending and receiving stations for experimental purposes are hereby withdrawn". ***The second world war had begun!***

To be continued...



Spécial mobile Antennas



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