

OFFICIAL NEWSLETTER OF THE  
**BORDER RADIO CLUB**

**HAPPY NEW YEAR**

**JAN  
2010**

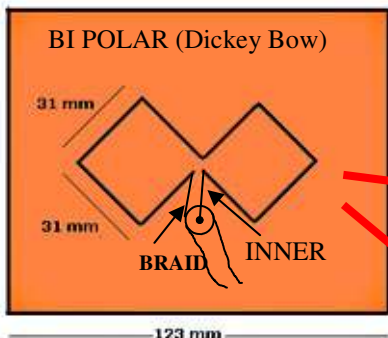
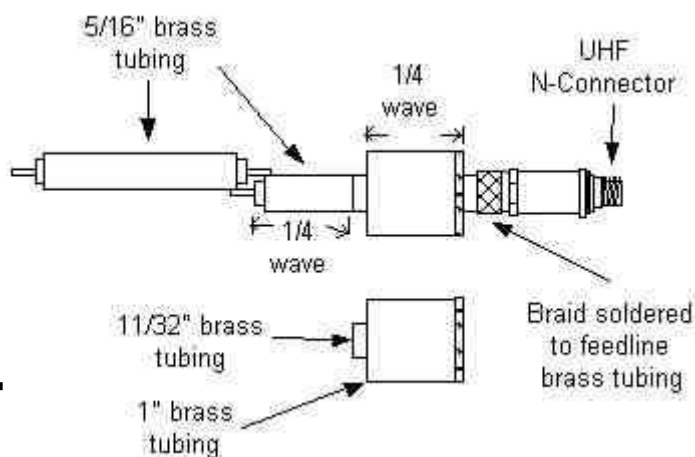
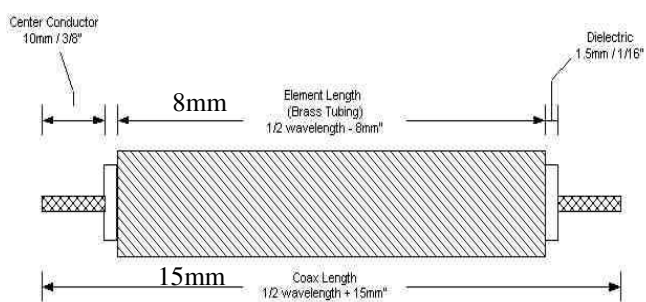
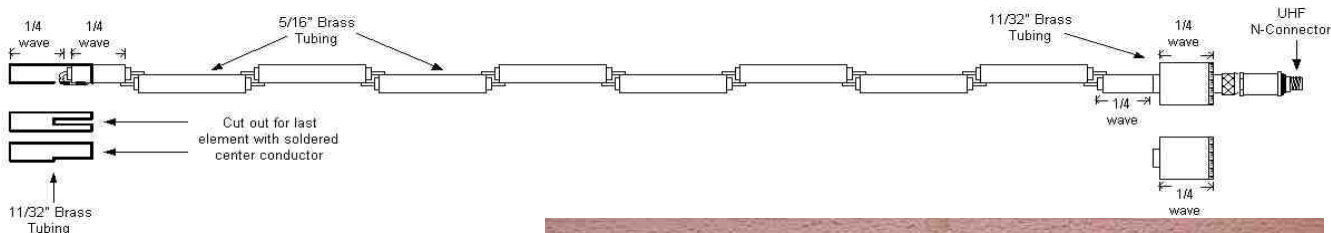


**It's 2010  
already**

**FEEDBACK**

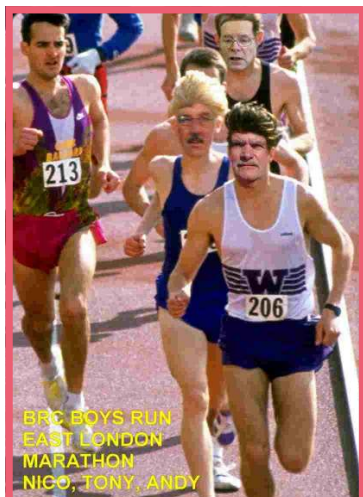
# 2.4Ghz Colliner Antenna

THIS ANTENNA WILL ALLOW YOU TO EXTEND THE PICKUP/Tx RANGE OF YOUR WiFi COMPUTER LAN



Any number of elements can be used. the more used, the more gain you get. It is certainly better than the little antenna you get with the normal router.

The above Dickey Bow antenna is very good, easy to make and works like a bomb. It can be made from Welding rod or thick stiff copper wire. it can also be attached to an old TV dish for more gain.



Bruce ZS2CBW & XYL at the Xmas at the Party. Last month we lost him but now he is found. Full of dead mea by the look of it, hi.



BRC BOYS RUN EAST LONDON MARATHON NICO, TONY, ANDY

## DUAL-BAND ANTENNA FOR 146/446 MHZ

This mobile whip antenna won't take long to build, works well and only requires one feed line for the two-band coverage. For the radiator and decoupling stub, a brazing rod can be used for the radiator, which he coated with a rust inhibitor after all the tuning was done. You can start with a 2-m radiator that's 20.5 inches long. This is an inch longer than normal so that it may be pruned for best SWR.

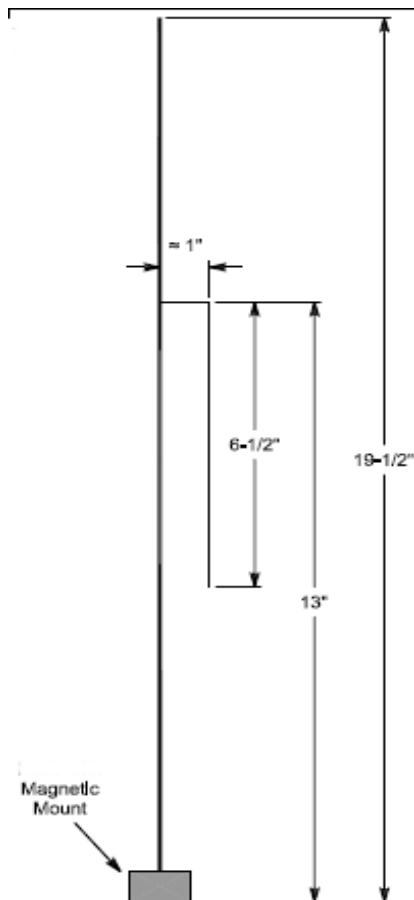
Next tack on the 70-cm decoupling stub, which is 6.5 inches long. Trim the length of the 2-m radiator for best SWR at 146 MHz and then tune the 70-cm stub on 446 MHz, moving it up and down for best SWR. There should be no significant interaction between the adjustments for either frequency.

The SWR in the repeater portions of both bands is less than 2:1.

### ADAPTING THE MOBILE ANTENNA FOR FIXED-STATION USE

You can use the dual-band mobile whip as the radiating element for the ground plane antenna. Don't change the 2-m radials. Instead, add two 70-cm radials at right angles to the 2-m set. The antenna is no longer two dimensional, But you do have two bands with one feed line and automatic band switching.

Diagram of dual-band 146/446-MHz mobile whip. Brazing rod is used for the 2-m radiator and for the 70-cm decoupling stub.



# D-I-Y



## East London Ham History

The Van Blerk family sent the Border Radio Club these two snippets of Ham history. It shows the late young and beautiful Iris Hayes of East London. Iris was the first Female radio amateur operator in South Africa and was known world wide. She was a real ambassador to all that contacted her on the bands. Look at the date of her QSL card - 6/5/1938. It must be the oldest QSL card in South Africa that is still in existence.

ZS2AA

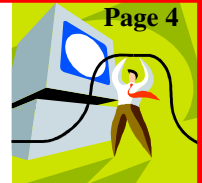


TO DENNIS ZS1AU

Many thanks to Dennis and the Van Blerk Family for this treasure.



## INTRODUCTION TO PACKET RADIO - PART 12 - by Larry Kenney, WB9LOZ



**The National Traffic System**, known as NTS, is the ARRL sponsored Amateur Radio message handling network. Packet radio is now playing a very important part in the network, so let's take a look at the system and give you some tips on handling NTS traffic by packet.

**Handling third party traffic** is the oldest tradition in amateur radio. Nationwide, the National Traffic System has hundreds of local and section nets meeting daily in order to facilitate the delivery and origination of such messages. More and more of this traffic is being originated, relayed, and delivered on packet. If you enjoy traffic handling, you can easily get involved in NTS via packet. If you're on packet but know nothing about NTS, this part of the series will get you off to a good start. At the end you'll also find some references for further information on NTS. Local packet BBSs have to be checked daily for traffic that needs to be delivered or relayed. When you check into your local BBS, enter the LT command, meaning "List Traffic". The BBS will display a list of all NTS traffic awaiting delivery. It'll look similar to this example:

```
MSG# STAT SIZE TO FROM @BBS DATE/TIME SUBJECT
37893 TN 486 60625 KB6ZYZ NTSIL 1227/0712 CHICAGO, IL 312-267
37802 TF 320 06234 WB6DOB NTSCT 1227/0655 NEW HAVEN, CT
37854 TF 588 93432 KA4YEA 1227/0625 CRESTON, CA 93432
37839 TN 412 94114 KA8UHL 1227/0311 SAN FRANCISCO 415-821
37781 TF 298 94015 W1KPL 1226/2356 DALY CITY, CA 415-992
```

You might see traffic that is being relayed by your local BBS to some other part of the country as well as traffic for your local area. The "Subject" or "Title" column of the listing will show the destination of the traffic. If you see a message that is within your local area, help out and deliver it.

**RECEIVING A MESSAGE:** To take a message off of the Bulletin Board for telephone delivery, or for relay to a local NTS net, enter R followed by the message number. Using the list above, R 37839 would send you the message from KA8UHL for San Francisco. You'll find the message in a special NTS RADIOGRAM format, with a preamble, address, telephone number, text and signature, ready for delivery. After the message has been saved to your printer or disk, the message should be erased from the BBS. Use the K command, as you do for killing your own messages. To kill message 37839, for example, you'd enter: K 37839. This prevents the message from being delivered again by someone else.

**DELIVERING OR RELAYING A MESSAGE:** Once you have received the NTS Radiogram, it should, of course, be handled expeditiously. If it's for your immediate area, you should deliver the message by telephone. If you took the message for delivery to the local traffic net, you should make an effort to see that it gets relayed as quickly as possible. If you're unable to deliver the message, due to an incorrect phone number, no answer after several tries, or some other problem, send a return message to the originator advising him of the non-delivery, and why.

**SENDING MESSAGES:** Any amateur can originate a message on behalf of another individual, whether the person is a licensed amateur or not. It is the responsibility of the originating amateur, however, to see that the message is in proper form before it's transmitted. A special format is used for NTS traffic so that the messages are compatible across the entire network. Each message should contain the following components in the order given: number, precedence, handling instructions (optional), the station of origin, check, place of origin, time filed, date, address, telephone number, text and signature. The destination of all NTS traffic must be to a point in the US, its possessions, or Canada.

When the message is ready to be entered into your local BBS, you must use the ST command, which means "Send Traffic", followed by the zip code of the destination city, then @ NTS followed by the two letter state abbreviation. The form used is ST ZIPCODE @ NTSxx. A message being sent to Boston, MA 02109 would be entered as follows: ST 02109 @ NTSMA and a message for Iowa City, IA 52245 would be entered as ST 52245 @ NTSIA. The message SUBJECT or TITLE should contain the destination city and state and the telephone area code and exchange, if available. See the examples in the listing above. Only one NTS message should be included in each packet message (no "book" messages). The actual radiogram should be included entirely within the TEXT of the packet message, including all of the components listed above. End the message with the usual Control-Z or /ex.

**IN TIME OF EMERGENCY:** The National Traffic System functions on a daily basis as a public service for both your fellow hams and the general public. It serves another function as well. The NTS provides a well oiled and trained national system of experienced traffic handlers able to handle large volumes of third party traffic accurately and efficiently during disasters. Your participation now will help prepare you for that time of emergency. Following the Loma Prieta Earthquake in October of 1989, over 7000 NTS messages were handled by packet BBSs in the San Francisco Bay Area. We needed and used all of the help we could get.

**REFERENCE MATERIAL:** The ARRL booklet "An Introduction to Operating an Amateur Radio Station" offers detailed information on handling and preparing NTS Radiograms. There are also many files with detailed information on NTS available for downloading from your local BBS. They give a complete rundown on how to prepare and send an NTS message on packet, how to deliver NTS messages, etc.

**NEW BUS!**



The Border Radio Club members held their first field trip using their new **Activity Bus** which had been donated by the Lottery Fund Association of Southern Africa incorporated !!!.

A great time was had by all, but there was a small fight as to who was to drive.

This certainly made the field trip more enjoyable and we travelled in luxury.

It is well equipped with computers inside courtesy of Microhard and some of the members tried them out.



**DON'T SAY WE EVER FORGET THE LADIES.**  
If they feel lazy we can always tow it behind the big bus.



**Doctor's Advice**

Doctor: I see you're over a month late for your appointment. Don't you know that nervous disorders require prompt and regular attention?

What's your excuse?

Patient: I was just following your orders, Doc.

Doctor: Following my orders? What are you talking about? I gave you no such order.

Patient: You told me to avoid people who irritate me.



**Doctor Interview**

During the course of being interviewed by the press, the noted doctor was asked by a reporter: "Doctor, did you ever make a serious mistake?"

"Yes, was the reply, I once cured a millionaire in three visits!"

**Doctor! Doctor!**

A mother takes her son to a psychiatrist and says, "Doctor, I'd like you to evaluate my 13 year-old son."

"He's suffering from a transient psychosis with an intermittent rage disorder, punctuated by episodic radical mood swings, but his prognosis is good for full recovery."

"How can you say all that without even meeting him?"

"Didn't you say he was 13?"

**HAPPINESS**

To be happy with a man, you must understand him a lot and love him a little.

To be happy with a woman, you must love her a lot and not try to understand her at all.

**A Catholic Heart Attack**

A man suffered a serious heart attack and had open heart bypass surgery. He awakened from the surgery to find himself in the care of nuns at a Catholic Hospital.

As he was recovering; a nun asked him questions regarding how he was going to pay for his treatment. She asked if he had health insurance.

He replied, in a raspy voice, 'No health insurance.'

The nun asked if he had money in the bank.

He replied. 'No money in the bank.'

The nun asked, 'Do you have a relative who could help you?'

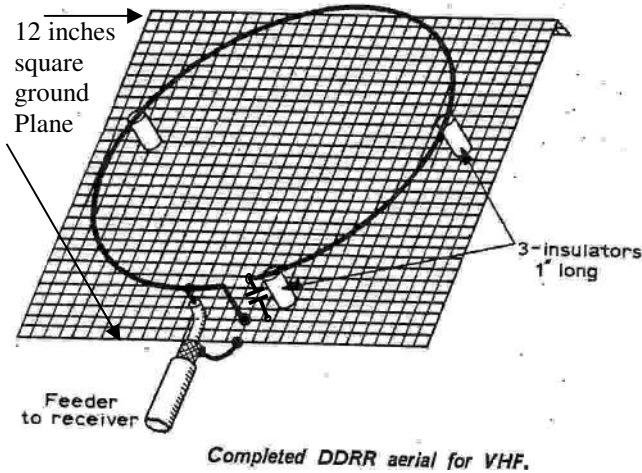
He said, 'I only have a spinster sister, who is a nun.'

The nun became agitated and announced loudly, 'Nuns are not spinsters! Nuns are married to God.'

The patient replied, 'Send the bill to my brother-in-law.'

# THE DDR VHF ANTENNA

In the November issue of "FEEDBACK" I showed a photo of Clary ZS2CDC holding up his DDR aerial. Here is some information that will allow you to make one and try it out. See if it is as good as clary says it is.



The following formulae can be used for calculating any size aerial working also on the HF bands.

Coax 52Ω

Height of loop  $H = \frac{8.5}{F(\text{MHz})}$  ft

Circumference of loop  $C = \frac{252}{F(\text{MHz})}$  ft

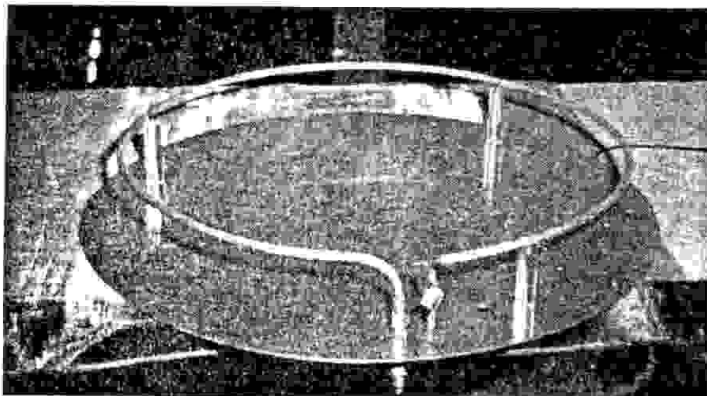
Feeder tap  $X = \frac{28}{F(\text{MHz})}$

On Vhf it works out that the loop is 33 inches long. The Tap, Gap, and height are all 1 inch spacing. The Ground plane is 12 inches square and made from solid plate, chicken wire, mosquito mesh etc. Clary seems to have a larger ground plane, and his works.

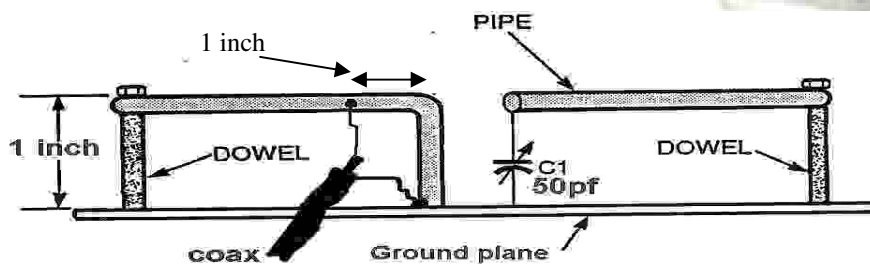
The DDR aerial which stands for, **Directional Discontinuity Ring.**

It is basically a single loop aerial working against another loop or ground plane which is slightly larger in area than the loop. The aerial is tuned to resonance by a variable capacitor and the feeder, matched to the aerial by adjustment of the feed point 50Ω (another article say's 75Ω, so experiment) coax inner moved to the best point on the loop (± 1 inch). The loop is not continuous, it is Broken at the feed point. The length of the break is important and depends on the operating frequency. Once the loop is formed, the end closest to the coaxial cable is bent 90 degrees and grounded. The length of the small vertical section is 1 inch (0.007 wavelength). The other end of the ring/loop is connected to a variable capacitor. Even at low transmitting power a high voltage is present at this spot **so beware.** The capacitor should have a **good** air gap. The ring diameter is also 1 inch in height above the ground plane.

(If you used it for 7MHz then the ring would be  $(0.08)(300)/7 = 3.43$  meters in diameter.



Clary ZS2CDC with his version of the DDR antenna



\* Here's a side view of the DDRR. The ground plane can be made of sheet metal, metal screening, or even chicken wire.



Dec. 1899: British heliograph corps signalling from the beleaguered town of Ladysmith, Boer War, South Africa.



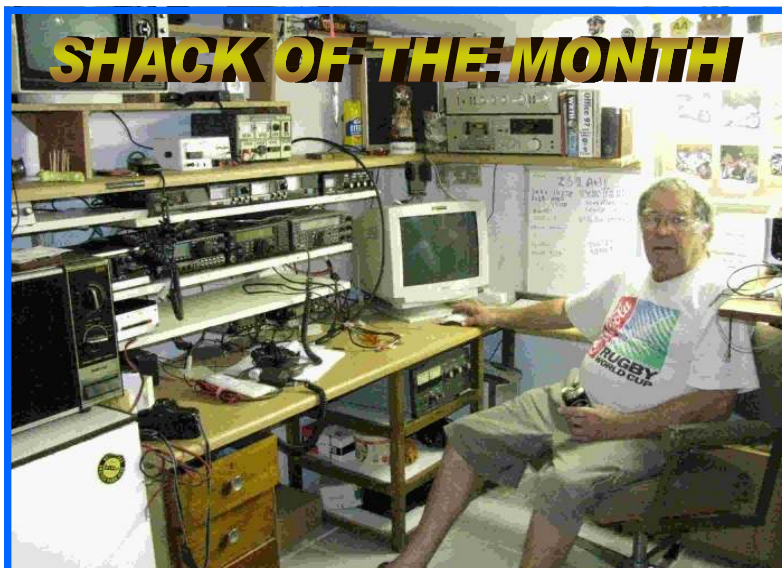
**BEWARE** Summer is here again and so is the Lightning season. Lightning , Kills, Burns and knocks out radios and electronic goods. Ensure that your aerials are unplugged and earthed before you go to bed or leave the house unattended. We would not like YOU to be a victim of a strike ( as flowers for a funeral are too expensive).

**ENSURE THAT ALIENS HAVE NOT TAKEN OVER YOUR AERIAL HARDWARE..**

It is time to give your installation a good service.

You do not know what other surprises may be in store for you, especially here at the coast. Rust is the first that comes to mind.





**HENRY ZS2AHL RELAXES IN HIS SHACK , AFTER PREPARING IT READY FOR MARCELS STAY OVER**



**YOU MAY WONDER WHAT I DID OVER CHRISTMAS**  
 I spent my time making a Christmas tree DIY style. It took a long time but it made me feel good. Although I missed the 25th (It probably was there) the tree was finished and so was the wine. Through my blurry eyes it looked good to me and I vowed to do it again next year, if my Liver can take it !.

**Merry Christmas ready for next year - ZS2ABF.**

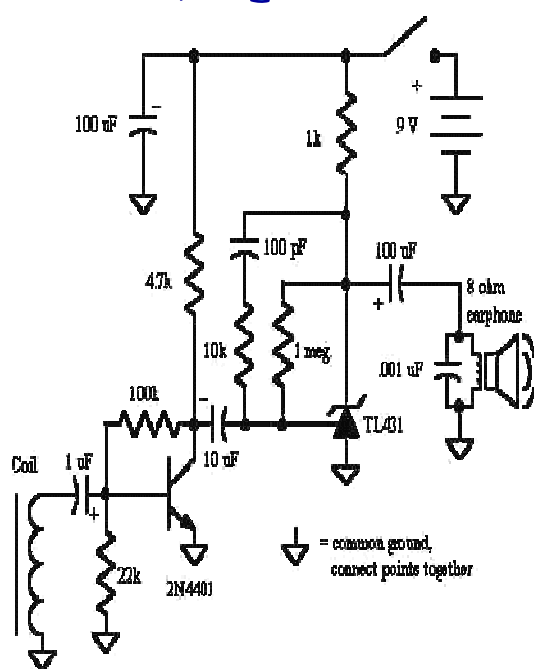
## Night before Christmas

Twas the Night Before Christmas,  
 And all through the bands,  
 Not a signal was heard,  
 By any of us hams.  
 The bands were all silent,  
 The airwaves were clear,  
 All hams were listening,  
 For St HamNick to appear.  
 DX spotters,  
 With fingers quick,  
 Scanning the airwaves,  
 Looking for N1CK  
 Hams of all ages,  
 Looking for signs,  
 Of that rarest of DX,  
 With a perfect 599.  
 As the hour turned 12,  
 UTC,  
 The band sprang alive,  
 Said the clusters with glee!  
 For once again,  
 Elmer started his rounds,  
 Bringing tools, toys, and towers,  
 To Hams on the ground.  
 As the grey line moved slowly,  
 Around this great sphere,  
 Ham scored their contacts,  
 With each reindeer.  
 QSLs online,  
 Posted like magic,  
 Not a one was missed,  
 Not a moment was tragic.  
 Ragchewers delighted,  
 With endless discussion,  
 Everyone was conversing,  
 Without QRM or cussing.  
 As grey-line passed,  
 Between Lats and Longs,  
 Hams slip into dreamland,  
 In their long-johns.  
 Techs dreaming of Mobiles,  
 And Extras of Bases,  
 Generals of accessories,  
 And battery replacements.  
 Hams awake happy,  
 Filled with new glee,  
 QEX and an HT,  
 From under the tree!  
 As new radios turn on,  
 With wonder and delight,  
 From N1CK to all,  
 And to all a good night!

Wishing everyone a Prosperous New Year

# D-I-Y

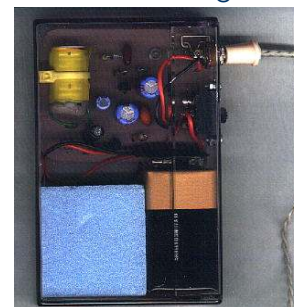
## Induction Receiver



The induction receiver shown below is very sensitive and can serve a variety of purposes. It is excellent for tracing wiring behind walls, receiving audio from an induction transmitter, hearing lightning and other electric discharges, and monitoring a telephone or other device that produces an audio magnetic field ("telephone pickup coil").

The receiving coil could be a "telephone pickup coil" if available or a suitable coil from some other device. The coil in the prototype was salvaged from a surplus 24 volt relay.

Actually, two relays were needed since the first was destroyed in the attempt to remove the surrounding metal so that a single solenoid remained. Epoxy putty was used to secure the thin wires and the whole operation was a bit of a challenge. A reed relay coil will give reduced sensitivity but would be much easier to use. The experimentally inclined might try increasing the inductance of a reed relay by replacing the reed switch with soft iron. Avoid shielded inductors or inductors with iron pole pieces designed to concentrate the magnetic field in a small area or confine it completely (as in a relay or transformer) unless you can remove the iron.



The resulting coil should be a simple solenoid like wire wrapped around a nail. Don't try to wind your own - it takes too many turns. Evaluate several coils simply by listening. Coils with too little inductance will sound "tinny" with poor low frequency response and other coils will sound muffled, especially larger iron core coils. This prototype was tested with a large 100 mH air core coil with superb results but the 2 inch diameter was just too big for this application.

The other components are not particularly critical. The 2N4401 can be just about any NPN general purpose small-signal transistor. The TL431 is a shunt voltage regulator but it is being used as an audio amplifier in this circuit. In fact, the whole device is nothing more than a low noise, high gain audio amplifier with a pickup coil connected to the input and other amplifiers will work equally well.

The circuit is built into an 8 mm cassette box with the power switch and earphone jack in the back. The circuit board is a piece of pink countertop laminate which looks good against the violet hue of the cassette box. The battery fits nicely into the box and a piece of foam fills in the remaining space. These video cassette boxes make nice project boxes, unlike audio cassette boxes which are too flimsy.

When you first turn on the unit you will probably hear a lot of buzzing from the wiring in the room. Rotate the receiver in a horizontal plane to find a "null" where the hum is minimal. If you can get a reasonable null, you should be able to hear distant lightning crackles or other magnetic noises. If you cannot get a null then go outside away from the building. Try holding the coil near electronic devices like your computer monitor, telephone (when in use), cell phone readout, etc. You can trace power wires behind a wall or ceiling by listening for a sharp increase in hum as the coil passes near the wire. Make sure that current is flowing in the wires to be traced by turning on a lamp or other appliance. (Here is an experiment to try: Build a line voltage lamp flasher that can be connected to the circuit to be traced. The desired wire will now have an on and off buzz - buzz sound that will be easy to distinguish.

Other wires can be traced if they are carrying alternating current in the audio range or a signal generator can be connected to produce the current. Connect the generator to the wire to be traced and connect the generator's "ground" to the house wiring ground. Also ground the far end of the wire you are tracing so that current flows in the wire. This ground connection can also just be a temporary wire laying on the floor running from the generator ground to the far end of the wire you wish to trace. For the ambitious: try wrapping one or two turns of wire around the whole house and connect the loop to the output of an audio power amplifier (one channel of a stereo should work). Add a 4 ohm, high wattage resistor in series to protect the amplifier. You should be able to pick up the magnetic field fairly easily anywhere within the loop with the power amplifier supplying just a few watts of power.

## **Introduction**

The Internet contains a huge amount of information on nearly all facets of amateur radio. A barrier to accessing all this material is the time taken to search for the information you need, particularly if you pay by the minute for your on-line time. This article provides information on a number of web pages of interest to the newcomer to amateur radio. With this article, you will be able to access information on many aspects of amateur radio without having to firstly use News, information, education and software

Australian Amateur Radio Frequently Asked Questions (FAQs) <http://www.ozemail.com.au/andrewd/hamradio/hamfaq.html>  
Maintained by Andrew Davis VK1DA, this page is your first stop if you are just becoming interested in amateur radio. As its name suggests, it provides answers to questions people commonly ask about amateur radio. Armed with this knowledge you are then ready to look at sites such as Novice Notes Online, which provides more detailed information on various facets of amateur radio.

### **Australian Radio Amateurs on the Internet**

[http://www.ruralnet.net.au/~allan/VK\\_List/amateurs.html](http://www.ruralnet.net.au/~allan/VK_List/amateurs.html)

Do amateurs you know have an e-mail address and/or a personal web page? Find out by visiting this site. Information on this site is fairly current - it is regularly updated by Allan VK2NNN.

### **DOS computer programs for the radio amateur**

<http://www.cdrom.com/simtel.net/msdos/hamradio.html>

The Simtel.Net MS-DOS Collection contains numerous programs of interest to the radio amateur, SWL and electronics buff. There's dozens of ideas to make your old XT or 286 computer earn its keep around the shack.

### **Elmers online**

<http://www.novia.net/~pschleck/elmers/>

"Elmer" is an American term for an amateur who helps newcomers study for their licence and get set up on air - much like what we'd call a mentor. If you don't have one but are bursting with questions, you can now get help from a number of amateurs with e-mail who have volunteered to be "Internet Elmers". The list of elmers is divided by country and operating interest to ensure that you can direct questions to the person best able to answer.

### **Ham Radio Online**

<http://www.hamradio-online.com/>

A very comprehensive US-based amateur radio news service with reports of current events and articles on key issues facing the Amateur Service. Well worth a read.

### **K3TKJ's guide to amateur radio mailing lists**

<http://www.qth.net/>

If you decide to specialise in one or two narrow aspects of amateur radio, you may wish to keep in touch with like-minded enthusiasts around the world. For this purpose the use of an Internet mailing list is ideal. The above URL provides a detailed guide to lists specific to various facets of amateur radio.

### **WIA NSW Bookshop and WIA NSW Education Service**

<http://marconi.mq.edu.au/wia/bookshop.html>

This page provides details of books and educational material (including the Novice Study kit) stocked by the NSW Division of the WIA. Prices and titles carried should be similar in other states - enquire with your local Division.

## **Licensing information**

### **Australian Communications Authority**

<http://www.aca.gov.au>

This page contains advice on regulations and licensing conditions applicable to the Amateur Service in Australia. There is also information on calculating multi-year licence fees, but I challenge anybody to get a correct result! A frames-capable browser is required to view this page.

### **Operating**

#### **Australian amateur radio band plans**

<http://www.vk5wia.ampr.org/wia/bandplan/index.htm>

Very detailed information on each amateur band from 1.8 MHz to many gigahertz. These band plans are produced for all Australian amateurs and provide information on what modes are used on what frequencies. Operating according to them increases the likelihood of you making contacts and reduces the possibility of causing interference to others.

#### **CW Facts and Operating Tips**

<http://www.magiclink.com/web/shurst/page2.html>

Maintained by KA7NOC, this page includes a range of material on Morse (CW) operating. There is also advice on learning Morse code.

#### **Ionospheric Prediction Service**

<http://www.ips.oz.au/>

Obtain information on the current state of radio propagation, sunspot forecasts and do your own propagation predictions. Just a few of the attractions available through the IPS' site.

#### **KA9FOX Contest and DX Site**

<http://www.qthcom/ka9fox/>

A useful resource for contesters and DXers, this page contains material on exchanging QSL cards, contest rules, DX bulletins and more.

## **OH2BUA DX Cluster**

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<http://www.clinet.fi/~jukka/webcluster.html>

See whose hearing who (sorted by amateur band) with this DX cluster. Also, use it to alert others of the appearance of rare DX (only after you've worked him first!). A wide range of DX and operating links are available through this award-winning site.

## **Predicting propagation on the VHF/UHF bands**

<http://homepages.ihug.co.nz/~tbabel/zl3ne.htm>

ZL3NE gives some pointers on using weather charts to predict long-distant VHF and UHF propagation. Mainly of interest to the weak-signal SSB/CW operator.

## **QRZ Online Callbook**

<http://www.qrz.com/cgi-bin/webcall>

If you don't have an International Callbook or CDROM handy, this site is a useful way to get the names and addresses of stations you work. Simply type in the callsign and the QRZ site does the rest. Both Australian and International addresses are available through this system, though the Australian listings are not always up to date.

## **Radiosport - the home page of radio contesting in VK4**

<http://www.uq.edu.au/radiosport/Rules/index.htm>

Produced by Peter Wetziz VK4TPW and John Loftus VK4EMM, this is an excellent page for those devoted to the competitive side of amateur radio. Contents include contest rules, monthly contest reports, band plans, a calendar, shareware and operating hints. Much of the information has been written with the Equipment manufacturers and suppliers. Most of these pages include details of products stocked, store addresses, prices and ordering information.

## **Antennas**

### **G3YCC's Antenna Page**

<http://www.gqrclub.demon.co.uk/ants.htm>

Maintained by a well-known QRP enthusiast, this page is part of a larger website that covers all aspects of low power amateur radio. Constructional articles on pieces of antenna test equipment, masts, mobile whips and various wire antennas feature on this page.

### **GW0TQM's magnetic loop antenna page**

<http://ourworld.compuserve.com/homepages/csl/magloop.htm>

If you've been avidly following the discussion on compact antennas in recent Novice Notes columns, this page devoted entirely to magnetic loops will be of special interest. Though the theory may get too deep for some, the page, which contains several excellent graphs and diagrams, is a "must see" for anyone interested in these fascinating antennas. Also provided is an exhaustive bibliography on magnetic loops for the experimenter who wants to know more.

## **Highly recommended.**

### **N1KGGH's Indoor Antenna Page**

<http://www1.shore.net/~dmaison/faqs/carpetloop.html>

Information on a novel "carpet loop" antenna for short wave listeners.

### **SM0VPO's antennas for 70cm**

On his website, SM0VPO includes details of the popular Slim Jim, co-linear and J-pole antennas scaled for the 432 MHz band. See later for the full description and URL for this page.

### **W4RNL's Amateur Radio Page**

<http://funnelweb.utcc.utk.edu/~cebik/radio.html>

This page, produced by a prolific antenna experimenter and author, takes some time to load, but the information provided is well worth the wait. Material is presented on a variety of wire antennas and beams. In addition, detailed information on antenna modelling is provided. This page would be most useful to the amateur, who having got themselves on air with simple verticals and dipoles, is seeking to improve station performance by experimenting with other antennas. Though the technical content gets a bit advanced in places, the page does have an excellent series of articles pitched at novice operators establishing a station on 28 MHz. Topics such as compact and hidden antennas, effect of antenna height, antenna coupling units for 28 MHz and yagi antennas are just a few of the subjects covered.

### **W6RCA's Home Page**

<http://people.delphi.com/CecilMoore/>

This page includes constructional information on a "bugcatcher" mobile antenna as well as data on popular wire antennas including loops, beams and the G5RV. Also presented is a novel multiband dipole for eighty to ten metres.

## **Technical**

### **Amateur radio construction projects**

<http://www.pconline.com/~rohrwerk/k0jd/>

K0JD's construction project home page.

### **Amateur radio construction projects** <http://www.acs.ncsu.edu/HamRadio/HF/qrp/projects/>

More projects for you to try. How good is your black box's receiver? <http://sherweng.com/table.html>

New rigs don't necessarily have the best receivers. This site provides performance comparisons between most popular models of amateur equipment. See how your rig stacks up against the rest.

### **JF10ZL's Homebrew Homepage**

<http://www.intio.or.jp/jf10zl/>

Contains a range of unusual transmitter circuits that are amazing in their simplicity, but seem to work, as testified by the log extract provided. The page is particular interest to six metre AM and DSB operators, but it should be bilingual (Japanese and English).

Editor: This is a shortened version of Peter's article to fit our publication..



## **AMSAT-UK FUNcube Press Notice By Trevor M5AKA**

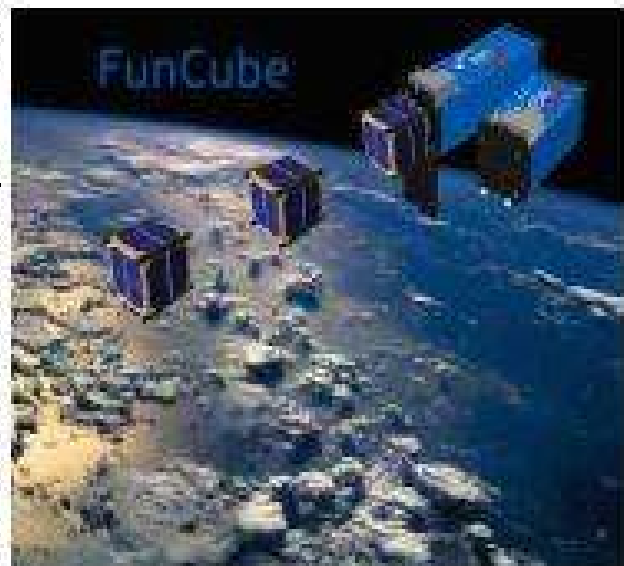
AMSAT-UK has announced a new amateur satellite project - FUNcube. The project has received major initial funding from the Radio Communications Foundation (RCF) and is expected to be developed in collaboration with ISIS-Innovative Solutions in Space BV.

FUNcube is an educational single cubesat project with the goal of enthusing and educating young people about radio, space, physics and electronics. It will support the educational Science, Technology, Engineering, Maths (STEM) initiatives and provide an additional resource for the GB4FUN Mobile Communications Centre.

The target audience consists of primary and secondary school pupils and FUNcube will feature a 145 MHz telemetry beacon that will provide a strong signal for the pupils to receive. It is planned to develop a simple receiver board that can be connected to the USB port of a laptop to display telemetry in an interesting way. The satellite will contain a materials science experiment, from which the school students can receive telemetry data which they can compare to the results they obtained from similar reference experiments in the classroom.

FUNcube is the first cubesat designed to benefit this group and is expected to be the first UK cubesat to reach space.

It is anticipated FUNcube will be launched into a Sun Synchronous Low Earth Orbit about 600-700km above the earth using one of the many launch opportunities that exist for Cubesat missions. In such an orbit the satellite passes over Europe approximately 3 times in the morning, and 3 in the evening, every day, perhaps allowing the morning passes to be used for educational purposes and the evening passes for Amateur Radio communications.



FUNcube will carry a UHF to VHF linear transponder that will have up to 1 watt and which can be used by Radio Amateurs worldwide for SSB and CW communications. Measuring just 10 \* 10 \* 10 cm, and with a mass of less than 1kg, it will be the smallest ever satellite to carry a linear transponder and the choice of frequencies will enable Radio Amateurs to use their existing VO-52 or DO-64 station.

key feature of the satellite is the absence of an On-Board Computer. For reliability and maximum power efficiency, the design has been kept as straight-forward as possible with satellite control being achieved using simple commands.

AMSAT-UK has more than 350 individual members and is one of more than 20 such groups worldwide. AMSAT-UK teams have provided hardware for more than 10 satellites over the past 35+ years including SSETI Express in 2005. They are presently involved with the development of hardware and software for a number of satellite projects including the European Student Earth Orbiter (ESEO), P3E, SUI SAT2, the Columbus module on the ISS and also the GENSO Ground station network.



The Radio Communications Foundation is a Registered Charity (Number 1100694) set up in 2003 to fund efforts to bring the wonders of radio into the classrooms, universities and any other public place where hands on demonstration can influence understanding. The RCF funding for FUNcube is made possible through the generous bequest from a "silent key" who wanted the hobby that he loved brought to the attention of others. Any one wanting to make a bequest in their Will so that their name can live on in the hobby, or anyone simply wanting to make a donation, should click on the link below.

AMSAT-UK: <http://www.uk.amsat.org/>

Radio Communications Foundation: <http://www.commsfoundation.org/>

GB4FUN: <http://www.gb4fun.org.uk/>

FUNcube contact Graham Shirville G3VZY Tel: +44 (0)7713 665725



This would make a great Border Radio Club shack

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The Border Radio Club holds monthly General Meetings every third Tuesday of the month at The Gatehouse, Eskom's Sunilaws Office Park, Quenera Drive, Beacon Bay 19:30 for 19:45.

Anyone and everyone is welcome to attend. The Club can be contacted via e-mail at:

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Visit our Border Radio Club Website at address, <http://www.zs2brc.co.za/> (do not use a search engine)

Listen to our Sunday bulletin at 07:45 on 145.650 Mhz. FM Local, and relays on 145.675 Mhz. FM, 3.575 Mhz. FM, 7.074 Mhz LSB, and 3.615 Mhz LSB.

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