

February 2012

Volume 12, Issue 8

ANODE

Inside this issue:

Editor's Comments	1
80 Metre V.F.O.	1
The Back Page	7

Anode Editor's Comments

Volume 12, Issue 8
February 2012

This week in 1956

A radio made to run either on batteries or solar-cell power was first sold in the U.S.

{—}

CobWebb aerial - just one of them!
<http://homepages.wightcable.net/~g4zfq/Cobwebb.htm>

{—}

Open Mission Control is open source, open access software for monitoring and controlling small spacecraft or ballon projects ballon? What is a "ballon"?

Propagation Report from Hannes Coetzee, ZS6BZP 12 February, 2012

Hannes Coetzee, ZS6BZP, reports that the solar activity is at low levels.

Fortunately a new sunspot is rapidly growing in the south-eastern quadrant of the sun.

If you want to do your own frequency predictions the expected effective sunspot number for the week will be around 47.

All the bands from 20 to 10 m and especially 15 m will provide lots of DX fun with 10 m only opening sporadically due to the low solar activity.

Please visit www.spaceweather.co.za

(continued on page 4)

80 Meter VFO

Using a Variable Capacitor and 10.7 MHz IF Can

By
Paul R. Jorgenson
KE7HR NSS 39382FE

While working on an 80 meter DSB transceiver project, I became less than satisfied with a kit VFO that I built and was using with the radio. This particular kit had some peculiar problems such as a shift in frequency between transmit and receive, a VHF oscillation that heated up the buffer transistor (causing drift), and microphonics when bumped even though the torrid coil

was glued securely to the PC board.

Changing transistors, putting ferrite beads on the leads, changing capacitors and inductors - nothing seemed to tame this VFO. Something different was needed for the project. My first solution was to use a crystal oscillator with a crystal that I had for the phone band. It works quite well except for the fact that being rock bound means that any QRM cannot be avoided. When working one evening from underground to a station on the surface, I was able to copy the surface station just fine but, due to a distant conversation going on only 800

(Continued on page 2)

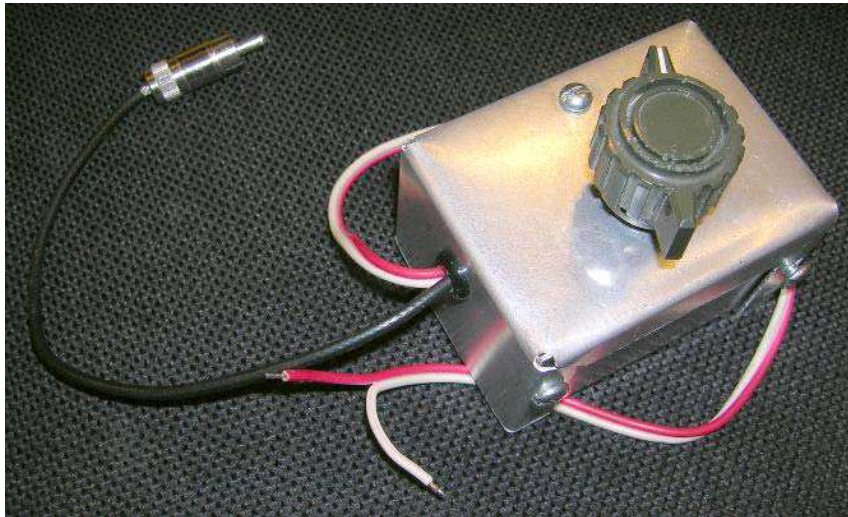
Special points of interest:

- **Contact details on back page UPDATED 2011-11-14**
- **Ham - Comp Latest on web site. Still under construction..**

80 Meter VFO

(continued from page 1)

hertz away, the surface station was having a hard time copying my transmissions. I could only be heard in lulls in the distant conversation.



The next solution was to try a brass screw tuned PTO (permeability tuned oscillator) that I had seen used several times in other QRP equipment. The circuit looked simple enough and went together fine on the breadboard after scaling for the frequency change from 40 meters.

The PTO worked pretty well except for my mechanical mounting, which can be improved upon. I will revisit the PTO in the future and have a better plan for keeping the coil and brass screw more stable. I next tried to use the same basic circuit as varactor diode tuned with a 10.7 MHz IF can as an adjustable inductor. The IF transformer seemed to work fine using the primary coil (no attached capacitor on this can and the secondary windings are unconnected) and gave a large amount of adjustment, but the diodes that I tried all gave tremendous amounts of frequency drift. This was not acceptable. The solution I came up with was to replace the varactor diode circuit with a variable capacitor from the junk box. A 100 pF air variable unit made with a ceramic insulating base was at hand and pressed into service. It works great. The drift, after a warm up period, is quite acceptable. SSB signals only need to be retuned after 15 minutes

or so to keep them sounding normal in the receiver.

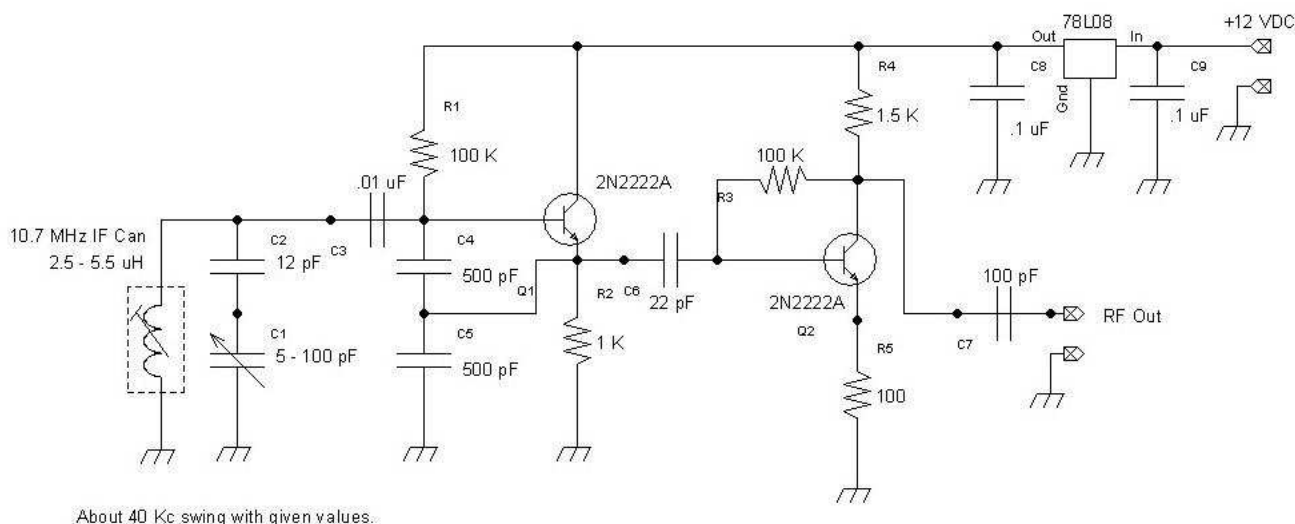
The circuit is built 'dead bug' style on a piece of single sided copper circuit board which was cut to fit the small aluminium box that was to house the VFO. All ground leads are soldered directly to the copper foil. Components either bridge between themselves or are supported by small pads of circuit board material. All of the capacitors are either silver mica or NPO ceramics for stability. The transistors are a variety of 2N2222A with a heat sink built in (not needed but this was the transistor at hand). The voltage regulation for the circuit is handled by a 78L08 three terminal device. RF decoupling capacitors are on both the DC input and output of the regulator. The RF out of the VFO is coupled to RG-174 coax via a 100 pF capacitor. The main tuning capacitor is 'padded' by a 12 pF capacitor for less tuning range. With the values given, the tuning range was about 40 KC [kHz].



(Continued on page 3)

80 Meter VFO

(Continued from page 2)



Most of the tuning tends to stack up on one end of the capacitor range and using a wider tuning range makes for difficult tuning. The tuning range is easily shifted anywhere in the 3.5 to 4.0 MHz range by adjusting the slug in the IF can with a nonconductive tool. I adjusted the range initially to cover 3.915 to 3.955 MHz so that the crystal oscillator module would be in the same range (3.930 MHz).

80 Meter VFO - KE7HR

[Editor's notes]

The 78L08 is a low power regulator that might not be readily available. Rather use a 7805 with two L.E.D's in the ground connection.

C9 should really be a tantalum type of 1 microfarad capacity.

Anode Editor's Comments

(Continued from page 1)
for further information

{—}

Contest news

The first of this year's CQWW WPX contests is RTTY, which takes place for the entire 48 hours of the weekend of the 11th and 12th. There are categories for QRP, low and high power, single or multi-operator stations, various numbers of transmitters and even single-operator stations where the operator has been licensed for less than three years. With the HF bands now in good shape, 10m could well be busy for long hours. The exchange is signal report and serial number.

{—}

Dear milkman:

I've just had a baby, please leave another one.

Please leave an extra pint of paralyzed milk.

Cancel one pint after the day after today.

Please don't leave any more milk. All they do is drink it.

Milkman, please close the gate behind you because the birds keep pecking the Tops off the milk.

Milkman, please could I have a loaf but not bread today.

Please cancel milk. I have nothing coming into the house but two sons on the Dole.

Sorry not to have paid your bill before, but my wife had a baby and I've Been carrying it around in my pocket for weeks.

Sorry about yesterday's note. I didn't mean one egg and a dozen pints, but The other way round.

When you leave my milk please knock on my bedroom window and wake me because I want you to give me a hand to turn the mattress.

Please knock. My TV's broken down and I missed last night's Coronation Street. If you saw it, will you tell me what happened over a cup of tea?

My daughter says she wants a milkshake. Do you do it before you deliver or Do I have to shake the bottle?

Please send me a form for cheap milk, for I have a baby two months old and Did not know about it until a neighbour told me.

Please send me details about cheap milk as I am stagnant.

Milk is needed for the baby. Father is unable to supply it.

From now on please leave two pints every other day and one pint on the days In between, except Wednesdays and Saturdays when I don't want any milk.

My back door is open. Please put milk in 'fridge, get money out of cup in Drawer and leave change on kitchen table in pence, because we want to play Bingo tonight.

Please leave no milk today. When I say today, I mean tomorrow, for I wrote This note yesterday.

When you leave the milk please put the coal on the boiler, let dog out and Put newspaper inside the screen door. P.S. Don't leave any milk.

(continued on page 5)

Anode Editor's Comments

(Continued from page 4)

No milk. Please do not leave milk at No. 14 either as he is dead until Further notice.

{—}

Amateur radio club gets space at airport [Not going to happen here!]

From: mm6jbn Joe <jbreen83@gmail.com> (http://groups.google.com)

Date: Thursday 09 February 2012 19:36:37

Groups: uk.radio.amateur
WILLIAMSTOWN -The Wood County Airport Authority on Tuesday unanimously approved allowing the Parkersburg Amateur Radio Klub to use space at the airport.

"The (Federal Aviation Administration) is moving out of hangar 1 and we are giving the space to the ham radio group," said airport manager Terry Moore.

The radio club will occupy the annex of the hangar at no cost with the building as is for three years with two automatic renewals for three years each. This will give the radio club a possible nine years in the space.

According to the terms of the lease, the airport has the ability to void the lease if a paying tenant asks for the space, Moore said.

"This is patterned off of the lease we have with the Civil Air Patrol," Moore said. "I'm glad to give the building to the (group)."

The board also continued discussions on the driving ground rules for anyone driving a vehicle inside the airport's restricted fence. This includes employees as well as pilots who have planes in hangars.

"The vast majority of it is how to get training, the phonetic alphabet to talk to the tower and other safety," Moore said. "Need to know the movement and non-movement ar-

eas for gate usage and driving in the fence."

Everyone who wants to be able to drive to their hangar must take two tests: a written and driving exams, which will be administered by airport line employees. For those who are caught driving inside the fence without clearance, there are punishments that include the loss of all driving privileges at the facility.

"I want (tenants) to understand that is a privilege to be inside the fence at all," he said. "The airport could change the rules to not allow any non-employees to drive in the restricted area."

Moore added being inside the fence is a restricted area, and making sure drivers in this area know the rules is a security and safety issue.

"It's an intrusion because it is easy to go inside an area you aren't allowed to be in if you don't take the test to know where those highly restricted areas are," he said.

The board chose to delay approval of the plans until members have the time to look over the proposal.

"This needs to be addressed by June," Moore said.

<http://www.qsl.net/n8nbl/park.html>

{—}

Guys,

<http://www.nogaqrp.org/>

takes you to a website full of interesting ideas.

Check out the links on the side panel, specifically :-

So you want to be a builder

(Continued on page 6)

Club Birthday List for this month

2 / 4	ZS6BKS	Hennie Venter	
2 / 6		Sybil	Spouse of ZS6EXT Alan Exton
2 / 7		Justin	Child of ZR6DCP Stewart / Cindy da Costa Pereira
2 / 8	ZR6JEN	Derrick Jenner	
2 / 9	ZR6FDM	Jan van den Steen	
2 / 11		Sabrina	Spouse of ZR6RBJ Rory Crouch
2 / 12		Edward	Child of ZS6AGF Keith / Patty Liddle
2 / 12	ZS6TF	Richard Dismore	
2 / 15		Yolandi	Spouse of ZR6JEN Derrick Jenner
2 / 21		Teresa	Spouse of ZS6RQM Boleslaw Halas
2 / 21		Lynn	Spouse of ZS6EF John Williscroft
2 / 22		Morgan	Child of ZR6DAD Densil Dix
2 / 24	ZS6ZR	Frans Badenhorst	
2 / 25	ZR6NPH	Noel Hammond	
2 / 27		Lynette	Spouse of ZS6JVV Johan van Vuuren

Anode Editor's Comments

(Continued from page 5)
Soldering Tutorial

Hamradio-builder mailing list
Hamradio-builder@diana.db.net

A big thanks to the Authors and the guys at NOGA for hosting the content. Any beginner would be well advised to check this out. <http://diana.db.net/mailman/listinfo/hamradio-builder>

72s from a cold and rainy England,
Steve G0XAR

{—}

Wisdom demands a new orientation of science and technology towards the organic, the gentle, the non-violent, the elegant and beautiful. E. F. Schumacher

{—}

The West Rand Amateur Radio Club
Established in 1938
KG33XU 26.14122 South - 27.91870 East

P.O. Box 5344
 Weltevreden Park
 1715

Phone: 083 267 3835 (Chairman)
Email: zs6wr.club@gmail.com
Web page: www.zs6wr.co.za

Bulletins (Sundays at ...)

11h15 Start of call in of stations
 11h30 Main bulletin start

Frequencies

Output: 439.000 MHz 7.6 MHz split
 Input: 431.4 MHz (West Rand Repeater)
 145,625 MHz (West Rand Repeater)
 (HF Relay when possible)

Radio Amateurs do it with more frequency!

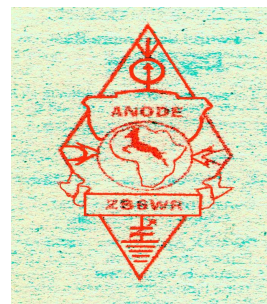
Chairman (technical)	Phillip van Tonder	ZS6PVT	083 267 3835	zs6wr.club@gmail.com OR zs6pvt@gmail.com
Vice Chairman	Geoff Levey	ZS6GRL	082 546 5546	glevey@gmail.com
Secretary	Rory Crouch	ZS6RBJ	082 448 4445	rorycrouch@mweb.co.za
Treasurer	David Cloete	ZR6AOC	083 449 8991	zr6aoc@mweb.co.za
Member	Romeo Nardini	ZS6ARQ	082 552 4440	roshelec@global.co.za
Member (Anode & Technical)	John Brock	ZS6WL	011 768 1626	brockjk@gmail.com
Member	Johan van Vuuren	ZS6JVV	082 558 5811	johanvv@absamail.co.za
SARL Liaison (PIO)	Willem Weideman	ZS6WWJ	082 890 6775	willem@zs6wwj.co.za
Club Manager & Groundsman	Nico Vorster	ZS6NJV	082 221 1266	zs6njv@gmail.com

West Rand members - we need your input!

To make this the best ham radio magazine in South Africa we need your input. Please submit articles, comments, suggestions etc.

Please send plain text with no formatting to the email address below.

See Club website at www.zs6wr.co.za for all ANODE back issues.



We need your input! Email us articles, comments and suggestions please.
zs6wr.club@gmail.com