



SHACKNEWS

HIGHVELD AMATEUR RADIO CLUB

MAY 2009

COMMUNICATION IS THE NAME OF THE GAME

Meeting At this meeting the discussion was about 70cm repeaters and operation. At the upcoming meeting Frank, ZS6TMV, will give a talk and demonstration on a PSK31 switching unit for use on laptop computers.

SSC Meeting The June meeting will be held at the home of Berridge and Sandra on Saturday 13 June.
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From the SARL web site

SOLAR CYCLE 24 LOOKS DISAPPOINTING

On May 8 the Solar Cycle 24 Prediction Panel has reached a consensus decision on the prediction of the next solar cycle (Cycle 24).

First, the panel has agreed that solar minimum occurred in December, 2008. This still qualifies as a prediction since the smoothed sunspot number is only valid through September, 2008.

The panel has decided that the next solar cycle will be below average in intensity, with a maximum sunspot number of 90.

Given the predicted date of solar minimum and the predicted maximum intensity, solar maximum is now expected to occur in May, 2013.

Note, this is a consensus opinion, not a unanimous decision. A super majority of the panel did agree to this prediction.

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The mother and father had just given their teenage daughter family-car privileges. On Saturday night she returned home very late from a party.

The next morning her father went out to the driveway to get the newspaper and came back into the house frowning. At 11:30 AM the girl sleepily walked into the kitchen, and her father asked her, "Sweetheart, what time did you get in last night?"

"Not too late, Dad." she replied nervously.

Dead-panned, her father said, "Then, my precious one, I'll have to talk with the paperboy about putting my paper under the front tire of the car."

Two boys were arguing when the teacher entered the room. The teacher asked, "Why are you arguing?"

One boy answered, "We found a ten-dollar bill and decided to give it to whoever tells the biggest lie."

"You should be ashamed of yourselves," said the teacher. "When I was your age, I didn't even know what a lie was."

The boys gave the ten dollars to the teacher.

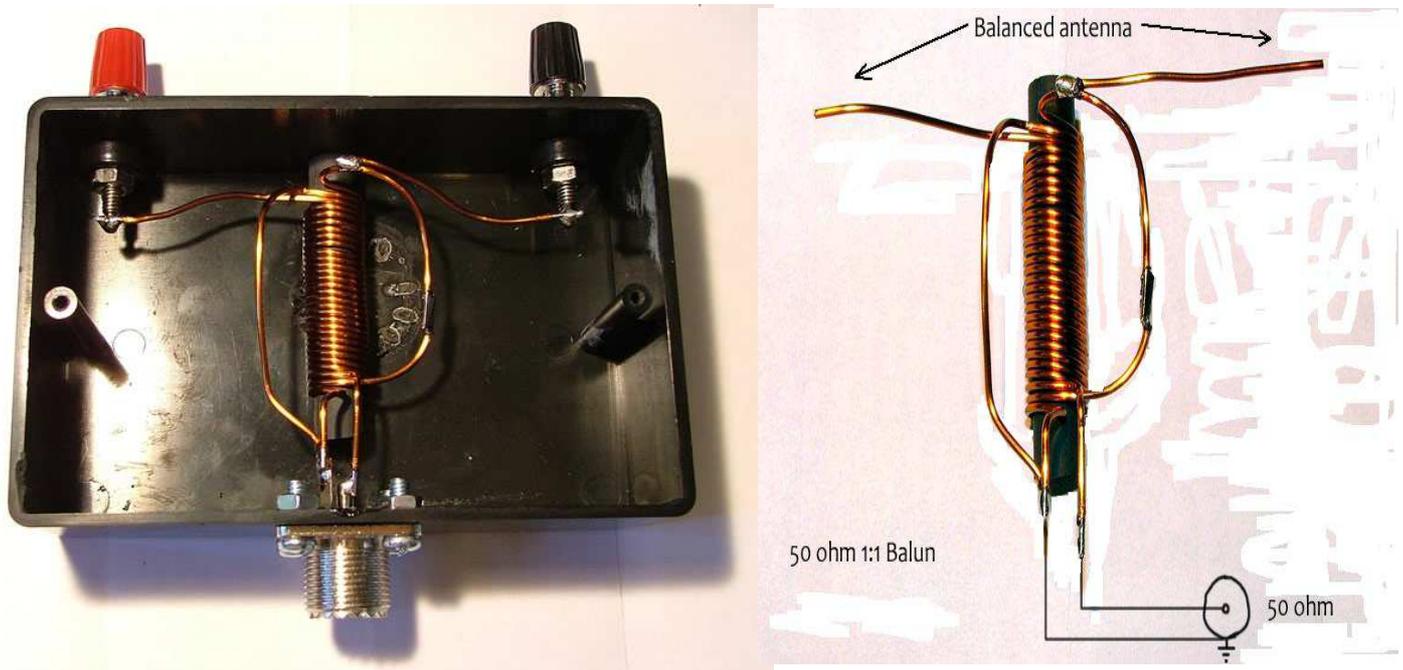
Our son was constantly wandering in and out of the house, leaving the front or back door wide open.

"Once and for all, will you PLEASE close that door!" my exasperated wife pleaded one day. "Were you born in a barn?"

"No, I was born in a hospital," he replied, smirking, "...with automatic doors."

A 1:1 BALUN

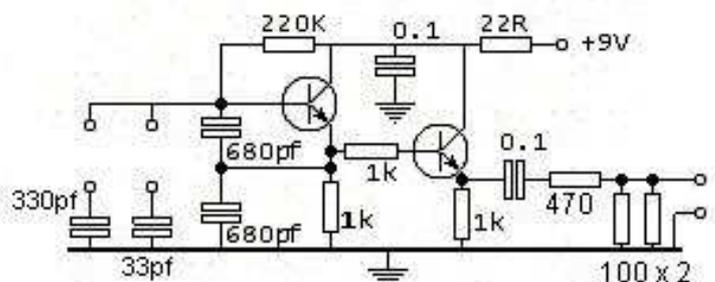
Here's a neat 1:1 50 ohm balun for use on HF horizontal wire dipoles. It uses an AM radio ferrite rod, with 3x9 turns of wire. You can use 18SWG enamelled copper wire. It all fits in a small project box. Great for setting up portable. Bandwidth from the resonant frequency is about 200KHz either way, any more needs an ATU.



Measuring Inductors using a frequency counter

Winding coils and finding their exact inductance is a problem for most beginners. Capacitors and resistors come marked but you have to build your own inductors using whatever comes handy.

The test oscillator shown in here is a very handy thing that can be used to easily measure the inductances and a little bit of work on a calculator.



The Circuit

None of the capacitor values are critical. If you don't have 680pf handy, try 560pf or even 100pf if those are the only ones you have. Almost NPN transistor will work. The output is attenuated down to a 50 ohms impedance through a series drop formed by the 470 ohms and a 50 ohms (actually two 100 ohms resistors tied in parallel). Shown it to work with a 9voltage supply (using a PP3 battery), you can easily power it by the 12v lab supply.

Operation

Solder the ends of the coil between the 'hot' end of the 330pf capacitor and the base of the oscillator transistor. Power up the oscillator, connect its output to your frequency counter. Read the frequency.

Calculating the Inductance

1. First, figure out the total capacitance in the circuit. For instance in my circuit, there are two 680pfs in series with each other, their effective capacitance will be 340pf. Then the 330pf between the ground and the inductor will also appear to be in series with the 340pf, hence the effective capacitance will be 165pf. Remember this value for all your calculations in the future. To page 4

WHAT'S IN A NAME? by Richard ZS6TF (From the AWA News Letter with thanks)

"If the legend outstrips the truth then print the legend" once wrote a famous editor who was motivated to sell his publications.

The heydays of radio are rich with legend, none the least surrounding the names of iconic sets of the vacuum tube era and their inventors.

The HRO is conventionally associated with Amateur radio, many still believing the folklore that the letters stand for "Ham radio operation" The truth is buried in the mists of time around 1934 when the National company successfully developed a ground based receiver for the US department of commerce called the AGS (Aviation ground station), a fairly simple superhet using plug-in coils. Transcontinental & Western airlines were unhappy with the limitations of the AGS and commissioned Herbert Hoover and James Millen of National to develop something technically superior. Naturally they wanted it yesterday and the project was so pressured it became nicknamed the HOR "hell of a rush". Just prior to the launch of the advert for the radio in the December 1934 QST magazine, it was realized that the letters could be wrongly pronounced and interpreted, so they were hastily reshuffled to become the name to endure for 3 decades.

The Racal RA17 is equally enigmatic and one could be forgiven for embarking on a research project to seek out the previous models RA1 to RA16, but the truth is such models are non-existent. In the early days, Racal manufactured amongst other things, golf clubs and warehouse racking to stay in business. Contemporary opinion was that Racal stood for Radio calibration company because in the 1950's their business in a small works located in Isleworth, a stone's throw from Heathrow, undertook repairs and recalibration of airborne radios, which was a bread and butter business bringing Racal in contact with the technologies of Marconi, Bendix, Collins, RCA and others.

Raymond Brown and Calder Cunningham both left Plessey in 1950 and founded Racal as a two-man consulting firm in 1950, the name being derived from the partners names, RAYmond Brown and CALder Cunningham. Seven years passed before Racal marketed its first proprietary product, a high-frequency radio receiver, almost a lucky accident. Believing that they had secured Collins' backing, Racal successfully tendered for Royal Navy contract to build and supply a variant of the American Collins Model 51-J4 Radio Receiver. When Collins realised it was for real, they inspected the Racal facilities and decided (reneged?) not to grant a licence to Racal for manufacture.

This meant that Racal had to build a new radio receiver from scratch in a very short time, designed in cooperation with South African Dr. Trevor Wadley and utilising his famed Wadley loop drift cancelling circuit. There were quite a few problems with spurious responses in the prototype models, this was cured, apparently, by band sawing one of the sets in half. In production models the 1st and 2nd VFO's are in separate units, and although they are bolted side by side on the main chassis, this eliminated the problem.

A demonstration was made of the prototype receiver to the Royal Navy explaining the obviously hand made nature of its construction as an advantage as the Navy could include features that they had not put into their specification for final production. The Navy were suitably impressed with the leap forward in technology. Providing that Racal could make the sets for £300 each, and with the same specification, then an order for several hundred radios was theirs. The specification caught the attention of other UK government agencies, notably the British radio surveillance organisation, known as G.C.H.Q. then still based at Bletchley Park, which resulted in the restriction of sales under the Official secrets Act for a while, suitably starving the Americans, however there were more than enough orders for Racal as it became the UK government standard ground station receiver for the next decade or two.

This set was the RA17, (well they couldn't call it number one could they!)

As a footnote the Collins 51J4 was the pinnacle of mechanical excellence in receivers with unbelievable indulgence in complexity, profiled snail cams and ganged dust-core assemblies, with the objective of 2 knob operation. When Collins realized their tactical error they began a campaign of knocking the 4 knob operation of the Racal equipment, however fortunately the operators thought differently.



(From page 2)

2. Now, divide 1000,0000 by 6.28, and then divide that by the frequency read out. Square the result and then divide it by the capacitance value from step 1. You have the inductance in uH (micro Henries).

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A man went to the Police Station wishing to speak with the burglar who had broken into his house the night before.

"You'll get your chance in court," said the Desk Sergeant.

"No, no, no!" said the man. "I want to know how he got into the house without waking my wife. I've been trying to do that for years!"

A radical feminist is getting on a bus when, just in front of her, a man gets up from his seat.

She thinks to herself, "Here's another man trying to keep up the customs of a patriarchal society by offering a poor, defenseless woman his seat," she pushes him back onto the seat.

A few minutes later, the man tries to get up again. She is still insulted so she refuses to let him up again.

Finally, the man says, "Look, lady, you've got to let me get up. I'm twelve blocks past my stop already."

CLUB INFORMATION

Postal address PO Box 19937 Sunward Park 1470

Monthly meeting venue

Website <http://www.qsl.net/zs6hvb/>

e-mail zs6hvb@gmail.com

Repeater 145.1875 MHz input - 145.7875 MHz output

Linked to 70 cm - 438.850 MHz

Witwatersrand Rifles HQ
Cnr Barlow and Cavaleros Str
Industries West
Germiston

Bulletins Sunday morning - 145.7875 MHz & 7062 KHz @ 08h45.
Relay - 80M - 3662KHz

First Saturday of the month at 14:30

Committee

Chairman	Frank van Wensveen	ZS6TMV	082-294-2648
Vice Chairman	Frank Mercier	ZS6MER	011-845-1146
Secretary/Treasurer	Berridge Emmett	ZS6BFL	011-893-1291
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Club bank details

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