



# SHACKNEWS

## HIGHVELD AMATEUR RADIO CLUB

### MAY 2011

### COMMUNICATION IS THE NAME OF THE GAME

**Meeting** Not a large turn out at the meeting this month. Feedback was given by ZS6BFL and ZS6MER who attended the SARL AGM. The past Hobbitech exhibition was discussed. During the general session the advantages of various HF antenna were given.

### Hobbitech

The annual Hobbitech exhibition was held at the John Barrable hall in Rynfield Benoni on the weekend 14 & 15 May.

As can be seen in the pictures this was the setup used. In the trailer there were 3 HF Multiband radios that could be used. On the day the pictures were taken there was a 40M Hustler and an inverted V for 20M. VHF used one of the mobile antennas on top of the trailer.

The main attraction especially for the kids was a Telereader with a morse key and monitor attached. It was nice to see how some of them were able to grasp the concept of sending morse and see their results on the screen. A certain amount of interest was shown and information was handed out as per SARL handouts. The bait has been cast.



**SSC Meeting** To be held at the home of Doug and Merle on Saturday 18 June 2011. Please remember to bring a plate of eaties...

# Simple Building and Tuning of Traps

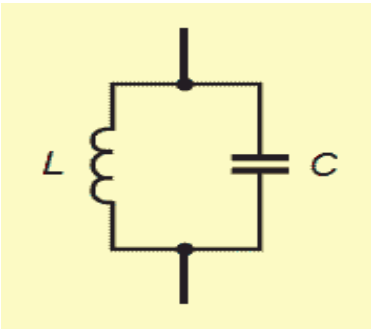
Found on the WWW

Traps are useful for multiband operation of all kinds of antennas. They are much easier to build than you think and you do not need any special measuring equipment for their adjustment. Only a transceiver and a simple homemade measuring circuit.

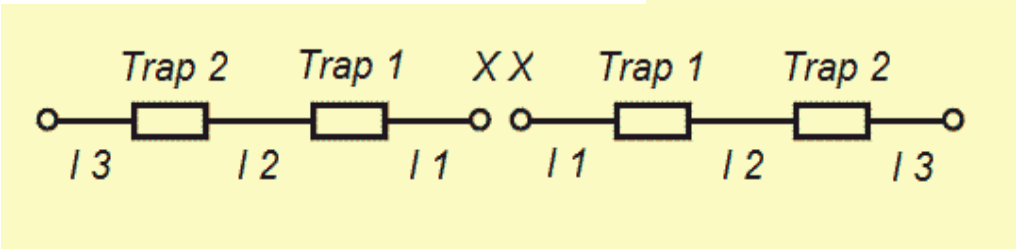
A trap is a parallel circuit of L and C on the frequency you want to use in antenna type.

For n working frequencies of an antenna, you need n-1 traps in each part of the antenna. For example a 2-band-dipole needs one trap in each half of the antenna.

The trap can consist of a coil and a separate HV-capacitor. Another method for building traps with coax-cable.



Here we see the principle of a 3-band-dipole. If we need 10m, 15m and 20m, trap 1 will be resonant on 28,5MHz and trap 2 on 21,2 MHz.



## How to Tune a Trap

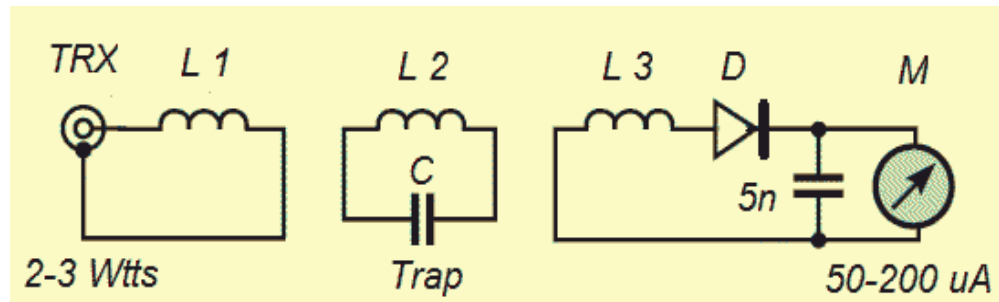
You only need a simple arrangement of two coils and the trap, a diode, a C of 5nF and a meter for tuning.

L 1 = 2-3 turns, 25-30mm diameter

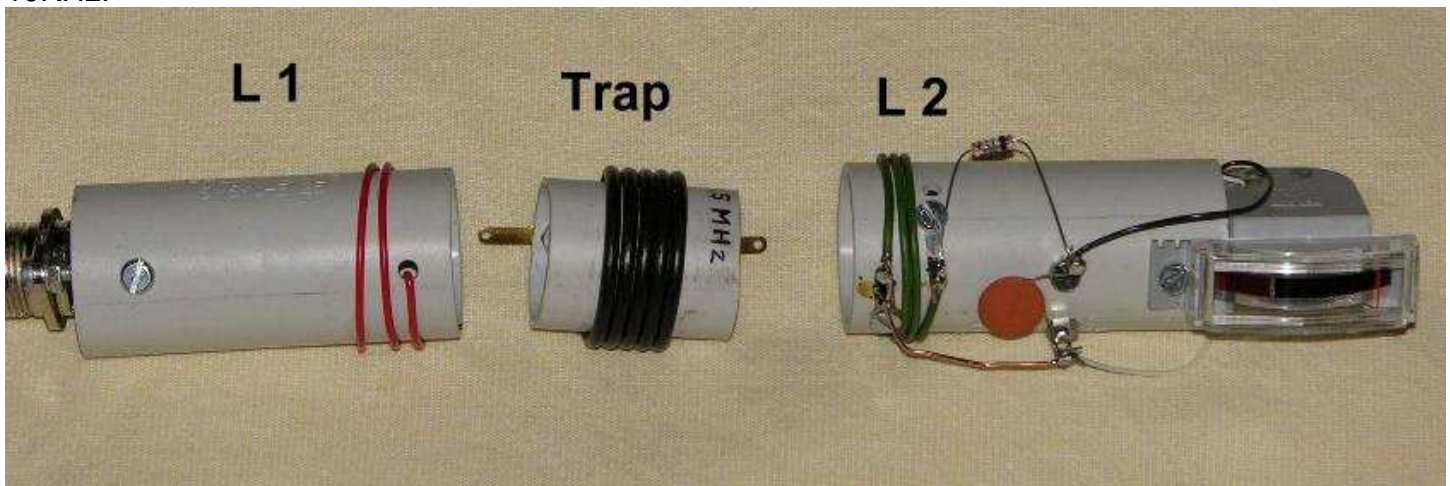
L 2+C = trap to tune

L 3 = 3 turns, 25-30mm diameter

D =OA91 or similiar



The picture below shows how to tune the trap. Couple 2-3watts continuous RF from the transceiver into L 1. When changing the frequency, you will find a clear dip of the meter on the resonant frequency of the trap. In that case the RF is coupled from L1 into the trap and then to L2, where it will be rectified. The dip is very sharp, on 10m you can locate the resonance with an accuracy of +/- 10KHz!



The example shows a RG-174-coax-cable-trap for a 10/15m-Vertical on 28,300MHz. By changing the spacing of the windings the frequency can be changed. After tuning, the coil can be fixed with some glue.

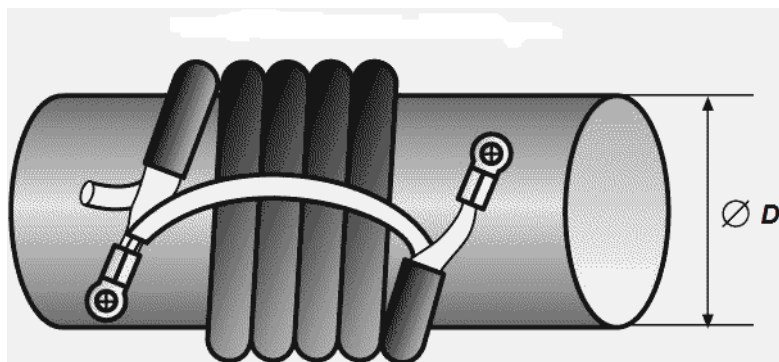
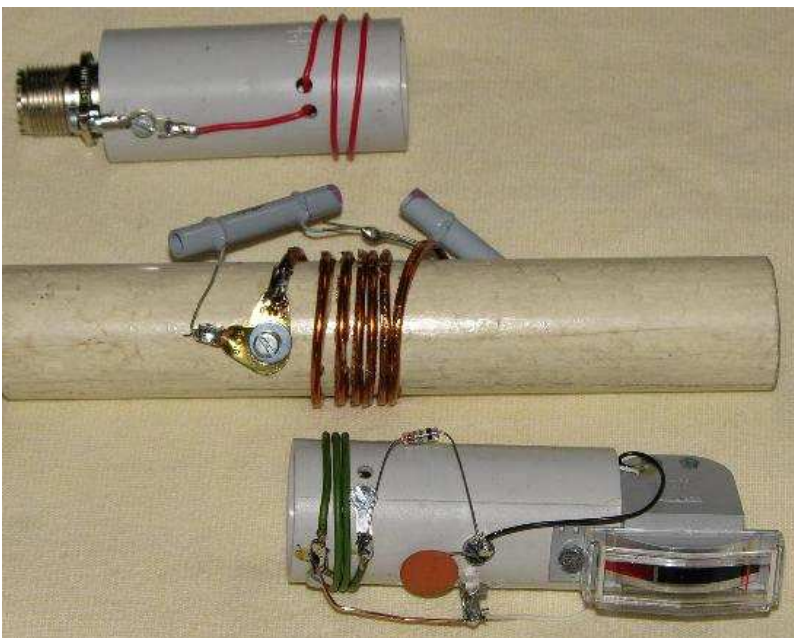


This next picture shows another arrangement of the three coils, you can make the distance between the coils greater for a sharper dip.

Here it is an example of a 28,3MHz-trap with two 60pF-5KV-ceramic capacitors in series and a coil of enamelled copper wire

Another way to build traps is to use coax-cables. The inner conductor and the screen form the C, the screen is the inductor of the trap. The main problem is that you cannot change L and C individually. Coax-cables have a C of 60-100pF/m, see tables with the data of the cables.

A very useful tool for coax-traps is a program of Tony, VE6YP named "coaxtrap.exe". You can download the program from his website [www.qsl.net/ve6yp](http://www.qsl.net/ve6yp).



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## Water to Wine

An Irish priest is driving down to New York and gets stopped for speeding. The state trooper smells alcohol on the priest's breath and then sees an empty bottle on the floor of the car. He says, "Sir, have you been drinking?"

"Just water," says the priest.

The trooper says, "Then why do I smell wine?"

The priest looks at the bottle and says,

"Good Lord! He's done it again!"

Hy-Gain traps (TH7/TH3 style) are pre-tuned at the factory. To check them, first visually inspect them for broken or missing trap-caps. These can allow water to enter the trap and detune it. Replacements are available. Also, look for breaks or cracks in the outer aluminium tubing where it is bent to connect to the smaller inner tubing. Also check the screw used to make this connection. Older (before 1985) traps used plated screws that may be rusty. Check this connection with an ohm-meter and replace the screw if necessary. Check inside the trap for insect and spider nests (especially if stored on the ground). Clean nests out by using a high-pressure air hose. DO NOT take the trap apart! If all connections and caps are good, then the trap may be checked with a grid-dip meter (dipper) for the proper resonant frequency. 10 meter traps are resonant approx. 27.6 MHz, 15 meter traps are resonant approx. 20.6 MHz. Couple a dipper coil to the outer end of the trap to obtain the resonance.

The method that is mentioned in this news letter to check the traps could be tried.

### **CLUB INFORMATION**

**Postal address** PO Box 19937 Sunward Park 1470

**Website** <http://www.zs6hvb.za.net>

**Back issues of Shacknews available on the club website**

**e-mail** [zs6hvb@zs6hvb.za.net](mailto:zs6hvb@zs6hvb.za.net)

**Repeater** 145.1875 MHz input - 145.7875 MHz output

**Linked** to 70 cm - 438.850 Mhz (Sunday bulletins)

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

**Monthly meeting venue**

Germiston Methodist Church  
Room at back of the offices  
Lady Duncan Rd  
Germiston

*3rd Saturday of the month at 14:30*

#### **Committee**

Chairman	Ton van Dijk	ZS6ANA	011-432-5494
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#### **Club bank details**

First National Bank - Current Account 62116557309. Branch Code for EFT 250655