



SHACKNEWS

HIGHVELD AMATEUR RADIO CLUB

March 2014

We're on 

COMMUNICATION IS THE NAME OF THE GAME

The meeting in February was not well attended. A demonstration of a dipper and a MFJ259B working as a dipper was given.

The club call sign and repeater licence renewals have been received and paid for.

The next meeting, 15 March, will be a social get-together at the home of Berridge and Sandra. Seeing the QTH is now in a closed off area a map is included. There are no booms at the moment.

There are still a few subs outstanding.



Hacksaw Special 10 Meter antenna

Modifying a CB quarter-wave ground-plane vertical is not too difficult. There certainly are many different commercially built 1/4-wave antennas for the 27 MHz band which use aluminium pipe or tubing for the radiating element, and three or four dropping wires for the radials that form the ground plane. The fastest and perhaps one of the most inexpensive 10 meter band antennas that is capable of producing the low takeoff angle radiation required for working DX is precisely a converted 11 meter CB antenna.

Try to find the highest possible quality antenna to start with, and proceed to resonate the vertical radiator to the part of the 10 meter band you plan to operate most of the time. A good center frequency to cut the antenna to is 28.5 MHz, which should give reasonably low SWR from the low end of the band up to around 29 MHz. If you plan to operate on 10 FM, then the radiator should be resonated to around 29.2, which still will give acceptable SWR down to 28.5, allowing SSB DX to be worked, too. (You're cutting to 1/4 wave length here, so use the formula $234/f$ [MHz] (length in feet or $71.5/f$ [Mhz] (length in meters) to find the dimension for your center frequency of choice).

Do not use steel whips for this project. They are too thin, and thus their bandwidth is much more limited. CB antennas with telescoping elements are the best, as they can be resonated by changing the overall length with just loosening a small clamp, adjusting the upper section, and retightening the clamp.

A more typical "conversion" will need a hacksaw and some elbow grease. Once you have decided on which part of the band to tune your antenna, proceed to measure the 1/4 wavelength plus about 5 percent, and do a first trial cut.

Install the antenna as high and in the clear as possible, placing the four radials at an angle of between 30 and 45 degrees. Use the highest possible quality 50 ohm coaxial cable and run a SWR test at the projected center frequency. A well-done sweep, starting at the low end of the band and going all the way to 29.7 MHz, will give you a very good idea of what the next step should be.

Work slowly, and by all means avoid the 1:1 SWR syndrome. You will not achieve a "perfect" match and you don't need to. Your converted CB 1/4-wave vertical should show an SWR of around 1.2:1 to 1.4:1 at resonance, and that's all you will really need when running rigs in the 100 watts or less class.

Next make the radials using No. 12 or No. 14 bare copper wire. They should be cut about 5 percent longer than the radiating element (see formulas in Table I).

As with all vertical antenna systems, it's always a good idea to provide some kind of static discharge path to ground. You can do this by building a simple spark gap at the base of the antenna, or by using one of the popular "coaxial gas-tube surge protectors" properly installed with an adequate grounding system.

Hacksaw Special Data

Use the standard formula to calculate the length of the 0.25 radiating element-that is, $234/f(\text{MHz}) = \text{length in feet}$, or $71.5/f(\text{MHz}) = \text{length in meters}$.

You will want to make the first "cut" a little longer, and carefully check the antenna's resonant frequency until the lowest SWR is obtained.

The typical converted CB 1/4-wave vertical with drooping radials will show an SWR of 1.5:1 or lower at resonance.

Remember that the radials must be 5 percent longer than the radiating element.



Brain teaser

You have two traditional hourglass-type egg timers...

One timer takes 7 minutes for the sand to run through, and the other takes 11 minutes. You need to boil an ostrich egg which takes *exactly* 15 minutes.

How can this be done using the two timers?

The solution does NOT require a drill!

(Solution P4)

ETERNAL TRUTHS

Middle age is when broadness of the mind and narrowness of the waist change places.

Opportunities always look bigger going than coming.

Junk is something you've kept for years and throw away three weeks before you need it.

(This one is always familiar)

Entrance = GPS 26° 15.786S & 28° 14.318E



Brain teaser No 2

A highway barricade has two blinking lights. One light is on for three seconds and off for two seconds. The other is on for two seconds and off for two seconds. If both are turned on at the same time, both are on simultaneously for two seconds.

During which seconds will they again both be on simultaneously for two seconds?

(Solution on P4)

Solution from P1

1. Start both timers at the same time that you put the egg into the boiling water. **(time: 0 min.)**
2. When the 7 minute timer 1st finishes, immediately turn it over. **(time: 7 min.)**
3. When the 11 minute timer finishes 4 minutes later, immediately turn over the 7 minute timer again. The 7 minute timer is now set to measure 4 more minutes. **(time: 11 min.)**
4. When the 7 minute timer finishes, 4 minutes later, take the egg out to have the *perfect* 15-minute egg! **(time: 11 + 4 = 15 min.)**

Solution for brainteaser no2

The lights are on during the 17th and 18th seconds

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

Repeater 145.1875 MHz input - 145.7875 MHz output

Bulletins Sunday morning - 145.7875 MHz & 7062 KHz @ 08h45.
Relay - 80M - 3662Khz (Winter) 30M - 10.132Mhz (Sum)

Committee

Monthly meeting venue

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

3rd Saturday of the month at 14:30

Chairman	Vacant		
Secretary/Treasurer	Berridge Emmett	ZS6BFL	011-893-1291
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Club bank details

First National Bank - Current Account 62116557309. Branch Code for EFT 250655
Branch Code 201209 - Sunward Park