SHACKNEWS

HIGHVELD AMATEUR RADIO CLUB

January 2013

We're on

COMMUNICATION IS THE NAME OF THE GAME

The first meeting of the club will take place on Saturday 19 January, usual venue and time.

Need to discuss what is to happen this year and other issues.
We have not head yet when this years Hobbitech will take place-if there is to be an event.

Frank, ZS6MER, is still in hospital. Yesterday, 6 Jan, he was still in isolation in the ICU section. We wish him a speedy recovery.

Thanks to those who have assisted with content for this news/information letter. It is difficult to find suitable content on my own so any assistance is always appreciated.

Meeting events for this year attached.

The bear truth

Baby Bear goes downstairs and sits in her little chair at the table.
She looks into her little bowl. It is empty.
"Who's been eating my porridge?!!" she squeaks.
Daddy Bear arrives at the table and sits in his big chair..
He looks into his big bowl and it is also empty.
"Who's been eating my porridge?!!" he roars.
Mummy Bear puts her head through the serving hatch from the kitchen
and yells...
"For xxxx's sake, how many times do we have to go through this with you idiots?
It was Mummy Bear who got up first,
it was Mummy Bear who woke everyone in the house,
it was Mummy Bear who made the coffee,
it was Mummy Bear who unloaded the dishwasher from last night, and put everything away,
it was Mummy Bear who went out in the cold early morning air to fetch the newspaper,
it was Mummy Bear who set the damn table,
it was Mummy Bear who put the friggin cat out, cleaned the litter box and filled the cat's water and food dish, and now that you've decided to drag your sorry bear-xxxxs downstairs and grace Mummy Bear's kitchen with your grumpy presence, listen good, coz I'm only going to say this one more time...
I HAVEN'T MADE THE *******IN PORRIDGE YET!!!"

Various pointers when installing radio equipment in a mobile (HF)

Safety is the most important issue, period! The rig (or the control head) needs to be close at hand, the display needs to be readable, and the controls accessible. And it should be positioned in such a way to avoid interference with passive restraints (airbags), and operating controls including dangling microphone cords.

Mounting techniques seem to suffer when it comes to mobile operation. Velcro, bungee cords, nylon or canvas straps, and duct tape are not adequate. Imagine an 8-pound rig travelling through the air at 60 mph (88 fps). That's 30 tons of potential energy (mass times the velocity squared)! The best strategy is simple. Think about the worse thing that could happen. If you don't, it will!

Wiring is the next most important item. Cigarette lighter sockets (auxiliary power outlets) are out! No matter the total current draw of your HF rig, the minimum wire size should be AWG # 6, and connected directly to the battery! This has more to do with noise introduction, than it does power draw. Properly fuse both the negative and positive leads as close to the battery as possible, and dress the leads to avoid sharp edges, and securely attach them with tie wraps. A variety of connectors are available for interconnecting just about any conceivable combination. Buy a complete set of fuses for the vehicle, rig, etc. and put them in the glove compartment. If you don't, you'll wish you had.

With the exception of 10 and maybe 17 meters, it is difficult to mount a full-length 1/4 wave antenna which means the antenna must have a loading coil to cancel the capacitive reactance due to the shortening. Physically small coils with metal end caps, or helically wound fibreglass antennas maybe aesthetically pleasing, but their performance suffers.

Spirally wound short antennas on 75 and 40 meters exhibit no more than one or two percent efficiency. Add a poor mounting location and attachment method, and you'll be lucky to get that much, hence the moniker dummy load on a stick! This is because their coils are very low Q, typically less than 50 and as low as 10! Q is the ratio of reactance to resistance, and the higher the Q the better. Most commercial screwdriver antennas exhibit a Q of between 100 and 350 depending upon band (regardless of what you read). Under very special conditions coil Qs as high as 800 or more are possible, but they are large and not ideal for mobile operation.

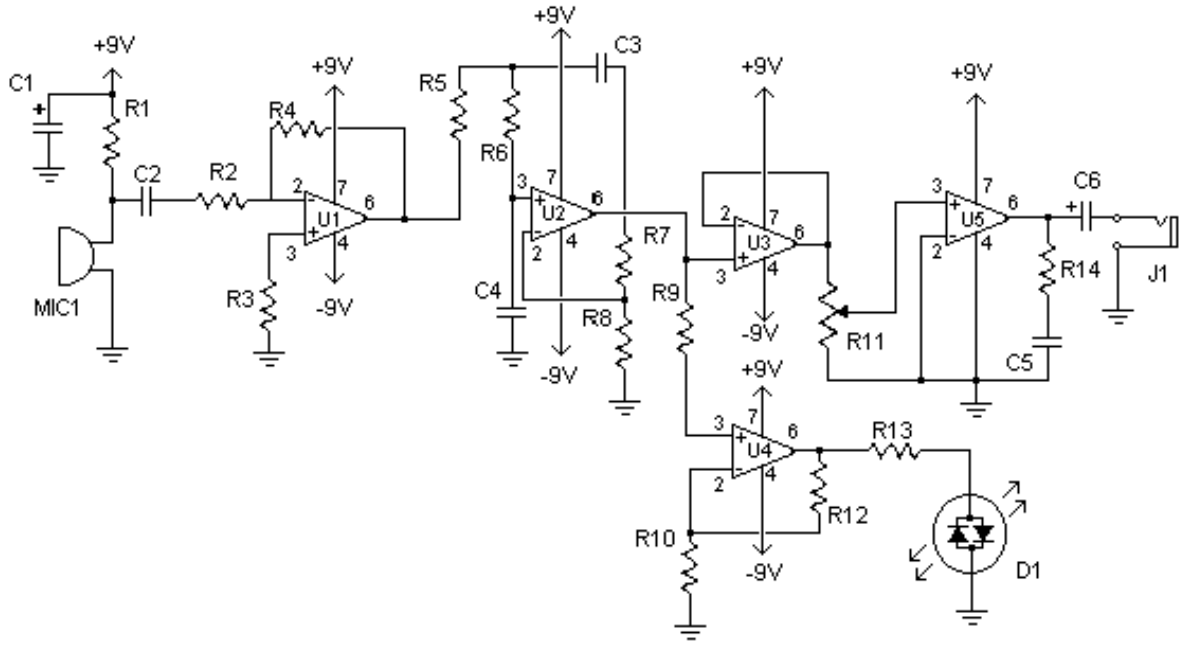
A typical 9 foot, centre loaded, mobile antenna will have a radiation resistance of 12 ohms or so. A requisite loading coil with a Q of 50 will have a loss of 15 ohms. At a Q of 300 the loss will be just over 2 ohms. Add in a poor mounting technique with its inherent losses, and it is easy to see why minimizing losses is important.

And don't mount with duct tape, license plate mounts, trunk lip mounts, magnet mounts, or worse, bumper mounts. There is no excuse you can give for not drilling holes for a good ball-mount or base plate. Either you're into mobile operation or you're not.
The closer to the ground you mount an antenna, the greater the ground losses. For example, an average 9 foot 75 meter antenna mounted on the bumper (or tow hitch mount) will exhibit a ground loss of about 10 ohms. The same antenna mounted on the trunk will be about 8 ohms. Mounted on the roof it will be about 4 ohms. With the radiation resistance about one ohm on this band, it doesn't take a rocket scientist to figure out why mounting position is important. No matter where or how you mount it; the coil should be at least 18" above the nearest metal, albeit difficult on some vehicles, especially vans where front mounting may be your only alternative A recent addition to the amateur arsenal is the automatic antenna tuner. A lot of hams shy away from them because they have been told they're inefficient. They're not and they're not inexpensive, but their convenience may offset the latter. While it is true that a base-loaded whip (as used with most auto-tuners) is less efficient than a good center loaded, resonant antenna, in some cases the overall losses are less.

Just don't try to use one with a helically wound antenna to band hop. The distributed capacitance is just too high to allow this type of operation.

When you're doing all of this installation, wiring, etc. Don't forget to use good safe practices when soldering, crimping, connecting to the battery, running control cable, power cables, and coax. An ounce of prevention is worth a pound of cure as the old adage says.

An electronic stethoscope



Stethoscopes are not only useful for doctors, but home mechanics, exterminators, spying and any number of other uses. Standard stethoscopes provide no amplification which limits their use. This circuit uses op-amps to greatly amplify a standard stethoscope, and includes a low pass filter to remove background noise.

Part	Description
R1	10K 1/4W
R2, R3, R9	2.2K 1/4W
R4	47K 1/4W
R5, R6, R7	33K 1/4W R8
R8	56K 1/4W
R10	4.7K 1/4W
R11	2.5K Pot
R12	330K 1/4W
R13	1K 1/4W
R14	3.9 Ohm 1/4W
C1	470uF
C2, C3, C4	0.047uF
C5	0.1uF
C6	1000uF
D1	Bi-Colour LED
U1, U2, U3, U4, U5	741 Op-Amp
MIC1	Electret Mic
J1	1/4" Phone Jack

MISC 1 Board, Wire, Sockets for ICs, Knob for pot, Stethoscope, Rubber tube

1. Be careful with the volume, as excess noise level may damage your ears.
3. The + and - 9V may be supplied by two 9V batteries wired in series and tapped at the junction.
4. R11 is the volume control

Something new for the shack

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
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
Secretary/Treasurer	Berridge Emmett	ZS6BFL	011-893-1291
Repeater	Ton van Dijk	ZS6ANA	011-432-5494
Shacknews Editor	Berridge Emmett	ZS6BFL	011-893-1291
Shacknews Printing	Harry Lautenbach	ZS6LT	011-888-5362
Webmaster	Yvonne van Dijk	ZR6TBL	011-432-5494
Assistant Webmaster	Marianne Treyvellan	ZR6JMT	079-519-8808

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

2013

HVB Meetings

HVB Social

January 2013

Su	M	Tu	W	Th	F	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	**19**
20	21	22	23	24	25	26
27	28	29	30	31		

February 2013

Su	M	Tu	W	Th	F	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	**16**
17	18	19	20	21	22	23
24	25	26	27	28		

March 2013

Su	M	Tu	W	Th	F	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	**16**
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

April 2013

Su	M	Tu	W	Th	F	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	**20**
21	22	23	24	25	26	27
28	29	30				

May 2013

Su	M	Tu	W	Th	F	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	**18**
19	20	21	22	23	24	25
26	27	28	29	30	31	

June 2013

Su	M	Tu	W	Th	F	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	**15**
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

July 2013

Su	M	Tu	W	Th	F	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	**20**
21	22	23	24	25	26	27
28	29	30	31			

August 2013

Su	M	Tu	W	Th	F	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	**17**
18	19	20	21	22	23	24
25	26	27	28	29	30	31

September 2013

Su	M	Tu	W	Th	F	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	**21**
22	23	24	25	26	27	28
29	30					

October 2013

Su	M	Tu	W	Th	F	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	**19**
20	21	22	23	24	25	26
27	28	29	30	31		

November 2013

Su	M	Tu	W	Th	F	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	**16**
17	18	19	20	21	22	23
24	25	26	27	28	29	30

December 2013

Su	M	Tu	W	Th	F	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				