SHACKNEWS

HIGHVELD AMATEUR RADIO CLUB
SEPTEMBER 2010

COMMUNICATION IS THE NAME OF THE GAME

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Meeting There was no official meeting held this month. The SARL Radio Technology in Action takes place on the 18 September and clashes with our AGM. It was felt that members would like to attend the RTA and it was decided to change the dates.
The **AGM** takes place on the**16 October 2010**.

SSC Meeting   No meeting this month

---oooOOOooo---

EVER WONDER

Why the sun lightens our hair, but darkens our skin?
Why women can't put on mascara with their mouth closed?
Why don't you ever see the headline "Psychic Wins Lottery"?
Why is "abbreviated" such a long word?
Why is it that doctors call what they do "practice"?
Why is lemon juice made with artificial flavour and dishwashing liquid made with real lemons?
Why is the man who invests all your money called a broker?
Why is the time of day with the slowest traffic called rush hour?

---oooOOOooo---

Kids Are Quick

TEACHER: Maria, go to the map and find North America .
MARIA: Here it is.
TEACHER: Correct. Now class, who discovered America ?
CLASS: Maria.

TEACHER: Winnie, name one important thing we have today that we didn't have ten years ago.
WINNIE: Me!

TEACHER: Millie, give me a sentence starting with 'I.'
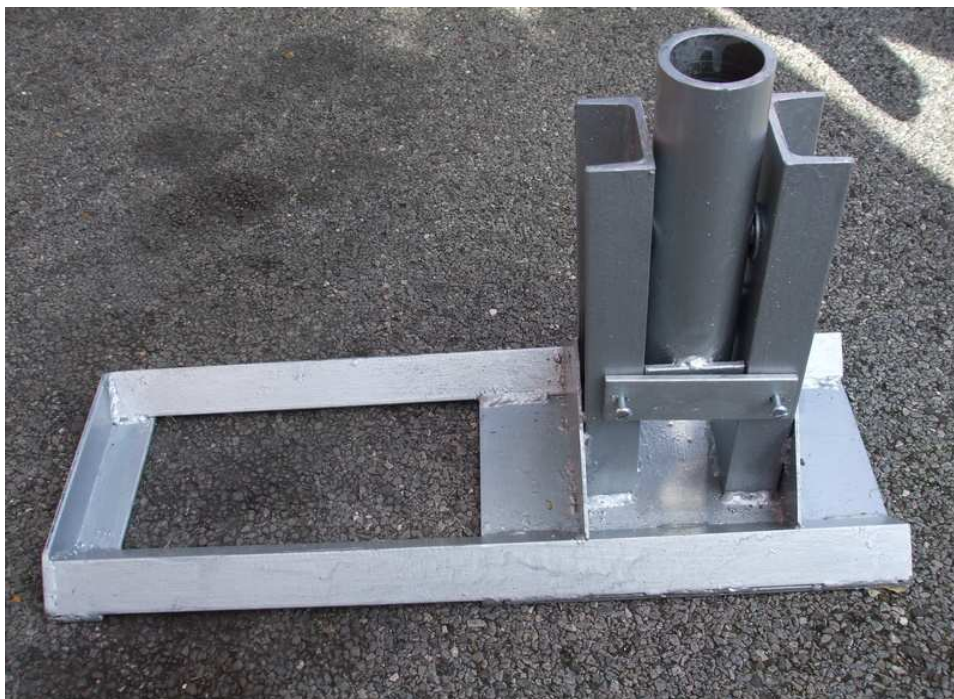MILLIE: I is..
TEACHER: No, Millie..... Always say, 'I am.'
MILLIE: All right... 'I am the ninth letter of the alphabet.'

TEACHER: George Washington not only chopped down his father's cherry tree, but also admitted it.
   Now, Louie, do you know why his father didn't punish him?
LOUIS: Because George still had the axe in his hand.

Mast stand for operating from a mobile

From a previous issue of SN Worth repeating

The discussion went around the protection of a rig against the accidental reversal of polarity when connecting to a PSU or battery. It seems that new equipment on the market these days does not have a reverse polarity diode for protection as discovered by one of the members. Expensive mistake.

Preferred method. The diodes must be able to handle the rigs max current x 2
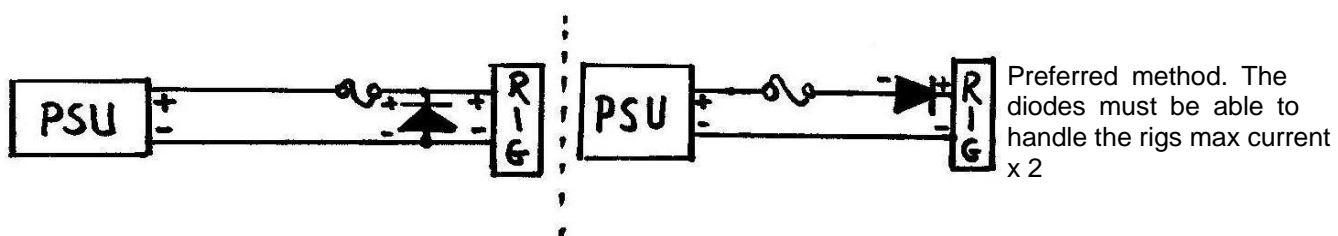
The "S" meter

An "S" meter is fitted to some radio's (Communication Receivers) to allow the user to determine the signal strength of the transmission being heard. But What does this all mean?

As a guide; S9 on the S meter scale is reckoned to be equal to a potential of 50 uV signal voltage at the receivers aerial input. Also each "S" point is said to represent a 6 db change (up or down). A 6 db change coincidentally represents a doubling (or halving) of a voltage before/after the aforesaid change. Recalling the well known textbook formula:

$$db = 20 \log v2/v1 \quad \textbf{substituting values}$$

$$= 20 \log 2$$
$$= 20 \times 0.3010$$
$$= 6db$$

Therefore the relationship of "S" meter reading to input signal voltage obeys the law

$$uV = k\ 2^{s} \quad \textbf{[k is a constant (derivation shown soon!)]}$$

That is; because of the signal voltage doubling for each increase in "S~' point the signal voltage is directly proportional to the base 2 raised to an exponent being the "S" number. To bring this into some perspective:

If 50 uV represents S9, then substituting in the above formula

$$50 = k \times 2^{9}$$
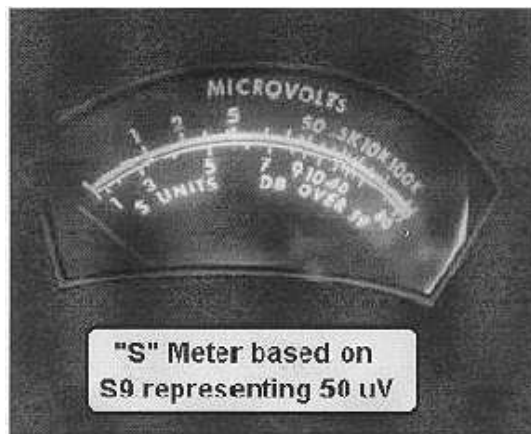
therefore $\quad k = 50/512$

To obtain (say) the signal voltage corresponding to S4 we can substitute in the above formula

$$uV = k\ 2^{s}$$
$$= 50/512 \times 2^{4}$$
$$= 50/32$$
$$= 1.5625\ uV$$

Constructing a table of values based on the above we get:
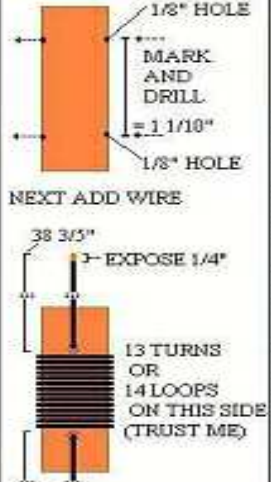
"S" reading	Voltage at RX input
9	50 uV
8	25 uV
7	12.5 uV
6	6.25 uV
5	3.125 uV
4	1.5625 uV
3	0.781 uV
2	0.39 uV

"S" Meter based on S9 representing 50 uV

Therefore: as you can see, each change in "S" point represents a doubling (or halving) of its immediate predecessor, all referenced to S9 being 50 uV (Some archaic texts suggest S9 as being 100uV), but the principle is still the same. Simple really !

2 Meter Homebrew Vertical Antenna: This antenna is a 1/2 wave co-linear design and is built inside a 10 foot piece of 3/4 inch PVC water pipe. It is omnidirectional and has the gain of a small beam. **Good luck!**

PARTS

- 3/4" PVC END-CAP
- 10', 3/4" PVC IPS SCH40
- 1/2"WOOD DOWL: CUT 2"LONG
- 10' OF HOOK-UP WIRE: 20 GAUGE SOLID INSULATED
- COPPER CLAD 1"x 1" CIRCUIT BOARD
- 20" OF 300 ohm TWIN LEAD WIRE NOT FOAM TYPE
- 2 WIRE TIES
- A PIECE OF FOAM RUBBER TO STUFF INTO THE BOTTOM

STEP 1

STRIP 1/2" OFF BOTTOM, TWIST WIRES TOGETHER, AND SOLDER

NOW MEASURE AND EXPOSE ABOUT 1/8" OF TWIN LEAD WIRE ON BOTH SIDES = 1 1/2"

STARTING FROM THE BOTTOM, MEASURE AND CUT = 16 7/10"

LAST CUT IN STEP 1

EXPOSED 1/2"

STEP 2

1/2" WOOD DOWL
1/8" HOLE
MARK AND DRILL
= 1 1/10"
1/8" HOLE

NEXT ADD WIRE

38 3/5" — EXPOSE 1/4"

13 TURNS OR 14 LOOPS ON THIS SIDE (TRUST ME)

38 3/5" — EXPOSE 1/4"

ON TO THE NEXT STEP

STEP 3

CIRCURT BOARD

CUT INTO A CIRCLE THAT IS BIGGER THAN THE INSIDE DIAMETER OF THE PVC PIPE AND SMALLER THAN THE OUTSIDE DIAMETER OF THE PIPE

DRILL A SMALL HOLE IN THE CENTER OF THIS CIRCLE AND SOLDER ONE END OF THE COIL WIRES TO IT

SOLDER OTHER END OF THE COIL TO THE EXPOSED WIRE OF THE TWIN LEAD

SHOULD LOOK LIKE THIS

ADD SOME RG-58 COAX, SEE DIAGRAM BELOW

WIRE TIE THE LOWER SECTION OF THE TWIN LEAD TO THE COAX

CAREFULLY FEED THE COAX AND ANTENNA THROUGH THE PVC

GLUE END CAP ON TOP

STUFF THE FOAM RUBBER IN THE BOTTOM END TO KEEP BUGS OUT

HAVE FUN! STEVE KB1DIG

50ohm COAX

CLUB INFORMATION

Postal address PO Box 19937   Sunward Park   1470

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 (Sunday bulletins)

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

Committee

Position	Name	Call	Phone
Chairman	Vacant		
Vice Chairman	Frank Mercier	ZS6MER	011-845-1146
Secretary/Treasurer	Berridge Emmett	ZS6BFL	011-893-1291
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