STARLITE

THE NEWSLETTER FOR THE STOURBRIDGE AND DISTRICT A.R.S.

G6OI
G6SRS

G4CVK

ISSUE: JUNE 2018

STOURBRIDGE & DISTRICT AMATEUR RADIO SOCIETY
INCORPORATING
OLD SWINFORD HOSPITAL SCHOOL RADIO CLUB

MEETINGS HELD AT

OLDSWINFORD HOSPITAL SCHOOL
HEATH LANE
STOURBRIDGE
[8:00 TO 10:00 PM]

VISITORS ALWAYS WELCOME

THE SOCIETY HOLDS ITS FULL MEETINGS
ON THE 1ST AND 3RD MONDAYS EACH MONTH

80TH ANNIVERSARY YEAR

[MARCH 2018 - MARCH 2019]

RSGB AFFILIATED SOCIETY

The views expressed in STARLITE may not be those of the Committee – Stourbridge and District Amateur Radio Society

STARLITE

Telephone Enquiries to:-

Hon. Secretary
John Clarke M1EJG
[01562] 700513

Or by Email to:-
honsec@g6oi.org.uk

All correspondence/enquiries should be addressed to the Hon Secretary at:-

StARS
c/o The Mill House
21 Mill Lane
Blakedown
Kidderminster
DY10 3ND

StARS Website URLs:-
www.g6oi.org.uk
http://g6oi.ross-lewis.co.uk/index.html

StARS Facebook Page:-
https://www.facebook.com/groups/stourbridge.ars/

Forthcoming Meetings

June 4th	Informal. Digi Modes Group.
June 11th	Informal. Digi Modes Group.
June 18th	**Club BBQ @ The Sheepwalks**
June 25th	Informal. Digi Modes Group.
July 2nd	Informal. Digi Modes Group.
July 9th	Informal. Digi Modes Group.
July 16th	Main Meeting – Subject tba.
July 23rd	Informal. Digi Modes Group.
August 6th	Informal. Digi Modes Group.
August 13th	Informal. Digi Modes Group.
August 20th	Main Meeting – Subject tba.
August 27th	**August Bank Holiday – No Meeting**
September 1st/2nd	**RSGB/IARU Region 1 SSB Field Day**
September 3rd	Informal. Digi Modes Group.

Editor's Comment

I don't have much to comment upon this month, but did any of you work the GB50TEL station, for the 50th Anniversary of Telford, run by the very active Telford Club? Listen during June for it should be QRV again. How about any of the Mills On The Air stations? GB4RM(?) was the equally active Dudley Club from their HQ at Ruiton Mill. Or the Pubs And Clubs On The Air stations? These last two were on the same weekend (12th/13th May).

Following our Committee's recent meeting, it was stated that an application for a special event call should be made for a GB80 call to coincide with the Society's 80th year. I thought this was a positive, exciting step forward designed to promote the Society and I would be keen to participate. A number of people I've spoken to did not know there is a Stourbridge & District A.R.S.!!!, so could this be an opportunity to attract some new members?

The May 21st meeting was well attended with members evolving into different groups. Some in the computer group, some in the DMR programming group, with the remainder chatting about different things. As this was a Main meeting, we should have, ideally, been enjoying a presentation by a visiting speaker. If you have any ideas for the programme, please have a word with the Programme Secretary (if we still have one) or a Committee member. Thanks.

You will notice that I have removed the “On Air” from the Calendar. You can draw your own conclusions as to why I've done this, but I think the reason is fairly obvious.

Jim G4WAO has sent me another item from his Australian source, **VK2MB**, which should be sent along with this issue. It will, hopefully, be of interest to those of you in the DMR Group, but may make interesting reading for others, too.

Here is another link from **Jim G4WAO** and his usual source **VK2MB**

Hello Morse | Experiments with Google #morse

Google’s GBoard now supports CW: https://experiments.withgoogle.com/collection/morse

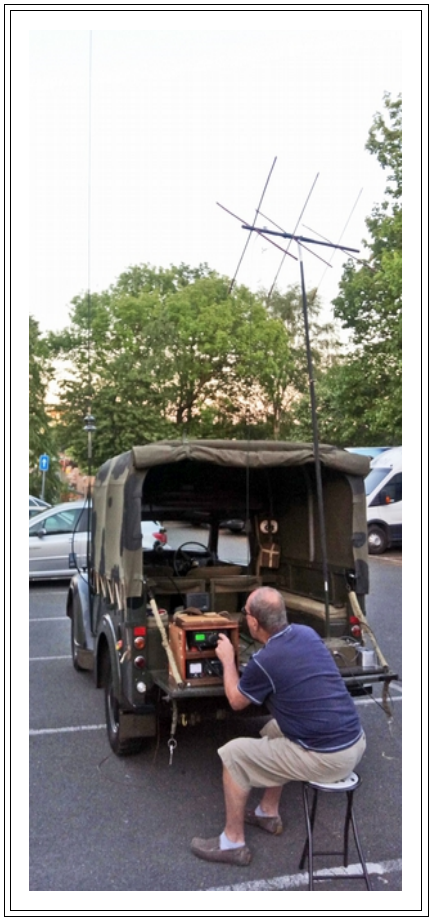
Hope you find it interesting.

Tony M6AHW/P @ OSH

At the 14th May meeting, **Tony M6AHW** brought along "*Tilly*", his beautifully restored pre-war Austin 10 Utility Truck, kitted out with radios for HF & 2M. Tony managed several contacts into Italy from the car park on the truck mounted Tank whip, but the bands were very quiet. He also worked into Gloucestershire with the home brew "*Moxon*" 2m aerial on his home brew rotator. Tony's "*Tilly*" was featured as an example of a restored one on TV in "*Car SOS*" a short while ago. It was even featured in the opening titles. You can watch the episode; see the link below.

https://www.dailymotion.com/video/x6h57gb

Tony on his way to the club meeting.



Write-up and photos by **Wayne M5LLT**.

SNIPPETS

STYLOPHONE

Anyone got one of these???

I still have mine.

Quite good fun to use back in the olden times.

Seen on the internet

Copper wire conversion chart

SWG	mm	in	SWG	mm	in
1	7.62	.300	26	0.4572	.018
2	7.010	.276	27	0.4166	.0164
3	6.401	.252	28	0.3759	.0148
4	5.893	.232	29	0.3454	.0136
5	5.385	.212	30	0.3150	.0124
6	4.877	.192	31	0.2946	.0116
7	4.470	.176	32	0.2743	.0108
8	4.064	.160	33	0.2540	.0100
9	3.658	.144	34	0.2337	.0092
10	3.251	.128	35	0.2134	.0084
11	2.946	.116	36	0.1930	.0076
12	2.642	.104	37	0.1727	.0068
13	2.337	.092	38	0.1524	.0060
14	2.032	.080	39	0.1321	.0052
15	1.829	.072	40	0.1219	.0048
16	1.626	.064	41	0.1118	.0044
17	1.422	.056	42	0.1016	.0040
18	1.219	.048	43	0.0914	.0036
19	1.016	.040	44	0.0813	.0032
20	0.9144	.036	45	0.0711	.0028
21	0.8128	.032	46	0.0610	.0024
22	0.7122	.028	47	0.0508	.0020
23	0.6096	.024	48	0.0406	.0016
24	0.5588	.022	49	0.0305	.0012
25	0.5080	.020	50	0.0254	.0010

DX NEWS [*An occasional feature*]

EJ0DXG - Irish IOTA Groups

Beginning June 1st 2018, the EIDX Group will activate ALL Irish IOTA Groups.

Using the 'Echo Juliet' prefix, EJ0DXG will be QRV from IOTA EU-006, EU-007, EU-103 and EU-121 this summer.

Starting off with 'Little Saltee Island' EU-103 on June 15/16/17/18th....the groups will be QRV on HF and 6m bands using CW, SSB and Digital modes.

Please follow their Facebook page for information/dates for all other activations....https://www.facebook.com/groups/185038478993063/

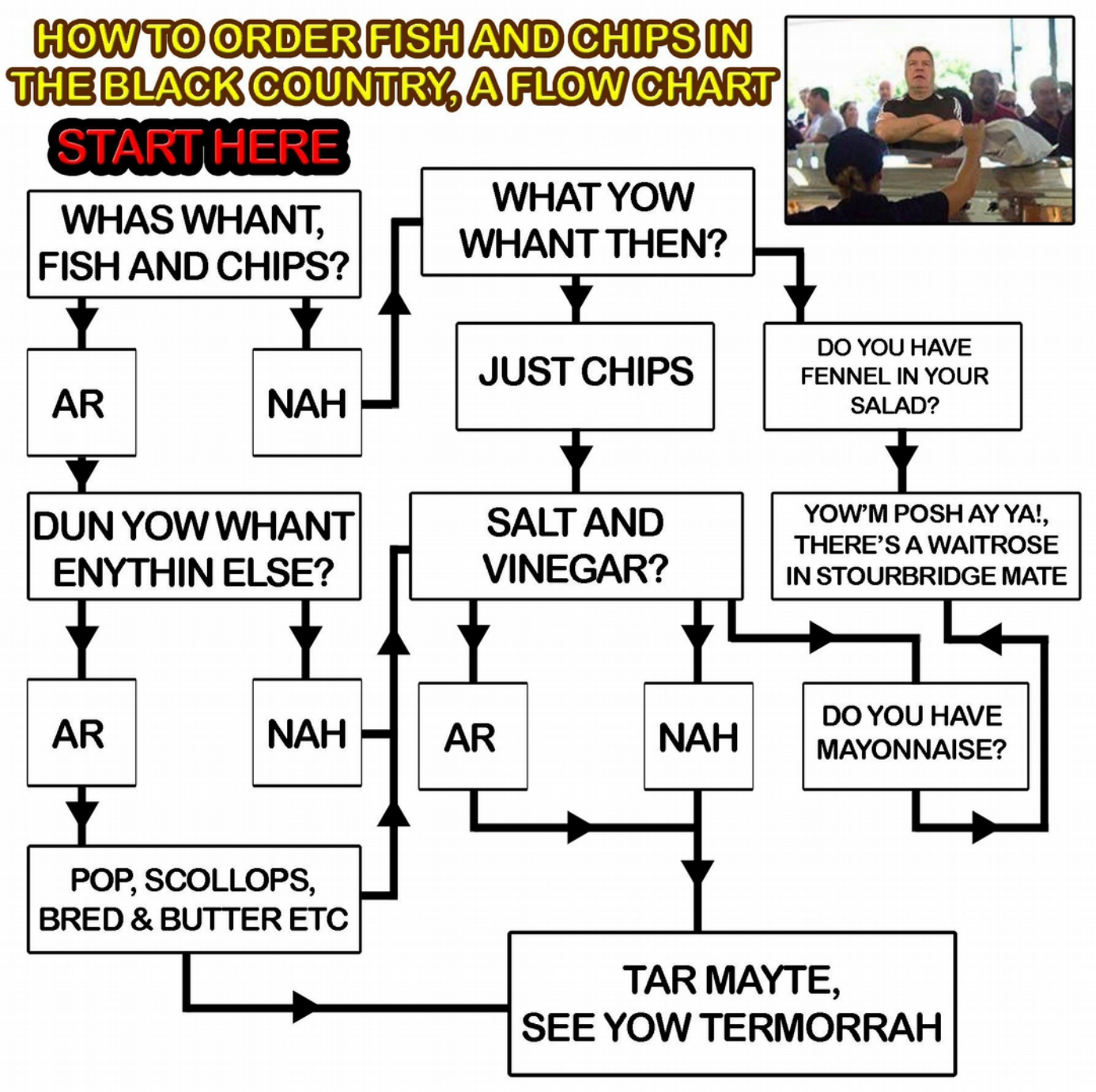
Supported by dxwanted.net a beautiful plaque will be available for whoever works them on 4 different IOTA Groups. So, as a 'Bonus' or 'Joker' station, EI0DXG will also be QRV from Mainland Ireland (EU-115) throughout and until September 30th 2018.

As with all EIDXG activities, please QSL via M0OXO.

Sorry, not my fault, but nothing to fill this space!!!

Deadline for next issue .... 24th June

Just For A Chuckle

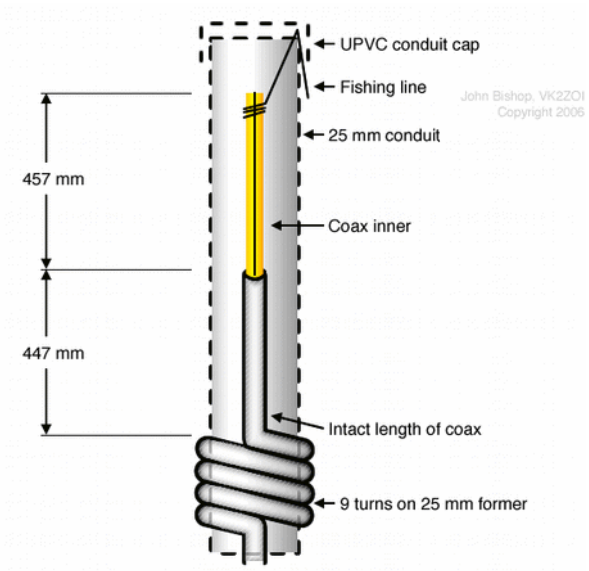


You can probably guess from this item that I'm somewhat short of inspiration for items to include in these pages.

May I respectfully suggest that the remedy is in YOUR hands!!!

Half-Wave Flower Pot Antenna

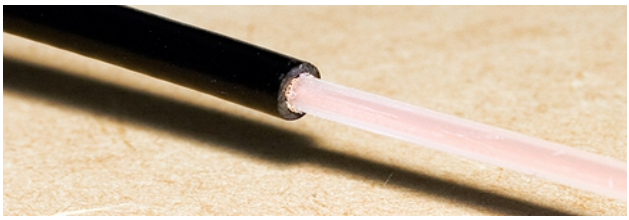
The diagram below shows the basic arrangement of the 2m Half-Wave version of the antenna. To construct the antenna, first select a suitable length of grey 25mm conduit (as a minimum 1m but if you make it longer, you will have more room below the coil to attach to your antenna support).



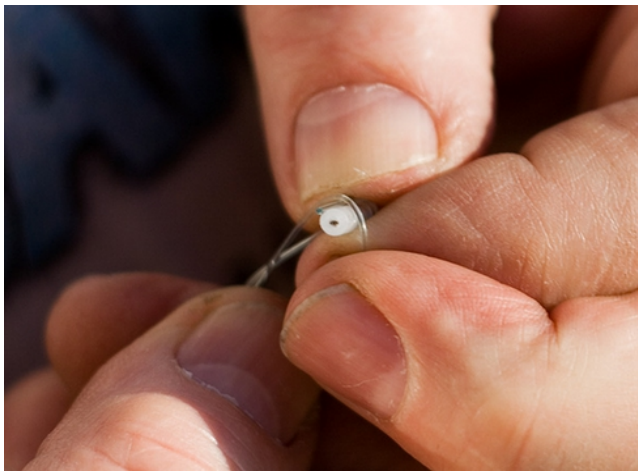
Basic arrangement of the 2m Half-Wave version

Drill two holes into the side of the conduit for the choke coil. The 'top' hole will be approx 925mm from the end (this distance is the length of the radiator plus a small clearance between its end and the end-cap). The spacing between the holes should be such that the coil turns will be firm and secure. Actual hole diameter and spacing will depend on the cable brand and/or where it was manufactured. It will be close to being two 6mm holes spaced 45mm apart but wind 9 turns temporarily on the conduit and take measurements.

Then take a suitable length of co-ax (I make mine using the one piece of cable, about 5 to 6m long, to reach from the antenna to the transceiver – the length is your choice). From one end, strip off 457mm of the outer sheath and braid to form the top element. It's not a big problem if you end up with a length that's a bit short, because a another piece of wire or the discarded braid can be soldered to the top to make the correct length.

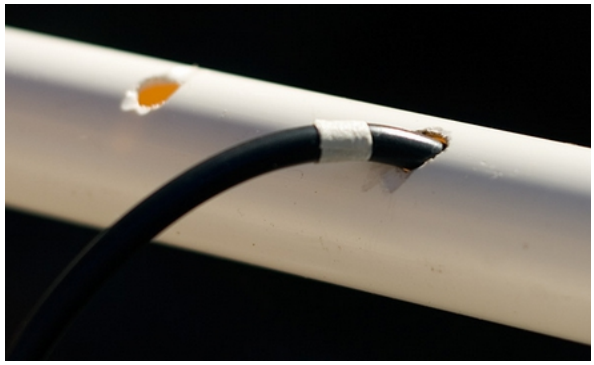


Using several “half-hitches”, tie a piece of fishing line (or similar, thin nylon line), say about half a metre long, to the top of the upper element. This line will be used to pull the radiator taut, it will clip over the top of the conduit and be clamped by the end cap.

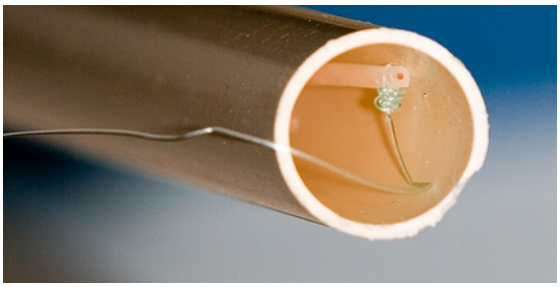


Now measure 447mm down from the feed-point (the point where the braid/outer sheath now starts); this is the distance to the start (or top) of the choke coil and mark this position on the coax with a piece of tape, string, paint spot, or whatever, so as to be a reference/stop point when inserting the cable into the conduit.

The antenna is assembled by inserting the radiating portion (together with the piece of nylon line) through the top coil hole and pushing it upwards until the aforementioned reference/stop point disappears into the hole.



Fish-out (pun intended) the nylon line and by pulling it taut, temporarily straighten the radiator to “set” the bend at the choke coil top.



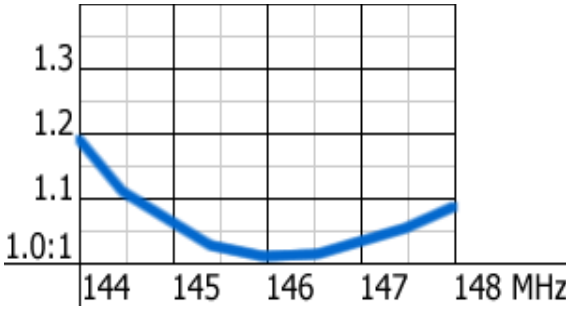
The coil is then wound on the outside of the conduit and the remainder of the cable inserted through the bottom coil hole and pushed down. Using firm but careful manipulation, the cable is pushed and tugged through the exit hole until the

coil is tightly wound and secure. This must be done without altering the bottom radiator length (you should continue to just see your ‘mark’ through the top hole.

At the top, cut a small (thin, narrow) notch in the edge of the conduit, pull the nylon line taut and nip the nylon line into the notch. Later, when an end cap is fitted, the cap will clamp the nylon line solidly in place and hold the radiator straight.

Fit a connector, measure the VSWR, if necessary trim the top element.

However, you should find that very little trimming, if any, will be necessary. If you dual band the antenna, the 2m resonance will appear to shift upwards slightly. So, don’t be too concerned if your antenna at this stage appears to have its VSWR curve dip a bit below 146 MHz. The VSWR plot of the 2m Half-Wave antenna should look like the following:



VSWR plot of the 2m Half-Wave antenna

When you are happy with the VSWR, finally, cap the top, securing the nylon line and the radiator in place.

Don’t block or seal the bottom end of the conduit. This is to allow condensation etc to drain away.

Tips

File the coil holes to ease the bends.

Heat-shrink the feed-point to seal against water entry. Also heatshrink the coil's entry and exit points to minimise water entry.

Heat-shrink the bottom end to provide a buffer for the exiting coax and neaten the base.

The type of Co-Ax is Important. Use braided co-ax *only*.

Do not use co-ax with a foil shield as the foil tends to break during assembly especially at the sharp bends at the choke entry/exit points. Obviously if this happens, your antenna will not work!

Cocky Proofing

To protect the choke coil from bird attacks especially from the White Cockatoos, the coil needs to be covered with a 'Cocky' shield. An empty Silicone Sealant cartridge (enlarge the hole at the top and cut the barrel to length) neatly fits over a 2m antenna coil. A PET soft-drink bottle can be used for larger coils which, when heated with a hot-air gun (but don't melt the conduit), will act like heat shrink tubing and become a very tough shield. Before fitting the shield, wrap PVC tape over the coil and the entry/exit holes to minimise water entry.

Using something other than grey electrical conduit

To the purist and his microwave oven, grey electrical conduit is considered lossy. It is, however, very UV resistant. The design compensates for the affect of the conduit by shortening the elements (by about a 2% factor) but otherwise the conduit appears to have little effect on the radiation efficiency.

If you use orange (HD) conduit, irrigation pipe, Telstra conduit, GRP, etc, the element lengths will be different. An unenclosed antenna will have longer elements (probably 2% or maybe 3% longer). Similarly, an antenna enclosed in something that is very much loaded with conductive filler will be much shorter (but, of course, don't ever use a material like this for an antenna).

Scaling to Other Frequencies

The above design will scale to other frequencies, the limitation being the mechanical properties of the conduit. To make an antenna for other frequencies, a suitable choke coil can be determined from this table.

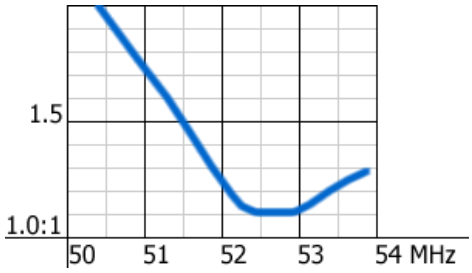
RG58 Co-ax Self Resonant Frequency (MHz)			
Coil Turns	PVC Conduit Former Diameter		
	25mm	32mm	50mm
4	-	160	-
5	150	136	85
8	142	106	65
9	135	100	60
10	129	95	57
12	117	84	52
15	105	75	47

As a suggestion, construct a series of graphs from the data to make it easier to interpolate. Ideally, the choke should consist of unit turns. Half turns are OK but do not wind a choke coil using other than full or half turns. If your design is for a single operating frequency (or very narrow band) then chose the lowest half turn (ie the choke frequency is closer to the operating frequency); if, however, a broader-band antenna is required, chose the nearest higher half turn.

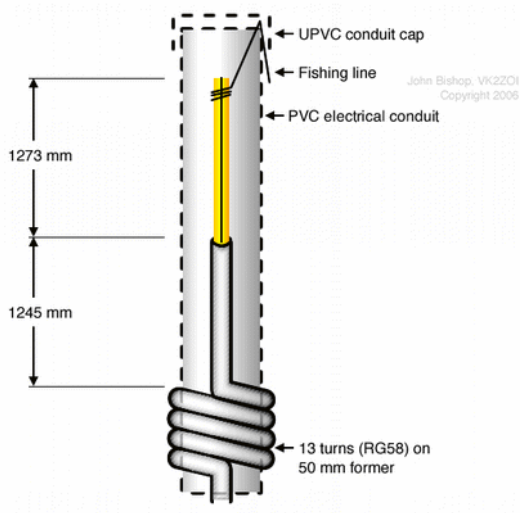
The choke needs to be resonant about 5 to 6% below the desired operating frequency. Closer spacing will sharpen (and deepen) the VSWR response; wider spacing flattens but raises the VSWR. Curve.

6m Half Wave Flower Pot

To build a 6m version, use 50mm (OD) conduit. The dimensions are in the following diagram.



VSWR plot of the 6m Half-Wave antenna



Coming next month: Dual Band Half-Wave Flower Pot Antenna

YOUR COMMITTEE

PRESIDENT	Tim Childe	G7TAC
VICE PRESIDENT	Nick Moss	G6DQN
SECRETARY	John Clarke	M1EJG
TREASURER	John Scott	G8UAE
COMMITTEE MEMBERS		
	Wayne Mocroft	M5LLT
	Geoff Cooper	G0KVK
	Mark Cadman	M0TCG
	Keith Dixon	M0HPY
	Ross Lewis	M6RLZ

STARLITE EDITOR	Bob Egan	G4XOM
	Email: robg4xom@outlook.com	