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WATTS

02-2011

Year 81 + 2m

Monthly newsletter of the Pretoria Amateur Radio Club
 Maandelikse nuusbrieff van die Pretoria Amateur Radio Klub.



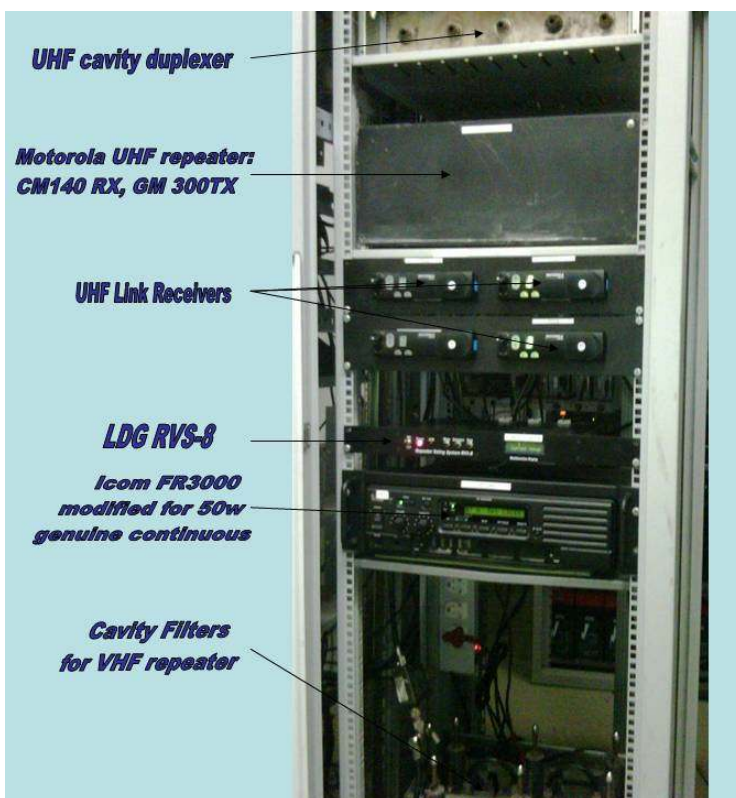
PARC, PO Box 73696 Lynnwood Ridge 0040, RSA



<http://www.parc.org.za> mail: zs6pta@zs6pta.org.za

Bulletins: 145,725 MHz 08:45 Sundays/Sondae
 Relays: 1.840, 3.700, 7.066, 10.135, 14.235, 51.400, 438.825, 1297 MHz
 Activated frequencies are announced prior to bulletins

Swapshop: 2m and 7.066 MHz Live on-air after bulletins
 Bulletin repeats Mondays | herhalings : Maandae 2m 19:45



ZS6PTA repeater upgraded

Radcliffe had new low-loss cables drawn in. Two extra receivers as part of the voting system were installed and activated at Donkerhoek and Wonderboom. The latter is accessible without 88,5Hz tone.

Our members owe much to Craig ZS6RH and the few that volunteered to help.

-Alec ZS6MVA, Craig ZS6RH en Pieter ZS6SPY-



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- Member news / Activities Lede-nuus en Aktiwiteite
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In hierdie uitgawe

Next Meeting

Date: Sat 12 Feb 2011
 Time: 13:30 for 14:00

Building #4
 University of Pretoria.
 S/E corner University
 and Lynnwood roads

PARC Management team / Bestuurspan Aug. 2010 - Aug. 2011

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Minutes of the monthly club meeting of the Pretoria Amateur Radio Club held at the South Campus of the University of Pretoria on 12 January 2011.

Welcome: The chairman welcomed all present.

Present: See register, 13 members plus 4 visitors.

Apologies: ZS6JJJ, ZS6GJJ and ZS6USA.

Joys & Sorrows: Nico ZS6AQ has had a stroke and is not well.

Minutes: The minutes of the previous were published, approved by Graham ZR6GJR and seconded by Vítor ZS6VG.

Web site: Graham ZS6GJR had confirmed that the web site is running. It was noted that Tjerk is threatening to shut it down at the end of the month.

Finances: We have a bank balance of R4447.58 after the end of year function, trophies and post box were paid..

Membership: There are 101 paid up members of the total of 126 for 2010/11.

Flea Market: The date of the next flea market is 5 March, and will be held at PMC at 08:00.

Social: The end of year event took place at PMC after the flea market of 27 November. It was well attended and a good time was had by all.

Rallies: The 2011 season has started. The first event is a regional rally in the Belfast area on 12 February.

Technical: The repeater is operating without the voting system at 50W from Radcliffe. The voting system will be sorted out shortly. The UHF repeater on 438.825MHz is again operational. The noisy CFL navigation lamps have been replaced with long life halogen lamps. It was noted that a backup service man is required.

VHF Dxpediton: Pine ZS6OB has advised that this will be delayed. A suitable site has been found..

Fox hunt: It was agreed that the fox hunt will be restarted. The club has a fox, which was described to the meeting. The first hunt will be on Saturday 19 February starting at 14:30, with a bring and braai to follow at the home of Vince ZS6BTY.

Presentation: Pierre ZS6PJH showed a video on cloud computing.

Next meeting: The next meeting will be on Saturday 12 February 2011 at about 14:00.

Birthdays

Verjaarsdae

Feb.



Feb.

Anniversaries Herdenkings

03 Willie ZR6WGR
 03 Nico ZS6AQ
 06 Ellen, lv van joe ZS6AIC
 07 Andre, son of Andre ZS6GCA
 09 David, seun van Ellen en joe ZS6AIC
 09 Kenny ZS6KMM
 10 Paddy, sw of Kenny ZS6KMM
 11 Leanne, sw of Allan ZS6AVC
 12 Yvette, daughter of Rika and Errol ZS6VDR
 13 Sander ZS6SSW
 14 Tobile ZS6TKO
 15 Phil, sw of Craig ZS6RH
 17 Freddie ZS6JC

03 Heather and Vince ZS6BTY (21)
 18 Sarina en Willie ZR6WGR (11)
 27 Paddy and Kenny ZS6KMM (46)
 28 Martie en "JB" ZR6YV (35)
 28 Phil and Craig ZS6RH ()

20 Ivo ZS6AXT
 22 Christopher, son of Joey and Graham ZR6GJR
 23 Arrie ZS6IRA
 23 Peter ZS6PJ

Joys and Sorrows | Lief en Leed

Helen ZR6HN, daughter of Roy ZS6XN achieved 5 Matric distinctions. Well done!
 We have recently heard that Nico ZS6AQ is recoveing well after a suspected minor stroke.

Diary | Dagboek (UTC times)

Feb 12 Belfast rally
12-13 SARL Field Day 10:00-10:00
 12-13 Dutch PACC contest 12:00-12:00
 19-20 ARRL Int. DX Contest 00:00-24:00
19 PARC Fox Hunt – contact Johan or Richard
 25-27 CQWW 160m Contest SSB 22:00-21:59
 26-27 REF Contest SSB 06:00-18:00
 26-27 UBA DX Contest CW 13:00-13:00
Ma 06 DARC 10m digital contest 11:00-17:00
06 SARL Hamnet 40m simulated emergency contest 12:00-14:00
18-20 SARL VHF/UHF Contest
 26-27 CQWW WPX Contest SSB 00:00-24:00

Fleamarket dates
the following dates have been received as final:

PARC	West Rand
March 5	April 30
May 28	June 25
Sept 3	Oct 1
Nov 12	Dec 3

Snippets | Brokkies

WATTS is widely read!

----- Original Message -----

It seems as if my old call sign ZS6BKW has emerged from the grave having appeared twice within the last two months in WATTS! It's there with my multiband antenna in the latest issue and it sneaked in (in small print) on my G0GSF QSL card following the QRP CW QSO I had with Vincent ZS6BTY. And then there was mention of me again in your article on Sir Basil Schonland. Such exposure!

Just a point about the ZS6BKW antenna that should be added to the useful description you published in the Jan.2011 issue. It's important to note that in this type of multiband antenna (based on the G5RV concept) that the length of the antenna (called L1) and the length of the matching section (L2) are interactive. Change one and the other must change too to maintain the multiband match. In addition, the characteristic impedance (Z2) of the matching section (which is really a series section impedance transformer) is also related to L1 and L2. This is best shown graphically and the graph below, which comes from my 2007 article in *Sprat*, the G-QRP Club magazine, best illustrates all these inter-relationships. Note that as L1 is lengthened so L2 becomes shorter. And also Z2 is ideally between 400 and 450 ohms which requires a somewhat smaller spacing that that provided by the spreaders mentioned in your article. The antenna will also work on five bands if Z2 is 300 ohms if one is prepared to accept a slightly longer length of L1 and correspondingly shorter L2.

I hope this helps anyone thinking of making the 'ZS6BKW'.

73 Brian G0GSF ex ZS6BKW

West Kirby
 Wirral
 England.

Subject:ZS6BKW multiband antenna
Date:Thu, 6 Jan 2011 16:58:24 EST
From:Abkaustin@aol.com
To:zs6pta@zs6pta.org.za

145,725 Repeater

Thanks to Craig ZS6RH we have a 3--receiver voting system operational again (front page). Additionally:

438,825 repeater

is again operational at full power and has good coverage

2011 SARL AWARDS NOMINATIONS

Members and clubs are invited to submit nominations to the SARL Council for the following SARL awards. Here is an opportunity to recognise a club member for his or her support in the various facets of Amateur Radio.

The closing date is 31 January 2011

Honorary Life Membership - the SARL's highest honour

Willie Wilson Gold Badge Awarded by Council to the amateur who gave exceptional and meritorious service to the South African Radio League

Jack Twine Award To recognise qualities such as unselfishness, clean operating and a genuine interest in Amateur Radio and its affairs. This prestigious Award will be made to Amateurs who, in the opinion of their fellow amateurs and the SARL Council, exemplify the qualities desirable in a Radio Amateur.

Arthur Hemsley 2 metre Trophy Awarded by Council of the SARL to a Radio Amateur for his/her individual achievements with transmissions in the 2 metre amateur band. This award is made for extraordinary performance on EME or modes such as tropospheric propagation.

It is not for the longest distance worked but rather for persistence in achieving something special on 2 metres.

Barney Joel Trophy Awarded by Council of the SARL to any member of the SARL for the best performance during the year whilst working HF mobile. This award could be made for performance by an individual in rally or other public event communication etc.

Icom Excellence Award This award is bestowed annually by the SARL Council on the amateur who through his/her activity in the Amateur Service has brought international

recognition to South Africa by either the achievement of a VHF/UHF long distance record which is internationally recognized by the IARU, or by service to the Republic of South Africa or the SARL in the field of scientific research using the amateur spectrum, or in promoting the amateur service internationally or as Council may determine from time to time.

Joseph White Plaque Awarded by Council to any member of the SARL for exceptional achievements in the 432 MHz band during the past year. This is not awarded for the longest distance worked, but for all round achievements.

Bert Buckley Six metre Trophy Awarded by the SARL Council to any radio amateur for his/her individual achievements with transmissions in the six metre amateur band. This award is

not for the longest distance worked but for outstanding work or activity on six metres.

Send nominations with motivation to secretary@sarl.org.za before or on 31 January 2011

SARL NATIONAL CONVENTION ON VAAL

The Sasolburg and Vaal Triangle Radio Clubs present: The SARL National Convention 2011. This year it takes place on 15 and 16 April. Come and enjoy the beauty of the Vaal. There is an exciting line-up, starting on the Friday evening with a wonderful Vaal River cruise down Millionaires' Bend. Enjoy a fantastic dinner and the company of good radio friends until late that evening!

On Saturday morning the SARL AGM takes place at the Vaal University of Technology. A huge flea market will be held for radio enthusiasts, while a nature drive at Emerald Casino Resort will keep non-amateur partners suitably entertained. The two clubs are aiming to make the Convention the biggest get-together of radio amateurs in years. Saturday afternoon has been earmarked for a visit to the Bloemendal medium wave radio broadcast station near Meyerton. Come and experience what a 500 kW RF transmitter is capable of doing, and see how the systems for such a shortwave broadcast station operate and service the world from South Africa.

The Convention's highlight is on the Saturday evening at the Riviera Hotel. This year, the SARL Gala evening is going to be a formal black tie affair. Our guest speaker is Prof. Alwyn Louw from VUT, a fantastic speaker! Gerald Klatzko, ZS6BTD, will be giving a riveting presentation on his satellite contact experiences. The annual prizegiving will be hosted by Tjerk Lammers, ZS6P. Thereafter the Broken Stream band fires up the dance music and the party begins.

Registration for the Boat cruise and the Gala evening is essential as there are limited seats available. Bookings should be done through the club secretary of ZS4SRK by visiting www.qsl.net/zs4srk to complete the forms.

FREE RADIO AMATEUR COURSE IN PRETORIA HAS STARTED

The Pretoria Amateur Radio Club (PARC) is presenting a free course to all persons interested in becoming radio amateurs. The course is three months, and lectures will be at the University of Pretoria. Tuition and study material are free of charge.

The course started on Thursday 20 January at 19:30 at our clubhouse at the University of Pretoria. It is probably not too late for interested persons to call Fritz Sutherland, 012 811 3875 or 083 304 0028 or Pierre Holzhausen, 082 575 5799 or 012 655 0726.

The New DXers Handbook (Free!) (info from HF Happenings 438)

Curt, K7CU, President of the Utah DX Association (UDXA), informs OPDX that a free small document (44 pages) is available online at <http://www.udxa.org>.

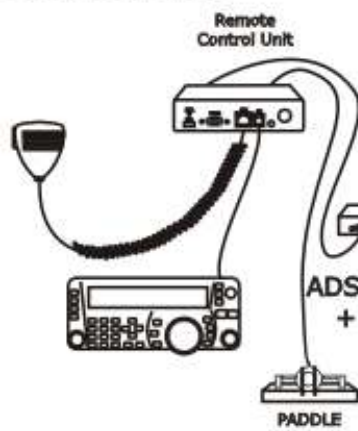
You will see it listed along the left side of the page, in the box labelled "About UDXA."

At the bottom of the list, you will see a link to the handbook (in PDF format).

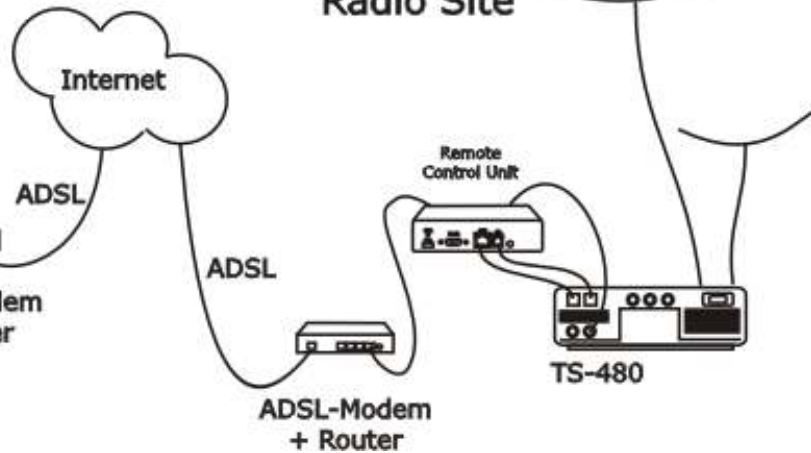
One of the UDXA members who recently completed his stint as Immediate Past President, Bryce Anderson, K7UA, and an accomplished DXer put the handbook together. [OPDX News]



Control Site



Radio Site



Here is a nifty solution to remote control without any computer. Check out the above website for more detail. Only certain radios are suitable due to the method of data transfer used between front panel and radio. Various radio brands and models and options are listed on the home page.

The control panel is working separated from the radio unit it itself. We replace the cable between panel and radio with two RRC-1258MkII, one connected to the control panel and one connected to the radio. No PC is needed at all. When you press the Power button on the panel, the radio comes to life at the remote side and sound and panel info flows across the internet between the pair of RRC-1258MkII. The look and feel of the panel is the same as if the panel was directly connected to the radio. The TS-480 is even more simple to adapt than IC-703/706 because you do not need any special cable. You can make the cables by your self using simple and cheap RJ-45 and RJ-12 cables.

This technique is not possible on the IC-7000 as the IC-7000 display is transferred to the control panel as a analogue video signal. To transfer a analogue video signal over the Internet needs lot of bandwidth so it's not realistic. The IC-7000 can be remote controlled via the CI-V Interface in the same way as almost all other ICOM equipment, but then you need a PC at the control end. At the Radio end only a RRC-1258 is needed. See all the options under the Icom tab.

and from ICOM:

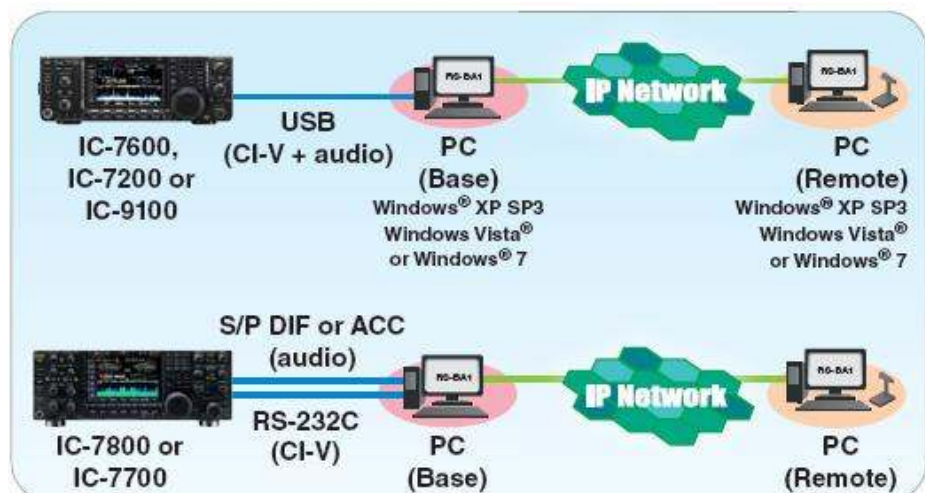
Advanced Remote Control Interface Tailored to some Icom Transceivers

Most functions and modes of your transceiver, including interference rejection functions and IF filter settings, can be controlled. Also, S-meter and SWR can be observed as well as RX recording. The RS-BA1 consists with two component software applications; System configuration software and remote control software to be released soon.

The system configuration software sets up IP address, audio sampling rate and other settings. The remote control software provides a user interface, similar to the radio's front panel, and allows you to control the radio from a remote location.

The IC-7600, IC-7200 or IC-9100 can be connected to a PC with a USB cable and the input/output audio signal and CI-V command is sent through the USB cable.

The IC-7800 or IC-7700 can be connected to a PC with a RS232 cable plus S/P DIF or ACC cable.



PARC Fox Hunts have started

Here is a simple 2m antenna for the job

TAPE MEASURE BEAM OPTIMIZED FOR RADIO DIRECTION FINDING

Joe Leggio WB2HOL - abridged version from http://theleggios.net/wb2hol/projects/rdf/tape_bm.htm

Description

This antenna evolved during my search for a beam with a really great front-to-back ratio to use in hidden transmitter hunts. This design exhibits a very clean pattern and is perfect for RDF use. It trades a bit of forward gain in exchange for a very deep notch in the pattern toward the rear. (You could optimize the design for more forward gain, but at the expense of a really good notch in the pattern toward the rear.) It is a design that can be constructed using only simple hand tools and still perform well.

When I designed this antenna I had one basic idea in mind. It had to be easy to get in and out of the car when hunting for a hidden transmitter. This would be accomplished by the use of steel tape measure elements. These elements could fold easily when fitting the antenna into my car and yet still be self supporting. I decided to use three elements to keep the boom from getting too long.

Another of my design goals was to use materials that were easy to obtain. I chose to use Schedule-40 PVC pipe and fittings available at my local hardware store for the boom and element supports. These kept the cost for the antenna very low. The element supports consist of PVC crosses and tees.

Since I had never seen any plans for an antenna using elements made from 1 inch wide steel "tape measure," I had to do the design myself. To assist in the design I used a shareware computer aided yagi design program written by Paul McMahon VK3DIP. It allowed me to optimize the antenna for the cleanest pattern combined with the best front-to-back ratio.

The best matching network turned out to be a "hairpin match." This is simply a 5 inch length of wire that is connected across the feed points of the driven element. The antenna has some capacitive reactance and the 5" length of wire has just enough inductance to cancel the capacitive reactance. This resulted in a better match than anything else I had tried across the 2m band once the distance is adjusted between the halves of the driven element for minimum SWR. (1 inch apart on my prototype).

Use a pair of shears to cut the tape measure elements to length. An old pair of scissors will probably do as well. Be very careful. Those edges are very sharp and will inflict a nasty cut if you are careless. Use some sandpaper to remove the really sharp edges and burrs resulting from cutting the elements to size. I put some vinyl electrical tape on the ends of the elements to protect myself from getting cut. I encourage you to do the same. It will probably be best if you round the corners of the elements once you cut them. Wear safety glasses while cutting the elements. Those bits of tape measure can be hazardous.

The RG58 coax feedline is connected directly to the driven element. Make sure you scrape or sand the paint off the tape measure element where the feedline is attached. Most have a very durable paint finish designed to stand up to heavy use.

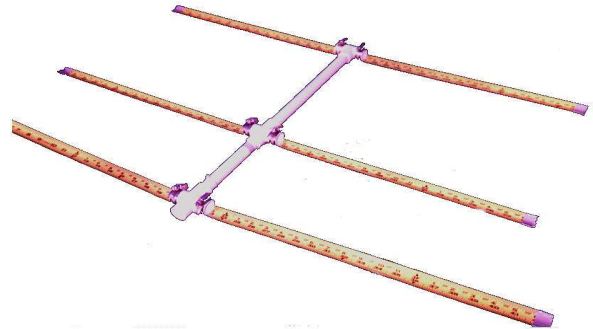
Solder the feedline to the element halves. Care must be taken since the steel tape measure does not solder easily and since the PVC supports are easily melted. You might want to tin the tape measure elements before mounting them to the PVC cross.

By using the dimensions specified, I found that the SWR was 1:1 at 146.565 MHz (our Fox-Hunt freq) when the two elements were spaced approximately 1 inch apart.

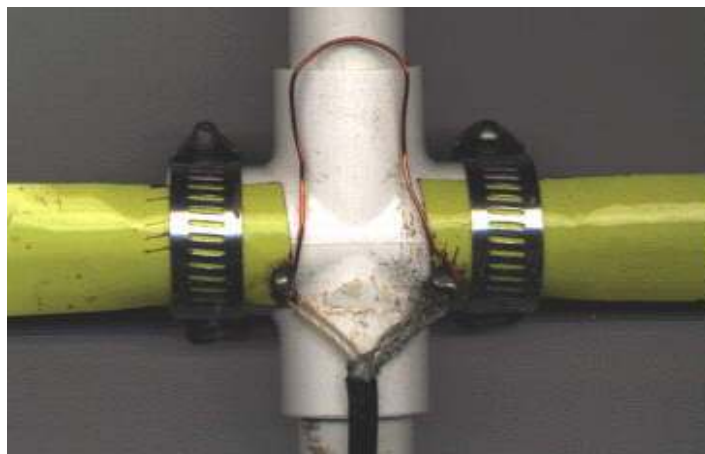
If you wish a slightly neater looking beam, use self-tapping screws at least on the director and reflector.

Rubber faucet washers have been used by some builders between the tape measure element and the PVC fittings on the director and reflector.

These allow for the tape to fit the contour of the PVC fitting and will make the antenna look better.



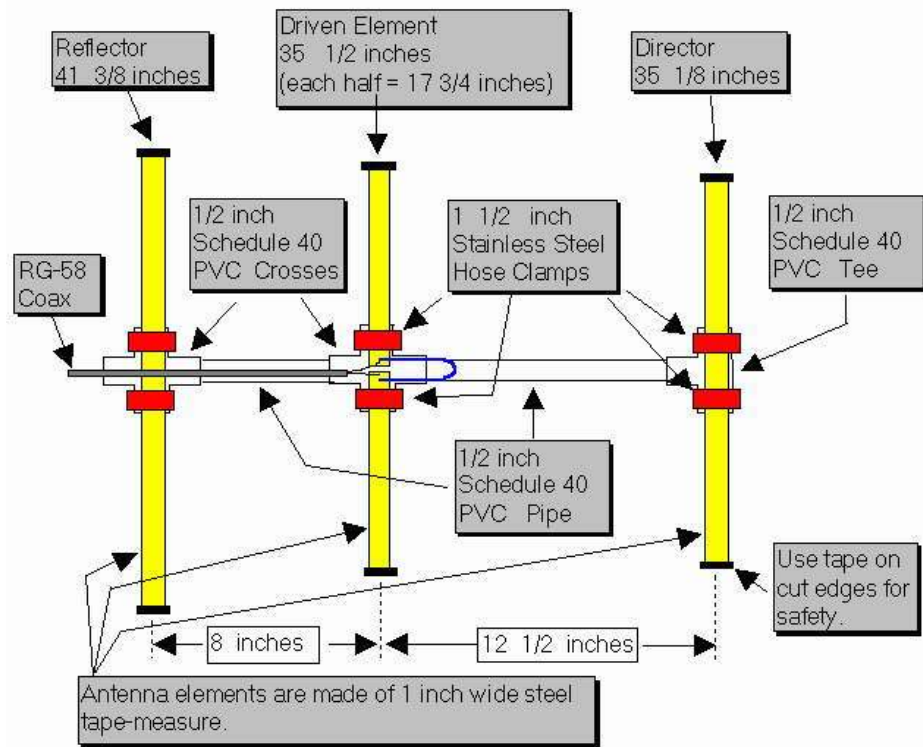
Performance Predicted by YAGI-CAD	
GAIN	7.3 dBd
Front-to-Back Ratio	>50 db
3 db Beamwidth	E = 67.5 degrees
3 db Beamwidth	H = 110 degrees



Construction:

Dimensions are as shown. Once you have cut the tape measure to length, put vinyl tape on the cut ends to protect yourself from the sharp edges. Scrape or sand off the paint from one end of each of the driven element halves so you can make a good electrical connection to the feedline.

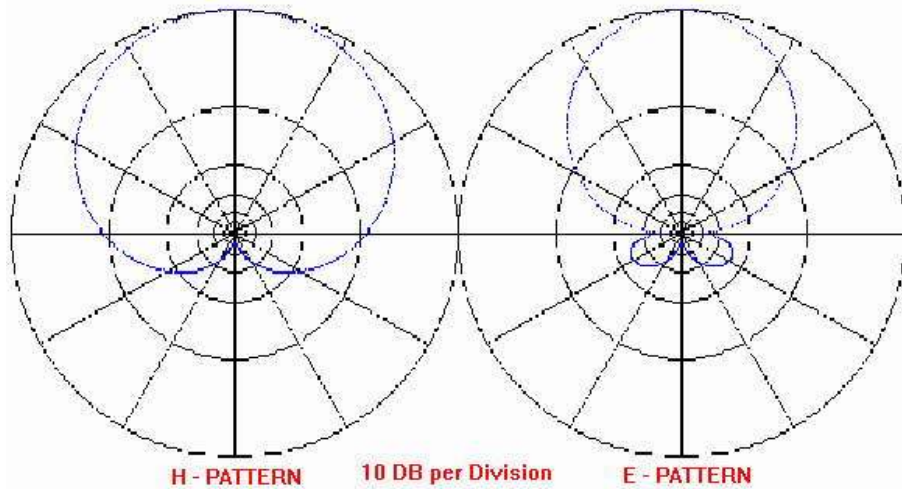
If you are planning to solder the feedline to the driven elements it is best to pre-tin the elements before attaching them to the PVC cross. If you don't, the PVC will melt as you apply heat to the element. Bend the hairpin match into a "U" shape with the two legs of the "U" about 3/4" apart. Tin the ends of the hairpin. If you tin 1/4 inch of each end of the hairpin it will leave 4 1/2 inches to shape into the "U".



You will need to cut two lengths of PVC pipe to use as the boom. One should be cut to 11 1/2 inches. It is used to form the boom between the Director and the driven element. The other piece of PVC between the reflector and the driven element should be cut to 7 inches.

At this time you can pre-assemble the PVC boom, Crosses and Tee which will support the tape measure elements. I secured the PVC pipe in the fittings with a friction fit.

Use stainless steel hose clamps. Attach the tape elements to the PVC fittings as shown in the drawing. It is normal for the reflector and director elements to buckle a bit as they are tightened to the PVC Tee and Cross. You can eliminate this buckle if you use the washers and self tapping screws to attach these elements instead of the hose clamps.



How does it perform?

The SWR should be less than 2:1 across the entire two meter band. The front-to-back ratio is predicted to be very good with the antenna exhibiting a very deep notch in its pattern towards the rear. The [YagiCad 4.1](#) program produced these antenna pattern graphs showing the pattern you should expect. If you would like to experiment a bit with this program, the yagi specification file for this tape measure beam is available for download [here](#). Simply download the YAGI-CAD program and put the tape measure beam design file in the same directory. You will then be able to experiment with the design.

Summary

This beam has been used just about everywhere. The SWR is typically very close to 1:1 once adjusted. Front to back ratio is as predicted. The rear null is perfect for transmitter hunts. When tested using a sensitive field strength meter and a low powered fox transmitter, full scale readings were seen from a distance of ten feet. With the same meter I was able to point the antenna away from the transmitter and move the reflector element to within a few inches of the transmitter antenna and still not see a reading. I don't have the facilities to verify a 50 db notch as predicted by the software but it sure seems close. My antenna has seen a lot of use and has held up quite well. Best of all, when on a fox-hunt, this beam is a breeze to get in or out of the car.

Children 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: John, why are you doing your math multiplication on the floor?
 JOHN: You told me to do it without using tables.

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

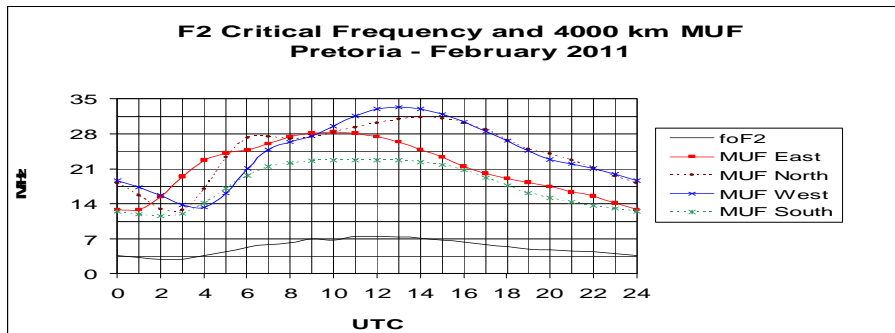
TEACHER: George Washington not only chopped down his father's cherry tree, but also admitted it. Now, do you know why his father didn't punish him?
 LOUIS: Because George still had the axe in his hand....

TEACHER: Now, Simon, tell me frankly, do you say prayers before eating?
 SIMON: No sir, I don't have to, my Mom is a good cook.

TEACHER: Clyde, your composition on 'My Dog' is exactly the same as your brother's.. Did you copy his?
 CLYDE: No, sir. It's the same dog.



Long Term HF Propagation Prediction for February 2011 courtesy ZS6BTY (see also our website propagation tab)



DX Operating
 The graph shows the 4000 km maximum useable frequency (MUF) to the East, North, West and South from Pretoria for the first hop using the F2 layer.

Local Operating
 The F2 critical frequency (foF2) is the maximum frequency that will reflect when you transmit straight up. E-layer reflection is not shown.

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