

# HAM-MAG



January 2010  
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F5SLD's **Free** HAM Magazine - **100% HAM RADIO**

## A SMALL YAGI FOR 50 MHz

**History :**  
**The V for victory**



**QRP is... !**



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# POST-IT !

## The breaking News



**Ham-MAG is now on...  
Facebook.**

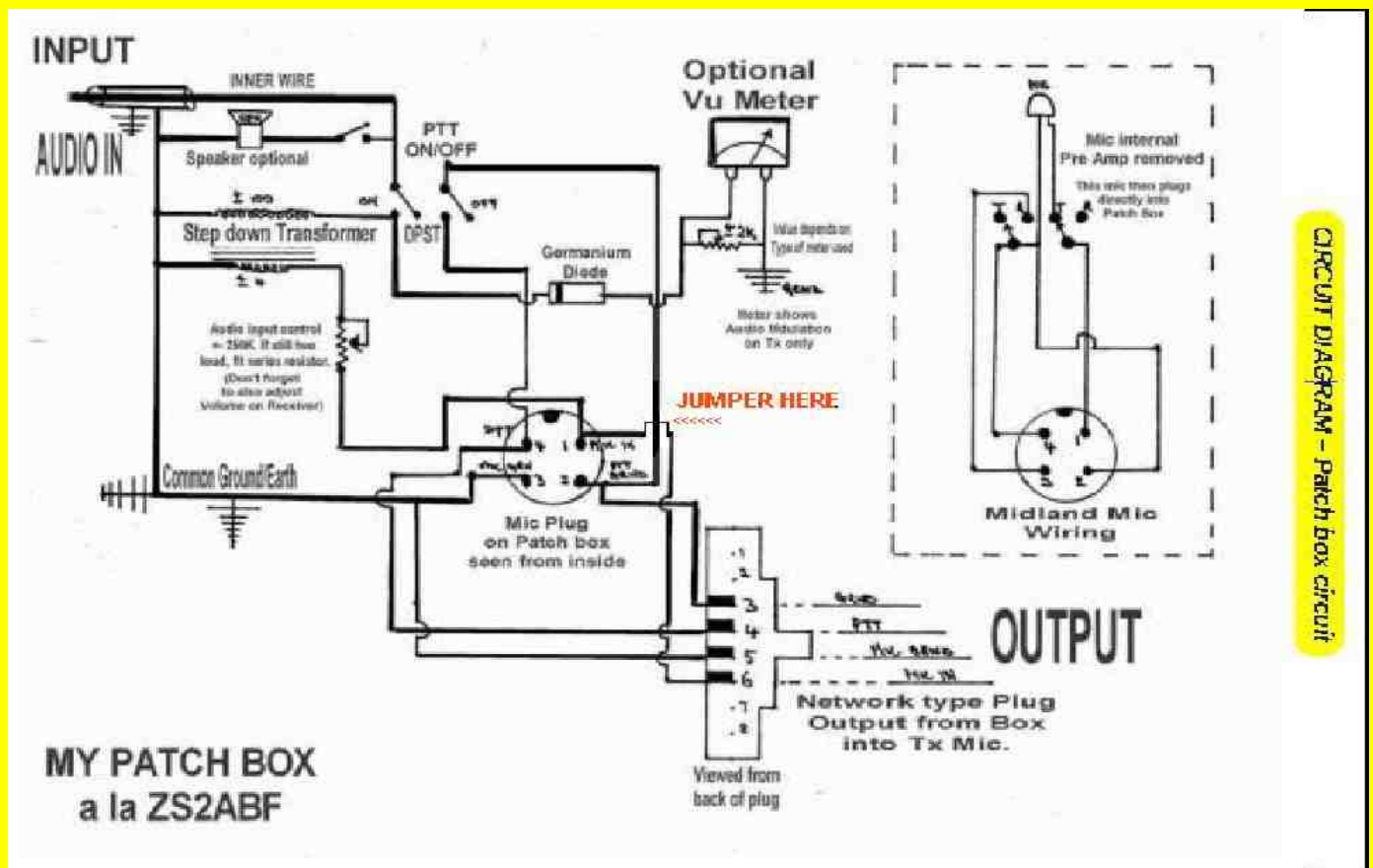


Type "ham-mag" in the facebook homepage and become a fan.  
If we are a lot of fans, may be some retailers would be interested in publishing one (or several) ad in this magazine. Of course, to exist this magazine needs your participation... All infos are welcome.  
Happy new year 2010.

*Vincent Faucheur - F5SLD*  
Chief Editor

\*\*\*\*\*

Hello,  
I have just found a mistake in my circuit Diagram as published in Ham-Mag No10 of Nov09.  
There should have been a Jumper but it is shown as a short circuit.  
Sorry about that, see the circuit corrected.  
**Best 73's - Peter ZS2ABF \* The Locust**



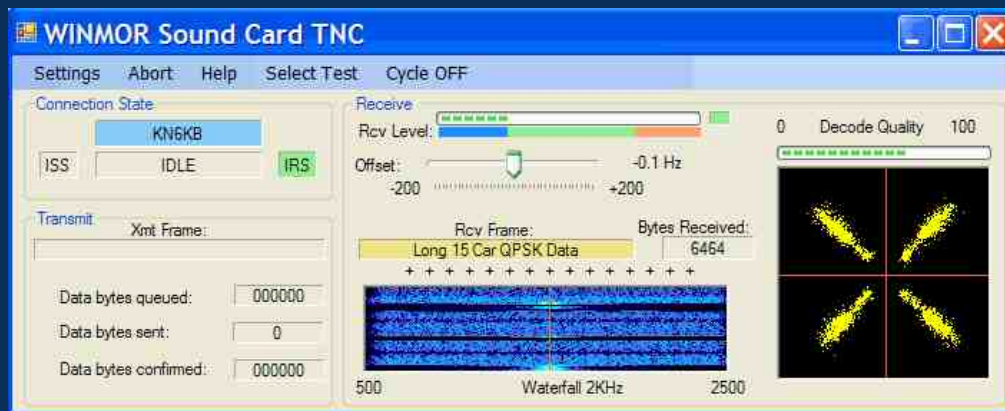


## WINMOR--A New HF Transmission Protocol for Winlink 2000

By Leon Singh - 9Z4BM

<http://9z4bm.tripod.com/>

<http://9z4bm-hamradio.tripod.com/>



WINMOR, by Rick Muething KN6KB of the Winlink Development Team, is a new HF radio transmission protocol for the Winlink 2000 system. WINMOR was introduced at the 2008 ARRL / TAPR Digital Communications Conference in Chicago on September 26-28, 2008. Unlike PACTOR, only a simple computer soundcard-to-radio interface is required, and it will run as a "virtual TNC" with Paclink and RMS software. Also unlike PACTOR, it will be fully documented and without restrictions or license issues preventing anyone from using the protocol in other software. It will have at least three modes, ranging from 200 to 2000 Hertz in bandwidth, and will provide raw speeds ranging from 125 to at least 1875 bits per second.

WINMOR will NOT replace Pactor but be used in addition to Pactor. The RMS HF will be able to operate BOTH WINMOR and Pactor (1-3) but not simultaneous connections. While WINMOR may not equal P2 and P3 in total performance it will provide lower cost, higher performance and more robustness than P1. The primary applications will be for those lower usage Emcomm applications which have trouble justifying the high cost and low utilization of the P2 and P3 modem.

### Current Status

The second round of beta testing began on September 17th, 2009. All individuals interested in contributing to the test should:

1. Signup for the WINMOR Yahoo group, where the Beta test will be conducted, at <http://groups.yahoo.com/group/WINMOR>.
2. Review the documents in the FILES area of the WINMOR Yahoo Group. Particularly the "WINMOR Testing and Evaluation Plan." You may not want to participate at the outset of the testing period. Please educate yourself before making requests. Thanks.
3. Direct your communications regarding testing and your participation to the WINMOR group. Have a look here : <http://www.winlink.org/WINMOR>

73's 9Z4BM, Leon

# 6 Meters—The Early Years

## A personal history by Dave, W3BJG

Having just read the “6 Metre Handbook” by Don Field, G3XTT, I realized that although this book was intended as a handbook, I felt that there was a lot of 6 meter background information not addressed.

I became licensed as WN3BJG in February of 1955. This was before the days of FM and Repeaters and EME, Moonbounce, Scatter and all of the other technologies available today was essentially buzzwords but there were a few pioneers.. SSB was just coming into being as far as the amateur world. For the average Ham, it was either A1 or A3 emissions. A new word was spreading among the amateur world--semiconductors! To most, this was a Selenium rectifier, others were experimenting with Germanium diodes and a few lucky ones gained access to the Raytheon CK722 transistor.

I immediately got on the air on the utilizing the 2 Meter band, mainly because I had previously acquired a surplus SCR-522 rig which was completely converted and ready to go on the air.

Having no HF transmitting capability, I spent my entire Novice year operating on the 2M band and listening to W1AW and private code practice stations, getting ready to go for the General class license, which I successfully obtained within the one year grace period.

Not many commercial manufactures were making 50 MHz equipment in the mid 50's. Practically all commercial/amateur equipment manufactured at the time only went to 30 MHz. As I recall, I got on the air after much prodding by my friends on 144 MHz. A recently formed VHF Club had as a club project, a 50 MHz transmitter so I built it and then I needed a receiver. Having played with some super-regenerative receivers before getting my license, I took that route and finally had a 50 MHz station.



A quick check thru the advertisers in the ARRL Handbooks yielded the following manufacturers of 50 MHz gear: **See Appendix 1.**

According to my Log Book, my first 6M contact was February 12, 1956 but this activity ceased in April of the same year when I enlisted in the Navy. In June of 1956, I bought my first piece of commercial 2M equipment, a Gonset Communicator.

As I recall, my first piece of 6M equipment, was a Tapetone XC-50 Double Cascode High Performance 6M converter which I bought early in 1957 and used it in conjunction with a BC-312N surplus receiver. I think my 6M antenna at the time was most likely a modified TV antenna.

During the next several years, while I was attending Navy Technical Schools I did manage to operate from Memphis, W4ODR and later when stationed in Hawaii, KH6AHQ. Most of the operation at these clubs was on the HF bands, handling phone patch traffic.

During the latter part of 1956 and early 1957, I had the opportunity to become acquainted with Paul Wilson, W4HHK. I often visited with him while he was at work as a TV engineer at a local television in Memphis, TN and also was fortunate in visiting him at his home QTH in Collierville, TN. One of the things I remember most about his station were the twin towers he had erected in preparation for the upcoming IGY program, See QST, Nov. 1957. On these towers Paul had erected 6M arrays and the towers were oriented so in one direction, they pointed directly towards W1AW and in the opposite direction, they were directed towards Australia.

Unfortunately, I never heard of what success he may have had with the antenna although I did have the opportunity to speak again with Paul as I traveled thru Memphis in 1973.

While in Hawaii, I started the construction of what I intended to be a Portable 6M Transceiver. I later found out that in the process of testing the transmitter portion, I apparently did it during a rather good band opening to the East coast (from Hawaii) and I was heard somewhere in the New England states. I had no receiver capability at the time and wasn't aware of what had transpired. The receiver in this portable transceiver was a modified version of the Super-Regen originally used when I first got on 6M.

As soon as I saw an advertisement for the Heath Seneca 6 & 2 M Transmitter kit, I immediately ordered it. In the latter part of 1958, I secured permission to set up my own amateur radio station on the Navy base at Barber's Point, TH and assembled my new transmitter in my own Ham Shack. In a letter to Sam Harris, W1FZJ, I stated "as of the 15 of March (1959), I got on 50 MHz and during the first three hours of operation with the new rig, I worked several of the local hams in Hawaii, and then hit an opening into VK4 and VK9 land. The present set-up is: Heath Seneca, Tapetone XC-50 into a Hallicrafters SX-100, and a 5 ele beam abt. 60 feet in the air."

### **Openings:**

I was fortunate in that I was on the air during the IGY which coincided with what was anticipated to be a good year as far as sunspot activity. As it turned out, cycle 19 proved to be the highest recorded sunspot activity and that record still stands, 50 years later.

Another factor which made these openings interesting was the fact that Hawaii had gained statehood on August 21, 1959 and was the last state required for WAS on 50 Mhz. Many of the West Coast stations that contacted me were attempting to obtain the coveted WAS on 50 MHz and really expressed an interest in getting my QSL card. The operating during a great band opening was a lot of fun, but the work began after the band closed. I made it a policy to QSL 100% and although the cost was not that great—still only 3 cents a card, the time required to research the address information and then fill out the card took much more time than the contact itself.

Having notified the FCC Engineer in Charge in Honolulu, I was able to operate under my own call as W3BJG/KH6 which was an asset during band openings. That call stood out among the other KH6 stations during band openings.



I know I contributed to several of the W6 and W7 call area hams among the first to obtain their WAS 50 on 50 Mc certificate. During one exceptional band opening, there was a two (2) hour period where I worked fifty (50) different stations just as fast as I could log them. **See Appendix 3.**

Many lapses in DX contacts were due to either the lack of good band conditions or the fact that I often deployed to the Midway Islands as part of a flight crew. Several other operators were authorized to utilize my station and were fortunate in making a few DX contacts themselves.

**73 ! G. David Germeyer, W3BJG**

### Appendix 1

1953	Harvey-Wells	TBS Bandmaster Senior
1953	Gonset	Super "6" Amateur Converter
1953	Concord	Sonar MB-26 Various, including 6&2M
1953	Monitoradio	2 & 6M Receiver
1953	RME	MC-53 3 Band 2, 6,10-11M Conv.
1955	Gonset	Communicator 2M and 6M models
1956	GE Ham News	Simple-Sixer Converter
1956	National Co.	HRO-60 Receiver, 50-54 MHz optional
1956	WRL	6 M converter
1956	Ameco	Low Pass Filter

### Appendix 2

The 50th State VHF Club published a Propagation Forecast for 6 Meters, October and November 1959.  
2 October 1959

<b>Path</b>	<b>October</b>	<b>November</b>
Okinawa	1300-1400	1200-1800
Eniwetok	1400-1800	1000-1900
East Coast U.S.	---	---
Philippines	---	1300-1600
West Coast U.S.	0900-1400	0900-1400
Japan	---	---
Alaska	---	1100-1300
Midwest U.S.	---	---

These openings are of a general nature. Openings other than those noted may occur, depending upon atmospheric phenomena, pre-sunspot activity or scatter.

Times listed indicate periods when MUF reaches or exceeds 50 mcs.

### Appendix 3

The following is a brief summation of 6M band openings I was fortunate in operating during 1959-1960. Only states or countries are listed and times are local, Hawaiian time. *W = worked. H = heard*

3/15/59	2305	VK9	W	3/29/59	2335	ZL2	W
3/15/59	2312	VK4	W	3/29/59	2350	ZL2	W
3/15/59	2328	VK4	W	3/30/59	0015	VK4	W
3/15/59	2342	VK4	W	3/30/59	0024	VK9	W
3/16/59	1444	PY5	H	3/30/59	2244	VK4	W
3/16/59	2207	VK4	W	3/30/59	2312	VK4	W
3/16/59	2218	VK4	W	3/30/59	2323	VK9	W
3/16/39	2230	VK4	W	3/30/59	2333	VK4	W
3/21/59	2150	VK4	W	3/31/59	2225	VK4	W
3/21/59	2213	VK4	W	3/31/59	2241	VK4	W
3/21/59	2242	VK4	W	4/1/59	2309	VK4	H
3/21/59	2300	VK4	W	4/1/59	2309	VK4	W
3/21/59	2331	VK4	W	4/1/59	2323	VK4	W
3/21/59	2332	VK4	W	4/1/59	2333	VK4	W
3/24/59	2236	VK4	W	4/1/59	2345	VK4	W
3/29/59	2211	VK4	W	4/5/59	1427	LU4	W
3/29/59	2226	VK4	W	4/5/59	1435	LU3	W
3/29/59	2243	VK4	W	4/5/59	1440	LU8	W
3/29/59	2316	ZL1	W	4/5/59	1445	CX1	W



4/5/59	1450	LU2	W	1/10/60	0939	WA6GXN	W*
4/5/59	1453	LU2	W	1/10/60	0943	K6LLK	W*
4/5/59	1457	LU5	H	1/10/60	0947	K6EOS	W*
4/5/59	1520	LU3	W	1/10/60	0951	K6RMX	W*
4/5/59	1536	LU9	W	1/10/60	0955	W6KIN	W*
4/5/59	1546	CX1	W	1/10/60	0959	W6LQM	W*
4/5/59	1559	LU9	W	1/10/60	1002	W6JTC	W*
4/5/59	1606	LU3	W	1/10/60	1005	WA6COS/6	W*
4/5/59	1614	CE3	H	1/10/60	1010	K6QMK	W*
4/5/59	2314	VK9	W	1/10/60	1017	K6LCL	W*
4/6/59	2159	VK4	W	1/10/60	1018	K6GOH	W*
4/6/59	2213	VK4	W	1/10/60	1024	WA6JOT	W*
4/7/59	2130	VK4	W	<i>Stations marked with W* were worked utilizing a</i>			
4/7/59	2307	VK4	W	<i>one (1) tube Super-Regen Receiver. Just told</i>			
4/7/59	2358	VK9	W	<i>everyone to move up the band to get out of the</i>			
4/8/59	0001	VK9	W	<i>local QRM !</i>			
4/16/59	1415	LU3	W	1/10/60	1053	WA6GRO	W
4/16/59	1457	LU2	W	1/10/60	1058	K6TPO	W
4/16/59	1511	LU2	W	1/10/60	1108	W7ZOW	H
4/16/59	1530	LU3	W	1/10/60	1115	W7JAX	W
4/16/59	1547	LU5	W	1/13/60	1009	W7DYD	W
4/16/59	1613	LU9	W	1/13/60	1015	W7RGS	W
4/30/59	2358	VK9	W	1/13/60	1025	K7ERW	W
5/5/59	2321	VK4	W	1/13/60	1052	WA6DQZ	W
5/10/59	2212	VK4	W	1/14/60	0937	K6UMM	W
5/10/59	2231	VK4	W	1/14/60	0945	W6AJF	W
5/10/59	2242	VK4	W	1/14/60	0951	K6UWD	W
5/10/59	2332	VK4	W	1/14/60	0956	W6WIT	W
5/30/59	2334	VK9	W	1/14/60	1002	K6OCF	W
7/3/59	2259	VK9	W	1/14/60	1007	WA6DRH	W
7/29/59	2339	VK9	W	1/14/60	1011	K6QAX	W
7/30/59	0001	VK9	W	1/14/60	1016	K6JJU	W
8/8/59	2303	VK4	W	1/14/60	1023	WA6BMR/6	W
8/10/59	2251	VK4	W	1/14/60	1027	K6OFJ	W
8/10/59	2335	VK9	W	1/14/60	1032	K6QQA	W
8/11/59	0001	VK4	W	1/14/60	1034	WA6BZA	W
8/11/59	0020	VK9	W	1/14/60	1039	WA6IFR	W
8/11/59	2323	VK9	W	1/14/60	1043	WA6FLX/6	W
8/17/59	2319	VK4	W	1/14/60	1047	WA6DTO	W
8/17/59	2340	VK4	W	1/14/60	1320	VE7's	H
8/21/59	Statehood !			1/15/60	0915	K6QMA	H
9/2/59	2245	VK4	W	1/15/60	0919	K6JKA	W
9/17/59	2304	VK9	W	1/15/60	0927	K6UMM	W
11/1/59	0917-1244	50 Stateside QSO's		1/15/60	0930	K6PXT	H
<i>including W6, W7, Calif and Arizona.</i>				1/15/60	0935	W6WIT	W
12/15/59	0953	K6JYJ	H	1/15/60	1020	WA6IFR	W
12/15/59	1000	K6HWD	W	1/15/60	1026	W7ACD	H
1/10/60	0922	K6HGT	W*	1/15/60	1050	W7RDY	W
1/10/60	0925	W6FZA	W*	1/15/60	1103	K6WYQ	W
1/10/60	0929	K6HCP	W*	1/15/60	1300	JA1,JA9, JA0	H
1/10/60	0929	WA6GEF	W*	2/13/60	<i>Operation from KH6 land</i>		
1/10/60	0934	K6MMT	W*	<i>terminated. Station torn down.</i>			



## Special event station

# ON50RN



Sponsored by: **RNARS, UBA, BMARS** and  
**The International Navy Ham Group**



From January 1<sup>st</sup> 2010 until December 31<sup>st</sup> 2010, there will be the activation of several special event stations to commemorate the 50<sup>th</sup> anniversary of the Royal Naval Amateur Radio Society. The RNARS was the first society to unite the International Naval and Maritime Ham Radio community. Since the foundation of our mother society “the RNARS”, several national naval and maritime amateur radio groups have been founded, all with ties of friendship to each other. All these maritime and naval amateur radio groups exchange information and contact each other through the international Navy Ham Group.

Email: [navyham@gmail.com](mailto:navyham@gmail.com)

The Belgian activation will be with the cooperation of operators from the UBA section ONZ and the BMARS and guest operators.

A small lesson in history:

As QSL design we have made the choice of the image of the HMS Buttercup, the HMS Buttercup was the flagship of Royal Naval Belgian section during WWII. She flew both the Belgian and Royal Naval Ensign at D-Day at the coast of Normandy. The Royal Naval Belgian section was founded september 1940. The officers and sailors of this section manned two war corvettes, the Godetia and the Buttercup and three patrol vessels, the Elektra, the Phrontis and the Kernot. The Royal Naval Belgian section was the foundation of the modern Belgian Royal Navy.



Special event stations:

<b>GB50RNARS</b>	<a href="http://www.rnars.org.uk/">http://www.rnars.org.uk/</a>	
<b>ON50RN</b>	<a href="http://www.qrz.com/db/on50rn">http://www.qrz.com/db/on50rn</a>	or <a href="http://www.bmars.be">www.bmars.be</a>
<b>PA50RNARS</b>	operated by PA0VLA	Jo RN 944
<b>PA50RNARS</b>	operated by PA5AD	Arjan RN 4670
<b>PB50RNARS</b>	operated by PA0XAW	Age RN 967
<b>PC50RNARS</b>	operated by PA3CTK	Harm RN 3521
<b>PE50RNARS</b>	operated by PA3EBA	Jan RN 2999
<b>PF50RNARS</b>	operated by PF9A	Martin RN 2887
<b>PG50RNARS</b>	operated by PA3DNH	Henk RN 2867
<b>PH50RNARS</b>	operated by PA0HRM	Hans RN 2885.

**Qsl info for ON50RN is via Buro or manager ON7PP.**

ON50RN is valid for RNARS and BMARS awards: RNARS 020, BMARS 100.  
All these stations may be counted as jokers for the BMARS awards.  
[www.bmars.be](http://www.bmars.be)

Qsl and poster design: Patrick ON7PP

# A SMALL YAGI FOR 50 MHz

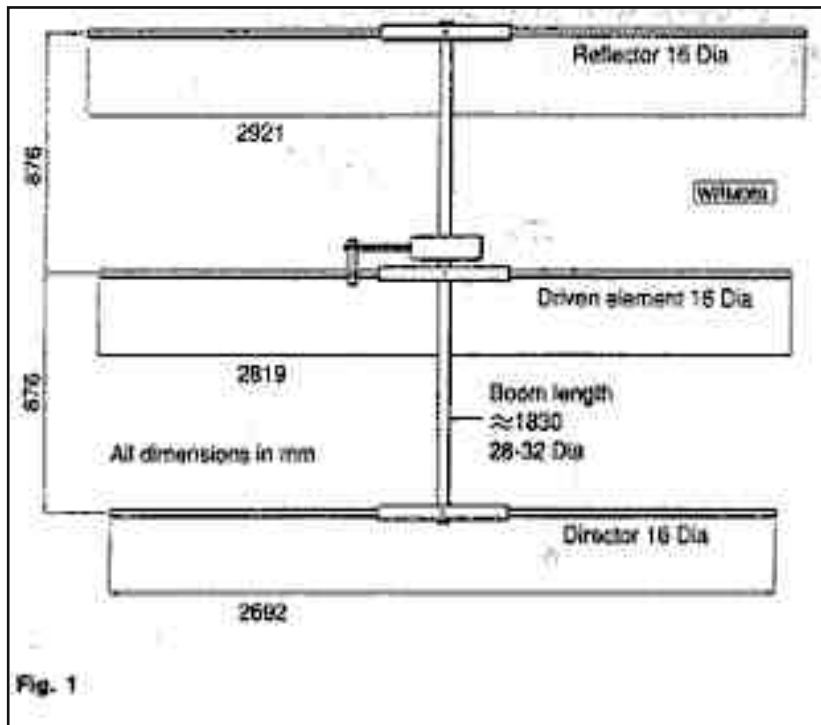
## BY KEN WILLIS G8VFR

I wrote an article under the above heading in the Spring of 1989 and it appeared in Practical Wireless in July of that year. In a later edition some further notes were published, following some computer simulation studies on the antenna by Dr. Ian White, G3SEK and my good friend Bob Reif, W1XP. Since then, several of these antennas have been duplicated around the world, and from time to time I still receive enquiries from potential builders. Consequently the editor of Six News suggested that it would be a good idea to prepare an updated article, now that some six or seven years of operational experience using this little antenna have shown its capabilities. We are indebted to the editor of Practical Wireless who readily gave permission for some of the original text and art work to be reproduced here.



There is little doubt that the most important part of any amateur radio station is the antenna system, yet few of us are fortunate enough to live in areas where tall masts supporting the sort of arrays we would like to use would be tolerated. The release of 50MHz facilities posed antenna problems for many amateurs, particularly those who previously operated only on the VHF/UHF bands where element and boom lengths are less conspicuous, being more in keeping with typical domestic TV aerial systems. In the early days of Cycle 22, I commenced a study of the literature in an attempt to find a really compact antenna, with forward gain, for six metres. From the outset there was no escaping the fact that a compromise solution would be necessary.

**Figure 1.**

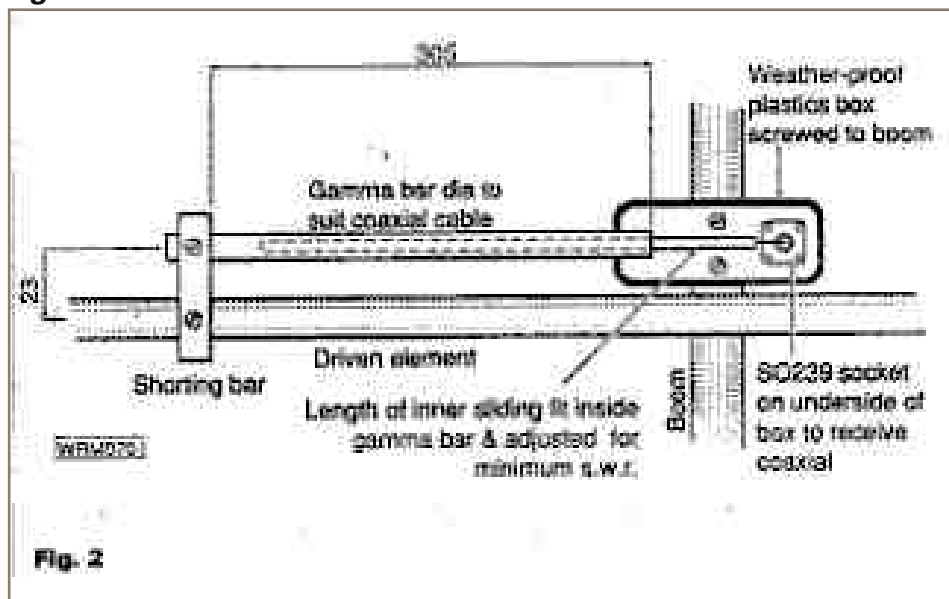


My thinking was that as the solar cycle progressed the real DX would be arriving via F2 propagation, so I favoured a small yagi which should offer low-angle radiation, reasonable directivity and suitable front-to back characteristics, useful for reducing interference. Some early arithmetic soon indicated the problems. A 50MHz 5-element yagi with elements spaced 0.25 wavelength would require a boom length of almost 20 feet, definitely a non-starter at my QTH. Reducing the spacing to 0.2 wavelength still resulted in a boom length of almost 15 feet, which coupled with element lengths of the order of nine feet was again larger than I was prepared to contemplate and risk disturbing the excellent rapport with neighbours which I enjoy.

Eventually I found a reference to a small 3-element yagi designed for 50MHz portable operation by Ed Tilton, W1HDQ who was for some years the ARRL VHF editor and one of the operators involved in the first transatlantic six metre contacts with G6DH way back in 1946. Using his antenna as a starting point, I eventually came up with the small yagi described here; its dimensions and the matching system which I finally settled on are shown in

In my original article all the dimensions were given in inches, but in the Practical Wireless figures, reproduced here, they were converted to the metric system. Obviously some discretion is needed here, since, for example, a driven element shown as 2819 millimeters in length suggests the need for an accuracy of nearly one part in three thousand which is certainly not the case! Using a pocket calculator to divide the millimetric lengths given in the figures by 25.4 will give a close enough length for those like me who prefer to work in inches. I aimed at an antenna resonant close to 50.110MHz, for obvious reasons, and the dimensions given reflect this but before you take a hacksaw to metal, read the update paragraph later.

**Figure 2**



**Construction.**

The great attraction of this little antenna is that its boom length is less than six feet. The design is an example of what used to be known as a "plumber's delight". This descriptive name arose from the fact that in this type of antenna, the boom and all elements are bolted together with no form of insulation between them, so standard plumbing parts such as T-junctions can readily be used to simplify the construction. In my

design, instead of using plumbing parts I chose clamps of the type sold for securing car exhaust systems. These are readily available in various sizes from automobile accessory stores. The U-bolt part of these should be a snug fit around the tube selected for the boom. A short length of mild steel tubing (brass might weather better) is welded (brazed) to the clip supplied with the U-bolt as shown in Figure 4. **[Please note that the spacing between the gamma match and the driven element should be 58.5mm NOT 23mm.]**

The internal diameter of these tubes should be just large enough to admit the yagi elements in a nice sliding fit. A single self-tapping screw through the outer tube and biting into the element beneath enables the element to be centred on the boom and prevents sideways movement. Figure 3 shows the dimensions and construction of the shorting bar which is not at all critical, but preferably should be fairly "hefty" to reduce inductance. As for the three yagi elements, provided they are not of the extremely narrow type, their diameter is also not critical. In my prototype I used half-inch outside diameter tubing.

**Matching the antenna**

For efficient operation a good match between antenna and feeder is paramount. With commercially built antennas there is usually little one can do but to accept what is offered and hope for a good SWR, but with a home-brew antenna things are more flexible. Over the years I have always favoured the gamma match, for not only is it capable of providing an excellent match with the minimum of problems, it is also particularly suited to the "plumber's delight" design because it does not require the driven element to be cut in halves for a central connection to a feedline.

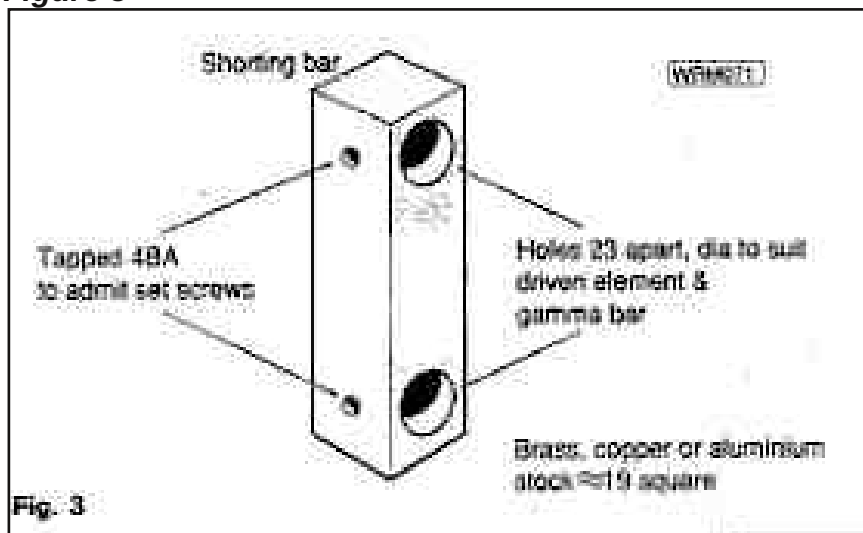


For those not conversant with the system, a gamma match consists of a short bar (the gamma bar) running parallel to and off-set from one side of the driven element which is an unbroken length of conductor. The end of the gamma bar furthest from the boom is connected to the driven element by a shorting bar (Figure 2). The outer (braid) of the co-axial feed line from the transceiver is then connected to the centre of the driven element boom), while the inner conductor, via a suitable capacitor, goes to the open end of the gamma bar. The length and diameter of the gamma bar and its spacing from the driven element are not at all critical, but for any given arrangement there will be an optimum value of capacitor to achieve a match. A problem has been finding a good quality capacitor of just the right value which can be mounted near the centre of the driven element where it risks being exposed to worst of the weather.

In this yagi the problem is overcome by making the capacitor a co-axial one, using a length of heavy duty coaxial cable with its outer copper braid stripped off, inserted into the tube which forms the gamma bar. (Figure 2).

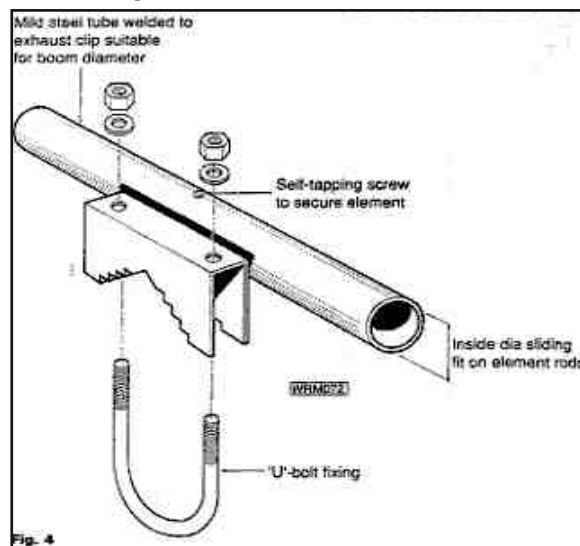
Obviously the tubing and coax dimensions should be chosen to result in a good sliding fit, with little or no gap between them. By adjusting the length slid into the tubing, the capacity can be adjusted over a wide range. The dimensions shown in the figures are probably a good starting point for anyone wanting to duplicate this antenna.

**Figure 3**



pieces. A piece of sheet brass was cut to fit inside the bottom of the box, forming a mounting plate for a SO 239 socket bringing the feed line up from the transceiver. Self tapping screws through the brass sheet secure the box to the boom, at the same time providing an electrical connection between the braid of the feed line and the centre of the driven element (which electrically is also the boom). The centre pin of the SO239 then forms a convenient anchor point for the free end of the gamma capacitor cable. This should all be clear from the figures. Make sure that in practice the SO239 socket and its associated plug are well and truly taped up to give protection from the weather.

They resulted in an almost unity SWR with my antenna. Some trial and error will usually be necessary to achieve a good match. I am fortunate in that my mast (which is camouflaged to look like a square drainpipe) can be cranked down to ground level very rapidly, so I was able to make several adjustments to the tubular capacitor to achieve the lowest SWR. Reference again to Figure 2 will show how I used a small plastic box mounted on the boom to provide a weatherproof anchorage for the various bits and



**FIGURE 4**

## **Results**

Considering the small amount of aluminium in the air, this little antenna has produced outstanding results at my station. By the time Cycle 22 was in decline, I had qualified for DXCC with more than 110 countries worked on 50MHz and 3 G-firsts (V47, ZWØ and 4J). I was also surprised to be the first in the UK to hear K6QXY "off the moon" in the February 1993 50MHz EME tests, though I suspect this was aided by my QTH which favours ground reflections

## **Update**

Following publication of the original article, Ian White, G3SEK, and Bob Reif, W1XP, both used my design to illustrate the use of the powerful computer program MININEC for modelling antennas. This showed the predicted performance was good at 50.2MHz, but it would be even better at 51.2MHz, with a forward gain of 5.7dB and the back/front ratio of some 14dB. The implication was that the element lengths I had chosen were too short by about 2%. (1MHz in 50MHz), so a 'quick fix' might be to increase element lengths by this amount and re-adjust the gamma match.

Another feature of MININEC is its ability to optimize an antenna design, and it suggested the following changes:-

Reflector - add 85 mm to length (about 3.3 inches)

Driven element - no change in length

Director - subtract 25 mm from length (about 1 inch)

Of more significance were the recommended element spacings for the optimized version, which were quite different, i.e. reflector/driven element 555mm (22 ins), driven element/director 1125mm (44.3 ins).

MININEC predicted these changes would increase forward gain from 5.7 to 6.0dB (hardly significant) but considerably improve radiation pattern to a front/back ratio of 31dB as opposed to the original 14dB.

If I was to make this antenna again, armed with the computer data, it would be sensible to adjust the element lengths to bring resonance closer to 50.110, though the effect on forward gain would be minimal.

I would consider changing the position of the elements on the boom, however. The existing front/back ratio appears adequate for my purposes, giving enough signal off the back to alert me that things might be happening in directions other than the one I am pointing at the time. Also, from the point of view of the centre of gravity of the antenna, I like having the driven element close to the mast-head which is where feed line arrives. Remember that computer figures are one thing, achieving maximum theoretical performance in practice is another.

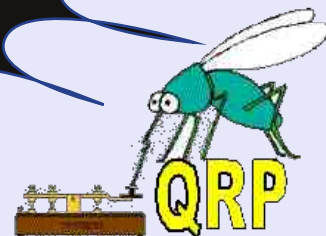
If you decide to build one, whichever dimensions you choose, the result will be a compact, rugged antenna performing well. We would all like a bigger antenna, but when F2 is about, 50MHz behaves more like HF. Would you turn up your nose at a well-matched 3-element yagi on 14 or 28MHz?

From a reception standpoint, it must be admitted that the lower forward gain of this small antenna compared much larger arrays used by some of the "big guns" on 50 MHz was noticeable during some major openings when stations they were working in areas such as W7 and JA were a few dB down at my QTH, but I don't think I missed a lot and I had more than my share of the good things on offer. I see no reason for changing to a bigger antenna for Cycle 23.

**Best 73's ! G8VR**

**QRP is!**

**(Confessions of a QRO op gone QRP)  
by Ed, W0YK**



***Wow ... what a blast! Operating QRP from 6Y during the CQWW CW Contest may be the highlight of my 40-year Ham experience so far. Imagine breaking 10 records on a weekend where the A-index was 95 and the K was 7. K2KW, N6BT, N6XG, KE7X and W0YK operated 6 single-op QRP entries (K2KW did two!) to surpass all 6 North American QRP SO single-band records as well as 4 of the 6 world records.***

One month ago, I'd never operated QRP and had no desire to torture myself in that manner. Then, a few weeks before CQWW CW I was on the phone with Tom, N6BT, about some Force 12 antennas he was designing for my rather windy ridge top location in the Santa Cruz Mountains.

He asked if I would like to join "Team Vertical" for the upcoming CQWW with their QRP caper. The 160 single-op position was open and 80 might open up depending on how Bill's, K6KM, health shapes up in the next few days. Bill had just returned from South America and was fighting something picked up from that trip. I was instantly skeptical about a QRP operation, then quickly became a believer because neither Tom nor team leader K2KW would go to this effort without there being a big opportunity ... or, just a heck of a lot of fun. Either way, I knew I'd enjoy myself. Little did I know how much I'd enjoy myself. My first (dumb) move was to exhibit a bit too much excitement to my partner Mary ... and, communicate in a typical male fashion, totally ignoring all my "Mars-Venus" training. It went something like this.

*(Ed) Team Vertical's invited me to Jamaica for CQWW.*

*(Mary) Neat. When is it?*

*(Ed) The weekend following Thanksgiving. It's really cool. we're going to operate QRP with the big Team Vertical antenna farm. We could break some North American and World records.*

*(Mary) Neat. When do you leave?*

*(Ed) Huh? Oh, the Monday before Thanksgiving.*

*(Mary) The Monday BEFORE Thanksgiving?*

*(Ed) Uh ... yeah, why?*

*(Mary) Well, I guess you won't be spending Thanksgiving with me and at this late date I'll have little chance to make other plans. How could you do this on Thanksgiving?*

*(Ed) That's when CQWW CW is ... every year. Thanksgiving is just a time marker pegging the annual occurrence of this important event. When I think of CQWW CW, I locate it in time relative to "Thanksgiving", but I don't actually think of the social aspects of "Thanksgiving" itself ... turkey, family, etc. I really hadn't thought of that angle until you brought it up just now.*

*(Mary) How could you do this?*

*(Ed) Do what?*

(Mary) How could you leave me on Thanksgiving and not even discuss it.

(Ed) We ARE discussing it. You can go if you want. If you don't want me to go, then I'll tell Kenny and Tom that I can't make it.

(Mary) Of course you're going to go. I want you to go. It's just that it's Thanksgiving and I wasn't included in the decision.

(Ed) Decision? I'm asking you ... we're "discussing" it.

(Mary) Well, it sure doesn't feel like it to me. But, don't misunderstand. I really do want you to go. I'm just hurt that I wasn't more a part of the decision.

(Ed) [Totally confused] Let me get this again. You're hurt that I'm leaving you over Thanksgiving. Yet, you want me to go and are fully supportive?

(Mary) Sure. This isn't about your going or not. It's about how you aren't including me in the decision.

(Ed) I don't get it, but I really do want to go and you do seem to be saying that you want me to go but I have a feeling that you're not happy about something. (Etc., etc. for the next 2 weeks.)

(Later, down in Jamaica, I'm lamenting to Walt, N6XG, about this pre-flight domestic discussion and he tells me it was a snap for him. How so, I ask. Simple, he says, "I told my wife about the trip, but that since it would be over Thanksgiving, of course I wouldn't be going." She immediately says, "Oh no, you must go. It gives me the opportunity to go out to New York and visit our daughter. What a great coincidence." This sounded somewhat like my spousal conversation except his partner seemed happy. Then it hit me. Mars vs. Venus. We're focused on the facts; they're focused on the interaction. And, Walt, the old pro, deftly remembered his Mars-Venus education.)

OK, back to CQWW. I am off to a shaky start, but with only two weeks left, I need to prepare. Plane tickets ... no problem Mon ... 5 minutes on the Internet and I'm all booked. Radio? Ah, I have a TS-50 I took to Damascus for the YK0A operation back in '94 so I proudly announce to Kenny that I'm all set in the rig department. "Nope", he says, "not allowed." "What?" I exclaim. "Unacceptable receiver characteristics ... won't handle the pileups."

"OK, what IS acceptable?" I ask. So, he explains the various radios that are fine, such as one of my TS950s, but the rest of the crew is taking Elecraft K2s. Not ever having experience with a K2, he is taking his JRC, also partly because he wants to work 6 meters. Tom is also taking his TS850 ... "just in case the K2s don't work out." So far as we know, no K2s have been tested in big multi-station expedition with potentially huge pileups. But, theoretically, the K2 should perform great.

Well, this was music to my ears. I love building stuff and it had been over 30 years since I built my last Heathkit or anything homebrew of any significance. So, this offered a great excuse to build a K2 which I had been coveting ever since Eric, WA6HHQ, of Elecraft had given a presentation at an NCCC meeting last year. At the time, my only concern was ... "What in the world would I DO with a QRP rig once I enjoyed the construction phase?" Elecraft is located just down the hill from me in Aptos, so I arranged to pick up my kit, along with all the various accessory kits, the next day.

With everything else going on in my life, including \$\$ participation for the club, I didn't get started on the K2 until a week before departure ... not a lot of margin for issues. Well, other than an un-programmed IOC chip (which controls all the relays and other internal K2 devices), the kit went together flawlessly. The basic kit took me 36 hours and I got the audio filter and computer interface modules completed as well. That was all I really needed. Just as I had ordered the K2, we had learned that K6KM wouldn't be able to make the trip, so I was moved into the 80-meter position. Thus, I didn't need the 160-meter module and since we weren't operating SSB, I didn't need that one either. However, I just barely finished the rig before leaving and had no opportunity to operate it ... not a way to "prepare" for the trip.





I met up with the other 4 guys at LAX where our non-stop Air Jamaica flight originated. While I knew most of the guys, this was the first time I had met Fred, KE7X. Fred is a really cool EE professor at Bozeman University in Montana, and has been going on expeditions with Kenny for 10 years. Our flight was a red-eye arriving at 6:30am Tuesday morning before the contest. Two drivers filled their cars with our gear and antennas (with barely enough room for ourselves) and we headed for the villa, 35 miles away on the North coast of Jamaica, just West of Discovery Bay. The groundskeeper and 3 household staff greeted us with a pristine tropical abode. Within minutes of arriving, we pushed the furniture out of the way, set up two large operating tables and soon the living room was a nerd's paradise. Power cables were run from the breaker box and duct-taped to the floor.



Kenny, K2KW, by the 2-element Sigma-6 array. Behind him are the 4 element 10M European array, 4 element 15M European array, 2 element 80M array, and 160M inverted L.

Kenny unpacked his JRC and Acom 1000 Amplifier on 6 meters in 5 minutes! The 2-element Sigma-6 vertical array was erected on the coral with waves lapping at their bases and then the 150' of LMR-400 I brought down was connected.

Kenny had 6 meters on the air roughly 30 minutes after arrival and worked the US and European openings as they appeared the rest of the day, interspersed with serious antenna construction.

Ultimately, we built 23 vertical elements, configured into 4 basic antenna types:

1. SVDA (Switchable Vertical Dipole Array)--fullsize center-fed vertical dipoles in a 2-element set of driver and parasitic reflector. The reflector is switchable to a director, but we didn't use that feature.

All directivity was northward to our main running directions: Northwest (US) to Northeast (Europe). On 10m & 15m, 2 of these pairs were phased to create a 4-element array on Europe.

2. Sigma Vertical--shortened center-fed vertical dipoles with "T-bar" capacity end-loading. Also, configured in 2-element parasitic driver/reflector pairs for 6 and 40.

3. ¼ wave vertical—bottom loaded with a coil, two elevated tuned radials.

4. Inverted-L—compliments of a local 50' tree, two elevated tuned radials.



Fred KE7X, Tom N6BT and Walt N6XG building vertical elements on the lawn

Here's the band by band antenna complement:

6m: 2-element Sigma manually "rotated" by moving the reflector to favor US or Europe depending on openings.

10m: 2-element SVDA on US/JA, 4-element on Europe.

15m: same as 10.

20m: 2-element SVDA pointed at 20 degrees.

40m: 2-element Sigma on US and a second array on Europe.

80m: 2-element base-loaded 35' tall vertical array pointed at 20 degrees.

160m: 50' tall wire inverted-L

By Tuesday evening all elements were constructed and 10/15/20 were operational. Wednesday, the 40's and 80's were erected and tuned.

Never operating from the Caribbean before, I wanted to get as much airtime as possible on the band before the contest, so I operated 80 through the night Wednesday, from about 5pm until 7am the next morning. For the first half of Wednesday night, the band sounded like 20 meters – no noise, and lots of loud Europeans. Then, the band noise rose up and stayed that way for the rest of our stay. Kenny and Tom say it's unusual to have such



band noise at this location based on previous experience – usually the low bands are as quiet as a mouse. Thursday we constructed the 160-meter inverted-L and it played wonderfully Thursday night. The plan was for me to do both 80 and 160 as single -band efforts ... that is, until Tom came down with a severe case of the flu. On Friday, he began to get better close to contest time, but was worried that he wouldn't have the stamina to battle his 40-meter assignment all night. So, we decided that I would do 40, Tom would do 80 as best he could, and Kenny would put in a few hours on 160 after 10 died.

I had to quickly adjust my mind from 80 meters to 40 meters as we reconfigured stations just a few hours before the contest by moving coax lines, coax switches, and building new CT Bin files. On 40 prior to the contest, I could clearly and loudly hear all over Europe, but no one would come back to my calls. I was enlightened that in 6Y, you can hear Europe on 40 and 80 a couple hours before being able to work anything there, even with a kilowatt.

Eventually, my QRP signal was heard and I began running stations. I couldn't believe how well 5 watts was playing. My excitement and anticipation for the contest was quickly squelched when the contest bell went off. I couldn't find a running spot anywhere in the lower 80KHz of 40 meters! In the first 8 minutes, while everyone else was wildly running, I managed only one W8 in the log. Experimentally, I discovered two things. First, I had to add "CQ" to my CQ message ... the 6Y4A call (sans kilowatt) wasn't enough in the initial bedlam. Second, I had to "Search and CQ" because holding a frequency longer than a few minutes proved futile and pouncing just as much so. While trying to run, I squeezed between two loud stations and was constantly moving my TX VFO 50-100Hz back and forth to optimize my running frequency.



Team Vertical: (L to R) Fred KE7X (6Y9A), Walt N6XG (6Y2A), Kenny K2KW (6Y1A & 6Y0A), Tom N6BT (6Y8A), Ed W0YK (6Y4A).



Eventually, the band settled down and I settled into my techniques that began the run. Then, I had the opposite problem ... the pileups are HUGE. Kenny & Tom warned me about them, but you have to hear them to believe it. Fortunately, the K2 RX handled them quite well.

For those of you who heard Eric's RX presentation at the November meeting, everything he said proved out. The RX really handled the signal overload. My problem then became my own personal ability to pull out the calls from the bedlam. The next 14 hours were incredible. What a high to be running Europe, USA, JA and the Pacific around 10z. This was what all the preparation was for and I thoroughly enjoyed it. However, my excitement kept me from sleeping enough during the day, and Saturday night was a bit more difficult. It was also a series of ups and downs. A JA called in at 0700Z, uncharacteristically early and actually prior to his sunset, so I thought I was in for a very hot band that night. Then, quickly, the band died, even the US stations were hard to hear and got watery and fluttery like a polar path during a disturbance. Somewhat later the band peaked again and I started running JA's (along with the US and some Western Europeans). But, suddenly, "poof", no pileup again.

The net result was that my QSO total dropped way below my anticipated rate and overall goal. It was a constant battle to hold a CQ frequency. Right in the middle of my CQ some European and an occasional W would just start CQing on my frequency. I had previously determined that fighting it out was futile, but by now I was feeling more confident, so I pushed back and guess what? I was able to chase stations off my run frequency. Not all the time but more than I would have thought possible. Then, VQ9X starts CQing beneath my CQ's. He obviously couldn't hear me, and I missed a new zone and country. A 4X called me but didn't confirm my report, so I had to scratch him from the log. There were many mults like this that slipped through my fingertips. I feel that my mults (22 zones and 72 countries) were lower than they could have been. Looking at other 40 meter results today, convinced me of this. I also felt I could have gotten more out of the pileups, so more practice in that department is planned this coming year. However, 23 hours into the contest (with solar indexes of A=95, and a K=7), I surpassed the 40- meter QRP world record! All and all, I was learning a whole new kind of operation ... QRP with atypically high antenna gain and a great location for running the USA, EU, and JA. As Kenny explained at the meeting last month, 5 watts is "only" 4 Sunits down from full legal power. And if your antennas/ location are optimized, as ours were, for a S9++ signal advantage over the typical expedition Yagi, then ta daa ... it is very much possible to "rock 'n roll" with QRP. This tiny 3lb K2, that is mostly air inside anyway, was commanding the world. What a thrill indeed. The net result is that I have a completely new perspective on "QRP". Transmitter power is just one element of the total system, and not nearly as important as other elements, like location and antennas that are matched for that location. This is not about verticals being better than Yagis. It's about verticals exploiting a saltwater location in a way no Yagis could ever do. Even the 23 vertical elements on our oceanfront didn't look that impressive compared to how they performed. Moreover, the analysis supports the operating experience.

**Yes, indeed, "QRP is!"**

Thanks again to Force 12 for the loan of the antennas, and to Elecraft for technical support.

**73 from Ed, W0YK**

Band	Call Used	Op	QSOs (duped)	Z	C	Claimed Score	NA Record	World <sup>1</sup> Record	# Of CQs <sup>2</sup>
10	6Y1A	K2KW	2,578	31	99	843,700	242,686	431,060	5,523
15	6Y9A	KE7X	2,166	28	93	637,670	186,102	364,344	4,819
20	6Y2A	N6XG	1,209	23	64	238,728	208,392	230,528	3,706
40	6Y4A	W0YK	1,337	22	72	298,168	90,240	117,262	5,632
80	6Y8A	N6BT	588	14	55	86,763	6,389	105,595	937
160	6Y0A	K2KW	162	6	17	7,567	2,232	28,670	198

<sup>1</sup>Note that none of the previous World Records came from NA, so if our claimed scores hold (and are not surpassed), we will have brought 4 World Records to the region.

<sup>2</sup>Does not include multiple CQ's from the CT "Repeat" function, only the initial CQ button push! Looks like W0YK holds the CQ record!

# Working radio at remote location!

## By Ulf Larsson SM0LCB/SM7LCB

It's a fine feeling to get home from work, settle down in that comfortable chair and then check out the bands. I put out a CQ call with the keyer and get a reply from a station in England. Sure it's fine but a little strange since I have no antenna or radio in my shack here in Solna (close to Stockholm) where I live. My antenna and radio are in our summer cottage down on the island of Öland off the south east coast of Sweden. Working a station in England isn't especially unique – but it is when you work it on 10 GHz.

How is this done then? Let me try to explain in this article! I will let others explain how long range QSO's can be made on microwave.



***Ulf SM0LCB at home in Solna active as SM7LCB on Öland***

I first started to plan remote operation at the beginning of the 1990's but at that time couldn't find suitable cheap technical methods to implement remote control within a reasonable frame.

Towards the end of the century when the Internet became more widespread and with it broad-band, I bought an Icom IC-706 transceiver. The best thing about this station is that it has a removable front control panel which is absolutely necessary for remote operation since the control panel remains at home and the radio is at the remote location. In year 2000 I had the radio remotely controlled between two computers at home in the shack. Then began a few years development to find out how the rest of a functioning remote system would work out. In my case a remote system would cover the following items:

- Remote control of the IC-706 transceiver.
- Remote control of the antenna rotor.
- Remote control of the transverter, firstly for 1.3 GHz and higher bands.
- Sound transfer to and from the transceiver.
- The Transfer of CW – manipulator keyer or hand key signals to and from the transceiver.

All these items excepting the last one were soon operational and worked locally in my shack. I worked many Nordic Activity Contests on 1.3 Hz with this setup. I tested the remote control of the rotor system during my many visits to the island. In the spring of 2004 broadband was introduced on the island and it was time to seriously launch remote control between Solna and Öland. The summer of 2004 became intensive, installing the antennas, building the radio hut by the antennas, hanging up the coax between the antenna hut and the cottage and finally installing the computers broadband and the software. When I left the island in August 2004 everything was fixed and working.





My antenna installation on a nearby barn.



Antenna from top 1.3 GHz, 10 GHz and 24 GHz

I was full of excitement when I got home to Solna and connected to the Internet, powered up the radio on the island and began to work radio through the remote system. Everything worked just as planned and I was a very happy radio amateur when I first heard the noise from the radio on the island in the loudspeakers at home. The real test came during the NAC contest on 1,3 GHz in august and I am still active in this contest. I have also managed to work many fine rain scatters and tropo-openings which are good fun, amongst others I have worked F1ANH (SSB 1558 km) on 1,3 GHz as well as GM4LBV (CW 1169 km) on 10GHz. More about this is on my home-page where log sheets, maps with squares worked and recordings of the many QSO's worked on microwaves can be found. The answer to the question, "Why work radio on microwaves"? can also be found there.

How have I managed all this you might wonder? Well, you buy a radio and hack a bit of code any radio ham worth his salt should be able to do it don't you think? Lets not joke about it, there has been an awful lot of hacking code and that has taken a long time. Most of the methods used to work out the remote commands are described on my home page, but here's a short list of methods.

- Remote control of the IC-706.

My own software developed for Linux/Windows. << [CLICK HERE FOR LINK](#) >>

- Remote rotor control.

My own software in a PIC-processor (in the rotor box) driven via ICOM bus from my own LOGGER program and Internet software for Windows/Linux. << [CLICK HERE FOR LINK](#) >>

- Remote control of the transverter mainly for 1.3GHz and higher bands.

My own software in a PIC processor (in the transverter) driven via ICOM bus via LOGGER program and my own Internet software for Windows/Linux. << [CLICK HERE FOR LINK](#) >>

- Sound transfer to and from the transceiver.

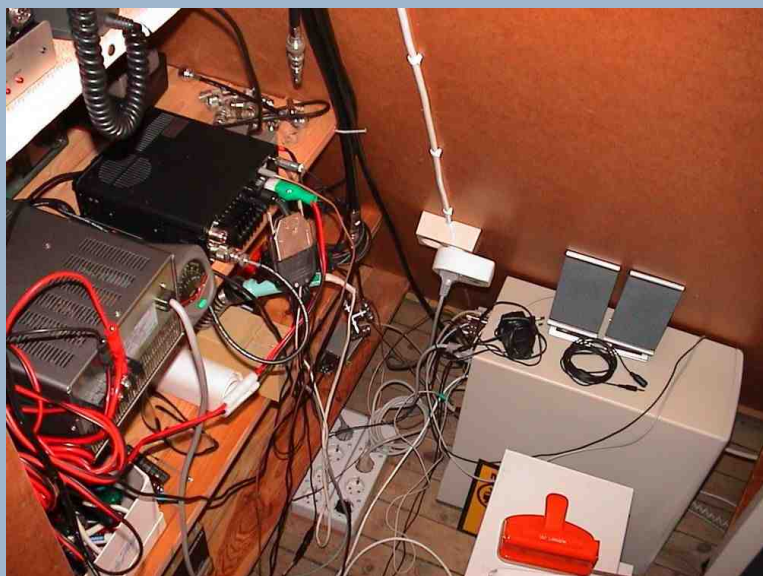
I use freeware here, and today I use Team Speak and IHU. << [CLICK HERE FOR LINK](#) >>

- Keyer and hand-key signal transfer to and from the transceiver.

My own software in a PIC processor at the keyer/hand key as well as my own Windows/Linux to connect them to the transceiver make this possible. << [CLICK HERE FOR LINK](#) >>

Is remote control of radio's here to stay? The answer is Yes! At present I live in a QTH, Solna, which does not enable me to work microwave, so remote operation is a necessity for me to be able to work these bands. Of course remote operation can be done in other ways but for me it was important to solve the problem by using my own equipment and software in the true radio amateur spirit. Already there are complete solutions on the markets and it won't be long before they are available from the radio amateur stockists, then it will be easy for the ordinary "mains socket amateur" to use this method.

Antenna hut at the antenna with rotor control, power supply and transverter for 1.3GHz.



Installation in the cottage about 60 meter from the antennas with the radio, power supply, computer and Internet connection.

However I am pleased with my own solution which allows me to operate my radio wherever I may be with the front panel on the desk and to call CQ with the manipulator-keyer or hand key to my transceiver on the island of Öland. For instance when I was present at the VHF-meeting in Norway I listened and worked my radio on the island of Öland in Sweden. It felt real good.

**73's de ULF. SM0LCB/SM7LCB**

Translated from Swedish by Derek/SM5RN.

Homepage <http://sm0lcb.shacknet.nu>

Mirror site <http://sm7lcb.shacknet.nu>

ON AIR

# DX NEWS From the Web



## **4Z, ISRAEL**

Alex, 4Z5KJ, will be active as 4Z5J during the CQ 160m CW Contest (January 29-31st, 2010) as a Single-Op entry. QSL via W0MM.



## **C6, BAHAMAS**

Operators Dimtiri/RA3CO and Yuri/RL3FT will be active as C6AWL during the ARRL DX CW Contest (February 20-21st) as a Multi-Single entry. QSL via RX3RC. Dimtiri informs OPDX that he will arrive a few days before the contest and will be active on all bands CW, but prefers 30 and 17 meters.



## **CM2, CUBA**

Frank, CM2IR, informs OPDX that he will once again be active between January 1-3rd, on 40 meters [CW around 7015 kHz and SSB around 7125 kHz], and also 15/12/10 meters SSB between 2200-0300z to bring in the New Year (IOTA NA-015). QSL via EB7DX, with 2 USDs or IRCs.



## **FO, FRENCH POLYNESIA**

Phil, FO8RZ (F5PHW), continues to be active on the bands (especially topband). He has announced this past week that he will be very active on 160m during his sunrise (around 1500z; calling on 1831 kHz +/- QRM and listening on 1824 kHz +/- QRM) until December 30th. If he does not hear anything, he will then move onto 80m, then after to 30m. QSL via F8BPN, direct, by the bureau, LotW.



## **HH, HAITI**

Pierre, HB9AMO, is now active as HH/HB9AMO from Haiti for about one month. Activity will be limited to his spare time. He will be using a TS-50 with 100 watts into wire antennas operating CW ONLY, mainly on 30-17 meters. His QSL Manager is PA7FM: Dennis Robbemond, Loggerhof 11, 3181 NS ROZENBURG, Netherlands. An online log will be available later, but a small Web site is up and running at: <http://www.hhhb9amo.pa7fm.nl>



## **HS, THAILAND**

Joerg, DL1MJF, is active as HS0ZGQ until January 25th. Activity will be on 40-10 meters CW/SSB using a Kenwood TS-50 and a dipole antenna. Joerg will also once again stay for one week on the Island of Koh Samui (AS-101) and will operate as HS0ZGQ/2. QSL via DL1MJF.



## **PY0F, FERNANDO DE NORONHA**

Fred, PY2XB, will once again be active as PY2XB/PY0F from Fernando de Noronha (SA-03) between January 23rd and February 3rd, 2010. Activity will be on all HF bands using CW, SSB, RTTY and PSK. His activities will include the CQ 160M CW Contest (January 29-31st), but he will sign as PQ0F. QSL via PT7WA. See photos from his last operation at: <http://www.py2yp.com/py2xb>



## **R1, ANTARCTIC**

Alex, UA1PAW (ex-RZ1PWA and R1ANF), now operating as R1ANR from Novo Runway in Antarctica, is expected to be there until the end of February 2010. Gianni, I1HYW, who spoke with Alex states, "He (Alex) said propagation is only open around 2000z on 40m. While 10/15/20/30m are closed. QSL Manager is Nick Shapkin, RK1PWA for the Russian and Ukrainian Hams. While for the other countries his QSL Manager is ZS1ANF: Oleg S. Sakharov, P.O. Box 15968, Vlaeberg RSA, Cape Town, Western Cape 8018, SOUTH AFRICA." For more info and photos, see his blog at: <http://alex-v-shmarin.livejournal.com>





### VI2, AUSTRALIA (Special Event)

Look for the special callsign, VI2AJ2010, to be used by Scouts under the guidance of Fishers Ghost Amateur Radio Club members (VK2FFG) at Cataract Scout Park, near Sydney, during the upcoming triennial Australian Scout Jamboree (AJ2010), to take place January 4-14th, 2010. With registrations of 10,000+ Scouts and 3000 Scout Leaders, VI2AJ2010 will be active on HF, VHF and node 6111 to promote their hobby. QSL via VK2FFG (bureau/direct).



### VP9, BERMUDA

Kurt, W6PH, will be active as VP9/W6PH for the 2010 ARRL DX CW Contest (February 20-21st) and ARRL DX SSB Contest (March 6-7th) as a Single-Op/All-Band/Low-Power entry. QSL direct to his home callsign W6PH.

## SOLAR ACTIVITIES

Summary : Region 11036 decayed rapidly, after it launched a C6.4 solar flare. Region 11038 decayed as well. Both regions will rotate of the sun's visible disk by tomorrow. Region 11037 faded away. Region P091222 rotated out of view. New active region numbered P091223a (former BP091220E) rotated onto the visible disk without sunspots. New active region P091223b emerged in the sun's south western quadrant today, and looks to harbour a small sunspot.

X-ray background dropped to A6 level. Solar Flux at 1800 UTC dropped to 78.4 and is expect to decrease gradually, unless the new active regions develop. The geomagnetic field was at mostly inactive levels, and is expected to remain quiet.

Active regions visible : 11036, 11038, P091222, P091223a, P091223b

Active regions not visible : none

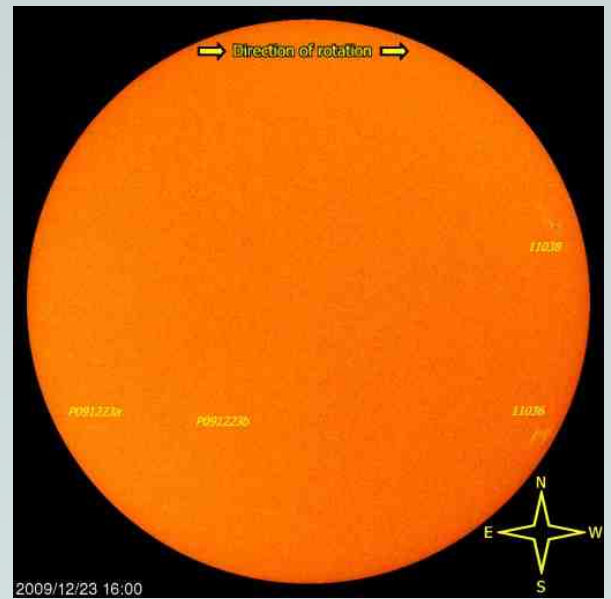
Solar Flux : 78.4      Sunspots visible : 6

Solar Flares : C6.4      Coronal Mass Ejections : none

Coronal Holes : none

Geomagnetic field : very quiet (K1)

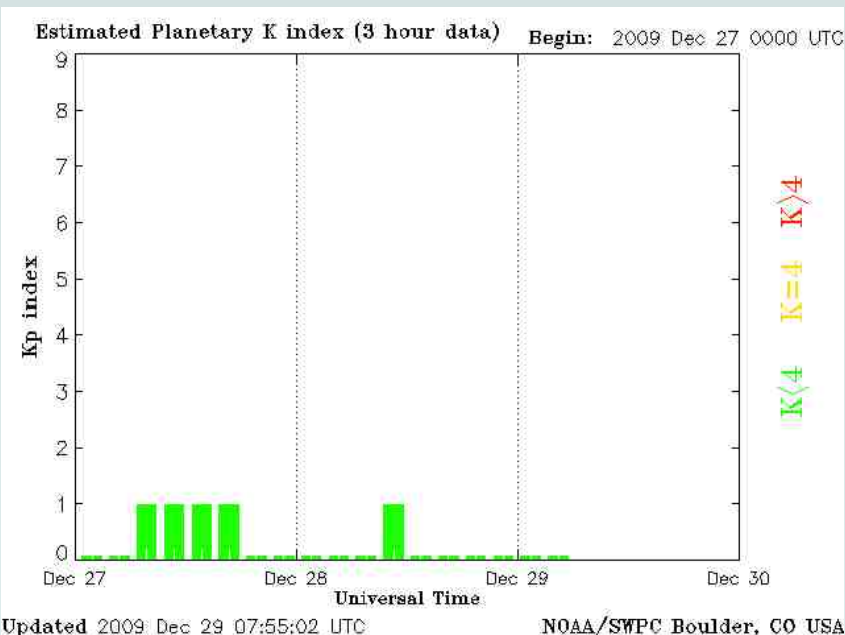
Solar Activity : very low to low



Propagation : no changing conditions expected

>2000km is very poor to poor, better than normal due to a very quiet geomagnetic field. Good chance for F2 propagation along the grey line, and a small chance for propagation across polar latitudes as well in the northern hemisphere.

<2000km is poor. Occasional E-skip at equatorial, lower and mid latitudes. Daily very strong E-skip in southern hemisphere peaking late local morning and late local evening. Daily weak to moderate E-skip in northern hemisphere  
<http://psc.suijs.info/>







# THE DXCALENDAR

- 3/1 THE GAMBIA; C56SMT

by SM1TDE. Activity will be holiday style. Look for him on CW, 2 kHz from the band edges, as well as some RTTY and SSB. QSL via his home callsign (the Bureau is preferred).

- 6/1 FIJI; 3D2 OC-016

by WB2TJO. He plans to visit three of the islands (Viti Levu, Vanua Levu and Taveuni, all in IOTA OC-016). Using his Icom 706 MkIIIG and wire antennas, look for him on 40 and 20 meters. Jim will be on holiday, so operations will be limited and casual. Look for updates, possibly on QRZ.com.

- 6/1 HAWAII; N1CE/KH6 OC-019

from Oahu Island. He states that his activity will be mobile using a Kenwood TS-480 w/100 watts, and it will be SSB only on this trip. QSL only direct to his home callsign.

- 7/1 SRI LANKA; 4S7KKG AS-003

By DC0KK. HF CW/SSB/RTTY/PSK WSJT. QSL hc via DARC buro or direct.

- 28/1 SUDAN; ST26ASC

by members of the Khartoum Sea Scouts Radio Club (ST2KSS). Activity is to celebrate the 26th Arab Scouts Conference (under Peace and Unity). QSL via ST2M.

- 31/1 CANADA; VG7W

The Vancouver Olympics Amateur Radio Group (VOARG) will activate three special calls to celebrate the Olympic Winter Games and Paralympics which will take place in Vancouver/British Columbia in Feb/March 2010. This is the second special call. A website will go online soon, all logs will be uploaded to the LoTW. QSL cards can be sent via bureau or direct to: VOARG, 9362-206A St, Langley/BC, V1M 2W6, Canada.

- 2010 MARSHALL IS.; V73NS OC-028

from the Kwajalein atoll by WD8CRT, who will have to work here for two years starting on Jan 5, 2009. He will work mostly in CW on 160-6m. QSL via bureau or direct to Neil Schwanitz, PO Box 8341, APO, AP 96557, USA. His website is <http://www.qsl.net/v73ns/>

- July 2011 FRENCH POLYNESIA; FO

by F5PHW. Since he is there for work, his on air activities will be limited, but he will try to operate as much as possible. If he lives in a house, Phil intends to be active on all HF bands from 80-10 meters mainly on CW and RTTY (possibly some PSK31) with very little SSB using only 100 watts. His antennas from the house QTH will be: 80-40m - Inverted V + HF6VX (GP), 30m - HF6VX, 20-10m - HF6VX + Spiderbeam (not sure). However, if he lives in an apartment the antenna may only be the HF6VX. QSL via F8BPN, by the Bureau or direct.

21/12- 9/1 AUSTRALIA; DL4IAL/VK OC-001

active mobile and portable as mainly in SSB on 20m while travelling through Australia. The trip will lead hem to New South Wales, Australian Capital Territory, Victoria, South Australia, Northern Territory and Queensland. QSLs direct or via bureau to DL4IAL.

28/12 - 3/1 MADAGASCAR; 5R8HX AF-013

by G4OHX. Activity will be mainly CW. QSL via his home callsign direct only.

28/12 - 4/1 VANUATU; YJØNA OC-035

from Port Vila by JK1FNL. 160-10 meter with 100w and wire antennas. QSL hc.

29/12 - 4/1 AUSTRALIA; VK6 OC-211

Robertson Island, Houtman Abrolhos. VK6YS is in the process of organizing an IOTA expedition. QSL via VK4AAR. For the time being the team includes VK6YS VK6NI, but they are looking for another two operators to share the costs. Please contact Wally (vk6ys@iinet.net.au) if interested. The Abrolhos were activated for the first and only time by VK9XZ/6 back in January 1996.

4/1 - 17/1 SOUTH AFRICA; ZS5/G4OHX

Activity will be mainly CW. QSL via his home callsign direct only.

5/1 - 26/1 ARUBA; P4ØC or P4ØCG

by W2CG. Activity will be primarily CW/RTTY on 80-6 meters, usually between 1200-1400z and 2000-2400z, other times as schedule permits. QSL is via the LoTW (prefers), or via his home callsign, by the Bureau or direct (U.S. stations, if not LoTW then SASE via CBA).

8/1 - 11/1 EASTER I.; CEØ/YV5IAL

This will be a QRP, portable, holiday style operation. Activity will be on PSK31 digital mode on 14070.15 kHz from 2200-0100z, and occasionally on 40/30/15 meters. QSL via his home callsign.

8/1 - 8/2 UNITED ARAB EMIRATES; A6/VE6LB

Activity will be holiday style with low power using wire antennas and mainly on 40-15 meters CW. QSL direct via his home callsign or LoTW.

10/1 - 24/1 SOUTH SHETLAND IS; XR9JA AN-010

from Arturo Prat-Greenwich Island-South Shetland archipelago, WW Loc. GC07FQ) by XQ5CIE, CE6UFF, F6DXE and CE5COX. Activity will be on 160-6 meters using CW, SSB, PSK31 and the AO-51 Satellite. QSL via CE5JA. For more information, go to:

<http://www.ce5ja.cl/>

12/1 - 8/3 THAILAND; HSØZJF AS-101

by ON4AFU. All bands, CW only. QSL hc via buro.

21/1 - 28/1 VANUATU; YJØXX, YJØDX and YJØMM OC-035

from Efate Island by a Croatian team of 9A4DU, 9A6DX and 9A8MM. Activity will be on 160-10 meters using CW, SSB and RTTY. QSL Manager will be 9A8MM. More details and updates are available at: <http://vanuatu.rkp.hr/>

21/1 - 21/3 UGANDA; 5X1NH

by G3RWF. Activity will be on the HF bands. He prefers CW and likes the Digital modes (PSK and RTTY), but may work SSB whenever signals are good enough. QSL via his home callsign.

23/1 - 24/1 UNITED STATES OF AMERICA; K NA-058

from Cumberland Island by members of the Camden County Amateur Radio (KB4CC). They plan to have two stations running on battery power on the following suggested frequencies and modes:

SSB - 14260 kHz CW - 14040 kHz, 7055 kHz and 7030 kHz

QSL via KB4CC: CCARS - USI#GA-002S, PO Box 2203, Kingsland, GA, USA 31548. For more information, visit: <http://www.ccars.org/ebruary>

February COCOS I.; TI9

TI2HMG is trying to put together another operation to TI9 which will take place in February of 2010. Look for updates and details on:

<http://www.qsl.net/ti2hmg/cocos.htm>

February AUSTRALIA; VI2BI OC-212

from Broughton Island by VK2IR, VK2NN, VK2GR, VK2RF, VK2HV and VK3JHA for three days in February 2010. Activity will take place on multiple bands (160-6 meters) simulataneously to give everyone the chance to contact them. Suggested frequencies are:

BAND	CW	SSB	RTTY
160m	1825	1840	
80m	3525	3793	3630
40m	7020	7085	7035
30m	10105	10145	
20m	14025	14195	14090
17m	18075	18160	18105
15m	21025	21295	21090
12m	24895	24950	24925
10m	28025	28490	28090
6m	50105	50130	

They may use 14.260 MHz.(US General Class Licence). For update and an online log search, visit the blog at <http://www.vi2bi.blogspot.com/>

1/2 - 31/3 CANADA; VG7G

The Vancouver Olympics Amateur Radio Group (VOARG) will activate three special calls to celebrate the Olympic Winter Games and Paralympics which will take place in Vancouver/British Columbia in Feb/March 2010. This is the third special call. A website will go online soon, all logs will be uploaded to the LoTW. QSL cards can be sent via bureau or direct to: VOARG, 9362-206A St, Langley/BC, V1M 2W6, Canada.

4/2 - 10/2 HAWAII; N7I

from Honolulu (Oahu Island HI-008S) by WL7MY and KL7JR. Activity is in celebration of the 16th anniversary of the U.S. Islands Awards program. Main frequency will be 28460 or 14260 kHz. They use a TS-50 and a vertical on mag mount. QSL Manager is KL7JR. For additional info: <http://www.usislands.org/>

10/2 - 21/10 KENYA; 5ZØH AF-040 and AF-067

from Lamu Island and Wasini Island by 5Z4ES, IK8TEO, IK8UHA and IK8VRH are planning to be in Kenya and activate two IOTA islands. QSL via LoTW, by the Bureau or direct to IK8VRH: P.O. Box 173, I-80016 Marano (NA), Italy. Visit the 5Z4H Web page at:

<http://5z4h.sitonline.it/>

17/2 - 23/2 BELIZE; V31RR

by AA4NC. Activity will be on the HF bands including 30/17/12m using CW, SSB and RTTY. His activity will also include the ARRL DX CW Contest (February 20-21st) as a Single-Op entry. QSL via his home callsign or LoTW.

18/2 - 22/2 NICARAGUA; YN2GY

by K9GY during the 2010 ARRL DX CW Contest (February 20-21st). Outside of the contest, look for CW activity on 30/17/12 meters. QSL via LoTW or to his home callsign, direct or by the bureau.

20/2 - 27/2 CHRISTMAS I; VK9X/G6AY OC-002

by G3SWH and G3RTE. They will operate CW only on 80-10 metres (no activity on 160 metres). Propagation permitting, they plan to have two stations on the air for as many hours every day as is possible. QSL via G3SWH, direct or bureau (requests for bureau cards can be submitted by using the relevant form on. Please visit <http://www.g3swh.org.uk/christmas-island.html> for further information.

25/2 - 28/2 UNITED STATES OF AMERICA; K NA-066

from Santa Catalina Island (USI CA016S, WLOTA LH-2912, Los Angeles County, California). Activity will be on the usual IOTA frequencies, mostly 20 meters SSB, using CW, RTTY and/or PSK31. QSL direct to K6PV (Palos Verdes Amateur Radio Club) or by the Bureau. They will have a special K6PV IOTA card for this activation.

2/3 - 11/3 ST. LUCIA; J68JA NA-108

by W5JON. Activity will be on 160-6 meters (including 60m) on SSB. He will use an ICOM IC-7000, KL-400 Amp (350 watts) into the following antennas: ZS6BKW design multiband dipole, and a 3 element yagi on 6m. Activity will also include the ARRL International DX Phone Contest (March 6-7th) as a Single-Op/All-Band entry. QSL via W5JON.

5/3 - 12/3 SAINT MARTIN; FS/KT8X

This will be a holiday style operation with an emphasis on the 30/17/12 meter bands using CW, SSB and RTTY. However, he does plan to enter the ARRL DX SSB Contest as a Single-Op entry. QSL route will be the "Logbook of The World" (LoTW).

5/3 - 24/3 THE GAMBIA; C56KR

by OZ8KR. Activity will be holiday style with operations on 80-10 meters SSB, using 100 watts into wire antennas close to the Atlantic Ocean. QSL via OZ8KR.

12/3 - 23/3 NEW ZEALAND; ZL4TY and ZL4M OC-203

from Stewart Island by VK4DXA and ZL4PW. They plan to have 2 stations using verticals for 160-30 meters and a Spiderbeam for 20-10 meters. They intend running barefoot unless they can obtain a solid-state amplifier. The following suggested frequencies (+/- 10 kHz, QRM, QRN & propagation permitting) have been announced:

Band	CW	SSB	RTTY
	----	-----	-----
160m	1820	1845	
80m	3525	3785	3580
40m	7025	7165	7038
30m	10115		10145
20m	14025	14260	14085
17m	18080	18145	18105
15m	21025	21295	21085
12m	24895	24945	24920
10m	28025	28475	28085 kHz



QSL Info: They need a minimum of 2 USDs or 1 x IRC (please, 2010 issue) for a direct reply. Any donation sent with your QSL request will be greatly appreciated. Cards with insufficient funds or invalid IRCs will be sent via the bureau. All logs will be uploaded to LoTW following the DXpedition. QSL ZL4TY via VK4DXA; by the VK Bureau or direct to: Ray Crawford, 53 Moore Street, Kingaroy, QLD 4610, Australia. QSL ZL4M via ZL4PW; by the ZL Bureau or direct to: Paul Ormandy, 13 Swift St., Oamaru 9400, New Zealand. For more details and updates, visit their Web page at: [http://www.zl4pw.orconhosting.net.nz/OC203/si\\_index.htm](http://www.zl4pw.orconhosting.net.nz/OC203/si_index.htm)

28/3 - 31/3 OGASAWARA; JD1BNN

by JF3MYU. He is expected to be there with three other operators who will be staying long (hopefully more details will be forthcoming). He will be focused on the WARC bands. QSL is "OK" via JARL Bureau, but write JD1BNN on your QSL (so it can be sorted easily). Also, you can receive his QSL direct if you send your QSL to his address: Kirk Itaya, 5-1-35, Daikaidori, KOBE, 652-0803 JAPAN. Please enclose SAE plus sufficient return postage. For NA, SA, EU and AF include one new IRC or 2 USDs. For Asia, one IRC or 1 USD.

10/4 - 18/4 VIET NAM; 3W6C AS-185

from Con Co Island by HB9BXE and a large group of operators from Switzerland, Germany and Vietnam will be running four stations 24 hours a day. Further information is expected in due course. For the time being, please visit: <http://www.3w6c.qrv.ch/>

19/5 - 23/5 ST. PIERRE & MIQUELON; TO2FH

by a team of Brazilian operators. More details are forthcoming.

### **IOTA-frequencies**

CW: 28040, 24920, 21040, 18098, 14040, 10115, 7030 and 3530.SSB: 28560, 28460, 24950, 21260, 18128, 14260, 7055 and 3755.

The frequencies are NOT exclusive to IOTA!

IOTA net Saturdays at 1300z on 14260 and Sundays at 1300z on 21260!

### **IOTA NEWS**

#### **OC-211.** (Update)

Operators Wally/VK6YS, Nigel/VK6NI and Bruce/KD6WW plan to be active as VK6IOA from Houtman Abrolhos in the Wallabi Island Group between December 31st and January 4th, 2010. They will definitely have the three stations on simultaneously. Operations should be on 40-15 meters. QSL via VK4AAR. Visit their Web site at:

<http://www.westozdx.net/IOTAS/OC211/OC211.html>

#### **SA-041.**

Members of the Araucaria DX Group and the ForDX group are planning to activate the Island of Maiau (DFB MA-01) during June of 2010. This is the same group of operators who activated PW6C from Coroa Vermelha Island and Coroa Da Barra Island. More details are forthcoming.

# GO SW - SO MHE DX NEWS BY OZ6OM

*MMIX. edited by O. Bjørn "Matt" Madsen (MCMLX)  
holder of; OZ6OM, OZ50MHz, 5Q6M, ex. OZ1IZB, G0DJJ & OZ7M  
Current email address to enter info is; oz6om @ uksmg.net*

ConDX. Solar cycle 24. We now officially have solar cycle 24 sunspot group #11036, located near S29W19 with a beta magnetic signature. We also have solar cycle 24 sunspot group #11037, located near N18E54 with a beta magnetic signature. We now have three solar cycle 24 numbered sunspot groups in existence at the same time, a new record high for solar cycle 24. Also the sunspot number is 43, also a new record high for solar cycle 24. 73, GUD DX, Merry X-mas & Happy New Year (Thomas F. Giella, NZ4O at [www.wcflunatall.com/nz4o4.htm](http://www.wcflunatall.com/nz4o4.htm) via MMMonVHF Newsletter 2009-12-24) 25 Dec. 2009



Willis Isl., VK9W. [Update]. Dave, VK9WBM has been on Willis Island for a while and is experiencing unexpected problems. "I am slowly getting on HF", he says, "but I am not there yet. I cannot erect a mast, the soil is coral rubble and sand and will not hold a guy peg. The soil is a bone dry insulator and I have been unable to get any viable earth. The onwire has worked 2 stations and is to be removed and replaced with a balanced antenna. This will take a bit of work as I have no ATU except the Icom AH4, an unbalanced only auto ATU. On 6m I am unable to mount the beam anywhere useful. It can only point out to the ocean. I have built a 300ohm slim jim and worked about 40 stations, mainly VK2 but with some VK3, 4, 5 and one ZL2. Listen for me in the afternoons on 6m, between 0400z and 0900z. When he is "reliably on HF", he anticipates it "will be 40m and harmonics only" (425 DX News #973) 25 Dec. 2009 - 1 Jun. 2010

Nicaragua, YN. Eric, K9GY, will once again be active as YN2GY from Octavio's, YN2N, QTH in Grenada, during the 2010 CQ WPX CW Contest (May 29-30th) as a Single-Op/All-Band/Low-Power entry. He will be there between May 27-31st. Outside of the contest, look for CW activity on 30/17/12 meters. Also look for him on 6 meters. QSL via LoTW or to his home callsign, direct or by the bureau. (Ohio/Penn DX Bulletin #939) 25 Dec. 2009 - 31 May 2010

Mexico, XE. (Special Event). Members of the DXXE (Mexican Contest and DX group) will celebrate their 5th anniversary by using the special callsign 4A1DXXE between December 20-31st. Activity will be on 160-6 meters using CW, SSB, RTTY and PSK31. The following operators will be active from different locations: Ismael/XE1AY, Hugo/XE1CQ, Sergio/XE1CT, Alex/XE1EE, Tony/XE1GRR, Pepe/XE1J, Ramon/XE1KK (Co-leader), Masa/XE1MM, Carlos/XE1MW, Joaquin/XE1R (Co-leader & callsign trustee), Miguel/XE1YYD, Benjamin/XE2AU, Bernardo/XE2HWB, Hector/XE2K (Co-leader & schedule and log controls), Marco/XE2S, Jorge/XE2WWW, Zalo/XE3N and Daniel/XE3RR. The QSL Manager is Dick, N7RO. Don't send your QSL cards to the Mexican Bureau since they will not have QSLs to answer. Make sure your Bureau QSL card is clearly marked via N7RO. QSOs with this station are good for the DXXE Award. For more information, visit the DXXE Web page at: <http://www.dxxe.org> (Ohio/Penn DX Bulletin #939) 25 Dec. 2009 - 31 Dec. 2009

Denmark, OZ. Hello Guys, I (OZ6OM) will be QRV in the Nordic Activity Contest Thursday evening (January 14 th.) between 18 and 22 UT. I intend to be QRV from JO55EJ at an alternate QTH running 100 w. into a 5 or 6 element Yagi. In any case I intend to keep activity round 50.173 MHz (SSB/CW) and 50.230 MHz / 50.236 (JT6m). (The reason I'm operating this way is, my attempt at setting up reasonable antennas at my QTH have so far ended in a law suit (Latest, case appealed to the domestic court after a no from the council review board). - so the antenna at my QTH is very modest at this time. The given permit says maximum hight at 1.8 m. agl.) Hope to see You down the log ... vy 73 de Matt OZ6OM

U.S.A., K. Heading to Big Bend and DL88 for the January VHF contest. Send me an e-mail to get on the maillist and I will keep you updated. We will be rover from several of the other area grids too but DL88 is the goal. email Joey at Padre.net Begin date: 20100115 End date: 20100120 Callsign(s): NA5RC Opr. & QSL route: W5BAK. 73 Joey W5BAK (Maurice F5NQL)

South Shetland Isl., VP8, CE9. XR9JA Greenwich Island WW-Loc: GC07FQ. XQ5CIE, CE6UFF, F6DXE and CE5COX will be active from Greenwich Island, South Shetland Islands 10-25 January 2010 as XR9JA They are will be active on 160-6m CW,SSB,PSK 31. QSL via CE5JA - (MMM on VHF Newsletter 2009-10-23)

Contest, Open / WW.

What to do on a rainy tuesday evening - or a dry one for that matters ?

- Well the 4th. Tuesday in the month brings You "The 50 MHz Open"
- This month thats Tuesday - the 26 th. 18 - 22 UT.
- You could help participants out with some QSO's
- or participate Your self ...

You may find the rules for "The 50 MHz Open" here  
and check out the standings here.

- so are You keen to give "The 50 MHz Open" a try ?

Hope to see You down the log - and Your log ... Vy 73 de Bjørn/"Matt" OZ6OM

Aruba, P4. [Update]. Marty, W2CG will be active as either P40C or P40CG from Aruba on 5-26 January. He plans to operate primarily CW and RTTY on 80-6 metres, usually between 12-14 UTC and 20-24 UTC, other times as schedule permits. QSL via W2CG, direct or bureau (but LoTW preferred). (425 Dx News #971)

Aruba, P4. Marty, W2CG, will once again vacation and operate in Aruba between January 5-26th, 2010. Look for him to use a special callsign, either P40C or P40CG (awaiting approval). Activity will be primarily CW/RTTY on 80-6 meters, usually between 1200-1400z and 2000-2400z, other times as schedule permits. QSL is via the LoTW (prefers), or via his home callsign, by the Bureau or direct (U.S. stations, if not LoTW then SASE via CBA). (Ohio/Penn DX Bulletin #926)

Australia, VK. The Hellenic Amateur Radio Association of Australia will be active as VI2BI from Broughton Island on 5-7 February. The team will include Tommy/VK2IR, Peter/VK2NN, Allan/VK2GR, Raffy/VK2RF, Paul/VK2HV and John/VK3JHA, and they plan to operate CW, SSB and RTTY on 160-6 metres. QSL direct to VK2CL. They have a web page at [www.vi2bi.blogspot.com](http://www.vi2bi.blogspot.com) (425 Dx News #971)

Temotu, H40. Operators Siegfried/DK9FN, Bernhard/DL2GAC and Hans-Peter/DG1FK will be active as H40FN (CW), H40MS (SSB) and H40FK (Digi-mode), respectively, from Ngarando/Reef Islands between February 6-19th (2010). Activity will be focused on 160/80m (using their famous LOBSTER 2-element multi-band vertical), but they will operate on 160-6 meters depending on the band conditions. QSL H40FN via HA8FW, H40MS via DL2GAC and H40FK via DG1FK. QSL cards will be sent out automatically via the Bureau. However, for those who want to receive their QSL cards directly, a minimum of 2 USDs for postage is requested. Donations are most welcome. For more details, updates and pictures/details of Siegfried's last visit to Temotu, please visit the following Web page at: <http://hari-ham.com/h40fn> (Ohio/Penn DX Bulletin #936)



# The "V" Army A V for victory

On 14 January 1941 Victor de Laveleye, a Belgian refugee working for the BBC, shortwaved the following announcement to his countrymen: " I am proposing to you as a rallying emblem the letter V, because V is the first letter of the words 'Victoire' in French, and 'Vrijheid' in Flemish: two things which go together, as Walloons and Flemings are at the moment marching hand in hand, two things which are the consequence one of the other, the Victory which will give us back our freedom, the Victory of our good friends the English.

Their word for Victory also begins with V. As you see, things fit all round...". Within weeks of de Laveleye's broadcast chalked V's began appearing on walls in Belgium, northern France and Holland, where Flemish broadcasts of radio Belgique, a conspirator in the V campaign, had a loyal audience.



*Colonel Britton, in charge  
of the "V-army"*



*Editors of the Belgium section of the BBC,  
Radio België / Radio Belgique*

De laveleye thought the V symbol would deal a psychological blow to German morale, and he was right. In his first broadcast he said that "the occupier, by seeing this sign, always the same, infinitely repeated, [would] understand that he is surrounded, encircled by an immense crowd of citizens eagerly awaiting his first moment of weakness, watching for his first failure." In May 1941 the BBC, buoyed by early reaction to the "V" campaign, circulated a paper on "broadcasting as a new weapon of war." The paper outlined a plan to "cause riots and destruction in every city in europe." Shortly after that, what would become the "V committee" met for the first time to set up plans "to encourage, develop and coordinate British broadcasts to enemy occupied countries about action against the Germans." The BBC choose Douglas Ritchie, a BBC assistant news editor, to make life miserable for the Germans.



Posing as "Colonel Britton," Ritchie's broadcasts, heard on the English service for Europe, became a regular feature dealing with items of localized interest in the occupied countries. The program had a good following in Holland, where one in ten listeners tuned in the BBC.



The broadcasts were so popular everywhere that there was a danger listeners would be incited to commit acts of sabotage. That caught the attention of British intelligence, which had been carefully nurturing German resistance since the hostilities began. Ritchie was beginning to trespass on their territory and they resented it.

but that's another story. At first the V committee endorsed "gentle" disruptive activities in the occupied reich. Listeners, for example, were encouraged to travel more often to upset the transport system. They were also encouraged to consume more food & harass the organizers of the rationing system, who were already harassed to the gills.

On 27 June 1941 the morse ...- was broadcast, followed by the opening theme of Beethoven's fifth symphony. The following day the V sound tapped out on drums became the station identification & interval signal throughout the BBC's European service. Announcers also explained how common sounds could be made into a V.



School teachers, for instance, could call pupils to order by clapping their hands in a V rhythm.

Likewise blacksmiths could tap V's on their anvils, and trains could toot the V. In mid-july, radio Moscow broadcast a talk in Russian about how people in occupied Europe "not only see the V sign but hear it on the knock on the door, the whistles of railway engines, the pealing of church bells." All Europe had responded to the BBC campaign, and the Germans went on the defensive.

on 7 July 1941, e.g., radio Hilversum, now in nazi hands, reported that records of Beethoven's 5th had been broadcast "in error." On 20 July 1941 Colonel Britton instructed listeners in Paris to stage a "quiet knocking" demonstration. The day before a message from Churchill put the British government's stamp of approval on the V campaign and gave heart to listeners throughout occupied Europe: "The V sign is the symbol of the unconquerable will of the people of the occupied territories and a portent of the fate awaiting the nazi tyranny. So long as the people of Europe continue to refuse all collaboration with the invader.....etc."

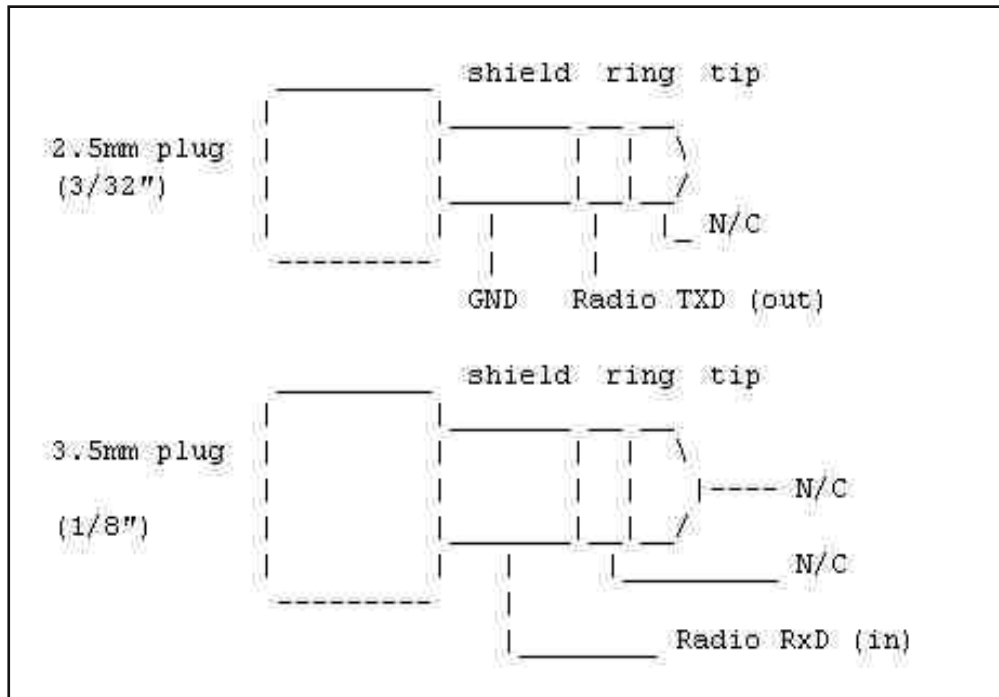
the quiet knocking campaign was a success and the Germans were duly rankled by it. In September 1941 listeners were told to organize themselves into "V radio groups."

These groups were given instructions on the building of frame aerials to improve reception and shown ways to defeat enemy jamming....



# PC-PROGRAMMING CABLE FOR KENWOOD TH-G71A / TH-F6A BY KB7QPK

I wanted to make my own cable to program my Kenwood TH-G71A ham radio with a PC, but the owner's manual simply did not show the pinout needed for the connector plugs. I searched the web but was not able to find this information but I did discover that several other radios used an RS-232-to-logic (0-3.3V) level-shifter and a Full-duplex serial connection (separate RXD / TXD), and found schematics for such interfaces for other radios. I also found a device called the "MAK interface" which claimed to work with the TH-G71A, and the web site listed an interface cable.

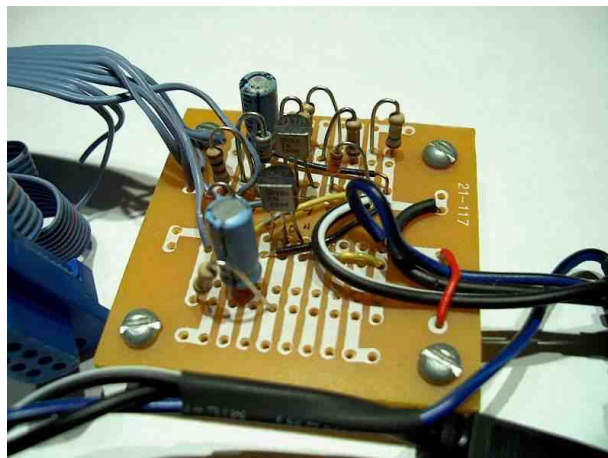


With these clues, and after studying the signals coming out of the radio (and lots of debug time ...), I finally figured out the plug connections at the radio end.

I was able to use basically the same interface schematic that was claimed to work for the Kenwood PG-4S cable (which is used for the TM-G707 / TM-V7 radios instead of the Kenwood TH-G71).

Refer to <http://home.attbi.com/~kc7zru/pg4s.html> for the schematic for the PG-4S interface:

The DB-9 connector to the PC is the same, but the connector on radio side is different. (Instead of the 6-pin mini-DIN connector, use the 2.5mm and 3.5mm phono plugs for the TH-G71)



Refer to Drawing at the URL above (Tate Belden's site), right hand side, starting at the top:

1. Ignore the tie between pins 4 and 5 of the mini-DIN connector. (There is no such tie on the TH-G71 Cable)
2. The interface's "TXD" goes to Ring of 2.5mm plug. (cathode of the diode on the interface)
3. The interface's "RxD" goes to the Shield of 3.5mm plug. (collector of NPN on interface)
4. GND goes to shield of the 2.5mm plug.
5. The tips of both plugs are No-connect.

### Schematic tweaks:

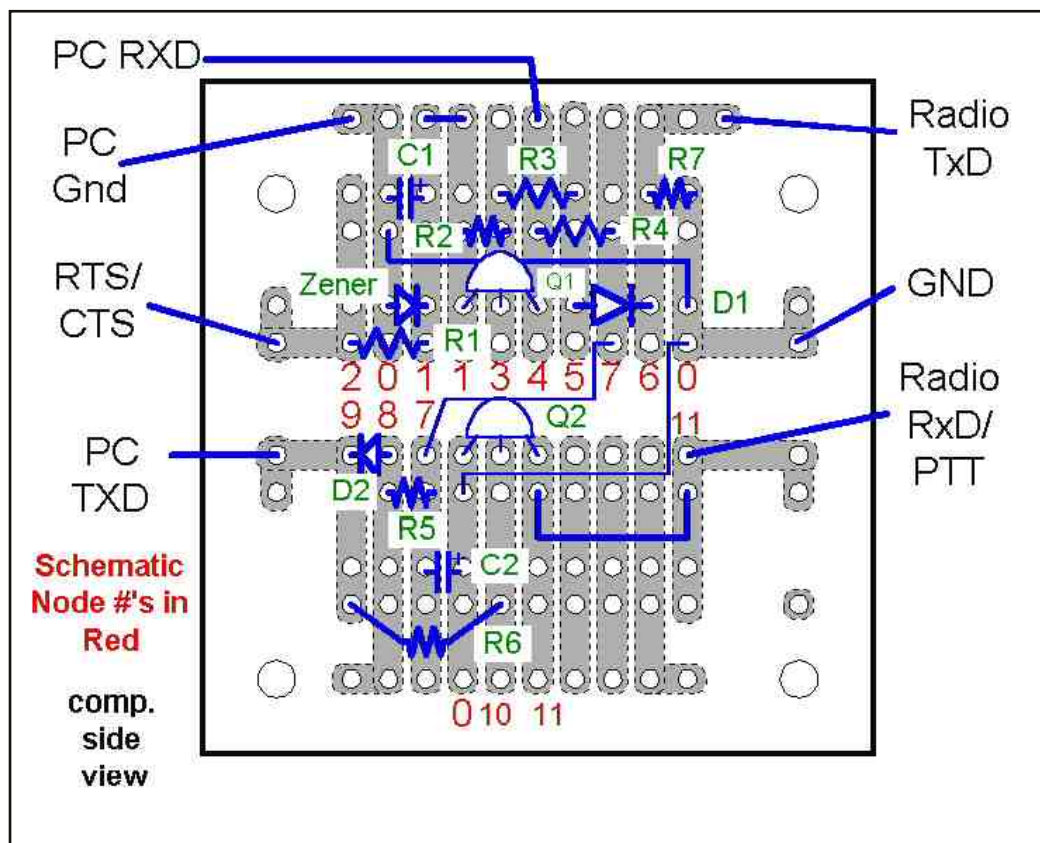
*Note: If you have an interface that already works on another radio such as the Kenwood TM-G707 / TM-V7, then you may not need to make these changes!*

1. Change R1 from 150ohm to 1K ohm (this is the resistor feeding the zener diode). I found that 150ohms loaded the line too much and the resulting voltage was too low to power the interface from the Serial port. If you have problems, be sure that the cathode of the Zener is at about 4.9V. I found that the interface worked down to about 3.2V when I just powered this from a variable power supply instead of through the PC serial port (after removing R1 and the zener and just applying voltage at C1)

2. add a 150K ohm resistor between the Radio TXD to gnd. I did this just to keep the voltage down on the TxD pin because the radio seems to be 3.3V I/O pin (not 5V)

Update: Dec 2001: The Kenwood manual for the newer TH-F6 radio shows the pinout for the Plugs (page 46). Through Dec 17, 2001, this web page showed the Ring and Shield of the 3.5mm plug both shorted together, but I have updated the plug pinout to match the Kenwood documentation, and I confirmed that it does work as shown, without the connection to the ring.

I was able to find a 90-degree "elbow" shaped, 2.5mm stereo plug at Radio Shack (p/n 274-298).





## Using the interface / software

1. For TH-G71: Menu 15, TC ON

Transceiver Control must be enabled, or else you will get a communication timeout error when trying to communicate with the radio after connecting the cable up to your PC. "TC ON" enables the plugs on the side to work as data lines instead of as external mic/speaker.

Press the "F" button, and then Band, turn the main tuning knob to Menu 15 Transceiver Control and turn it ON for programming. You will need to use a free com port (Com 1 or 2) on the PC.

*Note: For the TH-F6 radio, the Kenwood manual states: Access Menu No. 9 and select "PC"*

## 2. Kenwood Programming software

Download the PC Programming s/w from Kenwood FTP site <ftp://ftp.kenwood.net> or web page <http://www.kenwood.net/amateur> -> downloads -> software -> THG71A

You should see the files mg71200.exe and readme.txt .

Install the software and Run mcp-g71.exe. go to file menu, and be sure your com port is set correctly, then turn on radio, and plug in, and do "Radio-> Read". Try it a few times -- I found that it sometimes said something like "Communication timeout" the first time I tried after connecting up the interface.

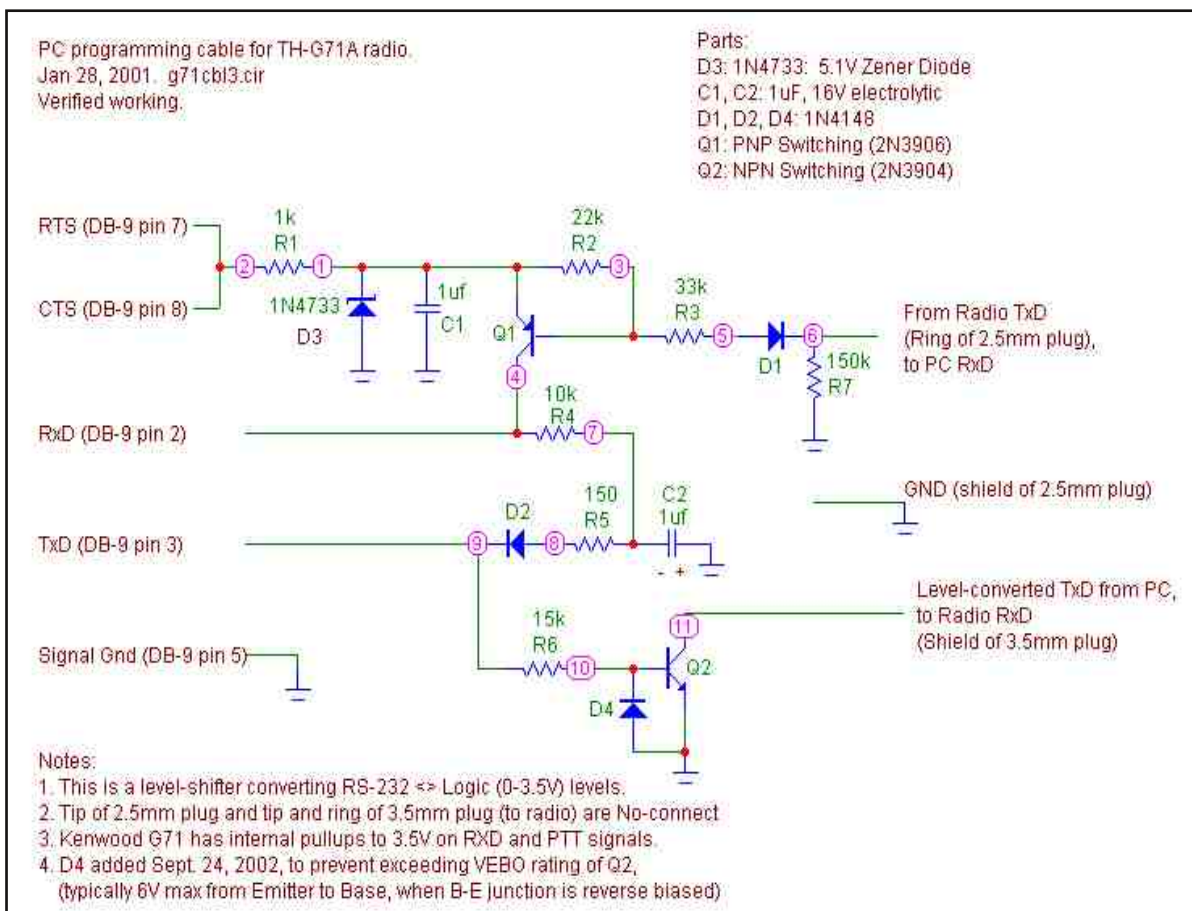
## Debugging problems with the interface

1. Be sure you have done everything listed under "Use". If you are really stuck, you can try these checks:

2. Verify power + side:

1. With the interface connected to the pc, connect a meter to node 1 (cathode of the Zener) and ground.

2. In the MCP program, do radio->read (you should see "reading data from radio") As it is "trying" to read the radio, quickly check the voltage.





3. The voltage should be about 4-5 Volts. This is needed to power the interface from the serial port. Note: The voltage at the RTS and CTS pins of the DB-9 connector will NEGATIVE when the Com port is inactive (when you are not trying to read or write to the radio with the software). But the voltage will go POSITIVE (about 9V on my PC) when the Com port is active.

Condition    RTS/CTS Voltage

Com port idle, not reading/writing radio    about -6 to -12V

Com port active, reading/writing radio    about +6 to +12V

4. If you don't have good power here, something is wrong. (This is why I increased R1 resistance from the original schematic - as the original lower value loaded my serial port down too much due to the diode at node 1).

You can power the interface externally: Remove the rts/cts connections from the PC and just power node 1 with a battery or external power supply. This was the main problem I had getting my interface working (besides trying to figure out the pinouts of kenwood jacks).

### 3. Verify power negative (-) side:

1. With the interface connected to the pc, connect a meter to node 7 (negative terminal of the Cap C2)

2. In the MCP program, do radio->read (you should see "reading data from radio" As it is "trying" to read the radio, quickly check the voltage.

3. The voltage should be negative (more negative than about -5 or -6V) This is needed to generate a negative voltage back to the PC RxD.

4. If this power is good in the previous steps, but the interface still does not work, recheck the interface to make sure everything is wired up correctly including all ground connections, and the pinouts the serial port DB connector. Check all part values and that the polarity of caps is correct, and that NPN and PNP transistor are wired up the correct way.

5. If that does not find any problems, I would then test the interface to be sure it does the correct level-shifting and "inversion" of the levels from the PC (RS-232) to lower-voltage for the Radio. This can be a bit tricky and you need some power supplies and clips to do this, with the interface disconnected from the PC and the Radio. Basically, you want to verify the following:

1. With TXD (out from the radio) = 0V, the RxD to PC should be about 5V

2. With TXD (out from the radio) = 3-5V, the RxD to PC should be between -5V to -12V.

3. With TXD (out from the PC) between -5V to -12V, the RxD to the Radio should be "floating" (Q2 off) (and the weak pullup in radio pulls the node to a logic "high" value)

4. With TXD (out of the PC) > 5V or so, the RxD to Radio should be 0V (Q2 is "on").

But the catch is that the interface generates the -12V (or so) by the switching on TXD. So you need to fake it out to be sure you have this voltage (which should be there in step 3c) because you don't have the interface connected to the PC anymore. Otherwise, you won't get the negative voltage in step 5B.

### Programming the TH-G71

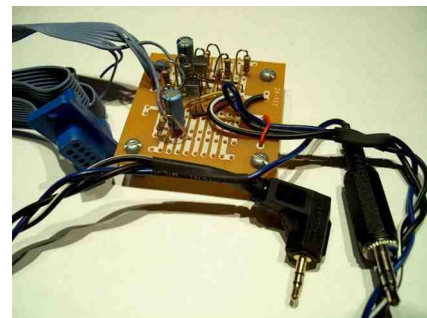
See my page for information used to program and control the TH-G71 through a serial port.

<http://www.iw5edi.com/ham-radio/?kenwood-th-g71protocol,121Serial>

Port command protocol is provided. This is useful if you are interested in how Kenwood's MCP memory control program works, or if you are interested in programming the radio using a PC.

**Chris Koza** [azkoza@yahoo.com](mailto:azkoza@yahoo.com)

**73 ! KB7QPK**



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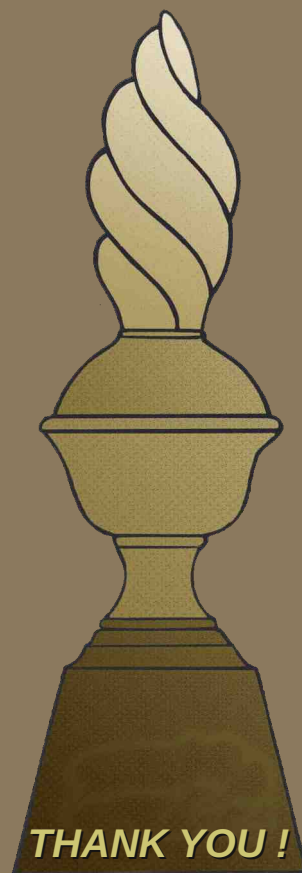
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