

READING & DISTRICT AMATEUR RADIO CLUB NEWSLETTER JUNE 2007

Editors Notes

Hi, once again time to produce another newsletter, albeit later than I would have preferred. I'm grateful to those members who send me something to include, however it makes it difficult if not much is forth coming. At one club meeting I did ask how many people wanted a newsletter and I think it was a unanimous yes. So please let me have something. Are you all sure you want a newsletter continued, please let me know your views g8frc@radarc.org.

Congratulations to those who took the Foundation course in April and passed the exam, don't forget passing the exam entitles you to complementary membership to the end of the year. Get along to club meetings and meet the rest of the members, there are plenty who know about all the different modes of operation in amateur radio. For those of you new to the club I've added some more ramblings which the majority of old timers will know, see after the Club Calendar!

David Foord	M3UBS
Cindy Bray	M3
Tamzin Maynard	M3
Carole Dibley	M3TYF
James Dibley	M3
Beverley Smallbone	M3
David Mardlin	M3TXG
Chris Beresford	M3ZAA
Gordon Milsom	M3
Sergi Moissejev	M3WNX

Unfortunately at the time of going to press callsigns of the remaining people were unavailable for inclusion.

Club Calendar

The club meets on the 1st and 3rd Thursday of the month, Sep, Oct, Nov, Jan, Feb and March. Only 1 meeting in Apr, May, Jun Jul and Aug, 1st Thursday. Dec is normal month for AGM.

Note AGM earlier than normal 29th Nov 2007.

14th June:

"Tracking the Falcon". Talk and Demo, Falconer, Steve Turner, G1PPA.

12th July:

"Pre-view of St Brandon Dxpediton, G3XTT" plus arrangements for the McMichael Radio Rally

9th August:

"Night on the Air and clubnight", Tom Cannon, G0VQR.

13th September:

"One-Man Dxpediton", John Warburton, G4IRN, HF Convention Speaker.

27th September: Direct Digital Synthesisers, Mike Rayner, G4CDF.

11th October:

"Construction Contest", Robin Caine G4IWS

25th October:

"The St. Brandon DXpedition 2007, the Report". Don Field G3XTT

8th November: "Autumn Junk".

22nd November: "Software Defined Radio", Dave Macken, G4DQA, of Bracknell

29th November: "RADARC 2007 AGM"

The foundation licence course will continue and I believe that Harry is putting together a programme to start running the Intermediate course, watch this space.

Alison Johnson will also be running the Advanced course probably starting in the autumn.

On both notes I'm sure that there are lots of members out there who are more than capable of contributing to the training, the more people the less work load for individuals to do. In the first instance please contact Harry g3ngx@radarc.org.

The Newbury Boot Sale has a new venue this year, Newbury Show Ground just to the North of Junction 13 of the M4, A34. They normally have fine weather, so well worth a visit. Date is 17th June see www.nadars.org.uk/

Once again we are getting close to Rally time, 15th July, Denis, G4KWT, g4kwt@radarc.org will be looking for all the help he can get, the more people the less time you have to do anything hence plenty of time to look around.....and if you are helping it's free entry. Martin Lynch is holding his Summer Party at the rally this year, so should be a good event and hopefully attract more visitors. Proceeds of the rally go towards club funds and also help keep subscriptions down, funny nobody wanted a free or reduced year at the 2006 AGM, maybe a bit like not many people wanting the free licence!!! Even more surprising was the fact that the proposal came from

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the Treasurer, they normally want to hang onto it for grim death!

On a monetary note can any of you think of items that the club might buy that would benefit the majority of club members, if so please let any committee member know. We are all contactable via ourcallsign@radarc.org.

Don't forget the club holds various pieces of test equipment etc available to borrow, mostly held by the Chairman Vin Robinson G4JTR, if you contact him before a club meeting he'll normally bring it along. Details at the end.

Over to the members:

From Peter Smith G4JNU

DIGITAL TELEVISION

In January, my twelve-year-old analogue T V decided to go QRT. Perhaps it was telling me that it was time to "go digital." Several weeks later, I / we decided on a 26-inch Panasonic LCD television and soon after delivery, I had the new set unpacked and ready to go. After running the auto setup program, using the Southern aerial, I noticed that the signal strength was over 70% but the signal quality was poor, particularly on BBC 1 and BBC 2. Switching to the London aerial improved the picture quality but the signal strength was down to 40%. This suggested that the TV had tuned itself to London not Southern, but this proved not to be the case. Switching to the analogue mode, all channels were better on the Southern aerial but I noticed quite a lot of patterning, particularly on BBC 1 and BBC 2. My next step was to tidy up the aerial feed and make up a new cable to bypass the video recorder and the aerial change over switch. I was in for a surprise! The signal increased but the picture quality went to zero, i.e. no picture. In addition, the patterning on the picture was very pronounced in analogue mode.

Time to sit down; have a drink and a think. Why did routing the signal via the VCR improve the signal? Could the VCR aerial circuit be acting as a simple high pass filter?

I dug out an old Wood and Douglas high pass TVI filter and fitted this in the aerial lead. Bingo! The signal strength dropped to 60% but the picture quality went to 100%. I could even put a 12 dB attenuator in the aerial lead without changing the picture quality. The analogue picture had also returned to near digital quality with no visible noise.

Conclusions

The new digital TV front end is not as tolerant to out of band signals as our old analogue TV and we are only about a quarter of a mile from the aerial mast at Highdown School, Emmer Green, Caversham, which radiates Band 2 F M radio signals.

Does this indicate that the new range of digital TVs are more susceptible to harmonics from amateur transmissions as well as other out of band transmissions?

From Graham Bedwell G3YX

RAMBLINGS OR LATE BLOG?

My Amateur radio in the 1950's and onwards .

I started my radio hobby in the late 1940's and early 1950's when pocket money had to be stretched as far as possible.

Projects using circuits from Practical Wireless, Radio Constructor and the Bernard's publications were adapted to components and valves from the spares box.

The side-board sized pre-war radios were going out of fashion, and were bought at jumble sales for as much as 1/6d (7.5 p.in new money.), cadged from relations and neighbours , and the dustbins of our local radio shop.

Even to this day I can not pass a skip without a second glance ! I concur Ed!

Such prizes were often sneaked home under the cover of darkness in the garden wheel barrow in case father found out!

Oh the classic wirelasses I took apart for components, if only I had kept them whole!

As my main interest at that stage was audio amplifiers, the excellent tome "Amplifiers Design and Construction " by FJ. Camm was on near permanent loan from the library. Purchase of the book would have meant less money for actual construction!

If new components were ever bought, it was mostly ex. Government and manufacturers surplus from mail order, or lengthy bus or train trips into London to Manor Park or Lisle Street.

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As I had endangered my own and family life expectancy, father applied a mains electricity ban, so part used batteries were scrounged from my mother's Women's Institute members who were living in "gas only" houses.

Dad did fork out on a battery eliminator, but think it blew more valves than I did.

Starting with the pre-war W21, HL2, P2 etc 2 volt types which rarely went wrong. I tried the "modern" 1.4 volt filament types briefly, they usually worked at home, but not when I got to Scout or Crusader Bible camp!

Back to the pre-war battery types until I could finally mend the mains fuses without Dad finding out.

This meant a leap forward into mains valves with higher voltages with real POWER.

Even with 4 watts the neighbours could listen to Chris Barber's Jazz Band records with ease!

Many projects were started, some even finished, and one or two worked!

I finally got my full amateur radio licence in 1966, with a lot of help from the late Eric G3PGM.

I was lucky enough within a month of the granting of G3XYX to receive VK6GT when covering the London to Sydney Marathon for Wheelbase. I was made very welcome in many shacks and enjoyed working the "locals" on 20 m. with Sydney 2,000 miles away!

When it came to constructing my first valve transmitter, circuits were from the ARRL, RSGB, magazines and handbooks, not forgetting RG. Rayer's articles in Practical Wireless.

For valves I had many pre-used types, some from pre WWII.

Although the common American types, 6J7, 6J5, 6V6 etc were in common use in transmitters, I chose the ever lasting 4 volt Mazda octal range of which I had a number in the spares box, and an old Murphy radio chassis with a mains transformer to match.

There are possibly very few home made transmitters using the Mazda octal 4 volt heater range of valves. The American octal base (IO) 6.3 volt heater range has a different size centre spigot.

The first transmitter outing was on CW (Morse code), which I concluded was a very drawn out way of exchanging information on a Sunday morning local AM net!

My CW was very laboured and slow, audio modulation was neededfast!

That afternoon I added a old loudspeaker matching output transformer in the PEN 45 power amplifier high tension supply and fed audio to the loudspeaker transformer winding from a home brew 10 watt public address amplifier (EF50, EF50, p/p12A6's, MU14 rec.). I soon built a modulator on board using a tried and tested circuit from my youth club days!

Later the modulator gain was improved with a HD41DD extra stage of amplification, and RF. power increased with changing PA. from a PEN 45 to a rare PEN 44.

Later on I went commercial with a KW Valiant with a home brewed power supply.

Finally reaching the ultimate with a Heathkit DX 100U AM tx.150 watt. With fiddling and modification I got the VFO very stable and could hold my own in SSB qso's.

I was once warned I had an excess of carrier breakthrough even if the mod was ok!

I must have earned the local "worked all music centres award" many times.

Over the years receivers were R1155L, Murphy B40 C, Eddystone 640, Yaesu FRG7D, Unica -30 etc.

In the motoring days when there was room enough to find your way under the bonnet I went first SWL/M with first a battery powered receiver and later after a re-build powered from a Motorola vibrator power supply. I did venture into an all transistor rx. Which was not as good as the battery flattening valve version.

The Motorola power supply survived to power my first mobile 160 TX, 2 of ECL80's on an OXO tin with a 10x crystal plugged into the front.

The final home brew mobile antenna was a centre loaded whip with the loading coil wound on a Harpic bottle, this gave a very clean signal!

Family expansion and a posh car VW Variant meant the end of home brewing and a TW 160

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Communicator modified for negative ground, and a TAVISU base loaded whip.

From Pete G8FRC

I did try 2 metres briefly with a Heathkit HW17A, but I got more response on 4 and sold it !

A simple TRIO 7200G took over VHF. coverage for many years, followed by a FDK- Multi-700EX.

I had ventured into commercial SSB with an early FT101, but house move and tight finances meant a brief spell going QRT.

With a bigger garden allowing better antennas I bought a second hand Yaesu FT101B in 1976. I added most of the Holdings mods. which transformed the front end and after only one HT diode breakdown is still working with original PA. valves.

Many years of searching and a temporary affluence before our daughters got married, I found Yaesu separates FR101D and FL101L and have been using them as my main rig ever since.

With slight hearing loss and higher QRM. levels and Outboard BHI. Noise eliminating module has helped a lot.

ANTENNA ELEVATION

Some of you may or may not know that I'm also a member of Berkshire Raynet. Recently Denis, G4KWT came up with the idea of using a painters pole to raise a temporary antenna should one be required. Painters poles are obviously used to extend reach and I believe you can get 3 or 5 metre ones. The 5 metre pole is about £15 at B&Q..

At the top they have screw on caps designed to take brush attachments.



AWARD



This photo was taken at the HFCC conference this year at the awards ceremony. It shows Tom G0VQR, Jim, G0LHZ and Dan, 2E0ZDA, receiving the trophy on behalf of RADARC for winning the QRP section of the National Field Day CW contest from RSGB President, Angus Annan, MM1CCR.

However this got me thinking, I didn't have one of these but I did have an extension pole for cleaning windows, had it about 10 or so years but never used! I wondered if this could be pressed into service. The pole had a tapered plastic cap at the top designed to take push on cleaning attachments. This was eased off with a bit of gentle persuasion. So how are we going to attach any thing? Well it so happens that in this case it was nearly the same outer diameter as 22mm copper pipe, could a compression coupling be used? I bought a 22 x 22 x 15 reducing tee. Unfortunately the alloy tube was slightly smaller but with some copper shim managed to get it about right to tighten it up on, 3 layers in fact although I had to make sure they didn't overlap. For the opposite end I cut off the corners of an old SO239 chassis connector, just enough such that it would pass through the top nut, but not completely and with the olive removed bite against the lower internal face of the coupling when tightened up. A short lead with BNC plug on was passed through the top of the coupling and out through the 15mm hole. Then the top nut was passed over the connector and clamped up.

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I took it, as was, up to the Ridgeway for the "Ridgeway Walk" to try it out, Jeremy M3KYK loaned me an end fed dipole which worked ok. Not a lot of use for ¼ waves though. It isn't complete.

What needs finishing, fitting some sort of radial to form a ground plane for ¼ wave type aerials. I thought perhaps that I may solder some machine screws on 3 faces of the upper nut, of suitable size to screw on some hollow alloy rod, which obviously needs to be removable if it is to remain portable. Also something to seal the hole where the cable comes out. Not sure what would be maximum load though. The rest of it is shown below. My pole extends to about 3.7 metres, in 3 sections.



CLUB EQUIPMENT

1. FT221R 2M multimode Transceiver (with G0LHZ)
2. Lowe HF225 Communications Rx + 12Vpsu.
3. Realistic DX-394 RX 0.15 – 30MHz.
4. Realistic Pro-2042 am/fm scanner 25-2300MHz.
5. Optoelectronics Handi Frequency sniffer/counter 2300MHz
6. MFJ-269 Antenna SWR analyser 1.8-470 MHz
7. MFJ-209 Antenna SWR Analyser 1.8-170MHz
8. Datong Morse Tutor (with M1CY)

9. Datong Morse Tutor (with G3NGX)
10. RSGB Filter Kit
11. Maplin Morse code oscillator
12. M2 Enterprises 4 way 432MHz antenna splitter, N type connectors
13. M2 Enterprises 2 way 432 MHz antenna splitter, N type connectors
14. Hitachi Dual beam 40 MHz Scope. (with M1CYE)
15. KW 1200 HF Linear Amp. (with G8XML)
16. Racal-Dana electronic wattmeter (G4IWS)
17. Electronic CQ caller (G0VQR)
18. Balanced ATU for field day use, available for short-term loan when not needed for club activities. ATU is the LDG Z-11 Pro, Balun is the LDG RBA-11 (GLHZ/G0VQR)

Items not assigned to a callsign are with G4JTR or are on loan.

Items 1 to 18 are available for loan, contact Vin, G4JTR for details.

The Club also owns, not for loan:

Flip Chart and easel (G3NGX)
White Projector screen (stored in table cupboard, Woodley Pavilion)
A large pneumatic pump up tower and a substantial trailer (G0LHZ)
An HF 3 Band, 3 el beam, G0LHZ.
Diesel generator (G0JTN)
Petrol generator. (G0LHZ)
1.5KVA Petrol generator ex G4JNU. (G0VQR)
Field day tent (G0LHZ)
Field day Tent Oregon Storm Proof 7.5m Tunnel Tent (M1CYE)

HF CW FIELD DAY

"A ROADIES & OR GROUPIES VIEW"

Once again the top field was pressed into service, recently mown. Unfortunately the cows had been in it not very long ago and the cow pats, although not still warm, were not as yet completely hard! The new club tent "storm proof" was difficult to position and avoid said droppings!

Putting up the tent for the first time proved a riot, just slide the poles in and away you go. Chris being Chris had already decided that he didn't need the instructions. However Dave decided to read them

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and found that the poles were all slightly different, so some had to be extracted, resulting in the RADARC shuffle.

Anyway things seemed to be going ok until (15:30 local) it was discovered that the diesel generator was noisy on top band., where was that coming from? Tom drove home to fetch the petrol generator and I took Denis home to recover some ferrites. However, ferrites and coiled mains lead didn't improve matters. However the team got going on time and I left about 17:00 local.

STATISTICS

3 stations were operated by Jim G0LHZ, Eddy G3VMY, Tom G0VQR and Dave M0DHO, 10 watt restricted section. They were G3ULT/P (FT1000MP), G0LHZ/P (FT1000 Mk 5) and M0DHO/P (K2 on battery). Club callsign M0AAA/P was registered for club members to have a go! We'll have to wait and see for the results.

Roadies, Harry G3NGX, Denis G4KWT, Andy M5ALG, Min G0JMS, Chris M1CYE, Des G8FIF, Simon M0XIE and yours truly Pete G8FRC, including operators.



Early on in the contest a desperate cry out from Tom,

“Jim what's happened to my Winkie?”

Next field day contest is SSB in September.

Please support this event.

Signing off Pete G8FRC....

PS Correct me if I'm wrong but I suspect this field day to have been the most photographed and videoed. Yes, next project is the video.

Apologies to Des G8FIF who supplied me with a CD full of pictures plus panoramic views. Sorry Des I

was having trouble with adding the panoramic views, we'll have to get them loaded to the website.



HOWEVER, here is one of Des's masterpiece's. This seemed to take ages to insert.....

SUNSET AT THE RADARC SITE!

From Graham G3XYX

THE WASHFORD TRANSMITTER

This transmitter lies between Minehead and Watchet near the north coast of Somerset I queried what this transmitter was currently being employed for, Ed.

Opened in May 1933 on 814 kHz. at 70 kw. West Region.

July 1933 1149 kHz at 40kw. National.

July 1937 Welsh Region Programme and West of England Regional Programme.

On outbreak of War in 1939 50kw. "Regionals" used national synchronised frequency. of 1149 kHz. during darkness.

Post War. re-arranged for Home and Light programmes.

1960. 2 man "Transmitter Maintenance Team" based to cover remote operated transmitters.

Listed in Radio Servicing Pocket Book, Hawker and Malloy 1955.

881 kHz. at 100kw Welsh.

Currently listed in Radio Guide 2007 and "Radio Stations in UK" .BDXC. .

882 kHz at 100kw. Radio Wales ,

1215 kHz at 100kw SW. Virgin, and

1089khz at 80 kw SW. Talk Sport .

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Finally don't forget you can contact any committee member, ["callsign"@radarc.org](mailto:callsign@radarc.org).

Please watch out for a separate file, this is part 2 of the newsletter.

Regards Pete g8frc ED.

Comparison of the MJF-933 and the LDG Z-11 Pro ATUs

The club recently purchased a LDG Z-11 Pro ATU and a LDG RBA 1:1 Balun for use at field day. I decided to compare the performance of the LDG against the more expensive MJF-933 ATU. Both tuners are “automatic” designed to automatically find a match without user intervention (e.g. just key up and a match is found). Both tuners use “latching” relays so when a match is found, the tuners return to standby and consume little power.

I decided to test them on a doublet antenna, the top part of the doublet antenna is about 25 metres across (centre fed), the down feed is about 30 metres in length and is fed down the house wall into the shack adjacent to the ATUs.



Test Method

- 1) Connect the ATU 'ANT' connection to a Doublet either using the external LDG Balun or (MJF ATU only) via the internal Balun.
- 2) Connect the ATU 'TX' connection to a FT1000 MK5.
- 3) The FT1000 MK5 internal ATU is switched OFF.
- 4) Transmit at 20 watts to force the ATU to tune.
- 5) Record the final SWR as seen on the FT1000 SWR meter.

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Observations

Frequency MHZ	MJF Tuned SWR	MJF Tuned SWR	LDG Tuned SWR	Notes
	Internal Balun	LDG Balun	LDG Balun	Power - 20 Watts LDG Tuner set to tune for SWR of 1.5 MJF Tuner set to tune for SWR of 1.5 Both Tuners connected to ground via grounding point on Tuner
1.910.00	1.2	1.1	1.2	
3.550.00	1.1	1.1	1.4	
7.025.00	1.1	1.2	1.0	
10.110	1.2	Fail	1.5	
14.040.00	1.5	1.4	1.3	
18.085.00	1.2	1.1	1.1	
21.040.00	1.1	1.4	1.3	MJF Tuner struggled on this band, but eventually found a match.
24.910.00	1.2	Fail	1.8	
28.040.00	1.4	1.2	1.2	
29.300.00	1.2	Fail	1.8	

Conclusions

- 1) Both tuners could match the Doublet on all bands when using the Balun supplied with them.
- 2) The MJF-933 could not match some bands when the LDG balun was used instead of the internal MJF balun. .
- 3) The LDG never "struggled" to find a match whereas the MJF tuner sometimes could not "get" a match and a second attempt to find a match was required.

Notes:

- 1) The Martin Lynch website shows the MJF-933 ATU priced at £209.94, the LDG Z-11 Pro priced at £139.95 and the LDG balun priced at £29.95. The the LDG package (tuner plus balun) is £169.90. So the LDG package is £40 cheaper.
- 2) The MJF-933 is rated at 150 Watts CW, 300 Watts PEP. The LDG Z-11 Pro is rated at 100 Watts CW or 125 Watts PEP.
- 3) The MJF-933 has a LCD display that shows Frequency, Matched Forward and Reflected power and various other paramters. The LDG has a simple LED display.
- 4) The LDG is much smaller, less than one quarter of the size of the MJF.

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Killer Feature

I think the Killer feature of the LDG is the fact that when it is in "standby" it only draws 25 microamps. It only draws substancial current when it is tuning. This fact coupled with it's small size, allows the unit to be mounted at the top of a mast (in a suitable waterproof box) along with a battery. This what RADARC did this year at NFD and it was very successful.



Jim Carter - G0LHZ

Very many thanks to Jim for producing the article, I decided to leave well alone at this late stage so this is why there are 2 parts to this newsletter. Enjoy Ed.