HARCNEWS

Newsletter of

Horsham Amateur Radio Club

Est. 1938

G4HRS

March 2006

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Published by Horsham Amateur Radio Club

Notes From The Editor

I would like to start by apologising to some of the readers of HARCNEWS who found the print quality of the February edition not quite up to standard, this was due to some hardware issues, which have been addressed and will be rectified in due course.

This month we have another one of our new features 'Guest Writer'. Please see if there is someone who you know that would like to write an article for this feature.

However, you are welcome to send in articles of your own. If you would like to see any particular interest covered in the newsletter then do let me know and I will see what can be done.

Write up's of club meetings are prepared by either Alister G3ZBU or David G4FQR whom I send thanks to. I have received emails praising the new look newsletter and thanks for that too!

See you next month!

David G4JHI

+++Stop Press+++

It has been announced that from 1 October 2006, Ofcom will take over the role of issuing, renewing and amending amateur radio licences. The main change is that licences will be issued for life.

However, licensees will have to confirm their licence details every five years. Ofcom will also provide an online service for issuing electronic licenses. Paper licences will remain available for those without Internet access but they will be subject to an administrative charge.

A statement from RSGB general manager Peter Kirby, G0TWW said "Please be reassured that the hobby has not been deregulated and that all the safeguards the RSGB fought to retain are still in place and will remain so".

Source - Radio Society of Great Britain

February Meeting Review:

Arnhem and the WS68P,

by Wally Blanchard G3JKV

Wally gave a fascinating talk about the Allied wireless sets used during the Arnhem landing; it was full of interesting facts and radio experiments. It has recently been a popular subject, because suggestions were made that the communications equipment used was just not up to the job, for a variety of reasons.

The Allies hoped to end the war by Christmas 1944 with a series of daring attacks as far forward as possible. Unfortunately the Nazis did not wish to lose! A plan to attack and hold Arnhem by dropping a large number of paratroops was made.

A shortage of signallers meant that ordinary soldiers were 'volunteered' to do a week's signals course and learn something about radios, nets, procedures on 'phone, but no morse code. Certainly the lack of fully-trained operators was one factor. Wally built a transmitter from a circuit diagram and spent quite some time in making adjustments to give the optimum output in terms of power, modulation depth and distortion.

The interesting aspect of the transmitter design was the p.a. (power amplifier) stage, which was an ARP4 double beam tetrode of very high gain. It was grid modulated, so the connection to the grid consisted of r.f., a.f. from a carbon microphone and step-up transformer and negative grid bias voltage.

Tests into a dummy load showed the -12V bias was not enough for decent

modulation: -17V produced much better results.

The r.f. coupling capacitance was too small, but this is possibly because the 'P' version was specially designed to operate at lower frequencies (2MHz) for greater range.

Wally used a modern microphone incidentally. But when properly tweaked up, the circuit gave almost 100% modulation and even music sounded good, and power was higher than the 0.25W in the original specification.

The next area to investigate was antenna matching. At 2MHz the antenna would need to be over 100 feet long, ideally, but one would soon be spotted by the enemy and they would take immediate steps to prevent you from transmitting, permanently.

The man-pack set normally had an 8 foot whip aerial fed via a tapped inductor and series ammeter.

For the lower frequencies, a 12 foot aerial was supplied. It is not known how long the aerial was used in action because even an 8 foot whip could be spotted, so the natural tendency would be to use the smallest size possible.

Tuning up the antenna involved adjusting the inductor and a capacitor for maximum current,but if the set is being worn then its capacitance to ground will vary considerably, so the only way of doing it properly is to have either a ground connection or at least trail a length of earth wire along the ground.

No evidence was seen of any earth wires in the drawings and photographs of the time. This meant that tuning up was not really possible.

Wally then range tested the transmitter with 8, 12 and 66 foot antennae by very cleverly monitoring a tape recording made some time ago of a 'numbers' station. Some years ago, spies were fed their orders, which were sent as a long series of numbers.

If the received audio was fully readable, then the numbers written down would match those sent. If any numbers were unintelligible, then the readability would fall. This gave an accurate measure of the efficiency of the communications path.

The 8 foot whip gave about 3 miles, 12 foot about 5 miles (the wanted range) and 66 gave over 9.

Intelligibility rapidly fell at these distances, and also it depended on trees in the way.

The set was built by Ecko and was not designed for parachute operation. This would have caused a fair number of reliability problems. The German's called our sets 'air boxes' because of the space inside.

The reason for that is the British 'electronics' industry was geared up to making large radiograms and televisions, not compact, robust, military equipment that the Germans had spent a lot of time and money designing whilst planning for war. (This was cheating!)

Wally was given a 19 set. This is much larger and gave out about 2.5Watts from an 807 p.a. valve.

The design was very advanced for the time as it had a single tuning dial, and a 200MHz UHF 'B' set for tank to tank communications.

The stability of the oscillator is excellent.

It took Wally a while to get the set working as many capacitors had failed and resistor's values were oo high. Some of the front panel labels are in Russian. Many 19 sets were sent to Russia during WW2 hence the labels. However after the war and into the Cold War, 19 sets were still being made with Russian labels!

Recently in RadCom a technical topics item suggested that valves oscillators are inherently more stable than transistor ones due to smaller internal capacitance changes.

But times have moved on and some transistors have much lower capacitance and can oscillate at far higher frequencies, however nowadays an oscillator is best-built using DDS and phase-locked loops for many reasons including cost.

A museum at a hotel in Arnhem where HQ was set up has some reconstructed rooms showing what it would have looked like and is well worth a visit. An excellent talk.

Guest Writer

A day in the life of a Sunray

By

John Weston G3LYW

Actually it was Tuesday 6th December 2005. I awoke to hear the rain beating against the windows, it was 4am. I usually wake up at this time; have done so for years now.

The hall clock struck with its eight chimes, it has a double chime and always fools me into thinking that it is 8am. I start to think about the day ahead, lots to do, but first of all I have to get up, wash, shave etc.

A cereal breakfast is prepared by 5.30 am, eaten and the washing up done by 6.30 am. Now it is time to get things ready for the day. The previous evening I prepared work for lessons at school, must not forget the new circuits for the Lower 3 lads, they are anxious to complete their projects for Christmas, small presents for Mums and Dads. I teach Electronics and Engineering right through to Upper 6.

I listened to the local BBC radio station at 5am to get the weather for the day, the rain on the windows said it all, but the man on the radio said that it would clear up by the afternoon, I wonder, I hope that it does as today is CCF day at school, and I must try and complete the re-routing of the open wire feeder from the antenna to the new radio room.

Now then, must make sure that I get all the tools up together in order to do the job, screwdrivers, large and small, side cutters, pliers, solder, gas blowlamp including the spare gas cylinder, oh and the gas lighter with it's spare butane gas refill.

I had a lot of funny looks when I bought six spare cans of butane gas last year, some people seem to use them for other purposes, I am still on the original can!

It is still pouring with rain as I load up the old 39-year-old car; it is a Triumph Vitesse, 2-litre job, my only transport. I keep most of the tools I need for CCF work at home as I also use them to maintain my antenna farm at home.

School starts at 8.30 am or should I write 0830 hours, masses of children everywhere, we have 550 on the books, a lot of them boarders.

After assembly we get down to work, well I do, and most of the children do as well, but there are some who are still half asleep, having been up nearly all night on the Internet, definitely not a good thing to do. I prepare for my lessons if the first period is not for me, well I am supposed to, but really I am looking out of the window wondering if that man on the local radio was going to be right with the forecast, it certainly does not look like it.

The morning drags on, still pouring with rain, but over to the west I can see a very small patch of blue sky, perhaps he was right after all.

Lunchtime arrives, well for some of us. With 550 pupils plus about 100 staff including all the admin people, lunch takes four sittings; if you are in the last sitting the menu has somehow got smaller, much better to get in on the first or second sitting if possible.

CCF parade starts at 1420 hours, you see I do know the 24-hour clock system; well I am ready and on parade, but where are all the cadets? Eventually at 1430 most of them have arrived, some 200 of them, some looking very smart, some not so smart, must have a word with the

CO about them, they, the not so smart ones, are not in the Signals platoon.

The weather has improved a lot, just a little drizzle, now then where are my cadets? One of my Corporals reports that the two Sergeants will not be on parade today, they were suspended for smoking, but are in fact back at school, but they are taking exams.

Oh dear, well where is Cadet Chris, "well sir, he is not feeling too well and is with Sister in the sick room", sounds interesting, but had better not make known my thinking, I am sure Chris would rather do CCF if he felt well enough, another night on the Internet I expect.

Well, I suppose one cadet is better than none at all, bad time of the year to be messing about with antennas, carol practice, exams, and Sister's nice warm sick room with the orange drinks thrown in.

So, I get out all the tools for the feeder job, you remember, the extension and re-routing of same. With only one cadet, the formal inspection is soon completed; the other 200 or so have gone off to do their thing or things. The rain has stopped, and it is all systems go. Out with the ladder, the ground is saturated and covered with leaves, very slippery, must be careful, Health and Safety at work and all that. No good reading all that stuff if you do not take account of it on the job.

I make a start to refix the supporting brackets that I made up some eight years ago, for the open wire feeder. They are made of aluminum, with brass fixing screws, none of it rusts, so it was easy to deal with.

"James", that is the cadet's name, the only one I have to help me, "can you hand me the big screwdriver please". I look down from my lofty perch, but he is nowhere to be seen. I curse under my breath, as I descend to ground level, slipping up on the wet leaves, and dropping one of my brass screws, where are the spares, James knows but where is he?

By this time the drizzle has started again, and I look for James. He appears on the horizon, "sorry sir, I was

taken short, but did not wish to disturb you as you looked so busy on top of the ladder, so I just went, hope that was ok" I smile weakly, well what else can you do in such circumstances?

I manage to fix a few more brackets, drill a few holes in the side of the wooden hut to get the earth wire and the open wire feeders through to the new radio room, but by this time the rain is pouring down again, that BBC man ought to get the sack, "clearing up by the afternoon" he said, he will have to go!!!

I take another look from my perch, and sure enough Cadet James is at his post, his head bowed with the rain dripping off his beret, making large ripples in the puddles on the leaves.

It is at this time that I notice other ripples in puddles, rainwater is pouring from me also, when you are really into doing a job properly, you do not notice these discomforts, I am sure you have had the same experience, on second thoughts perhaps not.

James said not a word, but I am sure he was feeling the same as me, a bit fed up, and wondering why we were doing all this work in the pouring rain. Just to remind you the reader, it was to try and get the CCF station back on the air by the end of this term, what a hope!!!

The admin people or top brass just said, "move to the new room, Sunray", little did they know of the work involved, they do not understand electromagnetic radiation!

Due to the rain, progress had been a lot slower than anticipated and time was marching on, it was now 1600hrs, and getting dark, so I told James we would pack up.

His face lit up, and I was all ready to get ready to go home in my soaking wet clothes, when out of the blue James said "oh, by the way sir, the CO asked me to tell you there was a meeting of all Officers at 1630hrs, to thrash out what we were going to do next term".

You can imagine my thoughts at the time, my resignation will be in the CO's post box tomorrow morning! I thanked Cadet James for all his help, pity he did not pass on the message about the meeting sooner; being taken short must have preoccupied him.

The meeting started 15 minutes late, not my fault; I was there on time in my "new" wet uniform, big puddles forming on the CO's carpet. I nodded my head at what I hope were the appropriate times, and made a few gurgling noises when asked to comment on the program for next term.

If the Signals Platoon is closed down next term you will know why!!! Eventually the meeting closed at 1730hrs, and I made my way home, the car seats were soaked, I was soaked.

I made a hot drink and changed clothes, and began to feel a little better, but then I had to start thinking about lessons for tomorrow, electronics and engineering, CCF would have to wait; it was after all a week away.

So there you have it dear reader, why do we put so much effort into the CCF, well, because we are so enthusiastic, and wish to do all we can to "fly the flag", Sunrays all over the country are doing the same, and I wish them and their cadets well for the future.

I must admit that after my experience detailed above, I feel like a very small Moonbeam, rather than a Sunray!

Sunray 71B

(A Sunray is the name given to the officer in charge of a Signals Unit)

(CCF = Combined Cadet Force)

HARCNEWS is printed by Lindfield Communications

Specialists in Telecommunication Systems

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FOXHUNT FOXHUNT FOXHUNT FOXHUNT FOXHUNT FOXHUNT

The next HARC 2 Metre Foxhunt will take place on the Morning of Sunday March 19th.

Details are as follows:

Starting point is Mannings Heath common. NGR TQ 206 290. Landranger 187.

N.B. The Fox will be located on OS Map 197, Chichester & The Downs.

Start time is 10:00 AM
Transmissions will be every 10 Minutes for 2 minutes

Frequency is 144.725 FM

Callsign is G4HRS/P operated by G3WZT

Last transmission will be at 12:00 PM. Continue if requested for 30 minutes.

Envelopes will be handed out at the start with details of the Fox's lair and the "watering hole" for lunch.

Please make sure that you have plenty of fuel in your car!!

I look forward to seeing you on March 19th.

73 John G3WZT

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TV Addict

If you like your gadgets then this is the show for you! The Gadget Show is a weekly look at many different types of gadgets, presented by Jon Bentley, Jason Bradbury, Suzi Perry and Tom Dunmore.

Each week you will see all the latest new gadgets often with some history about them and the most important part how to make the most out of your gadgets. Recently Jason had to live for 24 hours without any of his gadgets and when time was up it was certainly clear that he did miss them!

In a Gadget Show poll these were the top four items that viewers would miss: No 1 PC, No 2 TV, No 3 Mobile Phone, No 4 Ipod. In another edition Jon tested out different digital cameras. The programme is screened on Five Mondays at 7.15 PM with a repeat broadcast Saturday mornings. If you have not upgraded to digital TV yet don't despair!

No specialist gadget is required apart from a TV aerial covering channel 42, vertically polarized and pointing towards the Reigate transmitter! The signal reaches Horsham in favourable locations although some screening may be required in the direction of Basingstoke!

Please send contributions for the April edition of HARCNEWS to the editor by 17th March.

Any comments, letters or new ideas very welcome especially for the new features of this newsletter.

For items sent by email please send to this address:

harc.news@g4jhi.co.uk

Web Trawl

Maidstone Amateur Radio Society has been running since 1937 and today hosts a site with a multitude of information. Items found here include the society history and details about their events including photos.

Looking further into their site came pages about digi modes, mods to rigs and links to sites about Iron Powder Cores! Recent information has been added about Packet Radio and there are links to other useful sites. Finally one of the most interesting pages is Antenna Corner, which not only has regular aerials but all the details you need to build variations of the G5RV.

The pages concerned give full build details on the G1RV, G4RV, G6RV, G7RV and G8RV antennas! If you have the space then give one of these aerials a go and you will be pleasantly surprised!

www.g3trf.org

Radio Diary

Mar 2nd Club Night: Junk Sale

Mar 6th 80m Data Club Championship 20:00 - 21:30

Mar 9th Commitee Meeting - QTH of G7EYL

Mar 12th Bournemouth RS 18th Annual Sale

Mar 15th 80m CW Club Championship 20:00 - 21:30

Mar 19th HARC Fox Hunt

Mar 23rd 80m SSB Club Championship 20:00 - 21:30

All above times are UTC

Club Meetings and socials start at 8pm