Chelmsford Amateur Radio Society

Newsletter

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Next meeting:

Xmas Social & Quiz by CARS members, 1st Dec - 7.30pm, Oaklands Museum

Inside this issue:

Club Nets - Tuesdays 20:00h

Net Controller: Carl, G3PEM

#2 - GB3DA	8th December
#3 - GB3ER	15th December
#4 - 80m 3.756MHz	22nd December
#5 - 160m 1.947MHz	29th December

Essex Ham Net

Mondays 20:00h GB3DA

Christmas again, and a load of baubles in my stocking!

Contact details for the newsletter: editor@g0mwt.org.uk

Editorial

Hello again, and welcome to the latest edition of CARS Newsletter. It seems that the feedback received so far has been (mostly) positive, so I hope to continue as I started, in a slightly irreverent vein.

At the time of writing, this issue seems to be a bit of a Mrs. Dials Dairy (younger readers - you won't know what I'm talking about, so ask an adult) as it seems to consist of me, my anecdotes and experiences. Whilst I don't mind writing them, they are not necessarily all relevant to amateur radio although they do have a bias toward electronics in general. If you don't like that, then the cure is a simple one: send me some copy!

So: It's that time of year again. Ho ho ho! What's on your wish list? Perhaps you could send me a review of some kit you have bought recently, or that you find in your stocking. Traditionally, the kids' toys have a huge appetite for batteries and it's always those that get forgotten, isn't it?

I have been having some email correspondence with John, G8DET lately and there have been some interesting threads. One result of which, was to remind me of a large survey of different manufacturers' AA cells that was carried out by Bit-Box. The findings are very interesting, not least because the survey finds that the clear winner in value for money category in most cases, is discount bulk buy alkaline cells from such as Ikea and Home Bargains. It's well worth looking at the survey: http://www.batteryshowdown.com/ and deciding for yourself.

Colin, G0TRM also sent me links to two web sites with masses of 'antenna' information that will be of interest to other members:

The "best" random wire antenna lengths - random wire lengths you should and should not use! www.hamuniverse.com/randomwireantennalengths.html

M0MTJ amateur radio antenna pages www.mds975.co.uk/Content/amateur_radio_antennas.html

He found both sites full of useful information which will probably appeal to all. Thanks for that Colin!

The CARS calendar year ends once again with the Social and the legendary mince pie mountain and, as I haven't attended one of these before, I will look forward to it.

Steve, G4GHO, aka **Ed**.

Dates for your diary

Please note, the dates may be subject to change...

1st December Club night	Meeting - 'Xmas Social & Quiz' - by CARS Members
Mon. 7th December	Advanced Course Examination at Danbury Village Hall
Sat. 12th December	Waters & Stanton Open Day - ERG, TARG and CARS Training will be there
2016 - Schedule	
Tue. 5th January	Meeting - 'Meteor Detection using 2m Amateur Radio' - Peter Meadows, M0ZBU
Thu. 14th January	Six week Foundation course begins. See www.g0mwt.org.uk/training
Tue. 2nd February	Meeting - 'Satellites' - Steve Hedgecock M0SHQ
Thu. 18th February	Foundation Course Exam at Danbury Village Hall
Tue. 1st March	Meeting - 'Planning Permission' - Peter Davies M0PSD
Tue. 5th April	Meeting - '2MT Writtle - The Birth of British Broadcasting' - Tim Wander, G6GUX
Sat. 23rd April	GX0MWT - Operating at Sandford Mill for International Marconi Day

December Meeting - Xmas Social

By CARS members

The December meeting has a seasonal flavour! The event is intended to be a social occasion and will include mince pies. Features include a special quiz with some seasonal questions and some hands-on items including the 'tune-a-dipole' game.

Bring along your partners and dress up accordingly (and also bring along you own eats/cakes! if you want) - and have fun!

After the break there will of course be the famous CARS raffle.

Subs: Not renewed yet? A reminder that this is also the last meeting before the membership expiry deadline on January1st, so you will also have an opportunity to renew their subs - or you can now pay online via PayPal.

And the fun continues!

Come along and add to your wish list, (or buy your own stocking fillers - you can always try telling your significant other that there really ***is*** a Santa Claus...)

November's Meeting - 5MHz NVIS Talk

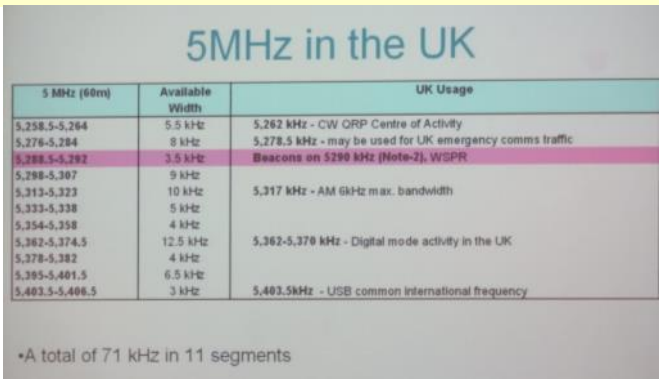
With the 2015 World Radio Conference (WRC-15) in progress, the November meeting was a highly topical talk on 5MHz Propagation by Marcus Walden, G0IJZ, followed by a 5MHz WRC-15 update by Murray, G6JYB.

Marcus is a corresponding member of the RSGB Propagation Studies Committee and has analysed years' worth of data from the UK 5MHz beacon network and Chilbolton ionosonde, enabling him to write some key papers on the topic.

Vice President Murray, G6JYB opened the meeting with apologies from the President and Chairman and with a few notices of the Society's upcoming activities. He then introduced the speaker Marcus Walden, G0IJZ who would enlighten us on the progress of the 5 MHz NVIS beacon experiment. NVIS stands for Near Vertical Incidence Sky wave and is achieved by having high angle radiation from the aerial giving an operational distance up to 500 km with no skip zone. To obtain this high angle radiation, the aerial has to be below a quarter wavelength from the ground.

The 5MHz band is mainly occupied by the military & humanitarian agencies and, in the UK, selected band slots are allocated to radio amateurs holding a full licence. The radio amateur slots were first allocated in

the UK in 2002 after representation from the RSGB. Ofcom issued NoV's to amateurs holding Full licences for propagation studies. The experiment was to produce propagation data that could be compared with and validate the existing propagation prediction models to the benefit the humanitarian agencies.



5MHz in the UK

5 MHz (60m)	Available Width	UK Usage
5,258.5-5,264	5.5 kHz	5,262 kHz - CW QRP Centre of Activity
5,276-5,284	8 kHz	5,278.5 kHz - may be used for UK emergency comms traffic
5,288.5-5,292	3.5 kHz	Beacons on 5290 kHz (Note-2), WSPR
5,298-5,307	9 kHz	
5,313-5,323	10 kHz	5,317 kHz - AM 6kHz max. bandwidth
5,333-5,338	5 kHz	
5,354-5,358	4 kHz	
5,362-5,374.5	12.5 kHz	5,362-5,370 kHz - Digital mode activity in the UK
5,378-5,382	4 kHz	
5,395-5,401.5	6.5 kHz	
5,403.5-5,406.5	3 kHz	5,403.5kHz - USB common international frequency

•A total of 71 kHz in 11 segments

As well as data from radio amateurs who reported their reception signal reports to RSGB using SINPO reception code, three transmitting beacon stations on 5290kHz were built and installed for automated reception. It is the data from these that Marcus has analysed. The beacons are:

GB3RAL - Located on the RAL site near Didcot Oxfordshire [at present off air]

GB3WES - Located in Westmorland near Penrith Cumbria

GB3ORK - Located on the island of Orkney West of Kirkwall

Marcus then proceeded to explained by using plots of Ionograms of critical frequency from the Chilbolton Ionosonde. He displayed the graph of the critical frequency and described the ordinary wave and the extraordinary wave and how they affect the interpretation of the 5 MHz propagation model. He further explained the optimum working frequency and how 5 MHz propagation changes over time.

Carl pondering, and Brian puzzling during the talk.

He then produced several plots detailing the comparison of the data obtained from the monitoring of the 5 MHz beacons and the HF NVIS propagation predictions produced from the VOACAP and ASAPS software computer prediction models for mid-latitude 5MHz HF links.

This was an extremely well presented and interesting talk on the result of the 5 MHz experiment and the results should be of help to those agencies that have to set up links in an emergency. The work should also strengthen the case for a permanent amateur allocation in the 5 MHz band.

The evening closed with the presentation by Murray of a CARS Mug to Marcus, followed by our raffle.

Carl, G3PEM

And the winner is...

Skills Night - November 16th

Once again, the Skills Night proved very popular, with a record 93 people in attendance. When not attending to the needs of the antenna builders, your scribe was seeking advice from M0PZT on certain aspects of digital radio which, so copy is a little limited from me.

Peter, G0ZDB was moving so fast he was just a blur and, once again, his kit showed that stuff didn't have to be pretty; it just had to work.

ESSEX HAM Provided some of the pictures and there is a very good write-up of the Skills Night here:

http://www.essexham.co.uk/news/essex-skills-night-november-2015-wrap-up.html

Chelmsford Amateur Radio Society

G0MWT, GX0MWT, GB5HF, GB5SM, GB100MWT & M2T

CARS Skills Nights

Intermediate Practicals at Waters & Stanton, November 18th & 25th

Two who attended were from London SE9 & SE15; three, who passed their Foundations at TARG, were from Waters & Stanton and two were from CARS (both of whom where on the CARS foundation course in Sept 2015).

Peter, M0PSD, Chris, G0IPU and Carl, G3PEM were on hand to take the students through the practicalities. Peter and Chris worked with the students in the 'demo' area where tables had been prepared.

Food and drink were laid on and pretty much every creature comfort was provided. The students took it in turns to do the practical and receive further instruction on other aspects of the course.

At the other end of the premises, Carl gave a talk to an appreciative audience on the use of a heterodyne wave meter.

The next ***Foundation Course*** starts on14th January 2016. Places are still available and names and deposits are being taken.

The next ***Intermediate Course*** starts on17th March 2016 . Names & deposits are now being taken to secure a place. Places are limited.

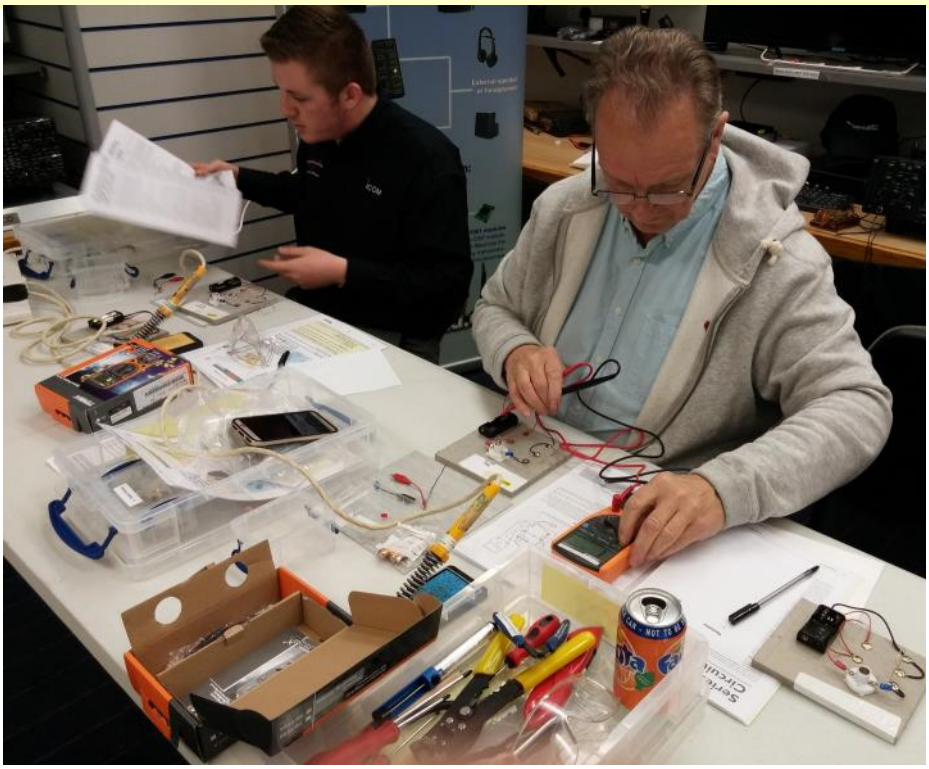
Peter, M0PSD

training2015@g0mwt.org.uk

The equipment that is provided for these courses all has to be organised. Someone has to collect, collate and distribute the equipment and then, at the end of the evening, the students would take their kits home with them to do their homework. These are returned the following week for assessment.

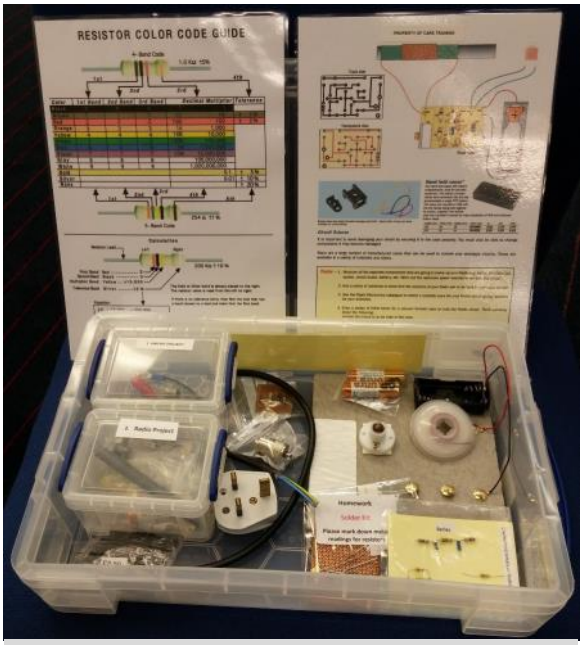
All the stuff that had been spread out on the benches was collected and put away. Soldering irons, fume extraction, meters, extension leads, build kits and spares (except for fuses to repair the multimeters!)

Oh - and the buffet leftovers.



There. That's a bit tidier!

For those of you who haven't attended these sessions, and when you see the results of the training group, please consider those who put the work in, to organise everything. **Ed.**



These kits don't put themselves together!

Before

After

Radio Waves

Now, I guess you're expecting a master class in propagation and antenna design.. Well you couldn't be further from the truth if you tried - this is more of a trip down memory lane...

Having only recently passed the foundation exam, obtaining M6 status and leaping head first into the Intermediate Practicals at Waters & Stanton (nice buffet by the way, Pete) it got me thinking about how radio in general shaped a lot of our lives (well, mine at least). Seeing all that equipment adorning the shelves whilst we grappled with the intricacies of wiring a 13amp plug, tuning a VFO and eating the mini pork pies, I realised that my interest was more deep seated than I thought.

I am at that age where I've seen the demise of the half crown, tanner, and the ten bob note... and learned at college how to connect 15mm metric plumbing to "old" imperial ½" copper domestic fittings – deep joy indeed but, going back a tad further, one thing in my younger days always stuck with me – listening to the radio on my pride and joy - a 6 transistor radio that I got one Christmas. I can't remember make or model, but it came in luxurious light tan leather case and had the standard cream coloured, poke in the ear type earpiece on a fragile bit of cable – I must have been 9 or 10 years old and the year was 1964.

Radio then was, for a youngster, quite boring: "This is the BBC Light Programme and it's time for Workers' Playtime". How dire that was for someone my age? The best bit was bedtime and by the light of the street-lamp shining through the window, tuning through the medium wave and finding Radio Luxembourg fading in and out (funny how it was just accepted that it did that – when I look back it was part of the charm) and some decent music to listen to.

But in 1964 things were about to change the way we listened to music forever. Mutiny was afoot - gone was the ghastly "Light Programme" and stuffy announcers in bow ties and evening dress – the death of mediocre radio was nigh and, at a press of a button on March 28 1964, the one and only Radio Caroline was born on 199 metres (later changed to 259 metres) – 7 days a week of continuous pop music from 6am 'til 6pm at night, broadcasting from a 702 ton converted Danish ferry the "Frederica" anchored 3 miles off the Felixstowe coast in no man's land. Pirate Radio was born.

The brainchild of one Mr Ronan O'Rahilly arose, so rumour has it, due to Radio Luxembourg not playing anything other than records from the EMI, Decca, Pye and Phillips labels, and Mr O'Rahilly having a vested interest in one Mr Georgie Fame (Yeah, Yeah..) decided with some other investors to do something about it.

Interestingly, one of the investors was one Carl "Jimmy" Ross of the famous Ross Frozen Foods, who owned a trawler with the name of "Ross Revenge" registered at Grimsby and, as a side note, was involved in the infamous cod wars... in its life as a trawler it landed one of history's largest catches of cod... Suitably jet washed inside, it became the final iteration of Radio Caroline's fifth and final home from 1983.

O'Rahilly named the original vessel "Caroline", allegedly after a visit to raise funds for the project in the States, after Caroline Kennedy, the daughter of U.S Presi-

dent John F. Kennedy. Its history was quite complicated; it was converted for broadcasting in Ireland at Greenore (owned by O'Rahillys father, no less). At the same port there was another vessel being fitted out at the same time - the "Mi Amigo", which became "Radio Atlanta" (latterly, O'Rahilly joined forces with Atlanta's owner and they became Caroline South and Caroline North respectively).

The history of Pirate Radio is way too lengthy to cover here but, suffice to say, it started a revolution in broadcasting; stations were popping up all over the place. Those not on ocean vessels, set up home in the war time sea forts dotted around the Essex coast and its seedier side of shootings and midnight raids to take control of rival stations was, I believe, what put the final nail in the coffin and resulted in the infamous Marine Offences Bill being pushed through by Anthony Wedgewood Benn (that's a name I will never forget).

Some odd facts which as radio amateurs we can but smile at: the original 199 metres, was in fact 197.3 metres (1520kHz). Caroline rhymed with 199... radios of the day had no digital displays; using an analogue rotary dial, this lack of precision allowed a bit of artistic licence with the frequency.

Caroline was the epitome of the Phoenix from the ashes, using 5 different vessels during its 1964 – 1990 lifespan.

The original Radio Caroline transmission output was around 10kw (later increased to 50kw) made possible by linking two Continental Electronics transmitters together. Funnily enough, I have read somewhere that most, if not all the transmitters used in the various vessels were sourced from the 'States, either second hand or new, so as not to arouse the suspicion of the UK authorities at the purchase of such a large piece of kit. Some of it was obtained from religious radio stations around the bible belt and some of them are still operational in countries as far away as South America.

The final Caroline (Ross Revenge) was purchased for £28,500 and had an operating mast 300 ft. above sea level (91m), the tallest mast ever fitted to a vessel.

The Radio Caroline theme tune was in fact sung by the Fortunes and was called Caroline, surprisingly enough, and I bet you are now singing it in your head...

During the Government's attack of silencing the Pirates, they managed to use one of the transmitters confiscated from another pirate station. The Government used it to jam the pirate's signal as they didn't have anything suitable to do the job – so much for interfering with essential Coastguard frequencies.

Caroline has transmitted again using the Restricted Service Licence broadcast, which was limited to 1watt on 1278 kHz back in August 2004, while berthed at Tilbury, and funded by the National Lottery.

The Ross Revenge is currently moored on the River Blackwater in Bradwell in Essex. At its peak Caroline had an audience of 10+ million listeners and was, without doubt, the start of a revolution that the government of the day tried desperately to quash, citing all sorts of technical reasons they should be silenced, e.g. the previously mentioned interference with Coastguard communications,

Pirate Radio lives on though. As I drive round London (when I have to) putting the radio on scan, you can't find an empty slot on the FM band for wannabe pirate stations and their "DJ's" shouting down microphones from their bedrooms, antennas dropped down drain pipes in flats and using microwave repeaters to evade the men from the ministry – all very clever. The "proper" pirates as I like to call them though, must have had nerves of steel; picture a vessel with no engines, anchored down and being hit by North sea gales whilst still transmitting, a 300 ft. mast swaying from side to side and finally falling overboard, listing at 15 degrees, taking on water, running aground... Sure, the modern version of the Pirate is technology savvy, but its presentation is raw to the point of excruciating, and the most they will ever come to proving they had the same dedication to their music is when mum calls them down for dinner and they say "I'll be down in a bit". Let's face it, it lacks soul and vision - anyone can do it – the pirates gave us a way out from the established formalised broadcasting; it was fun, fresh and most of all spoke to a generation and gave broadcasting the kick up the established backside it so needed.

Nostalgia just isn't what it used to be.

Ray Shaves, M6GVE

Got the wind up?

I initially had my 10m fishing pole vertical attached via a couple of bungee cords to a length of 1" aluminium angle that was pushed into the ground as per the vendor's recommendations. Either the bungees gave and the antenna slipped out of the "V" in the angle, or the angle simply worked loose in the ground. I felt a longer piece of angle iron would do a better job so that was duly hammered about 0.5m into the ground and the pole attached. Cable ties seemed a good bet, but the pole slipped down it so I wrapped the pole with pieces of redundant bicycle inner tube overwrapped with self amalgamating tape. That solved the friction problem, but the angle iron bent in the wind and the twist 'n' lock pole sections slipped down with time.

Next, I fixed the pole to my pergola. I cut a couple of wooden "V" blocks and screwed those to one of the uprights, using the same inner tube/ amalgamating tape as a friction lock. I then thought about fixing it with 2" Velcro and this has proved to be a very good solution. If I need to get it down, I just release the Velcro straps and do whatever is necessary, then just replace it. I also put a metal bracket just under the pole to help take some of the strain, but that wasn't really necessary and was only added as an afterthought several months afterward.

The pole sections were fixed into place with small strips of amalgamating tape wrapped around the joints . After these were applied, small cable ties were placed over the tape just above the joint seam and this has also proved to be a good solution. The antenna has now been up for over a year and has withstood the gales of both last year and the last month. The tip of the antenna bands over almost horizontally in the strongest gusts, but all seems well.

One evening, whilst I was watching for the ISS overhead, a flight of ducks fell foul of it. Whilst taking their evening constitutional from the lake at the end of our garden, one of them collided with the tip of the antenna. It made a loud bang and shook like a jelly, but it must have sounded worse than it was, as no feathers were apparently dislodged and the drake carried on as if nothing had happened!

I have also found that tensioning my long wire with 100lb fishing line is a good bet. It is slightly elastic and allows the support to give a little in the wind. I believe this helps to prevent breakages and, again, allow for high winds without having to resort to spring tensioners or weights and pulleys.

Ed.

Marconiphone Re-launch

Found on the web, after being tipped off by Murray, G6JYB, this (massaged) press release to revive a long-forgotten name. It would be nice to see it back on the shelves and, if the premise to challenge "established brands" with "uninspiring products" bears fruit and the Marconi name once again stands for innovation then I'm all for it. If, however, It is just re-packaging mass-market chipsets with faux "Bulldog Britain" wrapping, I shall feel all the sadder.

Ed.

Reading, UK, 23rd November 2015: Bullitt Group, one of the fastest growing and largest privately owned technology groups in the UK, has licensed the Marconi brand from Ericsson to launch a range of DAB radios, rejuvenating the 'original' radio brand.

Guglielmo Marconi, widely recognised as the pioneer of wireless communication, set up a factory which played a key role in British communications during the First World War. The brand helped form the BBC in the 1920s and went on to become one of Britain's most important space and defence systems providers.

Bullitt will help Marconi once again become a key player in the radio space, challenging more established brands that have dominated retailers' shelves with uninspiring products. Bullitt will design and manufacture a range of competitively priced DAB radios that will combine quality styling with British company heritage and will be sold globally across all the DAB/DAB+ regions.

Dave Floyd, co-CEO of Bullitt Group said: "Over two million DAB radios are sold in the UK each year. Partnering with the Marconi brand gives Bullitt a hugely strong platform to enter that market."

Floyd continued: "As with all the brands in our growing portfolio, we will design, manufacture and distribute a truly differentiated product range that will deliver on the promise of authenticity and heritage."

"With Bullitt's existing partner network providing scale and reach, we plan to rattle the cages of the more established, but increasingly complacent, consumer radio brands."

BULLITT

Nostalgia

I was having a clear-out the other day and came across a couple of fuzzy pictures of a project I had made sometime in 1979. At least, that is the date stamped on the back by the processing house. It was a crystal set that was powered off-air. I lived in Crawley in those days and it wasn't a million miles from the BBC's Crowborough transmitting station on 648kHz.

The set had two tuned circuits - one tuned to 648 kHz and the other tuned to anywhere else in the medium or short wave band you could manage. It had a built-in ATU derived from the Clansman auto ATU that was paired with the RT321 HF transceiver. The main tuning capacitor was a 5nF variable (no, that isn't a misprint, it was made from what looked like a series of stacked Polyvar-icons that could be connected in parallel as necessary). In an effort to get the maximum possible Q out of everything, all coils that were suited to the process were Litz wound on ferrite pot cores and vacuum impregnat-ed after ovening to drive off any moisture there may have been. A large array of di-odes, including some rare and expensive exotica, were tested for the lowest possible voltage drop and detection efficiency.

The idea was that the World Service signal would be picked up and rectified to drive an amplifier. That consisted of a single germanium transistor with an element of feedback (both intentional and stray) that proved hugely beneficial as a Q multiplier. It's not that many years ago now, that I threw out the circuit and instruction manual I drew up as background for a constructional contest (which I won, incidentally).

I'm racking my brains now to try and remember what all the plethora of knobs and dials were for (and they were all functional). I certainly recall it had a reduction drive on the main tuning dial and that wasn't just for show! Bandswitching was likely. The ATU was essential and a certain amount of fiddling was required to balance the requirements of sucking the right amount of power from the air and allowing the main tuning to do its job elsewhere.

There was enough power drawn from the aether to activate a 20uA movement S-meter that was re-annotated "Smoke Meter" and calibrated in a scale ranging from "Less" to "Lots" (and I think there was even a sensitivity control). There was a club crystal set "shoot out" at a SWL friend's QTH at Turner's Hill that was even closer to Crowborough - probably about 15 miles distant, as the crow flies, and the results were impressive, I was told. Unfortunately, I wasn't present at the final assessment, for reasons that are now obscure. Hey, ho.

It must have cost the company I worked for at the time a small fortune - not just in my time and the materi-als, but that of all the other interested parties who helped and encouraged me *in obscura*. It was near the beginning of my career in electronics and I like to think I was using it as an education tool. I certainly did benefit from it! Happy days!

So: What have ***you*** made that you were happy with? Please let me know...

Oh - and the headphones were a re-wound pair of Hi Z telephones I also made for the job - Ed.

Q signals for the Modern Age

A few new Q signals that may be useful on today's bands, shamelessly ripped off from CARA News…

QKQ - Keyboard Quit –I must shut down my station now, as my keyboard is on the blink and I don't know how to use anything else.

QCS - Contest Starting - Please be informed that I am keeping this frequency for the next 48hrs and any nets or rag chew here will be obliterated by the signals from my super contest set-up.

QRF - Restricted Frequency - This frequency belongs to the Cuss and Carp Group. If you don't use language that would make a sailor blush at least every two minutes then you should QSY.

QCL - Computer Logging - Don't bother sending your name, QTH, social security number, or blood type because I got all that from my logging program.

QPD- Processor Dependent - Sorry OM, but I am so used to hearing everyone talk with their processors set on stun that I can't understand a clear signal.

QWH - Wrist Hurting -1 can only send for 5 minutes because my Super Send SX-1000 keyer is broken and this straight key is killing my wrist!

QNC - No Code - Sorry old boy, but we don't know the code so quit QRM'ing the phone net with your silly dit-dit-dit, dah-dah-dah, dit-dit-dit.

Free: Solartron Osciloscope

This is a heavy, almost all-valve dual-beam instrument, considered to be portable in the days when most scopes went round on trolleys. It works well, although its specification is limited by today's standards. It has a 'Mainframe Unit' containing the tube and power supplies. The remaining units are plug-in assemblies. This oscilloscope is fitted with a 'Wideband Y Amplifier' (15MHz bandwidth) on Beam 1, a 'High Gain Differential Amplifier' (75kHz bandwidth) on Beam 2 and a 'Sweep Delay Timebase' unit. It is fitted with SO239 sockets on the Y-inputs and uses 4mm wander plug sockets for minor functions. It comes with a spiral-bound workshop manual, containing all circuits and maintenance procedures.

Collection only. **John Roe, G4IMS**. Tel: 01245 420564

For Sale

HEIL Sound Pro-Set KW Headset with mic (£160 new) ***only £85***

Andy, G0IBN, goibn@kersey1.freeserve.co.uk

Remember this?

I wrote about this dummy load in the newsletter last year. I had described its performance and the fact that it was out of spec. at much above 180MHz, despite the fact that it was supposed to perform up to 800MHz. I also criticised the fact that the PL259 connector shell was fixed and the pin was turning in the body of the female connector as it was screwed in. It was, however, quite cheap and I didn't have an alternative to hand. Leaving those issues aside, some time after I bought it I used it at the advertised maximum power for the allowable time and was then disappointed to find some time later, that it offered a very high SWR. Disconnecting the load from the configuration under test, I could find no reason (at d.c.) why it should give such a bad result. Connecting it up again showed the fault, and it appeared to be shorted, according to the load phase readings.

At first, I thought I had blown it up, but that would have resulted in an open circuit, surely, unless the resistive element had melted and fused. After a little tinkering and prodding, I realised that the centre pin was mobile in the connector PTFE insulator and could be turned in the housing. Realising also that this must be a direct artefact of the pin being turned with the connector body, I cursed the manufacturers and the fact that I hadn't returned the product as I had originally wanted. I then found that if I re-melted the solder in the centre pin, the connected wire popped out by a millimetre or so and the short disappeared, only to reappear a short time afterward as the load was again pressed into service. As it was worse than useless anyway, current EU consumer rules had not come into play, I had started to monkey with it and it was therefore past the point where I could (or should) have returned it as faulty, I resolved to take it apart to find out what was in it and why the fault should occur.

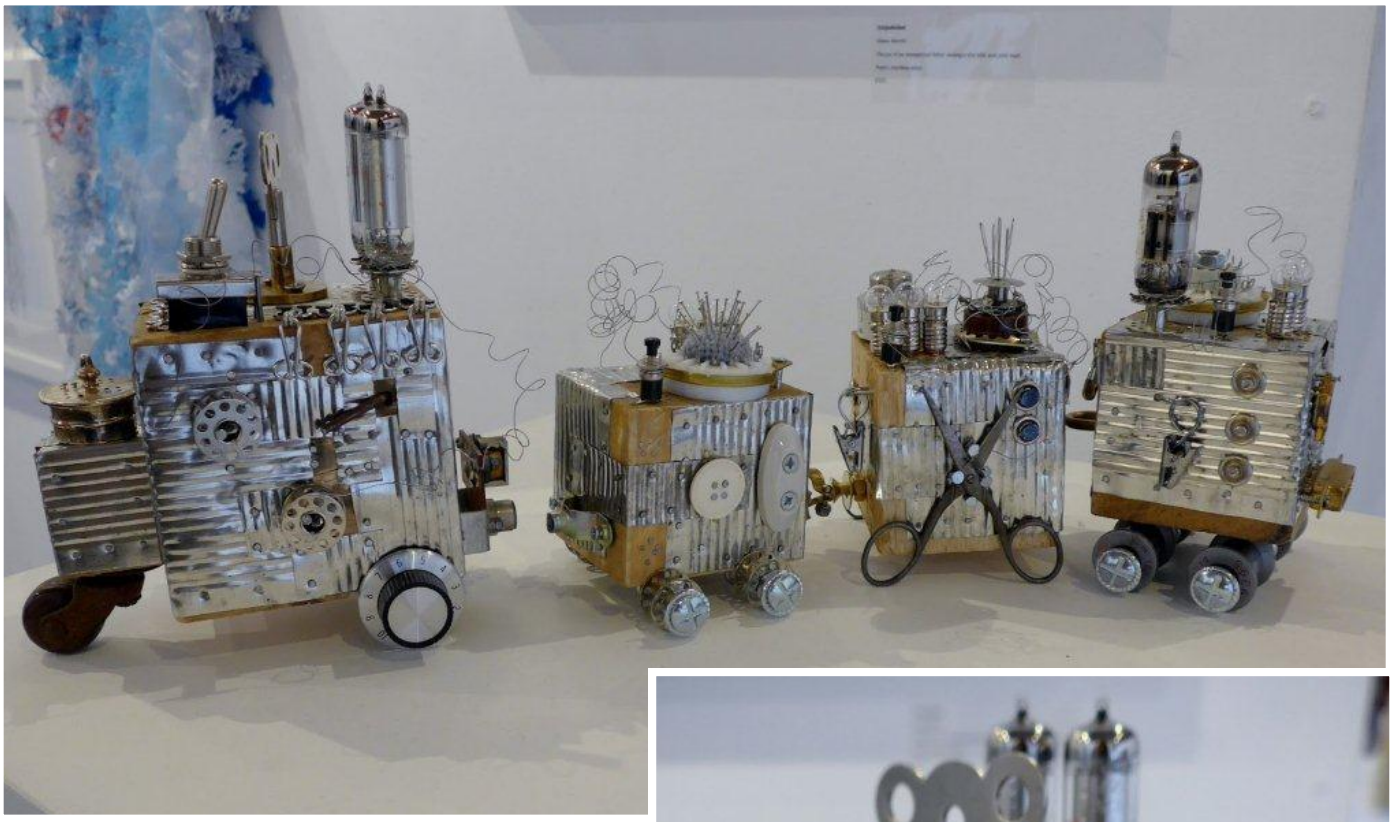
The connector body and terminator plate at the other end of the load were pressed into the aluminium "heat sink". There was no way I could get any reasonable purchase on either of these items, so I drilled a couple of holes in the terminator plate to see if I could get it out by tapping the holes and drawing it with some screws. The plate proved too stubborn to remove, so I hacksawed off the connector to release the centre pin. That didn't help, as I could see the resistive element, but still couldn't punch out the end plate. Finally, I put the whole thing in the lathe and turned down the end plate to a thickness where at last, I was able to rock it using various levers, and pull the load out. The results are shown here.

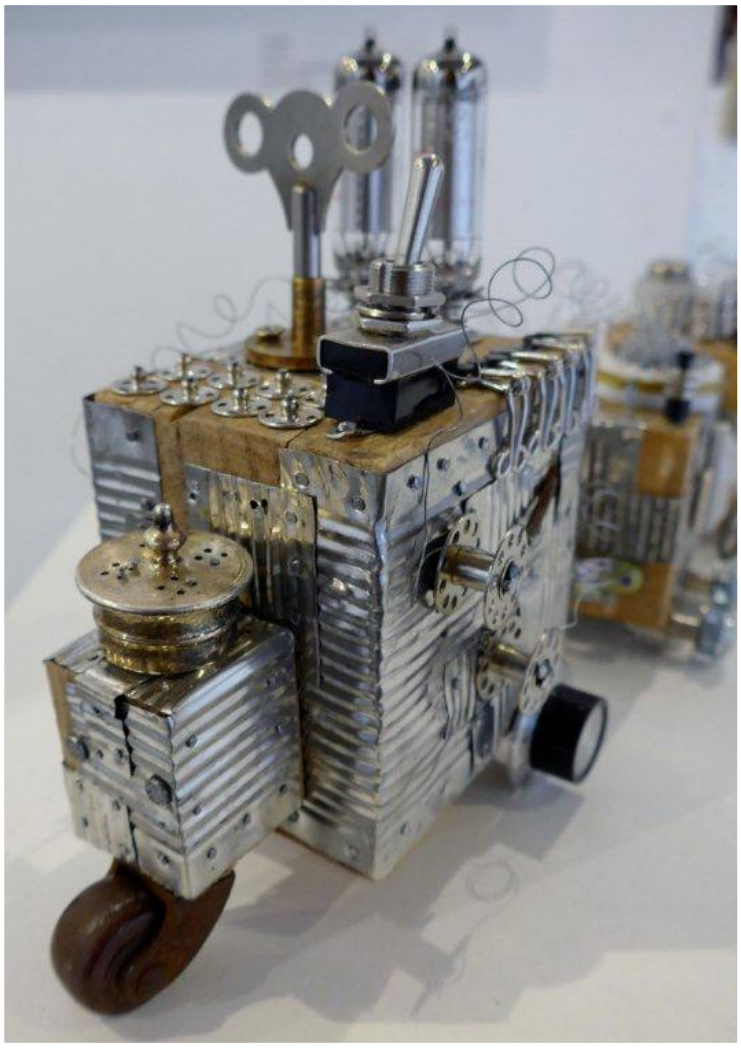
The parts are shown in about the same relative position as when they were assembled. The load element is, as suspected, a 47R carbon resistor which is soldered to the termination plate. The resistor lead is too long at that end, but too short at the connector end where it solders into the pin. Perhaps this was the reason that the resistor end cap was taken too near to the connector body and thus eventually shorted as the pin was rotated during use.

The moral of this story? You get ought for nought, and for me, it's just confirmation that the products this company sell are to be avoided.

Ed.

Tailpiece





Works of art.

Mara and I went to an art exhibition that she had some links to. I was rather taken by the re-use of some old valves and other electrical items such as knobs, switches, plugs 'n' sockets, knobs and dials, in a completely non-technical fashion.

They were interspersed with various other random household and dressmaking objects and the whole looked rather good - I would even have appreciated it on my mantelpiece.

Mind you, even if it was for sale, I wasn't going to shell out for a load of old junk…

Ed.