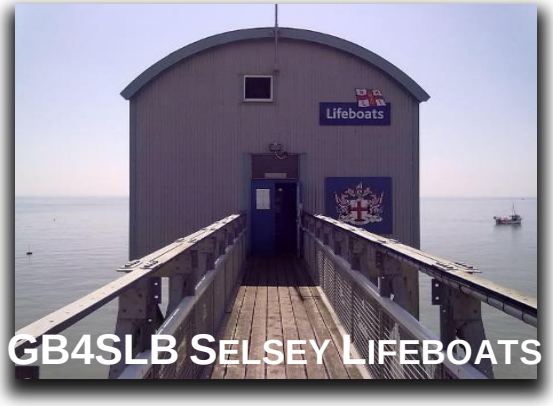
Ragchew

Bi-monthly newsletter for the Worthing & District Amateur Radio Club



GB4SLB SELSEY LIFEBOATS

Jonathan G1EXG's Homebrew Antennas for the WADARC Nets

MEMBER PROFILE

GRAHAM G4FNL

PLUS JONATHAN G1EXG'S SHORT CIRCUIT, EDMUND G0MNG'S MORSE DIARY, MAILBAG, COMMITTEE MEETING NOTES, RALLIES & CLUB DIARY

July – September 2015

Worthing & District Amateur Radio Club

Established 1948

Website: **www.wadarc.org.uk**

E-mail: **info@wadarc.org.uk**

President: Chris Smith G3UFS **Life Vice President:** Peter Robinson G8MSQ

WADARC meets every Wednesday at 8pm in the Lancing Parish Hall, South Street, Lancing BN15 8AJ. All who have an interest in radio communications and associate subjects, whether a licensed amateur or not, are invited. WADARC can also arrange training for the radio amateur Foundation, Intermediate and Advanced licences.

The WADARC Committee 2014 - 2015

Phil	G4UDU	Chairman
Andy	M6RFE	Secretary
Sally		Treasurer
Jonathan	G1EXG	Ordinary Member
Peter	G4LKW	Ordinary Member
Norman	2E0RKO	Ordinary Member
Andrew	G1VUP	Ordinary Member
Andrew	2E0TCB	Ordinary Member
Peter	2E0FVL	Ordinary Member
Dawn	2E0DSK	Ordinary Member

WADARC Ex Officio 2014 - 2015

Membership Manager	Peter	2E0FVL
Contest Manager	Graham	G4FNL
Ragchew Editor	Roger	G4TNT
Website	Andrew	G1VUP
Training Officer	Andrew	G1VUP

WADARC Club Nets (all times are local)

07.30	Sunday	3.725MHz ± QRM SSB
19.30	Monday	145.425MHz (V34/S17)
11.00	Thursday	7.106MHz ± QRM SSB

CONTENTS

EDITORIAL

Welcome once again to the latest belated edition of *Ragchew*. Although it's later than usual, it is very full so I'm sure you will find something of interest to read.

Inside This Issue

Last time I introduced a new and what I hoped would be regular column called *Mailbag* because Ted G3EUE wrote in with some interesting reminiscences. I was hoping others would follow Ted's lead and write in with their thoughts too, perhaps some feedback on Ragchew or anything to do with our Club, a recollection they'd like to share or just something they had to say to other members but it seems it was not to be – nobody else has written in. However, Ted has kept the page alive by sharing with us his memories of an interesting chance meeting in Storrington.

If you'd like to help keep the *Mailbag* page going, please send in your thoughts or recollections.

Regular contributor Graham G4FNL has come through again, this time with an account of how he became interested in radio – read it if you want to find out where his fascination with contests came from.

Many members have told me they enjoy reading these profiles but not many have offered theirs. If you'd like to share yours here in *Ragchew*, please do get in touch. There is now a new simple and easy to remember e-mail address – it's **ragchew@outlook.com**

Also in this issue is a report on the special event station GB4SLB at the Selsey Lifeboat Station kindly sent in by Pete 2E0FVL. If you're taking part in Club events, please think of *Ragchew* and take photos and jot down a few notes. Many members can't take part in these events or even get to the clubroom so reading about what's happening is their only way of keeping in touch with the Club and its activities.

Jonathan G1EXG, another *Ragchew* regular, has helpfully sent in two articles this time. The first one is for anyone who is interested in taking part in Club nets. In it he describes how to make five antennas, one for 40m and four for 2m. They're all straightforward and not too difficult to build so have a go and perhaps let others know how you got on through the pages of *Ragchew*.

Jonathan's other contribution is his regular Short Circuits column. This time he explains how crowbar protection works and shows you a diagram of a simple crowbar protection circuit.

Another Ragchew regular, Edmund M0MNG, has sent in the latest instalment of his Morse Tuition Diary. Regular readers will know that he started to learn Morse with the aid of a course on a memory stick provided by Phil G4UDU and his aim was to have a CW QSO with a lighthouse during the International Lighthouse & Lightship Weekend. Well, he did it and now he's planning to expand his CW horizons.

Held Over

Because it's a very full issue this time, several things have had to be held over until the next time. For example, Neville Bridle M5NEV has sent me lots of great photos of the Fire Station Open Day, the visit to see the mighty Wurlitzer organ and the recent SSB Field Day and I hope to be able to use them soon; I'm just waiting for some words to go with them.

Next time, I'm also hoping to bring you details of the Club's participation in Mills on the Air, the PW QRP Contest and the Shoreham Lighthouse Special Event Station.

Please Contribute

I know it can get a bit tiresome reading these constant pleas for contributions but *Ragchew* only exists because Club members write for it and it's only because a few stalwart regulars send in stuff month after month that it comes out at all. Please do try to think of something you can contribute – a brief note for the *Mailbag* page, a short write-up of an event, anything! It doesn't have to be exquisitely written or grammatically perfect so long as it gets written and sent in!

You can send it direct to me at **roger@radiouser.co.uk** or, if you want to help me automatically filter my incoming messages, you can send it to the new address at **ragchew@outlook.com**

73,

Roger G4TNT

PRESIDENTIAL PONDERINGS

Well, it seems the warm weather has decided that the UK is not the place to be and as I write this the rain is falling and it's cold!
It has been an interesting few months for the Club. One highlight was our Club dinner at the Old Tollgate in Upper Beeding. Around 40 members, wives and partners were there and the food was excellent. The service was quick and efficient too, even though the restaurant was absolutely packed.

Another highlight was the fascinating evening organised by Alan G4GNX at the East Sussex National, a resort and spa hotel at Uckfield. We had an excellent dinner, watched one of Buster Keaton's funniest silent films, heard a great recital on Europe's largest Wurlitzer organ and then to finish off we were given a backstage tour of its massive workings.

As it happens, organ music is one of my favourite forms of music whether it be Church, Hammond or Wurlitzer, modern or classical so for me it was an especially interesting evening out – and the food was good too! As several members said on the night, it would be nice if we could do it again.

Now on to club evenings. We had a very interesting talk by Keith G3VKW (who I first worked on 4m back on November 3rd 1968 – a long time ago!) on *How to work DX*, which I'm sure would also have interested the newer members who have yet to experience the thrill of working some real DX such as the other side of the world.

Peter G3LDO also gave a splendid talk on *LF and HF Antennas*, a very knowledgeable man is our Peter. He certainly knows his subject. He's also a great attendee of our Sunday morning breakfasts.

My own activities with radio have been rather sparse lately, mainly because of domestic chores, such as hedge cutting, painting bits of the house and so on. However, with the arrival of the Sporadic E season I did come across an opening on 4m the other day and worked a couple of S5s from Slovenia – 6m was also open and appeared to be full of the usual Italian stations.

Finally, I recently met a friend of a friend and found out that he too had been a Wireless Operator but in Submarines and, coincidentally, he had been monitoring Russian Block wireless traffic back in 1952, the same time as I was. When the conversation got around to CW, he admitted his currently wasn't very good and he would like to regain his speed so I told him about a CW program called *Just Learn Morse* that's freely available on the web. I also gave him a spare Morse key and an oscillator. He is now one very chuffed person. The point of this story is learn Morse code if you can and remember that once learned, you never forget it. You just get slower if you don't practice.

73 everyone, Chris G3UFS

CHAIRMAN'S CHATTER

Welcome to a Chairman's Chatter that's being written in the Dordogne in France. Sandy and I are here with some friends for a few days and, as always, the radio came along as well. Like most French campsites, there is an abundance of trees around here and as well as providing shade from the sun, they can also be used to support HF antennas. This time I've been using my *UDU Vertical* on a fibreglass pole pushed up through spindly trees. It works well (as it should!) and I've been on 40 to 10m most days. Amongst others, I worked our two SSB Field Day contest stations. I can also hear good signals on 60m but as there is no allocation for it in France, I can only listen.

We're still having reasonable weather here so I've been able to get out and operate portable on a choice of the sites we have around us, hills for the VHF and down by the water for HF. There is nothing better than operating within metres of the lapping waves to give you an enhanced HF signal.

Club Calendar

The event calendar has been busy so far this year and I have more ideas for talks in the next few months. If you have any requests for subjects that could be an evening talk or a project, please let me know and I will see what can be organised. I know some members want to get involved in amateur radio construction and as the winter months are the ideal time for this, we need to start putting our ideas into action now. I personally have some things I want to build and I hope to have some more time this winter to get them finished.

The next major club event is the AGM on October 28th. At a recent EGM we changed the constitution so that we can now have a Vice Chairman, which will help with the organisation within the committee and running of evening events.

I will be standing down as Chairman at the AGM. Various changes in what I am doing with respect to work and travel make this a sensible choice. I have enjoyed being Chairman but remembering the words of a sadly missed friend, Chris G3NDJ, you must pick a time to stand back and let the newcomers get involved, it is they who will take the club forward with new ideas and that is important for WADARC.

With that in mind I thank you for your support. I will still be involved with everything the club is doing so for meetings, training, taking part and operating in events – I will be there.

73, Phil G4UDU

MEMBER PROFILE

In the third of an occasional series profiling club members we learn about the life and interests of Graham Bubloz G4FNL.

My radio interest began around 45 years ago when I was a young lad growing up through the late 1960s. I don't recall what specifically interested me about radio but I suppose it was those around me, slightly older and therefore a little more streetwise, who influenced my interests in electronics and radio. I grew up in the era of reel-to-reel tape recorders and saw the introduction of cassette players. I found that you could make a fantastically futuristic phasing sound if you played the same music on either track of a stereo signal, but slightly out of phase. That, along with my interest in music (I started to learn to play the guitar when I was around eight years old), meant that I was frequently making or playing back audio recordings.

First Steps

Soon after this, I acquired a very old ex-Admiralty B40 short wave receiver from a friend of my father. It was my first means of being able to listen to the short wave bands and from the age of about ten I spent several years listening to the amateur and broadcast bands. Later on I registered as a listener with the RSGB as an Associate member, with the number A8094.

In my teenage years I joined the local radio club in Brighton which was run by amongst others Ron G3SKI. At this time there was little or no VHF activity and the local net took place on 160m on AM every Sunday morning. Even now I can still remember the majority the callsigns heard.

At around 15 years old I began to think about taking the Radio Amateurs Examination (RAE). I also decided that I wanted to be able to use the full HF spectrum and not be limited to VHF and higher and hence I started to learn Morse code. It helped having some local rivalry with a couple of school friends. We set about seeing who could be first

to pass the written exam and then the same for the Morse test. We didn't have any RAE or Morse classes organised – it was all self-taught using the old style 12-inch vinyl records for learning Morse code. I eventually took the RAE and a few months later sat the Morse exam (at Southampton). I can remember having the same struggles that many others suffer with in terms of reaching a plateau but after some intense practising I managed to get my Morse speed up from 12wpm to approximately 25wpm in about four months.

First Transmitter

I was licenced in 1976 and my first radio transmitter was a Codar AT5, which was manufactured locally in Lancing. I acquired it second-hand from a friend. I still had my B40 receiver (which, by the way, weighed an impressive 112 lbs!) With the Codar, a Katsumi electronic keyer that I borrowed and an 80m dipole I made many QSOs on 80m CW. The Codar TX would only operate on 160m and 80m and could only produce 10W of AM or CW. I soon realised that to be able to work any distance, using CW was the answer. In addition, because I lived at home I had to keep the noise down at night. CW is a particularly good 'stealth' mode.

Not long after this I managed to buy a used Yaesu FT101 from a friend of mine and that enabled me to really get cracking on SSB and CW. This was before the WARC bands and it soon became apparent that my favourite band was 40m.

To go with the FT101, I made a linear amplifier using a pair of 813 valves. I bought them from Charles G3BES, another local amateur operator who lived in Hove.

I can remember many late evenings spent on 40m working split frequency on SSB across to the USA, getting comparison reports with former WADARC member Barry G4GPW who was living in Lancing at the time. It was all great fun and it drove each of us to try to improve.

I was a member of the Worthing and District Amateur Radio Club for several years during the 1980s and at that time I moved QTH to a flat in Brighton. I had access to the flat roof and managed to get up a couple of low-profile HF antennas; 20 and 40m inverted vee dipoles.

It was once I was married that we moved again, this time into a house where we had a small amount of space to get a half-decent antenna and

radio setup in operation. At that time I was using a Yaesu FT101mk2 transceiver, an FR101 receiver along with a homebrew HF amplifier with two 4-400 valves that was made by Barry G4GPW. I managed to erect a 35ft tower and had a homebrew 2-element quad antenna for 10 and 15m plus dipoles for the other bands. That quad was a fantastic performer and I greatly miss it to this day.

I like making equipment (I've built several QRP CW-only transceivers) and experimenting with antennas.

Eighties and Nineties

In the late 1980s I was invited to take part in a multi-multi CQWW contest with the big multi-multi contest group G4ANT, which is located on the East Coast of the UK. I made the trip and spent several weekends with the team at their contest venue, which was also the Moseley Antenna construction plant on the outskirts of Norwich. This was quite an eye-opener as the group had no fewer than 12 towers, two of which were 120ft high. It was absolutely fantastic being part of a group of similar-minded folks, taking part in probably the best radio contest there is and I made life-long friendships.

In the 1990s I became a member of a number of CW clubs, including the First Class CW Operators' (FOC) and the Very High Speed Club (VHSC) because I have always enjoyed CW and am comfortable sending and receiving at various speeds.

At around this period in my life radio started to take a back seat and my time was spent helping to raise our two children. Consequently, I inadvertently lost touch with many from the Worthing Club but in 2005 I happened to be in the Worthing town centre shopping with my wife when we bumped into Barry G4GPW. He suggested that I should come along to the club and shortly afterwards I re-joined.

Contests

As many will already know, I particularly like to take part in radio contests. I know that these contests are often a real nuisance as they occur almost every weekend – and even I get fed up with them.

My pal Peter G4BVH and I have taken part in every RSGB National Field Day since 1982 (even through the 'non-radio' years). I have also

taken part in the regular weekday evening contests on 80m since restarting radio back in 2005 and Keith G4SLE, John G8FMJ and I used to take part in the contests on behalf of our club. These events are a really great way to improve your operating skills and provide some level of confidence on the radio.

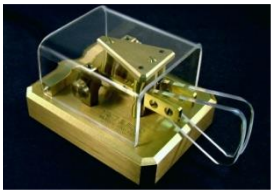
Nowadays, whenever I take part in contests, I operate from a local University site. The accompanying photos give some idea of the general setup there.

The shack at local university site (nearest hut) with the 80m long doublet antenna possibly just visible above.

Current Station

Fast-forward a few years and now my current radio setup consists of an Elecraft K3 radio and an Alpha 89 amplifier. With them I use a Heil Pro headset and I have a Schurr paddle for CW.

Elecraft K3



Schurr Paddle

Alpha 89

Heil Pro Headset

Unfortunately, my antenna setup at home is rather poor. As you might be able to see in the accompanying photo, it's just a 40m long and approximately 10m high doublet antenna.

73,

Graham G4FNL

Antennas for the WADARC Nets

Jonathan Hare G1EXG

The Worthing & District Amateur Radio Club has a number of nets over the week where club members get together 'on the air'. I wanted to be more involved in these so I decided to experiment with a few antennas to see what would work best. In some of these antennas I used my 3D printer to make up insulators, antenna centres and supports. More details of the construction of each can be found on my website – the links are at the end of this article.

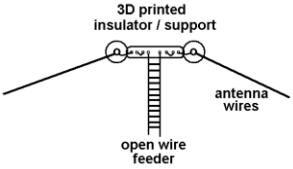
Weekly Nets

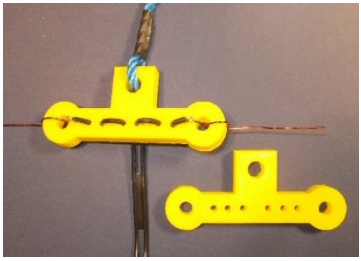
WADARC club nets are on 80m Sunday 7:30am around 3.712MHz LSB, 40m Thursday 11:00am around 7.06MHz LSB and 2m Monday 7:30pm on 145.425MHz FM (vertically polarised).

A few regulars also meet on 144.310MHz USB on Tuesday evenings at 8:00pm (also vertically polarised). This is not a WADARC net but anyone is welcome to join in.

For the 40m Net: An Inverted-V

I have a 12m telescopic mast in the back yard that I can raise to try out antennas. For the 40m net I decided to try a full-size inverted-V antenna. This is basically a dipole with the centre at the top of the mast while the two ends slant downward at an angle to insulators quite close to the ground. The antenna is fed with 300Ω twin feeder to an ATU and my IC706. I made up a 3D printed central insulator for this antenna to test out the strength and UV stability of the plastics. It has been outside for six months and I have not seen any degradation so far. The antenna works well for the WADARC net and local as well as European contacts.





The 2m Net

In my location I have various VHF issues and problems. I live in north Brighton about a quarter of the way up Ditchling Road that leads to Hollingbury Hill. I live just to the east of the hill so I do not have a great take-off to the west for VHF work. Consequently some of the signals on the 2m net can be weak with me.

Ground Plane Antenna

My first antenna for the 2m net was a ground plane antenna (GP), which is a quarter wave vertical with four quarter wave radials.

I used my 3D printer to create the centre base for the antenna, a plastic housing that can support the vertical quarter wave radiator, the four quarter wave 'earth' radials as well as providing an enclosure for the coax and connections which can be filled with sealant.

The four quarter wave ground planes are bent downward to produce a feed impedance of about 50Ω to match the coax.

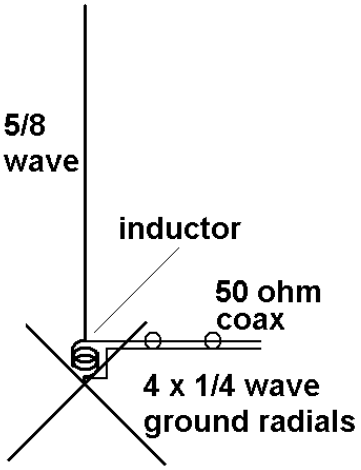
The single piece plastic base also includes a flat flange with holes for two U-bolts so that the antenna can easily be fixed to a mast.

This antenna worked but I needed a bit more gain to reliably communicate with people further away.

5/8 Wave Vertical

I next made up a 5/8 wave vertical. This also has four quarter wave ground planes (made from two 1m aluminium strips) but this time I left them horizontal rather than drooping down.

The radiator is, of course, longer than the quarter wave antenna element. The antenna requires a small coil/inductor (details on my website) to match it to 50Ω coax. This goes across the inner and outer of the coax where the cable attaches to the ground radials and radiator.

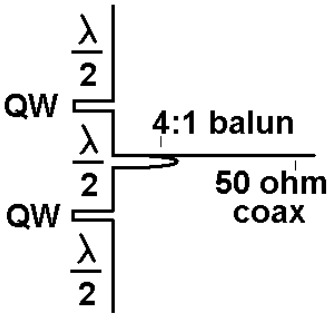


I made the 3D printed enclosure larger than the GP version so that it could take the matching coil. The coil can be adjusted for lowest SWR but in practice it is easier to adjust the length of the radiator. As with the GP antenna, once a good SWR has been achieved, the enclosure can be filled with sealant to weatherproof everything.

The 5/8 wave antenna worked and produced a 1 or 2dB improvement over the GP but this was still not really enough for me.

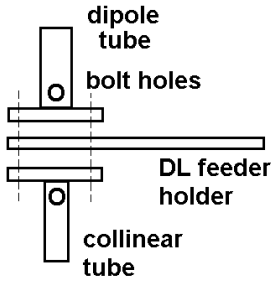
3-Element Collinear Array

I have wanted to experiment with collinear arrays for years so I used this as an opportunity to try out a 3-element collinear for the 2m band. The antenna is basically three half-wave elements fed in phase.



When mounted vertically, the result is an omnidirectional antenna with a low angle of radiation and some gain over a basic dipole.

The centre of the antenna is a standard dipole but at each end there is an insulator where another half wave length element is attached. You can't simply connect the end of the central dipole to these elements, of course, as this would simply increase the length of the antenna, making it resonant at a much lower frequency. Instead, we connect a delay line between the elements so they are correctly in phase. In practice, this amounts to inserting a quarter wave length of open wire feeder (shorted at the far end), see diagram.



I 3D printed insulating brackets to hold the elements as well as plastic arms that are sandwiched between the two brackets (see diagram). The latter can slot into the 300Ω feeder and so holds the end of the feeder if it is curled around (see photo and diagram).

The feed impedance at the centre of this antenna is a couple of hundreds Ohms so it can be fed using a 4:1 half wave coaxial balun to give a match to 50Ω coax.

This antenna worked really well. One station whose signal was always just below the noise on my GP and 5/8 wave was now perfectly audible and reliable two way communication was possible. However, this centre fed antenna needs to be mounted away from the metal mast and the coax cable needs to be brought away at right angles to the antenna. This means we need a horizontal mounting pole from the main mast to fix the antenna to. Although the antenna is not very heavy, it makes for an unbalanced mechanical setup on the top of the mast so it's not ideal.

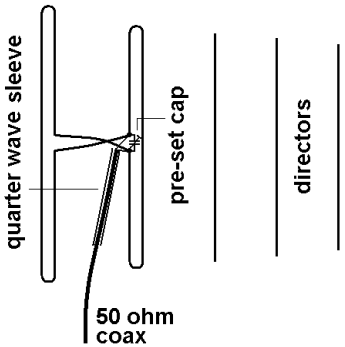
Now that I have got this antenna working, I am interested in constructing a 5 or 7-element all-wire array which could attached to the side of a fibre mast. It might be possible to create all the delay lines and half wave elements out of just two pieces of carefully bent wire with a few 3D printed holders and supports (it really would be a 'best bent wire'!).

Another problem was that I was now picking up too much signal from the local Brighton repeater (it is less than a mile away direct line of sight). Every time the repeater transmitted I found that the signal levels of the weaker signals on the net would drop. My receiver was not coping very well with the strong repeater signal picked up by the array!

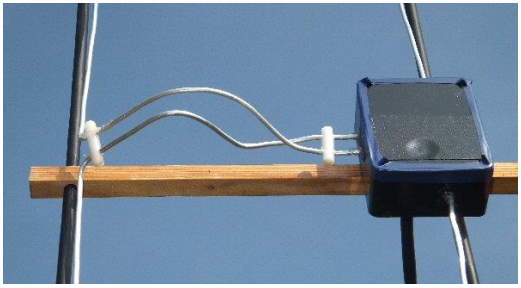
ZL Special

To overcome the strong signal problem with the repeater I needed an antenna with some decent gain over a dipole but also, it seemed, with some directivity. Reading through the *Out of Thin Air* magazine, a spin-off from *Practical Wireless*, I saw some interesting experiments with 2, 3 and 5-element ZL Special antennas. I decided to build the 5-element version.

The basic 2-element ZL Special is related to the HB9CV antenna. In the ZL Special, two folded dipoles are spaced a quarter wave apart and fed a quarter wave out of phase using a section of twisted quarter wave feeder. This results in power adding in one (forward) direction but cancelling in the opposite direction.



The back dipole is usually made slightly larger than the front. The two element antenna has good forward gain (theoretically around 6dB) and a really great front-to-back ratio. Greater gains are possible by adding directors.



The three directors were made from aluminium rod (I used 3mm welding rod bought in a pack of 50 from EBay). I have a long length of 4mm diameter aluminium wire in my cupboard for years doing nothing so I used it to make the ZL style driven elements. Two 1m lengths of fibre glass tube (10mm outer, 6mm inner) were cut down to 98 and 90 cm with a Dremal ceramic grinder. These were used to support the outer parts of each of the folded dipoles as the wire could not reliably support itself. A single

piece of wire was used to make the larger folded dipole and the 25.5cm of open wire feeder that twists and goes to a second piece of wire making up the smaller folded dipole. The coax goes at the junction of the two, as does a small tuning capacitor for matching.

The 50Ω coax is directly connected but I used a quarter wave sleeve to act as a (bazooka) balun (for more details please see the web URL at end of this article).

The 2-element ZL Special (with no directors) needs 20pf or so to get a good match to 50Ω cable but the capacitance you need decreases as more directors are added. In the 5-element (three director) version I hardly needed any extra capacitance at all. This may be why the *PW* article claims you can't add more than about three directors to the basic ZL Special – a far more complex matching arrangement would be needed for the longer ZL Special antennas, e.g. half wave matching section, movable stub and a 4:1 balun.

I first mounted the ZL special antenna horizontally to compare it to my existing 5-element long Yagi. I use this for SSB work (unfortunately it's not much good for the vertically polarised WADARC net).

I found the 5-element ZL Special had similar gain but it is almost half the boom length (only about 1m long). Because the ZL Special is small and lightweight it would be a very useful antenna for portable operation.

Once the antenna was mounted vertically polarised, it seemed near perfect. I have now got good gain to the west (where the signals are weaker for me) while the good front to back ratio ensures that I get less pick-up from the east where the Brighton repeater is located.

In addition, the signals that were too weak to copy on the simpler antennas are now several S-points stronger and I can work them easily so I am very happy with this antenna. It seems to have solved all my problems on 2m.

If you're thinking of making them, the 3D printed GP and 5/8 wave antennas are easy to assemble and could make good beginners projects. If anyone in the club wants me to print out these devices, please just drop me a line.

For details of the ZL Special and links to the other antennas see:
http://www.creative-science.org.uk/2m_5ele_ZL_special.html

Practical Antenna Handbook (2nd Ed), J. J. Carr, 1994
ISBN 0 07 011105 7

Out of Thin Air, PW Publishing Limited ca. 1981

3D printing and Amateur Radio, *RadCom*, J. P. Hare, December 2014

MAILBAG

An Unexpected Meeting

Several years ago I was trawling around the Stables Antiques shop in Storrington when I came across a military looking box that had one or two meters and the odd dial. Two other chaps were also looking at it and I remarked that it didn't look much like a piece of radio gear. One of them turned to me and asked, "Ham?" I agreed and he virtually flung his arms around me!

A lot of chat between the two in Italian followed and then the other one explained in English that they were visiting on holiday and staying in Upper Beeding. The conversation developed and resulted in them being invited for coffee. The Italian amateur was I2BFF, Ermanno Chiaravalli from Varese in Northern Italy. Including language, we didn't have too much in common because he specialised in VHF and UHF.

However, we particularly enjoyed the company of the companion and his wife who turned out to own a cottage in Beeding, which they use three or four times a year. The wife is English.

Ermanno only came over the once but since then he has kindly sent me a steady stream of radio related items, including historical books in English, French and German and a small selection of Morse keys. In return I've found him various bits and pieces to help towards the reconstruction of a T1154/R1155, the standard transmitter/receiver radio setup used in WW2 Lancaster bombers.

The couple have continued visiting Beeding regularly and always contact us to continue a strong social link.

Fairly recently, while we were having a meal together, the Italian's wife mentioned that she was rather pleased that her cousin had traced a family connection with a certain well-known actress. The outcome of the ensuing discussion resulted in the discovery that the two wives are related! Amateur radio tentacles reach everywhere.

Ted G3EUE

OUTSIDE EVENT

GB4SLB Selsey Lifeboats

On Friday 31st July, I got to Selsey about 16:30 and went over to the boathouse to arrange the opening of the compound for the weed busters to do their thing.

Pete G4LKW was the next to arrive and he quickly set to work, using his motorised strimmer with a metal blade to fell the weeds that were like small trees in places. Not long after Roger G7VBR arrived and he got stuck in with his strimmer too. I'd told them in advance how bad it was there, hence the metal blades.

The compound, which is next to the inshore boathouse, had to be cleared because it's where we always set up our tent. For the last five years we've used it as our operating centre for the last two days of this event, which is their main fundraising activity of the year.

On the Air

As we camp on site, we were up bright and early Saturday morning and we were on the air by 07:00. We had decided to use the 40m band and that turned out to be a good choice because we had a good run of QSOs.

However, as conditions changed through the day, we decided to have a look around some of the bands and this resulted in us getting contacts into Iceland, USA, Israel and Tanzania, along with all those from the UK and Europe.

In total we made 207 contacts over the two days of operation and had a good number of visitors to our radio shack in the compound, both amateur

radio operators and the general public.

The new station setup of the open front tent with the operators looking out seemed to work better and we attracted quite a few more visitors this year. Edmund M0MNG even managed to help one visitor set up his scanner!

Next Year

A new lifeboat station has been in the pipeline for some time and now it's been decided building work will soon get under way. It will be ashore on the site that now contains the inshore boathouse, museum, shop and the compound. They will all be housed in the new building, which will also contain much improved facilities for the crew.

At the moment, I'm not sure what's going to happen to our station next year because although the new building will be nearing completion, it won't be open. It will still be a building site and I don't know if there will be anywhere for us to fit in. We'll only find out nearer the time.

Once the new station is up and running, it shouldn't be a problem because I am already making arrangements to use a space in the corner of the meeting room for our station.

Our thanks go to all at Selsey Lifeboats for letting us play in their back yard.

Pete 2E0FVL

G1EXG's Short Circuits

This time Jonathan Hare G1EXG explains crowbar protection and describes a simple circuit that will protect your radio from damage caused by over-voltage.

Short Circuit No. 7: Crowbar Protection

Many transceivers require a separate 12V supply and if for some reason the supply becomes faulty, it could damage your precious radio. The crowbar circuit described here will protect your radio from damage caused by over-voltage.

The crowbar circuit is connected across the supply voltage going to your radio, as shown in **Fig 1**. It constantly senses the line voltage and if that rises above a preset 'danger' level, it responds by rapidly short circuiting the supply – almost as if a conducting metal crowbar had been thrown across the supply lines – hence the name. This short circuit drops the voltage going to the radio and, crucially, blows the in-line fuse, thus removing the radio (and crowbar) from the source of trouble.

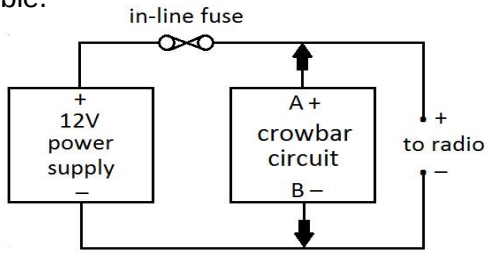


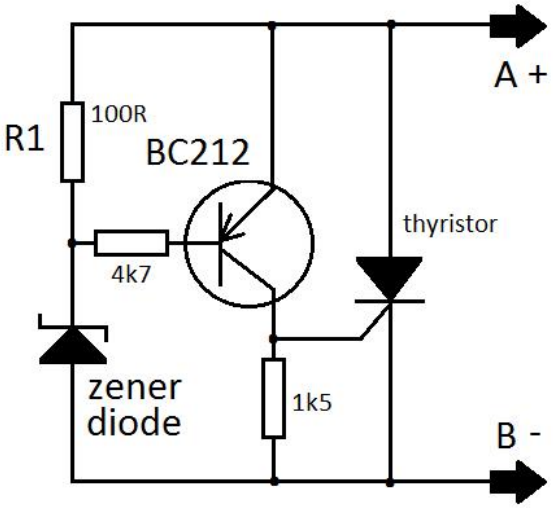
Fig.1

How it Works

The circuit is shown in **Fig. 2**. The Zener diode sets the trigger voltage (which is about 0.6V greater than the Zener voltage). Below that trigger voltage, the Zener diode is off and so the current through R1 is very small. This means the voltage across R1 will be small and so the PNP BC212 transistor remains off. However, if the supply voltage becomes faulty and goes high, the transistor will turn on,

triggering the thyristor. The high current thyristor is wired directly across the supply so when it triggers, it shorts out the supply. All this happens extremely quickly, much faster than it takes to blow a fuse, so it's far better protection for your radio. The circuits detects a potentially dangerous voltage rise, protects your radio from any damage and blows the fuse to make sure everything is secure.

Note: the crowbar has to be wired in circuit after the in-line fuse, i.e. on the radio side rather than power supply side of the fuse. The fuse must be the appropriate one you usually use for the radio. In normal use the crowbar takes very little power and it can simply be left in circuit as it only comes into play when there is a fault.



Next time we will explore thyristors in more detail

73,

Jonathan G1EXG

MORSE TUITION DIARY

Edmund M0MNG has been reporting on his attempt to learn Morse code using the memory stick course supplied by Phil G4UDU. In the last instalment he felt he'd not made much progress but now he's broken through and achieved his main goal.

Readers of the previous two instalments of this diary will know that the primary reason for me wanting to learn CW was to take part in the International Lighthouse & Lightship Weekend (ILLW). The 2015 event took place over the weekend of August 15 and 16 and my ambition was to join in and work at least one lighthouse using CW.

Success!

My wish was granted on the Sunday at 1242 GMT when I worked GB1OL at 12 words per minute on 14.027MHz. He was calling CQ at a high speed and after several unanswered calls, I decided to try my luck.

The operator was named Ed and when he heard me, he slowed down to my speed straightaway. This was crucial and it made all the difference; I honestly doubt that the contact would have continued otherwise.

It was a fairly basic 'rubber stamp' QSO that contained our signal reports (a genuine 599 each way), QTHs and names and I was shaking at the end of it. I'd made three mistakes. I noticed and corrected two of them at the time and the third one I didn't – but he understood anyway.

I would certainly not have passed my RAE CW exam with that QSO but the main object of the exercise was communication and it was clear that we understood each other!

Equipment

I used 20W from my Icom IC-7100 and the antenna was a G4UDU vertical. Although Phil will tell you that his antenna is particularly good on 40m and 17m, in my experience it gives a pretty good account of itself on 20m as well.

The key was a Palm paddle, which is designed primarily for use with portable QRP rigs. The jack from this key fits my FT-817ND and my

Icom IC-7100 as well but it will not fit my Yaesu FT-450 for some reason, even though all three transceivers seem to have the same size socket!

QSL Cards

I have sent off for a GB1OL QSL card via the bureau. However this is not the first Special Event Station that I worked using CW; that honour went to GB800MC (Magna Carta) on 40m back in May. They sent me a nice QSL card that I have received already as it came electronically via e-QSL.

Highlights

Apart from the CW contact, which was the absolute highlight, the 2015 ILLW brought mixed fortunes for me as a home-based 'lighthouse chaser'.

Other highlights included working lighthouses in several new countries such as Slovenia, Poland and Denmark. I ventured onto bands that I use quite rarely too – notably 20 and 15m. This meant I was only on 40m SSB most of the time rather than all of it!

Strangely, GB8SL at Shoreham was 59 every time I came across it. Usually it's is barely above the noise level here on 40m despite being just a few miles away. Nevertheless, I received GB8SL far better this time despite it using the same 100W and same antenna in the same position as ever. I wonder what made the difference this time... was it purely down to the ionosphere?

In addition, I worked my first ever QRP lighthouse station and my first ever Maritime Mobile one. 2E0HPI/P at Seaton Carew lighthouse was using 5W from his Yaesu FT-817ND. I understand that the Seaton lighthouse has never been activated before. MM5AHO/MM was afloat within striking distance of Hoy Sound High and Low lighthouses simultaneously. Both QSOs took place on 40m SSB.

Bearing in mind the conditions, I decided to lengthen my homebrew 24MHz inverted V dipole at the very last moment. By adding extra wire I was able to work GB0BCK in Scotland on 18MHz with a nice resonant antenna!

Not-so-Highlights

Propagation was not good. On 40m the daytime skip distance seemed unusually long. I can usually work stations in England very easily thanks to NVIS but this time I contacted just four lighthouses in this country! There were moments when great swathes of 20 and 40m were completely empty. The MUF didn't rise very high either. I didn't hear any signals on 24 or 28MHz and the only two signals I heard on 21MHz over the whole weekend were two lighthouses – I worked them both.

For the second year in a row I did not hear any French lighthouses, which is a great shame because French is my best foreign language by far. Normally I can hear French stations as easily as UK ones on 40m.

In total, I worked 32 lighthouses this year rather than the 38 I managed last year.

I had no VHF/UHF contacts at all. Last year, I managed to work Newhaven lighthouse (GB0NH) on 70cms via the GB3LR repeater and I was hoping that I might manage to work the Needles lighthouse on the Isle of Wight (GB0NLH) via the newly-relaunched GB3IW. Neither contact came to pass this year, although I did hear GB8SL work GB0NH on the Saturday afternoon so I know that they were on the air, on HF at least.

Finally, on 20m I heard but didn’t manage to work 7T7T in Algeria, ZB2LGT in Gibraltar and HB9ILLW in Switzerland. They would have been good catches because all three countries had just one lighthouse each participating.

Next Year
My plans for ILLW 2016 are improving my CW further still, using it on 30m, using data modes, working lighthouses on bands where I've not had lighthouse contacts yet (60, 30, 12, 10, 6 and 4m and 23cms), operating /P from the beach at some point and arranging monster sporadic E and tropo openings to coincide with the ILLW!

One lighthouse in Norfolk (GB0HL) was active on the 4m in FM and had contacts all over East Anglia and South-Eastern England. If they are QRV again in 2016, then I would love to get them in the bag on 70MHz.

I hope my experience might encourage other club members to take part in the ILLW even if they don't have antenna farms, towers, linear amplifiers and the like. I am proud to be a ‘little pistol’ station rather than a ‘big gun’ and I think I did all right!

My top tips for lighthouse chasers are use bands that you don't use normally, learn CW and learn a few words in several foreign languages.

Finally
Finally, if you fancy a little bit of CW practice, grab your 70cms handheld and tune to 439.575MHz in narrow FM. This is the output frequency of GB7BH, the recently-activated DMR repeater in Brighton. You might well hear some DMR transmissions as loud noises but sooner or later you will hear a CW ident using tone-modulated FM. The ident is relatively long by repeater standards but it is sent quite slowly. See if you can copy all of the information it contains!

73,

Edmund M0MNG

Links of Interest
The ILLW site: **www.illw.net**
GB8SL video from 2014: **https://youtu.be/UcQX_Mfn6as**
M0XTA's video of the 4 meter activation at GB0HKL:
https://youtu.be/1let1yCrWVA
Palm mini paddle: **www.sotabeams.co.uk/palm-mini-paddle/**

COMMITTEE MEETING NOTES

The Committee has agreed to publish short notes taken from the minutes to keep Club members up to date with its discussions.

Chairman's Report.
The meeting started with the Chairman's Report. He reported that he will have constraints upon his time in the future and in view of this, he suggested making a change to the Club constitution to create the post of Vice Chairman.

There was also a proposal to introduce guidance notes for lecturers to advise them on lecture timings and other connected matters.

Secretary's Report
The Secretary reported on matters concerning the booking of the Parish Hall meeting room and asked the committee for confirmation about the requirement for him to act as auctioneer at the forthcoming surplus equipment sale.

Treasurer's Report
The Treasurer reported on the current balance in the club bank account and anticipated expenditure and income. Current difficulties with electronic banking were raised.

Programme of Events
The need to co-ordinate the surplus equipment sale with other local clubs was raised. It was also suggested that a minimum bid of 50p should be introduced.

The Chairman advised that that events are now booked through to the end of October but there are two dates (7th & 30th October) that are still available for events if required.

Ragchew
Articles are still required for various past events as well as proposals for future articles. The Chairman advised that he will confirm with the Ragchew editor when the next issue is due for publication.

Membership
The Membership Secretary reported that the club currently has 69 members and the average attendance at Club meetings is 20 members.

Website
Andrew Cheeseman and Alastair Weller are working together to update the website. A more up to date format is being investigated. This may require a spend from Club funds.

Publicity
Potential advertising methods to promote the club were discussed. One of these was the production and use of banners at Club events. The layout of tables at public club events was discussed as a change may allow for increased interaction with the public.

Contests and Special Events
Operating requirements for forthcoming events were discussed. These included the requirement for operators and logging methods. Notices of Variation for both the Selsey Lifeboat event and Lighthouses on the Air were confirmed as having been received.

Training
Andrew Cheeseman raised the availability and suitability of various venues that could be used for training purposes and that future dates for training courses at various levels were now planned.

Any Other Business
Various AOB items were raised by committee members, including:
Progress with replacing the HF antenna installed at the Parish Hall
The status of the club D-Star repeater
The availability of a data dongle for internet access for the club laptop PC.

Next Meeting
It was then agreed that the next meeting will be held on September 22nd 2015.

RALLIES

SEPTEMBER

5th & 6th – British Amateur Television Club Convention

The Hurst Communications Centre, Belton Road, Sandtoft, Doncaster DN8 5SX

6th – Telford Hamfest

Enginuity Technology Centre, Coalbrookdale, Telford TF8 7DU

12th – Caister Lifeboat Radio Rally

Caister Lifeboat Station, Tan Lane, Caister on Sea, Norfolk NR30 5DJ

13th – Andover RAC Boot Sale

Wildhern Village Hall, SP11 0JE

13th – British Vintage Wireless Society Murphy Day

Mill Green Museum, Hatfield AL9 5PD

13th – Torbay Annual Communications Fair

Newton Abbot Racecourse, Newton Abbot, Devon TQ12 3AF

13th – West Kent ARS Radio and Electronics Fair

Tunbridge Wells Grammar School for Boys, St John's Road, Kent TN4 9XB

20th – Chippenham & DARC Mini Indoor Radio Rally

Neston Village Hall, Pool Green, Neston, Corsham, Wiltshire SN13 9SN

25th & 26th – National Hamfest

Newark and Notts Showground, Lincoln Road, Winthorpe, Newark NG24 2NY

27th – Pencoed ARC Table Top Sale

Pencoed Rugby Football Club, Felindre Road, Pencoed CF35 5PB

OCTOBER

4th – British Vintage Wireless Society Auto Jumble

The Angel Leisure Centre, Tonbridge, Kent TN9 1SF

4th – Blackwood ARS Rally

Rougemount School, Newport NP20 8QB

4th – Hornsea Amateur Radio Club Rally

Floral Hall, 7 The Esplanade, Hornsea, East Yorkshire HU18 1NQ

9th to 11th – RSGB Convention

The full convention programme of lectures for all interests will be available on the website later in the year.

11th – Hack Green Secret Nuclear Bunker Rally

Hack Green Secret Nuclear Bunker, Nantwich, Cheshire CW5 8AL

17th – North Wakefield Radio Club Rally

Middleton Leisure Centre, Middleton Ring Road, Middleton, Leeds LS10 4AX

18th – Galashiels and District ARS Radio Rally

The Volunteer Hall, St Johns Street, Galashiels, Scottish Borders TD1 3JX

18th – Holsworthy Amateur Radio Rally

Holsworthy Community College, Victoria Hill, Holsworthy EX22 6JD

24th – Fog on the Tyne Rally

Whitehall Road Methodist Church Hall, Bensham, Gateshead NE8 4LH

25th – Great Northern Hamfest

Barnsley Premier Leisure Complex, Queens Road, Barnsley S71 1AN

NOVEMBER

1st – North Wales Radio Rally

Abergele Leisure Centre, LL22 7HT

8th – West London Radio & Electronics Show (Kempton Rally)

Kempton Racecourse, Staines Road East, Sunbury on Thames, TW16 5AQ

15th – Cats Radio & Electronics Bazaar

Coulsdon Community Centre, Chipstead Valley Road, Coulsdon, CR5 3BE

15th – Plymouth Radio Club Rally

Harewood House, The Ridgeway, Plympton, Plymouth PL7 2AS

21st – Rochdale & District ARS Traditional Radio Rally

St Vincent de Paul's, Caldershaw Rd, off Edenfield Rd (A680), Norden, Rochdale OL12 6BU

CLUB CALENDAR

SEPTEMBER

4th, 5th & 6th.....SSB Field Day

6th.....Monthly breakfast meeting at the Rainbow Café

9th.....Construction Competition

12th & 13th .....Shoreham Coastwatch on the Air

16th.....21MHz Four Square Beam – Garth G3NPC

23rd .....2m DF Evening - Outside event

OCTOBER

4th.....Monthly breakfast meeting at the Rainbow Café

14th.....Discussion Evening

21st.....Breaking Bad - Jonathan Hare G1EXG

28th.....WADARC AGM

NOVEMBER

1st.....Monthly breakfast meeting at the Rainbow Café

DECEMBER

6th.....Monthly breakfast meeting at the Rainbow Café