



Mid Sussex Matters

January 2016

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Stella and Ken Gibson G3WYN with Russell G7TMR



Please Do Not Forget It Is Your Magazine

For this I need copy from any one of you however small and it may or may not be radio related.

I am hoping to go to print each month with copy in by the 10th of each month but if there is no copy there will be no mag simple as.

Best Wishes Stella, Editor of MSM

An Analysis of the HF Nets in 2015

Another year gone and I'm still running the HF nets and that's a surprise to me but here is my customary analysis of last year's operations.

The Sunday Morning 80M NET (from 8am clock time on 3.740)

A big improvement in that we had 15 members calling in compared with only 10 during 2014. These members used 20 different callsigns as some advanced towards a full licence and others ventured abroad and still kept in touch. The largest number on any of the weekend nets was 10 which is not too bad after all for 8am on a Sunday.

16 other stations called in including a wonderful contribution from John G0NOK .. he managed to join us on almost every Sunday morning, a really early bird once again.

A combined total of 31 stations using and calling in during the year compared with 21 the previous year, that's good.

Sean and I pushed our overall total since 1977 up by another 45 to 1745, dare I say it is a great achievement by a couple of oldies.

This Sunday morning net allows us all to keep in touch with MSARS members who now live some distance away from Burgess Hill, How else could we hear about Terry's café or the skinny dipping and bathing beauty contests he so regularly attends or hear of Gerry's adventures in Keshcarrigan?

Don't let these members feel that they've been forgotten.

The Weekday 15M Net (1330 clocktime on 21.330Mhz Mon-Friday)

HF band conditions continue to fall as predicted but there was some surprising DX out there if you listened carefully and I'm still pushing my totals up gradually.

Generally the same MSARS members supported this nets 19 calling in during the year compared with 16 during 2014. They used 21 different callsigns from 7 countries with holidays and callsign changes as exams are passed making up the difference.

I had to resort to CW on several occasions to work Bob, N4XAT since conditions did vary but we still managed to communicate despite this. I even had a few CW contacts with David W1GN as well for the same reason.

We were joined by 31 other stations including our regulars Bob, VE3UUH and VK7FRJG Rod in Tasmania for our furthest DX call in once again. Clearly the blue wire Delta Loops are still doing the business. These 31 callers came from 20 Countries and 4 Continents and obviously there are a lot of amateurs out there that know where we are at lunchtimes during the week.

A grand total of 50 participants for our lunchtime net, very good indeed!

AN ANALYSIS OF THE HF NETS IN 2015 Cont'd

We've now lost HO Townsend N5AOK formerly WA5MLT with whom I started this net on 13th Feb.1979 but Anita N5AOK has left his entry on QRZ.com in his memory showing a potted history of HO's amateur radio achievements and photos of the many masts and antennas still in place at her place in NE Texas. These are well worth a look to see what a proper American set up involves. I used some of that equipment during a 4 day stop there a year or so ago and worked 96 Countries with very little effort except turning the rotator to the desired direction! The photo of HO with G5RV recalls the highlight of HO's stay with Stella and I a few years back, another memorable event.

At last, due to a real effort on the part of George, G4PTJ we've worked the missing US States and are now only waiting the arrival of the last two cards for our Worked All States award. A grand effort too from our new QSL manager Gavin juggling the envelopes and persuading the last few stragglers to send us the cards we require.

With any luck we should soon have the Certificate on the wall of the shack and I'll find another HF award for you to strive for!

As I said last year, I won't be around for ever but am confident that after so long the HF nets will continue for years to come.

My thanks to all those who have supported the MSARS HF nets during 2015, I hope to hear you all, and other members too in 2016.

I'm still enjoying all this!

73 to all, Ken G3WYN.

Mid Sussex ARS Net Times—all times local

Sunday	0800	3.740MHz ⁺ /.QRM
Sunday	1100	145.350MHz
Weekdays	1330	21.330MHz ⁺ /.QRM
Tuesday	2030	3.725MHz ⁺ /.QRM (SCARF)
Wednesday	2000	145.350MHz

GB3HY is now working on the new frequency:

Listen 430.900Mhz Transmit 438.500Mhz CTCSS 88.5hz

Construction of Radio Equipment in a Japanese POW Camp

Part Two

By Lieutenant Colonel R. G. Wells

Transcript of a recording by Lieutenant Colonel R G Wells, on the construction of radio equipment whilst in a Japanese Prisoner of War camp after the fall of Singapore.

Finally, the valve; we joined the valve by winding the clean little bee wire around it and then plugging it with any insulating material we could get to make it stick, - no valve holder, of course. So eventually we produced a receiver of sorts, except it wouldn't oscillate. We tried building more, another choke coil and this went on for ages; there was no possibility we could get this valve to oscillate. I think it's recommended according to a friend of mine who had an amateur license, he thought that about 120 volts was the best we could get and there was no way we could get that by trying to smooth this anymore. So the only avenue open was to bribe one Chinese working at the power station that was very much our way, and of course in those days was a nationalist Chinese.

The capital of China in those days was Chungking, and I told him we could get him some overseas news from Chungking if he would slowly wind his field coil power up on the generator every night starting at about 9 o'clock bit by bit, and get it up to about 130 on his meter. He understood, and after that I said half an hour to drop it again, very quietly and slowly because it may affect the lights "....and you no speak about that because you get chopped, you know, and we will give you Chungking news...."

This was duly done and for about six months we had reliable communication. The first trial on air had too much hum, and we had to modify a few things two or three times in attempts to get it right, and in the end we had a workable situation which was worth exploring.

Capacitors right, choke coils right, one head phone, we had some old rag so we tied it round the head and tied it on, or string, or whatever we could get. With the hope of recording something we took some paper, which wasn't in plentiful supply, but the odd piece of paper we could get. Running notches down the left hand side, about a quarter to a half inch apart down the paper, and bending it over so that these little pieces stuck up in the air, and in the pitch darkness one could then put the headphones over one's head with eyes looking out for possible interruption by the Japanese - we had some lookouts, or cockatoos as the Australians called them, around the place to warn us at the oncoming of the Japanese - and with great trepidation we heard Big Ben chiming one night. Of course only one of us heard it but we were so full of enthusiasm.

It was the BBC all right; it was quite a clear signal but it was somebody talking about growing hops in Kent.

This broadcast went on for something like three quarters of an hour without any interruption, but ultimately the signal faded out and I was very annoyed. I was asked the next morning by my senior officer what was the news, and I said "we've got good news; I can't talk here, come this way." So he came along and said "what's this news you're talking about." I said I didn't actually hear any news, and he became very annoyed with me and said what the hell did I mean, and I said "if the British primary producing experts are capable and able to spare the time to talk about growing hops in Kent, Britain must still be alive and floating with their thumbs up, and as far as I'm concerned that's the best news I could hear!"

That's the outline and maybe there are some questions I haven't covered properly.

BJ: The first question I would like to ask you is: What did you have in the way of tools, if any, and how did you connect the components of the wireless without, presumably, a soldering iron?

RGW: No soldering iron, no solder of course, and no other system really available but to twist and wrap with some coconut oil paper, or cardboard or something, and very gently lift it. It was on a platen of wood we obtained somewhere; it was about a foot by a foot or something, so we just mounted the components on that. A meat skewer on the capacitor - oh, we had a capacitor too, a capacitor, a valve and a headphone, which were external to camp components we had. We didn't have any tools at all, except someone obtained the use of a sledge hammer - for what purpose I don't know because one of those would not be needed to escape; other than cutting up the soft iron of the fish plate which was about the only reason we needed anything, the rest were just twisted wires. We just wanted to get one usable because we didn't know whether it might be blown up or captured; we weren't worried, the main thing was initially a short term aim (as well as a long term aim) that it might last. Fortunately, it lasted for over a year - sixteen months until the arrests took place, but that's another story.

BJ: Can I just ask you - the components for the low voltage battery cells that you produced, where did you get all the components from?

RGW: Well, zinc wasn't hard, there was some sheet zinc lying on the aerodrome and we pinched quite a bit of that because that would be eaten away during the use of the cells for the low voltage. I don't know what would have happened if that ran out. I think someone produced two lantern cells which did for a while, but it was mainly on this home-made cell system, which wasn't efficient but nowhere near as inefficient as the rectifier was. We must have been consuming... Ah Ping said he had to turn up a lot of power to keep the lights what they wanted. We were dispersing such an amount of power in this four test tube rectifier for the high tension.

A variable capacitor was another component we had to bring in. We couldn't make a variable capacitor, it was impossible. We had to take two plates off the one we had to get a high enough frequency. Yes, I can't remember why we didn't go up a bit in inductance; it was largely a trial and error business really. Except that in a regenerative receiver you had some idea when you were near a station because the receiver was so sensitive as all regenerative receivers are.



It had a piece of meat skewer type wood which I had a hole drilled in by a pen-knife, and we glued this in with some of our glue or something, into the capacitor shaft so that we could tune it by holding a little stick across it, fixing it at about six inches because one couldn't get one's hands any closer to the set because it was in a state of very near oscillation where the maximum sensitivity is, just before it bursts into oscillation. With a fairly clear HF band, it wasn't long before we knew roughly, by putting a couple of marks on the stick, where it was. We knew that the Voice of America was due for a transmission and I don't think we ever knew the frequencies because the BBC didn't announce frequencies; they just came on the air and broadcast.

BJ: What did you use for an aerial?

RGW: A clothes line. All the huts had a clothes line of some sort so we just took a thin wire from that and wrapped it round the edge, knowing that a normal sentry wouldn't take any notice of it, and we just dragged that across the side of the hut and brought it in, and the people with our permission would put their loin cloths out and hang them over this when they washed them so it looked as if it was being used. The toilet in the sleeping block was a hole in the ground and it was verboten to be used by anybody except to put our radio set in when it wasn't in use; everybody respected our wishes in that regard!

I think the best thrill was, well two or three thrills, which were momentous I suppose and of great excitement, almost excitement of crying with excitement, and the first was I think when we heard a full news bulletin of something like 400 aircraft over Dresden or somewhere, pounding the place to pieces; we were very pleased about all this. But from the land point of view, from the beginning of '42 I think, I can't remember, but sometime just before the Battle of Alamein, and we heard some of the troop movements in preparation for that. The bulletins in those days were fairly long and gave a lot of detail.

Unfortunately the first lot of rectifiers blew up about 2 days after this so we were out of business for something like 5 or 6 weeks. Of course, the rumours started to flood in as to what was happening, what wasn't happening, the war would be over in 5 minutes and all these mainly optimistic things; but there were a few super-pessimists who said we would never get off the island, and would die there, and that sort of thing. But the thrill, I think, was when reception was restored again and we had to do another little bit of fine tuning because everything you changed seemed to affect something else; the whole thing was very sensitive and wouldn't have stood up to present day quality assurance bump tests!

So back there on the first night we missed the BBC for some reason, and the next thing was the Voice of America which had a headline which ran something like this: "The war is over in North Africa, Rommel is knocked to pieces, he's out of the Middle East and the Middle East is finished, the future for this and that" That was the end of the American news in about three sentences! No other detail, so I said we would go back at about 12.30, and hope that Ah Ping hadn't pulled the voltage down too far, to see what we could hear.



Again, the BBC was a little low but it suddenly came quite bright and lifted in volume, and Big Ben chimed again and there was a voice in the wilderness calling. It was a lovely sensation to hear Big Ben playing in those days, and every time I hear it now I become excited. The announcement, initially in a most depressing vein, described all about the 8th Army's movements, and it was here that it did this, and this regiment drew up and did that, on and on this went for something like 15 to 20 minutes, and we tried not to follow it because we had our eyes on too many other things, look-outs and so on. But a lovely flow of English and if you had a tracing board you could have traced out exactly where everything was in situ, but of course that wasn't the aim of our exercise which was to get news. At the finish of the news the polite sentence said "It must be considered now that as all resistance in North Africa has been overcome the Allies victory must be "assured" or something like that. And that was all he said, but he took a few minutes to describe everything that happened, so you had a clear picture. But the Americans seemed to be creating for a public that just wanted the headlines, three headlines and that was all; no other interest in anything else. That was one of the happy moments of the system.

We had the problem, of course, of writing the news because naturally a lot of people wanted to know it and a lot of people could be told it without its origin. This is why we used the piece of paper we took with us (Gordon Waite and the other officer who used to share some of the work), and as soon as we heard about 30 bombers over Dresden or something, you just put 30 BD, or B for Berlin, and feel the paper down when you felt it coming to the end, and pick up the next little bit of bend and write along that in the pitch dark, hoping that you've got something in the morning. Surprising how legible it was, just triggered a couple of words like that.

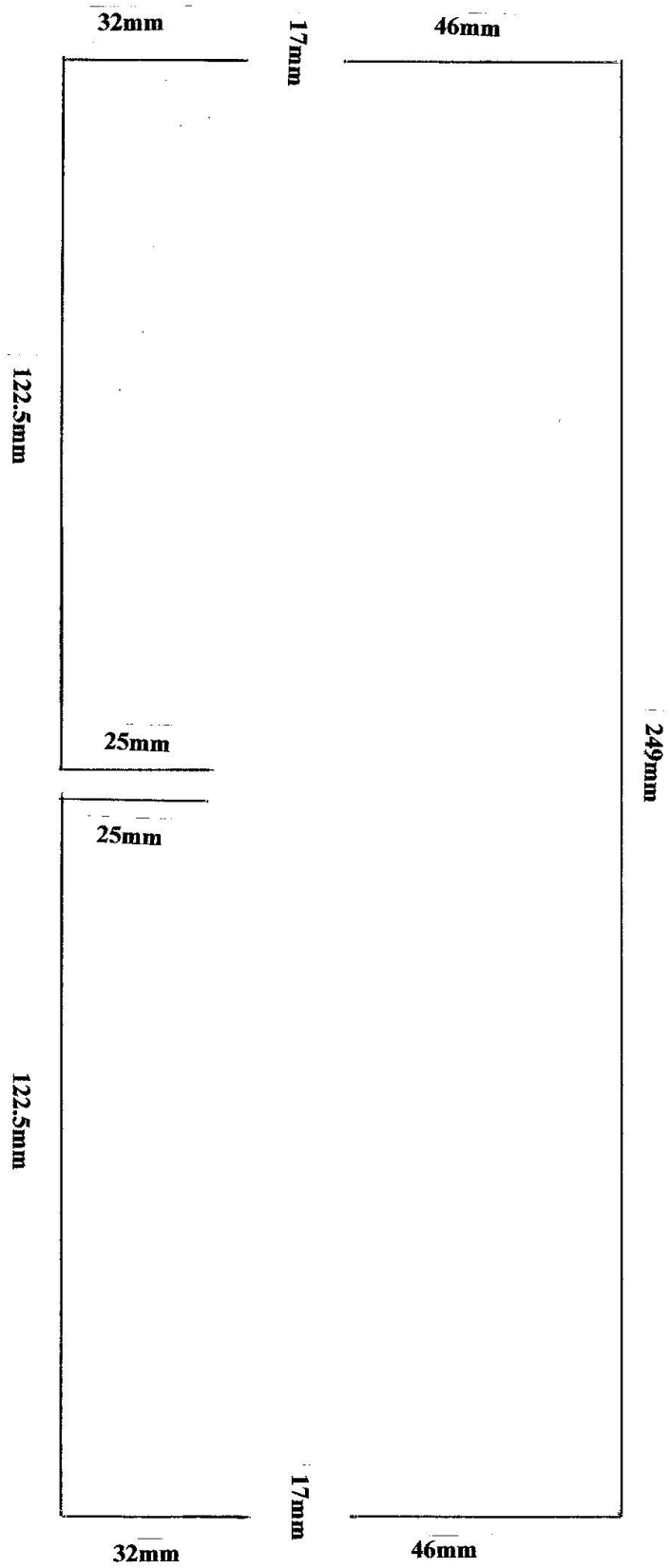
Unfortunately, I was in deep custodianship with the Kempetai when the Atom Bombs were dropped and I didn't hear that news on the BBC; it was relayed to me. We didn't keep these things, of course.

Getting off the technical side now, the radio set didn't betray itself. Some criticism could be levelled at us I suppose. We trusted too many people; we had no intelligence training then, of course, or anything like that and we were inclined to trust every Asian we met who smiled at us and who said he was one of us. Anyway, while this was going on at the aerodrome and once the troops heard, we had to tell the troops the good news of course. We said we had heard from an unknown source that the war is getting better, or something like that - we had to give them a sanitised version. It was probably all they wanted but, naturally, two or three senior officers wanted to know as much as they could because they may be the ones who would have to take some decisions one day about it.

Unknown to us an Indian - I don't like saying this and I'm not being racist, it could have been any nationality - blackmailed a Chinese who was helping us on the aerodrome picking up bits of iron for us and various other things. He blackmailed him but the Chinese wouldn't talk, so the Kempetai arrested the Chinese and put him on a rack; he mentioned in the course of his cries for help - which was not a nice thing to think about but I don't blame him - he mentioned Captain Matthews and a couple of other people; I think I would have done the same thing at that stage.

**Continued
Next time**

MINI MOXON ANTENNA FOR HY REPEATER



Mini Moxon Dimensions

G3WYN Dec. 2015

A Mini Moxon Antenna for the HY Repeater

Thanks to a great deal of work by a few members the HY Repeater is now running again and enables MSARS and others to keep in touch over a wide area using only a few milliwatts of transmit power from tiny transceivers.

These come fitted with a rubber duck which has questionable efficiency and whilst the use of these antennas locally is sufficient to break the repeater, users a little further away could do with something better.

This prompted me to set to and design a small Moxon antenna which has some forward gain, is far better than the rubber duck and, is cheap and easy to construct.

A Moxon antenna is a 2 element beam consisting of a driven element with a longer parasitic reflector behind it with the ends of both elements bent in towards each other with a small critical dimension between the ends.

For HY this is only a tiny device measuring 249mm x 95mm overall and can be made up from the wire from 2 wire coathangers, welding rods or any similar metal rods easily obtainable from a variety of sources. Since there is no soldering involved in this antenna the rod can be made from whatever metal can be found.

The diagram gives the dimensions of the three pieces of rod required, one of 341mm and two of 213.5mm but it is easier to cut all pieces slightly longer and trim the elements exactly to length once bent. When you are measuring any length remember to measure from the inside of the bend not the outside.

To make up the antenna, cut one length of rod to 350mm, measure 50mm from one end and stick a length of masking tape on the rod to allow you to mark where the first bend should be. Measure 249mm along from this mark for the second bend position and put the rod into a vice and make the first 90 degree bend carefully. Give it a tap with a hammer to make a sharp right angle bend and then do the same for the other bend 249mm away.

When you are happy that the distance between each bend is 249mm cut each short length to 46mm to complete the parasitic element of the antenna.

Now for the two identical front elements. You need to allow extra length on each of them to bend back to fit the terminal block which connects the coax to each of them, so cut two pieces 180 mm long and bend one end back 32mm from the end. Then measure 121mm from inside the bend and bend back the remaining length which goes into the terminal block.

The photograph shows the terminal block I used, translucent plastic with two sets of screws but anything you can get hold of will suffice. If you can only find single connectors then stick two together with superglue.

Now you have 3 wire elements which require fitting together and to the coaxial feeder. I used a sheet of polystyrene foam as a backing board but corrugated cardboard or any stiff board will suffice.

To maintain the 17mm spacing between the ends of the elements find a small length of plastic tubing that will just fit over the rod and cut two lengths each 60mm. Now find a smaller diameter plastic rod that fits inside the tubing, or use a length of matchstick if all else fails and cut this to 17mm. Stick the thinner rod into the tubing and keep it in the centre of the tube with a little superglue and secure the elements into place in the same way.

A Mini Moxon Antenna for the HY Repeater Cont'd

Fit the terminal block and trim the ends of the driven elements off if they protrude from the terminal block, fix the completed antenna to the backing board with tie wraps and you are ready for the coaxial feeder. I used mini 8 coax and formed a two turn RF choke secured with more tie wraps. Fit a plug at the other end of the coax that will match your transceiver and hang the completed antenna up with the feed point side facing towards the water tower and you're off.

You could make up a waterproof version of the antenna and mount it outside but mine is hanging in my ground floor shack and working fine so why bother. Just get to work and you'll be ready to tell your friends all about your low cost HY beam that is putting a 5+9 signal into the repeater. Mine is, and so will yours soon I hope!

G3WYN. Dec. 2015

Completed Antenna



BURGESS HILL & HASSOCKS ADULT EDUCATION AREA

RADIO AMATEURS' COURSE - C. & G 765 1973—1974

MARLE PLACE MP 80

Tutor: Mr. F.R. Canning, MIEE.

Thursdays 7.30 p.m.

This is part three. I am sure one or two of you may have taken this course or had this person as an Instructor.

Week No.

Proposed scheme of work

20. Methods of keying and modulating transmitters. Avoidance of spurious radiation due to harmonics, shock excitation, key clicks and over-modulation. - Remedial devices e.g. traps, filters etc.
21. Basic types of receiving and transmitting aerials, voltage and current distribution together with polar diagrams. Harmonic operation and-variation of directional properties.
- * 22. Resonant and non-resonant transmission lines. Characteristic surge impedance, standing waves, velocity ratio and matching.
23. Simple unidirectional arrays. Variation of feed point impedance and methods of matching to the transmission line. Aerial tuning units.
24. Operation of simple frequency meters, including crystal controlled types, and their utilization for frequency measurement.
- * 25. Meters for measuring d.c., a.f., and r.f. currents and voltages e.g. moving coil, thermocouple etc.- Avoidance of errors in measurement.
- * 26. Dummy loads and their use for alignment of transmitters or measuring the r.f. power output. Measurement of the d.c. input to the power amplifier. Transmitter efficiency.
- * 27. Application of the cathode ray oscilloscope for the examination and measurement of a waveform e.g. modulation envelope, keyed carrier characteristics etc.
28. Survey of the terms, provisions and limitations of the Amateur (Sound) Licence A with the aid of past examination questions.
29. Revision of transmitter interference to T.V. and B.C. services. Questions from past C & G Examination papers forming the basis for discussion.
30. General revision of important sections of Part II of the syllabus as indicated by the frequent repetition of relevant questions in previous examination papers.

NEXT 

* CALCULATIONS

Where a section of the syllabus requires these, worked examples of the required standard will be given.

Recommended Literature:-

"How to become a Radio Amateur". (This is free of charge from the Amateur Licensing division, Ministry of Posts and Telecommunications, London, S.E.1.)

The following are obtainable from the Radio Society of Great Britain, 35 Doughty Street, London WC1 N2AE.

"The Radio Amateurs, Examination Manual" (Price 90p)

"Radio Amateurs' Examination Revision Notes". (Price 30p)

"Radio Communication Handbook" (Price £4.10)

Many thanks to Mike Pollock G8KMP for this over the last three Issues of the MSM, the Editor.

Terry Stow
G0SWS
In his winter
Operating
Position



From the President's Corner

A fairly slow month HF wise with a few solar storms interrupting propagation and making it difficult to maintain contact during the nets. Nevertheless we did manage to talk to our overseas members and friends at least once or twice a week in the build up to Christmas and now, facing the New year as I type this column it's time for Stella and I to wish all of you a Happy and Peaceful 2016 and I hope that we can continue maintain contact via the MSARS nets in the months to come.

The HY repeater is now fully operational and in use by many of the locals, not all of them MSARS members but welcome of course. I've already spoken to one local after a gap of 9 years, so, use it yourselves regularly, if you can't hear anyone put out a call, lots of locals might be monitoring and you might get a surprise reply!

My Mini Moxon for HY details are now with Stella for publication when she gets space, the construction is childishly simple, the cost is zero, there is no soldering involved and the antenna does work better than any rubber duck. Let me know if you build one and how it works for you.

I would encourage you also to look at the MSARS website regularly. Tony is surpassing himself and the website now includes many new features which will keep you up to date with what's going on and what is planned for MSARS as the weeks go by. No excuse now for "forgetting" what next Friday's meeting is going to be about. Keep an eye open for the bargain items advertised regularly in the 'For Sale'; if you don't check-in you'll miss them because they will be Sold. This applies to both members and non-members, the Website is open to all.

Have a good New Year all of you.

73, Ken G3WYN.

Our Yearly MSARS Christmas Party 2015

A welcome return to 'eating out' was on the menu for this years MSARS Christmas party. The Plough at Pyecombe played host to our group of 24, both members and partners.

Below: Russell presents John Berry, G8JBJ with a bottle of Whisky. John is retiring after 12 years of teaching our students who were studying the Foundation course; A Superb teacher, John has been jointly responsible for the high pass rate of the candidates sitting the Foundation exam. A Blue Orchid was presented to his wife Sue.



Picture on Right: Clockwise near the end of the long dining table are seated: Adrian M0TCD, Chris M6FOW, Kim G7AIE, Jacqui 2E0FQV and direct from Ireland Gerry EI9DZ.

Picture on front cover: Our President Ken Gibson with his delightful wife Stella who had just celebrated their 60th wedding anniversary. Our Chairman Russell Nelson G7TMR presented Stella with a Blue Orchid. Congratulations to both of them from the members of the Mid Sussex Amateur Radio Society.

All three Christmas Photos by Mike Pollock G8KMP.

Mid Sussex Amateur Radio Society 2014— 2015

President	Ken Gibson	G3WYN	01444 412420
Vice President	Mike Pollock	G8KMP	01444 244953
Chairman	Russell Nelson	G7TMR	01444 236795
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Programme Secretary	Stella Rogers	M6ZRJ	01273 844511
Vice Chairman	Kim Newland	G7AIE	07787 770059
Shack Manager	Rob Simpson	2E0KDT	07730 209539
Publicity Officer	Stella Rogers	M6ZRJ	01273 844511
Committee Member	Jacqui Moore	2E0FQV	
Committee Member	Gavin Wylie	G4LYX	01273 845388
Course Administrator	Adrian Allen	M0TCD	01798 815286
Lead Instructor	Chris Saunders	G4ZCS	
QSL Manager	Gavin Wylie	G4LYX	01273 845388

Our normal "QTH" is Cyprus Hall Burgess Hill Sat Nav RH15 8DX

We meet most Fridays in the Millfield Suite 7.30pm till 10.00

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Newsletter—Editor Stella Rogers M6ZRJ

All articles and photographs are the copyright of the authors. Contributions are invited from Society members and should be sent to newsletter@msars.org.uk

Otherwise you can use Snail mail to my address at:

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If you have some great old pics that need to be aired I can share them with the rest of the club.

Best Wishes
Stella