

RNARS

NEWSLETTER



Royal Naval
Amateur Radio
Society



SPRING 2019

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Front Cover:

HMS Lowestoft was a Rothesay or Type 12 class anti-submarine frigate launched in June 1960, commissioned September 1961. She was reconstructed in the late 1960s to largely the same pattern as the third group of Leander frigates, with new radar, fire control, and a hangar with landing pad for a Wasp helicopter for longer range, anti submarine, engagement. In the late 1970s. It was converted as the prototype towed array frigate for the Royal Navy, but retained its full armament. *Lowestoft* was sunk as a target on 8 June 1986 by HMS Conqueror using a Tigerfish torpedo. She was the last Royal Naval target to be sunk still showing her pennant number.

RNARS Officers & Committee



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RNARS Officers & Committee		
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SUBSCRIPTIONS INFORMATION

Special Notice Regarding Your Subscription

As much as we would like you to continue being a member of the Society, all subscriptions fall due on April the first. If you have not paid your annual subscription within one month of the due date your membership will lapse. This is unfortunate.

Those members who use automatic banking facilities with dates other than 31st of March or April 1st, please contact your bank to change the date of your subscription payment. In this way you are helping to reduce the workload for our Secretaries and Treasurer. Thank you.

Subscriptions:

Please ensure your name and RNARS number appears on all transactions. **UK:** £15 or £5 per year **due on the first of April** to be sent to the Membership Secretary. Cheques and postal orders to be made payable to "Royal Naval Amateur Radio Society"; bankers orders are available from the treasurer. Subscriptions can also be made via **PayPal** through the RNARS website. Click on the *How to Join* page: www.rnars.org.uk.

Overseas members: Subscriptions via PayPal is preferred, see above for details.

Newsletter by e-mail: If you receive email Newsletters your annual subs are reduced to £5. Contact the Secretary for details.

The society banks with Lloyds 272 London Road, Waterlooville, PO7 7HN.

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GDPR: Your details will be held on the society's database by the Membership Secretary. The committee requires your permission with regards to the release of your personal information held on the database to be used only by the Society.

The RNARS is grateful to Phil MØVSE and Wayne G6NGV Taylor of **Shine Systems** for hosting our web site free of charge: www.rnars.org.uk

A gentle reminder to everyone:

When the subscriptions changed to £15, it would appear that a few members may have not changed their annual subscriptions from the old £10 when the change came into effect. Can you please check your payment arrangements and update them to the current subscription of £15. **Thank you.**

CHAIRMAN'S CHAT



David Firth
2E0GLL@mail.com

It seems like yesterday that we were gently cruising along with the domestic niceties of putting up the decorations and fetching the turkey crown from the local butcher. It has all come and gone! Tomorrow will be our first opening of the shack in Collingwood for 2019, and so we'll pick up the threads and get going again. In spite of the grey dank days of winter there have been encouraging signs of a stirring of activities with different people doing different things in radio, popping up all over the place like brightly coloured crocuses peeking up out of the snow. Satellite comms one minute, DMR the next, then Steve (M6WVV) popped up in RadioUser demonstrating his radio beanie hat extraordinaire! Not forgetting the die-hards glued to the HF and doing the seemingly impossible by plucking QSOs out of the ether. While other unrepentant 'radionistas' went up onto the local hill for a coast-wide rag-chew on 2m and 70cms. Well done to you all!

At the time of writing I can tell you that the DMR repeater at the HQ shack is all but squared away ready for the NoV to arrive. On Tuesday 22nd of January the system was boxed-up in a 19" wall cabinet and fitted on to the back wall of the shack. A hearty well done to Ian Hutchinson and Martin Longbottom for their efforts in doing this. More details later when the installation phase of this project is over.

The Harwell Rally held on the 10th of February seems to have been well attended in spite of the bad weather conditions for travelling, providing a nice winter break from the confines of the QTH for our members who attended, and keeping alive their interests in the hobby. The next rally in the deep south will be the Kempton Park rally on 14th April.

I am pleased to observe that the HQ shack has been quite busy of late with members, both new and old, getting involved in becoming savvy with our latest project and 'codeplugging' their new acquisitions. Lots of discussions...

Best wishes to you all, *David*

MEMBERSHIP MATTERS

A very warm welcome to our new members, and to re-joining members.

New Members		
Daren Burkill	SWL	5056
Derek Sinclair	SWL	5057
Tuomas Talka	OH5JJL	5058
Alexander KRIZ	OE6FTE	5059
Stella Nye	G0EKP	5060
Re-joiners		
Bernard Ager	M6BRZ	4917
Changes		
Resigned		
Silent Keys		
Roy Wells	G0ITS	3191
Des Shepherd	G3LCS	0038
Dick Hilton	G4WZI	0483



April, 1961

IT'S WHAT KEEPS YOU INVOLVED

Steve Legg

There has never been a better time to get into the hobby of Radio than now (Amateur or otherwise). Why? Interest in the hobby is high, the variety of modes and equipment is vast, whatever your interest, situation, ability or location, access into the hobby is supported. So many people get wound up when you mention network radios that I have now taken to operating mine underground (DISGUISED AS SANTA)!



Locally, with the expanse of Hams and 11m enthusiasts of all ages and experience, from operators in WW2 to newcomers entering the hobby just this month. VHF/UHF, HF, Satellite, digital (voice and data), CW and VOIP modes, and more, open to all using your old smart phone or a new all singing digital wonder costing many bucks!!!!

Whatever you use the important factor in all of this is "you" the radio operator. We use what we use because we enjoy the hobby, we enjoy making contacts and sharing in a friendly manner our interests. The likes of Facebook groups such as this one and others have brought more people together, sharing a smile, sharing a laugh or a special moment or gathering. Giving and receiving advice and learning something new every day, it's whatever you want it to be.

Locally we are blessed with enthusiastic radio users who put much time, effort and money into providing radio services for all to share. GB7SO, D-Star and DMR repeater, the new Hubnet link via a 2m repeater in Portsmouth, the amazing GB3IW with its large coverage (about to be relocated), two new repeaters shortly to come on line in Southampton, should be easily accessible to all SRG users, 2m and 70cm coverage, a new DMR repeater to go with the D-Star repeater situated at the RNARS Shack HMS COLLINGWOOD. Digital modes, like them or hate them (The Marmite Modes) have brought many new people into the hobby this year and will continue to do so, more radio users must be good to keep our hobby alive for generations to come, no matter how technology advances. Users with limitations from relocating to smaller properties, moving into sheltered housing of flats can continue to enjoy the hobby without antenna farms and the maintenance involved.

The Magic of the Airwaves are still very much alive. Propagation is on the up, smile and enjoy.

What keeps you involved in the hobby?

Steve

DIVERSE REPORTS

RNARS HQ

RNARS Launches DMR Repeater GB7CO

GB7CO IS NOW LIVE!

Following-on from the recent launch of the UK military & veterans talk group (23527) via Brandmeister last year, the RNARS DMR repeater project has begun initial local testing. A positive feature of this installation will be its visibility within the shack and with two LCD displays for system monitoring and user information.



The repeater's profile is outlined below with the callsign of GB7CO and is intended to augment the existing D-Star internet gateway repeater GB7RN in a widening of our digital services to our RN and civilian communities.

Watch this space...

Summary: NoV approved 23/01/19

c/s: GB7CO

Digital ID: 235272

Station Data:

This is a multi-mode **DIGITAL VOICE** repeater application.

Please note this repeater is NOT licensed for ANALOGUE Voice repeat

This Digital Repeater also has **DMR** capability cc:3

Connectivity: **BRANDMEISTER**

TX Frequency is: 439.4875MHz Rx Frequency: 430.4875MHz (70cms)

Region: **SOUTH-EAST ENGLAND**

DIVERSE REPORTS

Well, Fancy That! RNARS Member spotted in RadioUser



Steve Legg (M6WVV) has been truly tagged wearing this variation on woolly winter hats; seemingly kitted out with a radio, a set of cans (earphones) and also a (boom) mic maybe. A sort of soft option Capt. Scarlet. Spectrum is green!

Canvey Island Rally Marc Litchman



I attended the South Essex ARS Canvey Island Rally on Sunday, 3rd February 2019, with David Coles M0IDF and John Glover M0JGR both of whom are London Group members and it was Dave who provided transport for us all to and from the venue from Loughton and Chingford, respectively. After being staged for 30+ years at The Paddocks, on Straight Road (A130), the site is now due for re-development so the

relatively newly built, Cornelius Vermuyden School was the venue and it was quite spacious and airy with the majority of vendors being sited in one of the school's sports halls. However, a lack of on-site car-parking was seemingly an issue. Another issue, for me at least, was the size of the tables. I had booked two adjacent tables, for the RNARS and for the LG, but the tables were in fact three school desks pushed together and while about 1.8m in width the lack of depth meant that some of the Society's merchandise could not be displayed. The layout of the tables also meant that we were very close, back-to-back, to the VMARS stand. Dripping aside, the Canvey rally, being the first in the south east each year, is always well attended and this year was no exception. RSGB General Manager Steve Thomas M1ACB was spotted walking the halls and manning the Society's book stall along with some of the regional team. A number of local clubs and the Essex Repeater Group also put on good displays. A small number of members stopped-by to sign the RNARS rally attendance sheet and to purchase a few commodities. Tots of Pussers were also issued to the faithful (as well as Anne from VMARS).

All-in-all an enjoyable day, meeting-up with many amateur radio friends from around Essex, as well as making new associations with RNARS members from across the water (Kent. South London). One new member, Stella G0EKP, (RNARS 5060) was signed-up. Stella has been a member of the LG for several years, in fact she is the regular Thursday GB2RN CW op. Those who signed the RNARS attendance sheet:



5047,	David	2E0EGM	Eltham
5022	Ian	2E0DUE	Margate.
5037	Phil	2E0PGC	Broadstairs
2899	Brian	G7IIO	Benfleet
5060	Stella	G0EKP	Grays.

Marc

Talking with Taiwan on the radio



Jim, BW/G4TDS, RNARS 3355 living in Taiwan had picked up the buzz that GB7CO was up and running, so took a flyer and gave us a call on Wednesday afternoon (GMT 16:30-ish) of the 7th of February. For Jim it was 23:30 local time, but that didn't stop him booming in from nearly 10,000 Km/6,074miles away in what is a first for our new venture. Just what this system was intended to do -link up our RNARS members worldwide -plus F5VMR an expat living in France who has been very helpful in setting up DMR

Harwell Rally (Didcot) Joe Kirk

Saturday 10th of February and Joe Kirk was in early to set up the RNARS stand with its large feather banner swaying under the gentle breeze of warm air currents circulating inside the venue. This was one of those rallies that is more attuned to the needs

of the amateur radio constructor with a healthy mix of old and new items for sale, where among the stands you could find components and modules of every kind. The type of things that every home constructor really likes to appreciate. Sadly, missing



was the Royal Signals stand, and we had a pleasant chat with our friends at the RAFARS stand. It was a well attended rally and an enjoyable day with the usual surge of interest at the beginning followed by a steady stream of enthusiasts during the rest of the afternoon. There were two applications including one re-joiner, and fifteen members signed in during the course of the day.

Joe

**Next Rally: Kempton Park Rally: 14th April 2019
Doors open at 10am**



Opposite: A busy day in the HQ Shack in February

Silent Key Des Shepherd G3LCS

The funeral service for Des took place on 29th January 2019. There were around 125 people there including family, friends, neighbours and members of various organisations to which Des belonged.

Desmond Arthur Shepherd was born in 1930 in Wolverhampton. After service in the Royal Navy he worked for the Diplomatic Wireless Service at Hanslope Park near the family home in Haversham, Buckinghamshire. He met Sheila at a local dancing venue and, after marrying in 1956, he was transferred to Singapore. He later became a Chartered Engineer and ran his own business which was to take him on many trips abroad.

He was an active member of the Milton Keynes Amateur Radio Society which was located at Bletchley Park. He was an early member of the Royal Naval Amateur Radio Society number 0038 and an active CW operator. He later became a member of the First Class CW Operators Club, number 1736. Among his other interests was membership of the North Buckinghamshire Wood turners Club. *RIP Des.*

W L Mahoney

PLAY BEFORE YOU BUY

Ed

The experience of joining the digital age in radio got me very close to losing some dentine and it is a lesson in patience for all first-timers like me. There's one cardinal rule here -**Play before you buy**. Look at how it works online. Look at how the providers present the information on their TalkGroups. Look at what is available in terms of radio equipment and see how it could work for you. I chose the Brandmeister route mainly because that is where the military & veterans talk group can be found.

https://www.pistar.uk/dmr_bm_talkgroups.php



If like me you bought a handy Baofeng RD-5R from 'radioddity' then it does come with some frequencies already in its memory, and it also provides the facility of switching between analogue and digital. It also comes with a programming lead that connects the radio to a PC. The new style programming leads no longer have the interface chip embedded in the USB plug. It is now integrated within the radio instead. A much better arrangement.

Out of the box I switched the radio on and found I could enter my local analogue network frequencies and chat to one or two of the locals -it works. Looking at the battery it was only about half charged. The best thing to do at the very beginning is to unpack the charger and drop in the radio until there is a full pressure of voltage in the tank... I didn't and almost got caught out towards the end. In the meantime you can do a few things until it is up to capacity. I suggest you create a DMR folder in your file system on the PC, then go online and get to the radioddity download website where you will have to scroll down until you find the icon of the model you bought -click on that. This is where you find documentation control does not exist because some of these are third party:

<https://www.radioddity.com/pages/radioddity-download>

Ask around and take notes from which you later can write down a plan of attack. Find out where to register online for a digital identity, then go and get that. Then you can register with a digital services provider using that ID. When your device is fully charged then you can start to program it using your PC.

SEA STORY - continued

© Eric Bray M0HFF

One of the 'T' ratings fired up the 20" arc light, and illuminated the target. The Duty Officer identified it as one of 74 the Elint, (ELECTronic INTelligence), 'trawlers', which followed our military ships around like pet dogs. They had more radio aerials on them than they had fishing nets. We changed course suddenly, and applied power, hoping to get close enough to read the name, but the vessel darted off at a most un-fishing boat speed. Radar plotted it at 35 knots, until it was several miles away, when it slowed and matched our course and speed again. A message was compiled and drafted to the Min of Defence, detailing the incident.



At five past twelve, my head touched my pillow, then I was being 'shaken' for breakfast, before the forenoon watch. "Your pal's still out there, about ten miles astern."

"Uh?" My body was on watch, my head hadn't caught up yet. "Your trawler, they're going to send a chopper out to photograph it, shortly."

"Oh!" At twelve and a bit, I blundered down to the galley, running on automatic, ate something I have no recollection of, then crashed into bed again. I was excavated at five-forty five, for the Second Dog watch. After the evening meal, I went back to bed,

and 'died', until I was roused for the Morning watch. After that, it was breakfast at eight, then back to the EWO for nine, and daily routine duties, i.e. scrub the passage!

Taff the Tiff was nursing his other babies, the S and X band jammers. He was dashing frantically up and down from the attic room to the EWO, and back, juggling test gear and smoking soldering irons. The basic jammers were common across the fleet, but the three Carriers had an additional amplifier, because they made such large radar targets. The jammer was supposed to bury the reflection under a mess of noise, producing a huge splodge on the enemy's radar screen, making it useless for range-finding. Again, they were hand-built, and the heart of the amplifier was a temperamental beast called a Klystron. The Klystron was a special, very expensive, valve, and very prone to frying itself. It needed several hours of 'stand-by' power, to wake it up safely, which was handy when you needed them in a hurry! Should the jammer

transmitter need re-tuning, to a different radar target, for instance, you had to switch the Klystron to stand-by, then re-tune, very slowly, then wait until it settled on the new frequency, before powering up again or it threw a 'wobbly' and immolated itself, or switched off, (tripped), completely. In that case, Taff had to wait several hours, while it cooled, then start again, from 'stand-by'. Sometimes they tripped out because somebody sneezed, or if a catapult fired an aircraft into the sky, but usually they tripped out because they felt like it!

Just before we broke for lunch, the Chief called me into the EWO, and gave me an A4 manila envelope, with the words, "A memento for you!" Inside was an aerial photograph, measuring about ten by eight, of a boat festooned with radio aerials. Its name was partly readable, and partly weird back to front letters. "It's your Elint trawler!" Chiefy explained. "As close as we can get, its name is Capitan Skyrati." I studied the photo. The elliptical hull had a boxy cabin placed centrally, with a garden shed perched on top of that, for a wheelhouse. Scattered haphazardly around the boxes, and on cross-stays on the stubby mast, were assorted lengths of whip aerial, as well as a long-wire that ran from the lower cabin, to the mast-head. On the boat's stern, a man in a tatty tee-shirt and jeans was making an obscene gesture to the camera. Centrally mounted on the garden shed was an object that looked like a large frying pan, but it had the handle on the inside. I asked what it might be. "Ah, now. It would appear that they have satellite communications! Now what would an honest fishing boat want with that? Even WE don't have it, yet!" Chiefy pointed at the man in the stern. "A few frames on, he turned round, dropped his pants, showing us his buttocks!" I still have that photograph, rather dog-eared, now, amongst the junk a person collects over his lifetime.

That week at sea was spent testing every bit of equipment, especially things that had been stripped down during our stay in dock. The final day was spent performing high-speed runs. We left a huge white stripe of boiling water, and a line of black smoke behind us, as the whole ship trembled with the effort of punching through the water. Then it was time to play at daisies again, lined up on the edge of the Flight Deck, as we returned to Portsmouth Harbour. This time, we were on the 'land side', and could see Southsea, the fort, and the building that housed C in C Fleet, as we returned to Middle Slip, and were tied to the land once more. It is strange how quickly you become used to the trundling noise of the prop-shaft, down in its vertical hole, and the constant rocking and swaying of the ship, so when it stops, it seems weird!

Weekend leave was granted to the off-watch half, and Cinderella to the off part of the on-watch, if you follow that. I went to bed, and don't even recall being sat on when the lads staggered back at something past midnight. We stayed in harbour for a week, re-repairing defects, and chasing all the odd jobs that had been left, such as scrub the passage. The EWO stayed on full watch-

keeping, although it was reduced to a one man watch, for safety, not operational reasons, while Taff cosseted his babies, and fine-tuned them to perfection. We were told that it was better to leave the equipment running during short stays, rather than shut them down, and have to re-start them, because the stresses involved caused more damage. His plans were wrecked when a stoker, working on the jetty with a fork-lift truck, managed to drive through the power cables. The resultant big blue flash removed his eyebrows, and dumped Hermes into total darkness.

As the cooling and ventilation fans ran down, the battery powered emergency lights flickered on, but the damage was done. All the electrical equipment, devoid of cooling air, cooked itself. It took about twenty minutes to reconnect shoreside power, and most of the day restarting everything, then resetting it, and beginning the testing procedures all over again. Taff was having kittens when he restarted his babies, in case they had been shocked into insanity. Everything seemed to have survived, though, except the tape recorder. (Hooray, no more Morse tapes!) but unfortunately, it was soon fixed.

The other watch had weekend leave granted, then it was daisy time again. Out in clear water, we worked up to full speed, to check if a propeller imbalance had been cured. Everything was fine for ten minutes, then the boilers were hastily shut down. It turned out that the desalination plant had begun oscillating, and then failed totally. We had been seconds away from a mighty bang when the boiler fires were put out! We drifted, at the mercy of the wind and tide, powerless except for diesel generators, while the stokers laboured to strip and repair the de-sal plant, then restart it, after flushing the salt out of the fresh water pipes. Another two hours passed, then we limped back to Portsmouth, while the boilers cooled, so they could be examined for damage. After a few tubes had been withdrawn and replaced, we started again.

Back in Portsmouth, after another week at sea, all the remaining junk was removed from the flight deck, then a specialist team of dockies stripped all the non-skid paint, resurfaced, and re-marked it, and generally fiddled about while we stored ship. On Friday, weekend leave was granted to all non-locals, while the locals were split into two sections, and had a day each, thus keeping the bare minimum of men aboard to keep things running.

Chapter six. Next Stop?

On the following Monday, we sailed again minus two bodies. One was AWOL, (Absent WithOut Leave), and the other had fallen off a ladder, at home, while getting something from the loft, and was in hospital being patched up. He would catch up with us when he was fit to travel. I was operating the UA9, just after taking over the afternoon watch, when I picked up two new targets, one

was going tacketty-tack, tacketty-tack, rather like a train rolling along the track, and the other was a slower, low-pitched, irregular bloop. Pete told me that the first one was the A118, fitted to Sea Vixens, amongst others, while the low one was a Blue Parrot, fitted to Buccaneers. I reported the contacts to the bridge, then shortly after, we began to wind up the speed, and changed course. The first 'wave' of our aircraft was inbound. The SAR screech-whined into life, then thrashed off to its duty position, matching our speed, but holding station slightly aft, and a hundred or so yards to port, out of the line of the 'runway' but where its crew could see what was happening on the flight deck. Nothing much else happened, for a while, and then there was a sudden ear-splitting howl, followed by a deep roar. "He missed!" Pete said. "If you listen to the noises, you soon learn to recognize the sounds. That was a Vixen!" - Skreee – whump – howl – roar! "He hit the deck, but missed the wires." - Skreee – whump – howl – roar! - Skreee – whump – howl – roar! But this time there was an underlying noise like a giant zip-fastener, -ZZZZzzzz. The engine roar didn't fade, until the pilot throttled down.



"One!" Said Pete. The next one flew past, without attempting to land, as the deck was still blocked by the previous 'trap', or 'arrested' aircraft. The Skreee – whump – howl – roar, sometimes with a zzz, sometimes not, went on for half an hour, then the helicopter returned, and we slowed down to our previous speed.

An hour later, we went through it all again. Just before the end of the watch, a third group arrived, but these sounded much different. They proved to be Fairey Gannets. Three of them were long range radar search aircraft, with a huge dome slung under the belly, which made them look pregnant. The fourth one was referred to as the 'Cod', it lacked the radar, and was the odd-job machine, used for ferrying mail, and bits and pieces when the range to shore was too great for the helicopters. After the watch, I went up to the flag deck, for a 'goof', but there was nothing to see except some new wheel marks on the new paint, and the SAR chopper, tied down in the port aft corner of the deck, where a ring of white paint with a large 'H' centrally in it, marked the 'spot'.

My next watch was the Middle, then the forenoon, which was complete with Skreee – whump – howl – roar! This signified another group of aircraft arriving. While I was trying to sleep, during the afternoon, they began playing with the catapult, flinging our planes into the sky, so that they could land again, after a

trundle round. So now, we had to put up with - –Skreee – howl – Thud! (lurch) –roar – psssst, - Skreee – howl – Thud! (lurch) – roar- psssst! This was followed after a while, by the landing noises again. This went on for several days, the interval between launches, or landings, reducing slowly, as the deck crews got into the 'swing' again, and the new boys began to 'gel' into the team. As the Pilots learned, or refreshed, their skills, more aircraft 'trapped', and there were less 'bolters', (misses).

I finally found the time and energy to watch, one afternoon. Eight aircraft were parked along the edge of the deck, all with their wings folded. There were two Buccaneers, five Vixens, and a radar Gannet. They were all making howl-screech noises. Lots of bodies, dressed in various coloured hats and windcheaters, were milling about. The SAR chopper was



parked in its usual spot, on the 'H', its rotors turning slowly as it warmed up. Hermes made a gradual turn, coming more into wind, then poured on the power, until we were pounding along. Two Vixens were marshalled out of their parking places, and positioned at the beginning of the catapult tracks, guided by baton wavers. The Vixens came to a halt with their main wheels positioned on what looked like a pair of roller-conveyors mounted cross-ways, intended to help ensure that the aircraft were correctly aimed down the deck. More arm waving, then the wings were hydraulically unfolded, and locked into place, while ground crews swarmed over the machines, checking things. More deck crew hooked a thick wire loop onto fittings under the wing, the loose loop trailed across the catapult track. Another man hooked a bar from the tail of the aircraft to a bracket on the deck. Two 'pop-up' greenhouses were situated up

wet end of the cat tracks, one by each, with a man's head visible inside. I learned later that he was the cat controller. He set the correct pressure for the aircraft type and weight, on the steam valve, and decided when to apply the pressure. The cat shuttle, a thick hook, ran forward slowly, and applied tension to the wire 'strop', as a section of the deck behind the aircraft was jacked up, forming a jet-blast deflector.

The Pilots checked things inside, pulled their straps tight, wiggled the flying controls, crossed their fingers, then would up full power, at the instigation of a deck man, who wore a white hat. He made a wind-up motion, before crouching down, pointing at the 'greenhouse'. Steam pressure was applied to

the cat piston, the 'greenhouse' slid down, and with a whump, the Vixen was accelerated from stationary, to flying speed, around 150 mph, in less than a second, and over a distance of about a hundred feet. It hurtled over the end of the deck, leaving a trail of black smoke, sagged down towards the waves, then gently climbed away, banking off to one side as it went. The wire strop fell into the water, discarded, its job done.

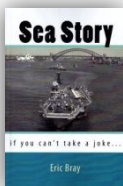
As I watched, I began to see a pattern in the actions of the deck crew. Red



hats were fuellers or armourers, Yellows were service crews, Greens were marshallers, and Whites were cat crews. Each man also had either a number or an initial on his windcheater, which designated his duty. The Gannet was last, waddling clumsily to the cat, its twin propellers on concentric shafts turning in opposite directions on its nose. It lined up, then unfurled its triple

fold wings, rather like its namesake preparing to launch off a cliff. The props wound up to full bellow, then the cat tossed it into the air with a gentle phut, as it needed nowhere near the speed of the Vixens or Buccaneers. The seven jets formed up into a group, in the air, and roared off, leaving the air clear for a group that had been launched earlier, to land. The in-comers settled into an oval anti-clockwise 'race-track' circuit around the deck, with the nearest side arranged so that it was over the deck. The aircraft were spaced out at regular intervals, and went round and round until the deck was ready.

The first one down was a Buccaneer, which came in from astern, its wheels, landing flaps, and arrestor hook dangling. It settled into line, its nose high, with lots of power on, leaving a smoky trail to indicate the effort involved, as it wobbled down to the deck. It slammed down on its stubby legs, the stiff wings flexing as the springs sagged under the impact. Full power came on, the split-tail fuselage airbrakes closed, and – the hook caught the number two wire which dragged the machine to a standstill as the hydraulic brakes allowed the wire to unreel. The engines screaming full power until the Pilot accepted that he had stopped, and throttled back.



Eric MOHFF

INVESTIGATIONS ON A GALVANOSCOPE

Jürgen H. Timcke, HB9ANE, RN 3493

Introduction

Without any doubt: we radio amateurs have a very interesting technical hobby with possible activities spread over a wide area. We can make: contacts in various modes with other radio amateurs all over the world, experiments with antennas, theoretical investigations about high frequency technical connections, to name only some of them. But there is still another and very interesting point: we have the privilege to built not only our transmitters and receivers by ourselves, but also all kinds of other appliances for our hobby. One of the useful auxiliary appliances is a galvanoscope. I have built one and will describe it in this article.

Part A The theory of a galvanoscope

The function of a galvanoscope is based on the fact, that a direct-current carrying conductor will generate a magnetic field around itself. It becomes weaker with increasing distance from the conductor and conversely, stronger with increasing current flow through the conductor. The magnetic field lines are concentric circles around the conductor and vertical to it. Using a compass needle the direction of the magnetic field lines can be determined. This is shown in figure 1

Note: Conventional Current rules that the direction of the DC from a battery is from plus to minus -as opposed to electron current which flows from minus to plus!

Part B The design

To avoid the influence of metallic parts near to the compass I constructed the galvanoscope completely out of wood, also the inner stiffening pins are wooden. Only the two jacks (plus and minus) and their connections are of metal. The compass is a normal one, its dial has a diameter of $D = 35$ [mm]

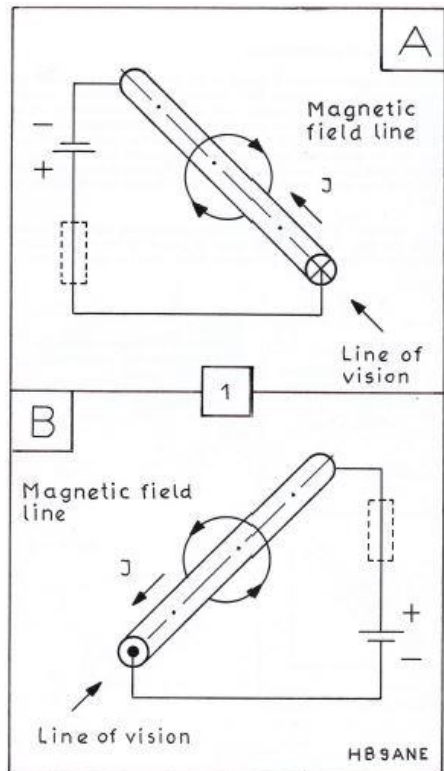


Figure 1 - Magnetic Field Lines

and the scale division is $\alpha = 5 [^\circ]$. It must be positioned directly and near below the current-carrying conductor.

If one substitutes the conductor by means of a coil then, without an alteration of the current strength, the magnetic field will be stronger. Result: the sensitivity of the galvanoscope increases, an advantage if only very little currents are available. Because of that I built my galvanoscope with a coil, see figure 2

Technical data:

The coil consists of 18 (2x9) windings of enamelled copper wire, diameter $d = 0,5 \text{ [mm]}$ (without the coat of lacquer). The calculated ohmic resistance of the coil is extremely low: $R = 0.45 \text{ [\Omega]}$ only. For comparison I measured it with a multi-meter (VOLTcraft VC 940), result: $R = 0.5 \text{ [\Omega]}$. This value I used for calculations. The inductivity of the coil is $L = 31.6 \text{ [\mu H]}$, measured with PEAK atlas LCR 40

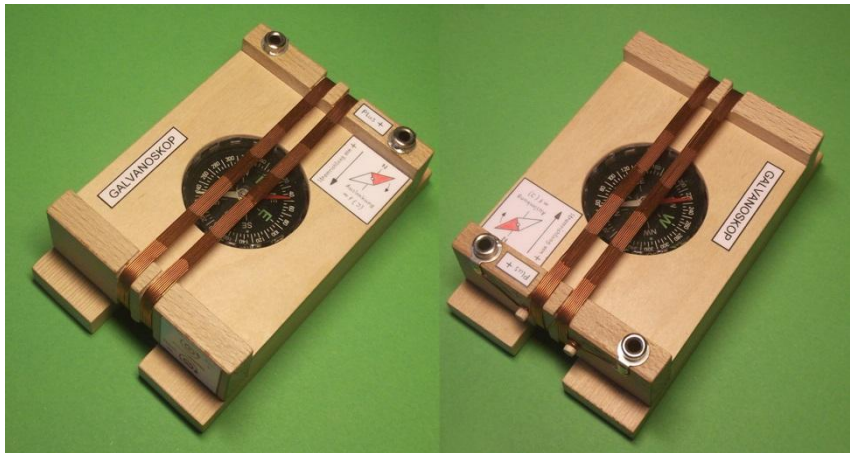


Figure 2 - My home-made galvanoscope

Editor's Note: Later on you will come across occasional formulas such as: $\alpha = f(J)$ or $y = f(x)$ or an expression like $y = f(x^n)$

All these are expressing the idea that the item on the left of the equals sign is a function of what is on the other side of the equals sign. E.g. angle α is dependent on the current J , and so on. Hence, y is dependent on x or on x^n

Part C How do you use a galvanoscope?

The galvanoscope is not a measuring instrument. That means one cannot use it to measure the strength of a DC current flowing along a conductor. It is a simple, but ideal little appliance to indicate that current is or is not flowing in a conductor. Both the conductor as well as the compass needle must be lined up in direction to North, see figure 3A.

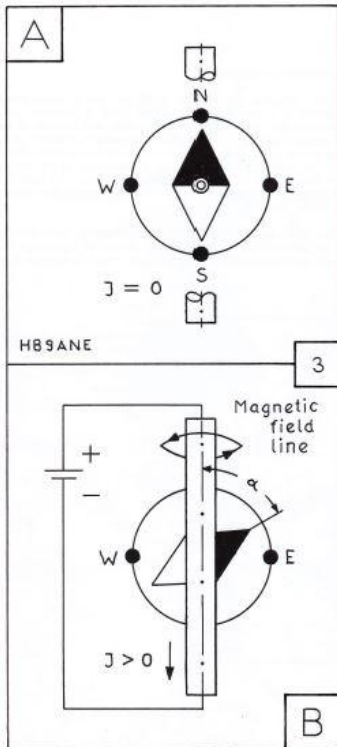


Figure 3A:
Conductor and needle lined up in a northerly direction, no current flowing.
 $J = 0$

Figure 3B:
Under the influence of an applied current source, the magnetic field lines cause the deviation (α) of the needle and $J > 0$

It can be demonstrated:

- a) if the current in the conductor flows from plus to minus then the needle deviates from North to East, as in figure 3B. The reason behind the needle's behaviour is that the magnetic field around the current carrying conductor is stronger than the terrestrial magnetic field, and because of this it forces the needle to deviate out of its North-South position.
- b) the deviation of the needle from North to East proves the direction of the magnetic field lines around the conductor, see figure 3B.

Part D First tests and results

For the first tests of the galvanoscope to check whether the needle reacts or not when a direct-current flows through the coil I used one of the well-known over the counter brands of 9V battery ($U=9V$) with no other technical data being indicated on it: neither the permissible current load J nor the internal resistance R_i . Because of that I could not calculate the current J in the electrical circuit $J=U / (R_i + R_a)$ when the battery is connected to the galvanoscope. Note: For the current use the letter J and not I !

To avoid any risk I was therefore very carefully before I connected the battery to the galvanoscope. For that reason I made a rough calculation by means of Ohm's law, using the DC resistance of the coil and the nominal voltage of the battery: $J \text{ amps} = U [V] / R\Omega = 9V / 0.5\Omega = 18A$. Well, this is not realistic because of the missing R_i but it gives at least a certain impression as to how the battery will be loaded when it is connected to the galvanoscope.

I connected the battery to the galvanoscope and the needle shows immediately a deviation to East, that means $\alpha = 90^\circ$. Well, the needle reacted as expected. However: the battery heated up very quickly. Because of that I made a test; the temperature increased within 6 minutes from $t = 27.6^\circ\text{C}$ to $t = 54.1^\circ\text{C}$. With this small resistance of $R = 0.5\Omega$ it represented a short circuit. With a resistor in the electric circuit the current could be limited, but not so precisely as with a power supply with variable and then constant current values. Interjection (The heating of 9V battery is part of an investigation at work, and which I will publish later on (Title: "A study on 9Volt compound batteries of different manufacturers").

Part E Determination of the positive pole of a direct voltage source

The deviation of the needle is dependent on the direction of the current in the conductor or coil over the compass, and can be used to determine the positive pole (+) of a DC voltage source on which the polarity of the terminals is unknown. For example, If the needle deviates from North to the:-

EAST: The wire from the voltage source connected to the plus jack of the galvanoscope is connected to the positive pole of the voltage source, see figure 4A.

WEST: The wire from the voltage source connected to the plus jack of the galvanoscope is connected to the negative pole of the voltage source, see figure 4B

For safety reasons it is recommended to add a current limiting resistor in the circuit (represented in figure 1 by dotted lines). Note: In the case of an unknown voltage source I used red and black wires in the photos of figure 4A and figure 4B.

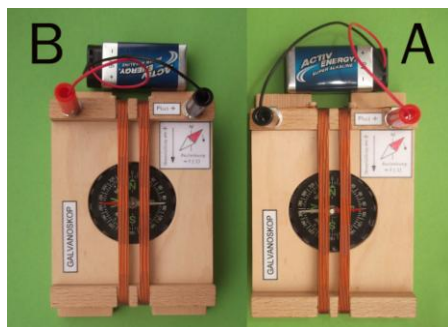


Figure 4

How the change in current direction by reversing the battery's connections influences the direction of the needle's deviation:

A = from North to East

B = from North to West

Part F

The needle deviation angle $\alpha = f(J)$ (alpha is a function of the current J. Ed)

Only one of my books about HF techniques mentions the function of a galvanoscope; that the angle α of the deviation of the needle depends on the strength of the current in a conductor.

But, I come to the surprising fact that neither in the above mentioned book or in others have I found a diagram of $\alpha = f(J)$. Because of that the question arose: which tendency has $\alpha = f(J)$ been presented in a diagram? Like, for example, one of the mathematical equations $y = f(x)$ or $y = f(x^n)$ or any other? To find an answer to this question I made corresponding investigations to determine $\alpha = f(J)$.

Based on the results mentioned in chapter D it was clear, that a 9Volt-compound battery could not be used for this investigation.

To be continued:

BRANCH NEWS - In Brief



The crew of HMS Protector found an unusual spot to have their Christmas dinner in 2013. This Christmas, Naval vessels will be deployed across the world, from the Type 45 Destroyer HMS Dragon in the Gulf to the Type 23 Frigate HMS Argyll in the Pacific.

HM Forces website



Royal Marines thanked by Norwegian monarch



Norway's monarch Harald V thanked Royal Marines for their participation in the largest military exercise his country has hosted in three decades. The 81-year-old head of state called in on Vaernes Camp, next to Trondheim airport, to visit participants in Trident Juncture, home to the Arbroath-based

marines for the final stage of the war game. For the bulk of the exercise, the men of X-Ray Company, 45 Commando, have been deployed aboard US assault ship USS Iwo Jima. After crossing from Reykjavik in Iceland the 'X-men' were sent ashore with some of their hardware, including Viking armoured vehicles for the live-action ground phase of Trident Juncture.

royalnavy.mod.uk

F-35s ready for front-line operations



Naval aviators can now fly the world's most advanced fighter on front-line missions after the F-35 Lightning was declared operational. In front of a new hangar built specially to house the stealth fighters at their home on land – RAF Marham in Norfolk – Defence Secretary Gavin Williamson announced the fifth-generation jet was ready to take its place in the nation's aerial order of battle. Nine F-35s are on UK soil at present, flying with the legendary 617 'Dambusters' Squadron.

royalnavy.mod.uk

D DAY 75



THE ROYAL BRITISH
LEGION



6 June 2019 marks the 75th anniversary of The D-Day Landings – one of the most remarkable Allied wartime operations.

The Royal British Legion is working with the UK Government and other stakeholders to plan significant commemorations to mark D-Day 75, both in Normandy and across the United Kingdom.

We're excited to announce that The Royal British Legion, in partnership with Arena Travel, have chartered a ship, the *MV Boudicca*, to provide a fully funded tour for 300 D-Day Veterans. Each veteran is able to bring one carer who will also be fully funded. Priority will be



given to veterans who participated in the D-Day Landings, with the remaining spaces allocated to Normandy Veterans via a ballot.

britishlegion.org.uk/

£20 million for D-Day landings memorial

British servicemen and women who gave their lives in the D-Day landings to be commemorated with a new memorial.

From:

HM Treasury, Prime Minister's Office, 10 Downing Street, The Rt Hon Philip Hammond MP, and The Rt Hon Theresa May MP



The British servicemen and women who gave their lives in the D-Day landings and in the Normandy Campaign will be commemorated with a new memorial, supported by £20 million.

www.gov.uk/

Normandy return for D-Day heroes

17 January 2019

Portsmouth and the sands of Normandy will become the focal point of world events for what is likely to be the last major commemoration of the D-Day landings featuring the men who were there.

Up to 300 veterans have been invited to join a cruise ship for a unique 'return to Normandy' experience, one of the key events in this summer's anniversary announced by Vice Chief of the Defence Staff General Sir Gordon Messenger.

The senior Royal Marine was joined by serving personnel from the three Forces, plus veterans, in Portsmouth's D-Day Story Museum to reveal some of the ways Britain will commemorate Operation Overlord this June.

royalnavy.mod.uk



"D-Day is an event which changed history and shaped modern Europe, but it is made up of thousands upon thousands of human stories, stories of bravery, determination and overcoming adversity."

General Sir Gordon Messenger

There's more information on the royalnavy.mod.uk website





48 (RM) Commando coming ashore on D Day

Order of the Day

"It is to be our privilege to take part in the greatest amphibious operation in history – a necessary preliminary to the opening of the Western Front in Europe which, in conjunction with the great Russian advance, will crush the fighting power of Germany.

This is the opportunity which we have long awaited and which must be seized and pursued with relentless determination; the hopes and prayers of the free world and of the enslaved peoples of Europe will be with us, and we cannot fail them.

Our task in conjunction with the Merchant Navies of the United Nations, and supported by the Allied Air Forces, is to carry the Allied Expeditionary Force to the Continent, to establish it there in a secure bridgehead and to build it up and maintain it at a rate that will outmatch the enemy. Let no-one underestimate the magnitude of this task.

The Germans are desperate and will resist fiercely until we outmanoeuvre and outfight them, which we can and will do. To everyone of you will be given the opportunity to show by his determination and resource that dauntless spirit of resolution which individually strengthens and inspires, and which collectively is irresistible.

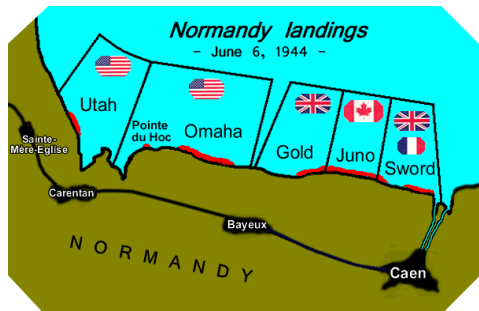
I count on every man to do his utmost to ensure the success of this great enterprise which is the climax of the European War.

Good luck to you all, and God Speed."

Beach Landings

5 beach areas were targeted, from west to east:

- 'Gold' (around Arromanches),
- 'Juno' (around Courseulles),
- 'Sword' near Ouistreham).
- 'Utah' (near Martin de Varreville),
- 'Omaha' (around St Laurent)



Troops Landed

Under the command of Allied Naval Commander-in-Chief Expeditionary Force Sir Bertram Ramsey



132,815 men in total (75,215 British and Canadians) + (57,600 American) were landed from ships and craft on 6 June 1944.

Operation Neptune was completed on the 30th June 1944 ('D'+24), when responsibility for the reception and defence of shipping was transferred to the Flag Officer, British Assault Area and the Eastern Naval Task Force was formally disbanded.

By this date, 570 Liberty Ships, 180 troop transports, 788 coasters and 905 LSTs, as well as 1,814 LCTs and LCI(L)s, had delivered their cargoes to the far shore, landing 861,838 men, 157,633 vehicles and 501,834 tons of stores.

The build-up convoys continued and a strong seaward defence was still necessary, to protect the anchorages and convoys against the surface ships and Uboats based on the Biscay coast, as well as the "Small Battle Units" deployed from the beaches to the east of the River Orne, until the former were all sunk or neutralised (in late August) and Le Havre was captured on 12 September 1944.

Unfortunately, Admiral Ramsey was killed in a plane crash in 1945 when the military aircraft in which he was a passenger is reputed to have iced up and became too heavy to control.

IN THE NEWS!

Global Bases for a Global Britain?

The Secretary of State for Defence has used an interview with the Daily Telegraph to announce a substantial change in the UK's defence posture which may lead to the opening of new permanent bases in the West Indies and the Far East. While it is perhaps a little unusual to see such a major policy shift trailed via a national newspaper interview, and not through the medium of a major defence policy document such as the MDP, it is potentially an intriguing development.



thinpinstripedline.blogspot

CSIRO maintains European Space Agency



CSIRO will maintain and provide operational support for the European Space Agency (ESA) in WA. This is the first time that an Australian organisation has been selected to manage day-to-day operations at the ground station. The agency is located at New Norcia, 130 kilometres north-east of Perth in Western Australia.

Critical Communications

US Navy moves toward unleashing killer robot ships on the world's oceans

The Sea Hunter, developed by DARPA, has launched the Navy down a path of developing a fleet of unmanned ships that could upend the way the Navy has fought since the Cold War. (Defense Advanced Research Projects Agency)



(The US has been flying 8 ton UAVs in the airways amid commercial passenger flights for some time now. Just waiting for a mid-air collision to happen. I wonder what excuses they will conjure up for themselves when it happens -**ed**)

US - defensenews

IN THE NEWS!

"Black Ops spy ship" arrives in Odessa "in show of strength to Vladimir"

The cutting edge warship was earlier photographed passing through the Bosphorous Straits in Turkey on its way to the Black Sea port of Odessa -has docked amid a war scare with Russia.

HMS Echo H87 (pictured) is a hydrographic research vessel.



Patrick Knox, The Sun/NavyLookout

Changes to the Band Plans

If you do not receive copies of RadCom you might not be aware of the latest changes to the published Band Plans for 2019. You will find the updated Band Plans at the following web address:

<https://rsgb.org/main/operating/band-plans/>

West London Radio & Electronics Fair - Kempton Park - 14th April 2019

For further information you can contact the organization online at:

www.radiofairs.co.uk

WannaCry cyber attack costs NHS £92 million

In their October 2018 publication on 'Securing cyber resilience in health and care: a progress update', the Department of Health and Social Care estimated the cost of WannaCry to the NHS as £92 million. The DHSC used a variety of factors (average number of NHS trusts involved) and categories (direct and resource) to estimate the financial impact on the NHS but this does not include a consideration of other organisations outside of the health and care who were also impacted.



ukdj

IN THE NEWS!

Jet pack used to complete Royal Marines assault course

Ex-Royal Marines Reservist Richard Browning flew a 1000bhp jet pack suit around the Royal Marines assault course at the Commando Training Centre in Devon. Royal Marines Captain Oliver Mason said:

“Royal Marines are sometimes called ‘supermen’ for their achievements, but even we stop short at the ability to fly. Watching Richard float, fly and hover around the assault course was a very impressive, surreal experience. Imagine what we could do with these suits on the battlefield – although Royal Marines pride themselves on being stealthy and one thing the jet pack isn’t is quiet.” Watching Richard float, fly and hover around the assault course was a very impressive, surreal experience. Imagine what we could do with these suits on the battlefield – although Royal Marines pride themselves on being stealthy and one thing the jet pack isn’t is quiet.”



ukdj

DE&S awards £23m radio contract keeping sailors connected at sea



The state-of-the-art radios will be installed on 39 ships in total, including Type 23 Frigates, survey and ice patrol vessels, mine hunters and RFA supply ships and will be used to communicate with other ships, ports and aircraft during operations. They will replace numerous older radios. As more modern pieces of equipment they are easy to use and can be updated via software and operated remotely. **Defence**

Minister Stuart Andrew said: “These radios will provide UK warships and supply vessels with an essential link to the outside world, both in home waters and on operations around the world.

mod.gov

UK spends \$507m on final four P-8A Maritime Patrol Aircraft - ukdj



Boeing has been awarded an almost \$2.5 billion contract to produce 19 P-8A Poseidon maritime patrol aircraft for the US Navy, Norway and the United Kingdom. The UK intends to procure 9 of the aircraft in total and had already ordered five. This purchase brings the total UK order of P-8A Poseidon Maritime Patrol Aircraft up to 9. Cost is less than £100m each.

SDR RADIO

Southgate Amateur News

Lime SDR (and PLUTO, too) sends TV

If you have experienced software defined radio (SDR) using the ubiquitous RTL SDR dongles, you are missing out on half of it. While those SDRs are inexpensive, they only receive. The next step is to transmit.



[Corrosive] shows how he uses DATV Express along with a Lime SDR or a Pluto (the evaluation device from Analog Devices) to transmit video. He shows how to set it all up in the context of ham radio. An earlier video shows how to receive the signal using an SDR and some Windows software. The receiver will work

with an RTL SDR or a HackRF board, too. You can see both videos, in the link below.

The DATV Express software has plenty of options and since SDR is frequency agile, you ought to be able to use this on any frequency (within the SDR range) that you are allowed to use. At the end, he mentions that to really put these on the air you will want a filter and amplifier since the output is a bit raw and low powered.

If you are old enough to remember when a TV transmitter was a big box full of circuitry, seeing video pour out of a little circuit board is pretty amazing. What's more, is that on transmit and receive you can do an impressive amount of processing in software that would have been very advanced using traditional hardware.

Oddly enough, the RTL SDR was originally made to receive TV anyway. You can actually do the transmit with nothing but a Raspberry Pi, and [Corrosive] mentioned he'll do a video about that soon.

<https://hackaday.com/2019/01/19/lime-sdr-and-pluto-too-sends-tv/>

THE VERY PECULIAR WORLD OF AMATEUR RADIO

BBC Neil Meads

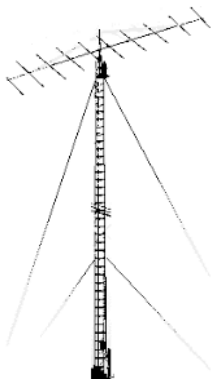
In the face of the internet, mobiles and instant messaging you might expect the hobby of amateur radio - or ham radio as it's also known - to be on the decline.

But in the last three years, the number of amateur radio licences has risen by over 8,000 - with 80,000 currently issued in the UK.

Using designated frequencies, amateur radio enthusiasts communicate with people over the world. Many prefer the relaxed approach of 'rag chewing' or chatting at length with people, who often become friends - while at the opposite end of the spectrum 'contesters' compete to make as many contacts as possible in a given period.

The hobby is also a public service, with Raynet (in the UK) stepping in during emergencies when regular communication networks fail. Amateur radio enthusiasts are currently contributing to relief efforts following Typhoon Haiyan in the Philippines.

BBC News joined the Chorley and District Amateur Radio Society as they put on a special "Castles and Stately Homes On The Air (CASHOTA)" event at Astley Hall, a Grade I listed house in Lancashire. The club is keen to break down traditional stereotypes of amateur radio enthusiasts and offers free training courses to its members who range from 8 to 80. (13 Nov 2013)



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The ARRL Handbook 2019



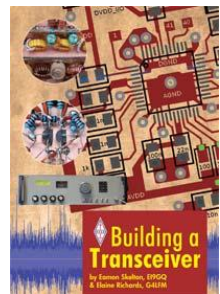
New projects and content for this edition includes a simple SLA Float Charger project, Amateur Radio Data Platforms, the latest information on WSJT-X digital modes, filter and circuit design software, low-Noise VHF and UHF Oscillators, an update on Solar Cycle 24, updated SSTV practices and technology, designing dual-band loaded dipoles and even a latest transceiver survey. Plus, new component tables, reference articles, material characteristics, and guidelines for SDR design.

This book now comes with a download suite of a fully searchable eBook digital edition of the printed book, as well as, software, PC board templates, and other support files.

Building a Transceiver

By Eamon Skelton, EI9GQ & Elaine Richards, G4LFM

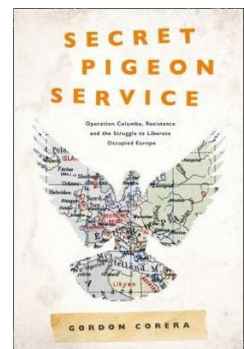
Building a Transceiver is based on the hugely popular 'Homebrew' column in RadCom written by Eamon Skelton, EI9GQ. Readers will find that the book covers the detailed electronic design process and practical constructional techniques necessary to build the unit. Photographs are also provided to help the reader visualise the final layout of each section. Each element of the transceiver is described fully with details of components and any board layouts available.



Secret Pigeon Service (Hardback)

Gordon Corera

BBC security correspondent Gordon Corera reveals the story of MI14 and the Secret Pigeon Service during the Second World War for the first time in this compelling read. Using extensive original research and declassified documents, he reveals the inner workings of 'Columba' - an operation that saw 16,000 plucky homing pigeons dropped in an arc from Bourdeaux to Copenhagen in an effort to bring back intelligence from those living under Nazi occupation.



FALKLANDS JOURNAL Pt 2

Dr Stephen Palmer GM0EQS/Ken Randall G3RFH

By kind permission from the Falkland Islands Journal

Candlemas Island expedition 6-24 March 1964

Ken Randall's lengthy and highly technical description of his part in the expedition to Candlemas Island has been substantially edited. Explanations and editorial additions are shown within square brackets [...] What is important to be remembered is that Ken's radio operation is the first and only time that such activity has occurred on Candlemas Island. It is well worthy of the description of 'unique' and is a remarkable achievement for a 'one-man' operation.



Ken Randall continues: "The hydrographers wanted a full-scale survey of those islands which lie about 2,000 miles southwest of Cape Town and about 2,500 miles east of Cape Horn. Very little was known about the South Sandwich group and there was certainly some doubt as to the exact position of them. As well as putting parties ashore for a day or so, there was to be a main party put ashore on Candlemas Island, the third one down in the group, and they would stay there for a period of about three weeks. This was going to be the most useful island to the scientists and much importance was placed on this part of the project.

Dr Ed King, a scientist on the staff of the British Antarctic Survey comments: This was an important period in Antarctic exploration, especially for the earth sciences, because everything was new, every survey was pushing boundaries. [Ken Randall's account] puts flesh on the dry bones of the scientific reports that came out of that time.

Ken Randall continues: The ship was going to be visiting all the other islands in the group and as this would entail being around 160 miles south of Candlemas for about a week, the usual [radio equipment] would not be very reliable, especially during the day. So a request was sent for a Naval type 612 transportable wireless outfit, working from 24 volt batteries and was an entirely self-contained station, complete with petrol engine battery charger [which failed soon after operations commenced; later it was repaired on the ship and returned to the island]. When this equipment arrived onboard at Portsmouth, no other members of the radio staff had ever seen one before except [myself] and I immediately offered my services as the base station radio operator, with

a view to using the equipment on 40 metres outside the Naval operation times [i.e. on amateur radio bands].



Candlemas Island

The equipment duly arrived, was unpacked and checked and found to be all in order. The first night at sea from Montevideo saw VP8HF on SSB [Single Side Band] for the first time. Regular contact was maintained with [radio amateurs in New York]. The week before the expedition was due to take place saw much frenzied activity onboard, visits to the various workshops to get 'little jobs done',

cadging various bits and pieces from naval stores and in general really getting everything together.

Unfortunately, during tests the Naval 612 equipment now decided to go unserviceable. After a comparatively short time though, the transmitter and power unit were repaired but it appeared that the HF receiver type B46 had gone completely out of alignment and insufficient information was held onboard to carry out a re-alignment. So it was decided that a 62 set would be taken and used as a receiver only.

On 6 March 1964 at about 7am local time the ship arrived off Candlemas Island in about 30 knots of sub-zero wind, and moderate seas. The island was about four miles away, looking very bleak and uninviting indeed. Roughly the island is almost egg shaped, with the small end of the egg to the north and the fat piece to the south. On the northern



B46 HF Receiver

peninsula was situated the active volcano, emitting clouds of smoke and sulphur fumes. On the southern end was a 3,000ft mountain capped with snow and ice and rising up sheer from a flat plateau about 80ft above sea level which connected with the volcano. The whole island measured about four miles long by about two miles across. The campsite was chosen to give as much shelter as possible from the prevailing high south westerly winds - characteristic of the Antarctic. With this in mind the camp was established at

the foot of the 3,000ft mountain, about half a mile from the volcano and situated in a small gully between two hillocks. The party consisted of three scientists (one of whom was a volcanologist), five Royal Marines and myself. Altogether eight tents were erected including one which was used as an insect hatchery and darkroom-laboratory. One three-man tent was assigned as the



Island Camp Site

Radio tent. Erection of the antennae started that afternoon with the assistance of one of the Marines. Unfortunately, just before completion of this work, a blizzard started to blow and all further outside work had to be abandoned until next day. At 2250 GMT the first QSO [contact] was made with W2MJ [a United States station].

A fairly good night's sleep was had after some discussion as to what happens just before a volcano erupts. The volcanologist in the party was consulted and he put our minds at rest by saying it would not erupt that night! A bad start was made next morning by oversleeping and missing the first (0800) sked [scheduled contact] with the ship. The wind had dropped to a breeze although it was still extremely cold.

Work was completed on the beam and the mast, the latter being made of one inch aluminium tubes. With two sets of three guys everything was made ready for the erection. The enlistment of a further Marine completed the erection party and pretty soon the beam was on its way up to a height of 18 feet. Unfortunately, when it was about 10 feet up, the mast buckled and the whole assemblage crumpled to the ground, the mast looking as if it had been frightened by a snake! Refusing to give up, the mast base and the only straight section of aluminium tubing left were moved clear of the tents and the beam was then successfully raised to a height of six feet. The beam was pointed toward



Working on The Beam

Europe according to the Great Circle map which had been drawn from a globe at the ionospheric station in the Falkland Islands.

A 599 signal report was received from VP8GQ (Signy Island, South Orkney Islands). The beam was rotated a further 90 degrees clockwise and this resulted in another 599 from LU6DIX in Buenos Aires. So the beam was left where it was and most of Europe was worked that evening. DJIBZ [a German station] being the first and G3LGW [an English station] – the first UK based contact. After 172 QSOs it was



The Broken Beam

decided to go QRT and rig a dipole the next morning. The next day the dipole aerial was brought down and the measurements checked. After shortening the length of the aerial reception was very much improved and soon many contacts were being made. In two days, 315 contacts had been made.



Recycled Antenna As Marker

The weather around the camp up until now had been quite pleasant, bearing in mind the area of the world in which it was situated. The volcano was smoking continuously and the glacier behind us thawed for about two hours daily, long enough for the fresh water supplies to be replenished.

After the AC generator [failed] I decided that I would only take to the air when the band was open [i.e. good conditions] in order to save the batteries. Very heavy QRM [noise] was experienced from South Americans on the transmitting frequency and particularly on SSB voice; they seemed to follow VP8HF and sit right on the frequency despite polite

appeals in English and, one suspects, not so polite appeals in Spanish from sympathetic South Americans. This caused a great drop in the number of SSB QSOs and as vast amounts of time were being wasted in trying to clear

interference. The cure was a temporary change to CW. No contact was made with any Far East station, or ZL [New Zealand] or ZS [South Africa] It is thought that the mountain immediately behind the camp had something to do with this. A VE [Canada] operator was heard. By 12 March the batteries were getting low and three ZL's were worked making the first contacts with New Zealand. The remainder of that evening and night was spent in charging batteries although the band was monitored occasionally, practically no signals were being received.

[On Friday 13 March HMS Protector visited Candlemas Island and the defective generator was lifted by helicopter to the ship where an engine change was carried out during the night].

Ken Randall continues: Only 50 QSOs with the United States were made that evening, one of them being W2GHK [a well-known United States amateur radio operator] who had [lent] the SSB equipment for the expedition. I was very relieved to make this QSO as it would have been extremely embarrassing to have had to report no QSO with the major benefactor!



The Full Station

On the morning of 14 March, the generator was returned to the camp [by the helicopter from Protector] but due to lack of wind (extremely rare occurrence!), it could not be landed as close to the camp as originally planned. Instead it was deposited some 500 yards away in soft lava dust. After collecting driftwood from the foreshore, the generator was dragged over this wood to the camp, taking the nine men of the party almost two hours to do so. As the AC [alternating electrical current] was now on, the DX40 was tuned up on

15 metres and resulted in 20 QSOs that afternoon. In the evening, another 139 QSOs were made, this giving a total to date of 727.

On the morning of the 15 March on 15 metres, Europeans were coming in with great strength, though none could hear me. They were heard calling for over two hours. Towards midday conditions seemed to be improving as the BBC Overseas service on 21Mhz was [clearly heard]. This day proved to be the

worst so far as regards conditions and even though Europeans and Africans were readable all day on 15 metres and 20 metres, none could be worked. A 'pile up' [i.e. many stations calling] developed of stations calling who either could not hear VP8HF, or who were not bothering to listen, because after half an hour of answering calls and giving reports with no replies, I decided to go QRT [station closed down] after a very frustrating day.

Next day it was much the same on 15 metres as the previous day - Europeans could be heard working each other but could not be worked from the South Sandwich Islands. This 'one-way skip' was very frustrating. 20 metres SSB [voice] to Europe was quite successful but extremely poor to the States. Only two QSOs were made on 40 metres during the whole expedition, VP8GQ on Signy Island and KC4USK at a [US] base in Antarctica.

On 17 March BBC film unit arrived from HMS Protector by helicopter and, as it turned out, it was a beautiful day with sunshine, blue skies and no wind. This gave completely the wrong impression to the visitors who obviously thought those conditions were normal. F2MA [a French station] was heard calling 'CQ South Pole & Antarctica' on 15 metres CW but no reply was received to calls from VP8HF. There was still no contact with VK or ZL.

18 March was a very busy day with plenty of activity from the surveyors and the film unit. A sequence was required of the communications set-up and as the cameras could not get inside the radio tent, the equipment was set up outside in exactly the same positions. That evening the camp was informed that there was a shortage of helicopter fuel and flying was going to be severely restricted. They wanted to lift off all unnecessary stores and personnel the next morning so that they could more easily work out the amount of fuel they had left to play around with. On the morning of the lift-off of the 'unnecessaries' the weather was very poor, with visibility down to about 200 yards. Skeds [planned radio contact] with the ship were arranged for every half hour until 1100 when normal sked times were resumed. The helicopter eventually arrived at 1830 and completed the lift-off. The only item of Naval radio now left was the 62 set plus the 36ft whip, batteries and battery charger.

Conditions were atrocious on 20 metres and 15 metres. Europeans could be heard all day on 15 metres but it wasn't until 1507 GMT that the first QSO was made with G3FKM, and [in the next] three and a half hours only 20 QSOs had been made. The band was absolutely dead for the rest of the night. On 40 metres G2DC could not be contacted and the only QSOs made were with VP8GQ and KC4USK.

To be Continued

WHAT IS SATELLITE RADIO?

Jeremy Laukkonen



Satellite radio has been around for a long time, but the technology still isn't as widely used or understood as traditional radio. While satellite radio technology does share some similarities with both satellite television and terrestrial radio, there are also important differences.

The basic formatting of satellite radio is identical to terrestrial radio broadcasts, but most of the stations are presented without commercial interruptions. This is due to the fact that satellite radio is subscription-based, just like cable and satellite television. Satellite radio also requires specialized equipment just like satellite television.

The main benefit of satellite radio is that the signal is available over a much broader geographical area than any one terrestrial radio station could possibly cover. A handful of satellites are capable of blanketing an entire continent, and each satellite radio service provides the same set of stations and programs to its entire coverage area.

Satellite Radio in North America

In the North American market, there are two satellite radio options: Sirius and XM. However, both of these services are operated by the same company. While Sirius and XM used to be two separate entities, they joined forces in 2008 when XM Radio was purchased by Sirius. Since Sirius and XM used different technology at the time, both services remained available. At its inception, XM was broadcast from two geostationary satellites that reached the United States, Canada, and parts of northern Mexico. Sirius used three satellites, but they were in highly elliptical geosynchronous orbits that provided coverage to both North and South America. The difference in satellite orbits also affected the quality of coverage. Since the Sirius signal originated from a higher angle in Canada and the northern United States, the signal was stronger in cities that had a lot of tall buildings. However, the Sirius signal was also more likely to cut off in tunnels than the XM signal.

The Rise of SiriusXM

Sirius, XM, and SiriusXM all share the same programming packages due to the merger, but the use of different satellite technology when there were two separate companies continued to complicate matters after the merger. So if you're interested in getting satellite radio in North America, it's important to sign up for the plan that will actually work with your radio.

Satellite Radio in Your Car

There were about 30 million satellite radio subscribers in the United States in 2016, which represents less than 20 percent of the households in the country. However, since some households have more than one satellite radio subscription, the actual adoption rate is most likely lower than that.

A driving force behind satellite radio has been the automotive industry. Both Sirius and XM have pushed automakers to include satellite radio in their vehicles, and most OEMs have at least one vehicle that offers one service or the other. Some new vehicles also come with a pre-paid subscription to Sirius or XM, which is a great way to try one of the services out.

Since satellite radio subscriptions are tied to individual receivers, both Sirius and XM offer portable receivers that a subscriber can easily carry from one place to another. These portable receivers are designed to fit into docking stations that provide power and speakers, but many of them are also compatible with specialized head units.

If you spend a lot of time in your car, a head unit that has a built-in satellite radio tuner can provide an excellent, unbroken source of entertainment on the road. However, a portable receiver unit allows you to take that same entertainment into your home or workplace. In fact, there are a few viable ways to get satellite radio in your car.

Satellite Radio in Your Home, Office, or Anywhere Else

Getting satellite radio in your car is pretty easy. It used to be harder to listen elsewhere, but that is no longer the case. Portable receivers were the first option that emerged since they allowed you to plug the same receiver unit into your car, your home stereo, or even a portable boombox type setup.

Sirius and XM radio both offer streaming options as well, which means you don't actually need a receiver to listen to satellite radio outside your car. With the right subscription and an app from SiriusXM, you can stream satellite radio on your computer, your tablet, or even your phone.

Satellite Radio Elsewhere in the World

Satellite radio is used for other purposes in different parts of the world. In some parts of Europe, terrestrial FM are simulcast over satellite broadcasts. There are also plans for a subscription-based service that will provide radio programming, video, and other rich media content to portable devices and head units in cars. Until 2009, there was also a service called WorldSpace that provided subscription-based satellite radio programming to parts of Europe, Asia, and Africa. However, that service provider filed for bankruptcy in 2008. The service provider has reorganized under the name 1worldspace, but it's unclear whether the subscription service will return.

AMATEUR SATELLITE UPDATE

ukamsat.files

China to Launch Two Amateur Radio Satellites in April

Two new Chinese satellites with Amateur Radio payloads are planned for an April 5 launch, CAMSAT has reported.

CAS-7A will carry H/T (21/29 MHz) and H/U (21/435 MHz) mode linear transponders, V/U linear and V/U FM transponders, a UHF CW telemetry beacon, UHF AX.25 4.8k/9.6k baud GMSK telemetry, and 3-centimeter AX.25 1 Mbps GMSK image data transmission for an onboard camera.



CAS-7B is described as a 500-millimeter sphere spacecraft weighing 3 kilograms. It will carry a V/U transponder and a UHF CW telemetry beacon. —

AMSAT News Service

Ham Radio SSTV From The Space Station

The Inter-MAI amateur radio Slow Scan Television experiment in the Russian Service Module of the International Space Station is scheduled to be activated Jan 30 – Feb 1 on 145.800 MHz FM. It appears from the scheduling that the experiment will only be active during a couple of orbits that overfly Moscow instead of a continuous operation. Rough time periods of activation appear to fall between the hours of 13:00 – 19:00 UTC.

amsat-uk.org

Kenilworth students' amateur radio contact with space station

There is high definition video feed from the live contact between **Kenilworth School and Sixth Form GB4KSN** and astronaut **Serena Auñón-Chancellor KG5TMT** onboard the ISS NA1SS on Friday, December 14, 2018

Amsat-UK



RNARS Nets

Mick Puttick G3LIK

The list is compiled by Mick Puttick G3LIK mick_g3lik@ntlworld.com – 02392 255880
who must be informed of all changes.

UK	UTC	Frequency	NET	CONTROL					
Daily	0001-0400	145.725	Midnight Nutters	M0WRU					
Sun	0800	3.667	RNARS SSB net (news: 0830)	G3LIK					
	0930	3.715	IOM Net	GD3LSF GD0SFI					
	1030	7.068/3.748	RNARS Northern SSB net	M6LWO					
	1100	7020	RNARS CW net	G4TNI					
Mon-Sat	1030-1330	3.748/7.068	The Bubbly Rats Net	GX3WTP/G0GBI/ G0OKA/M0ZAE					
Mon	1400	3.575	QRS CW Net	G0VCV					
	1900	3.748 (Pri) 7.088 (sec)	N.W. SSB Net (News: 2000)	G0GBI					
	1930	145.400 (S16)	RNARS Cornish net (Falmouth)	G0GRY					
Tues	1600	7.068/3.740	Tuesday HQ Net	GB3RN					
	1900	7.028/3.528	RNARS CW Net	G3RFH					
Wed	1400	3.748	Stand Easy Net	M6LWO					
	1900	3.748	Wednesday Net	G0VIX					
Thurs	1900	3.542	Scottish CW Net	???					
	2000 GMT	1.835	RNARS Top Band CW Net	G0CHV/G4KJD					
	2000	145.575 (S23)	RNARS Scottish 2m Net	GM0KTJ/P					
Fri	1600	10.118	RNARS 30m CW Net	SM3AHM					
Sat	0800	3.748	G0DLH Memorial Net	G0VIX					
DX	GMT	Frequency	Net	Control					
Sun	0800	7.015/30555	MARAC CW	PA3EBA/PI4MRC					
	1430	21.41/14.329	RNARS DX	WA1HMW/GD0SFI/ W1USN					
	1800	Echolink	Echolink	VE3OZN / K8BBT					
	1900	14.33	N American	WA1HMW					
Mon	0930	3.615	VK SSB	VK1RAN/VK2RAN					
Wed	0118-0618	7.02	VKCW	VK4RAN					
	0148-0648	10.118	VK CW	VK4RAN					
	0800	3.62	ZL SSB	ZL1BSA					
	0930	7.02	VK SSB	VK5RAN					
	0945	7.09	VK SSB	VK1RAN/VK2RAN					
Thur	1430	21.41/14.329	RNARS DX	WA1HMW/GD0SFI/ W1USN					
Sat	0400	7.09	VK SSB	VK2CCV					
	1330	7.02	VK CW	VK2CCV					
	1400	7.09	VK SSB	VK2CCV					
	1430	21.41/14.329	RNARS DX	WA1HMW/GD0SFI/ W1USN					
RNARS SCENE OF ACTIVITY									
FM	145.40								
CW	1.824	3.52	7.02	10.118	14.052	18.087	21.052	24.897	28.052
SSB	1.965	3.66	3.74	7.088	14.294	14.335	18.15	21.36	28.94

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RAFARS & RSARS Nets

RAFARS	Time	Freq	Control
Daily	1100 A	3.71	GØSYF G14SAM
	1830 A	3.71	G3HWQ MØRGI
Monday	1900 A	3.7	G3PSG GØBIA
Tuesday	0730 A	14.27	G4IYC
	1400 A	7.015	
	1900 A	3.567	
Wednesday	1500 Z	14.29	?
	1530 Z	21.29	
Thursday	1830 Z	14.17	ZC4RAF
Friday	0730 A	14.055	CW Net
Sunday	0900 Z	5.403	?
First Monday of the month	1000 A	3.71	?
RSARS Nets	Time	Freq	Control
Monday - Friday	1000 A	7.17	GW3KJW M3VRB
Monday	1830 A	3.585	GM3KHH (RTTY)
	1400 A	7.17	MØOIC
Tuesday	1600 Z	14.18	G4BXQ
	0600 Z	14.143	Various
Wednesday	1030 Z	3.615	?
	1830 A	3.565	GM3KHH
	2030 A	1.946	2EØBDS
Thursday	1400 A	7.17	GØRGB
	1800 A	3.743	G6NHY
Friday	1830 A	3.583	GM3KHH (PSK31)
	1830 A	3.565	High speed CW
	2000 Z	14.055	CW
Saturday	0600 Z	14.143	SSB
Sunday	1000 A	3.565	G3JRY (Slow speed CW)
	1100 A	7.17	GW4XKE
	1100 A	3.745	GM4FOZ
Joint Service Net	Time	Freq	Control
Sunday	0900 A	5.4035	G3RAF
Tuesday	1900 A	5.4035	G3RAF
Daily 24/7	DMR-TG23527	DMR TG23527	

CQ CQ CQ... GB3RN... QSO...



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