

# RNARS



## NEWSLETTER



Royal Naval  
Amateur Radio  
Society

Autumn 2018

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### Front Cover:

HMS Antrim, launched in 1976 at Upper Clyde Shipbuilders, commissioned in 1970 she spent her first years in home waters and in the Mediterranean. Later, B turret was replaced by four Exocet launchers giving her increased fire power. In 1982 she formed part of the Royal Navy task force for service in the Falklands War, serving as the flagship during the operations to recover South Georgia. Supporting the main landing at San Carlos Water, she was hit by a 1,000 lb bomb that penetrated 'tween decks which fortunately, did not explode taking 10 hours to remove. Lovely aerials all round!



www.rnars.org.uk		
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QSL Card Print	UX5UO – Website: www.QRZ.com	

## SUBSCRIPTIONS INFORMATION

### Special Notice Regarding Your Subscription

*As much as we would like you to continue being a member of the Society, all subscriptions fell 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, and we ask those of you who kindly use the banking facilities of either Direct Debit or Standing Order with dates other than April 1st, to please contact your bank to change the date of your subscription payment to 31st March or to April 1st each year. 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** and 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](http://www.rnars.org.uk).

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

**Newsletter by e-mail:** Members who receive their Newsletter by e-mail can apply for a reduction in their annual subscription. Please contact the Secretary G3ZDF for further details.

**The society banks with Lloyds** 272 London Road, Waterlooville, PO7 7HN. Sort code: 30 99 20 - Account number: 00022643 - IBAN: GB92 LOYD 3099 2000 0226 43 & BIC: LOYDGB21271.

**Data Protection:** Your details will be held on the society's database by the Membership Secretary. The committee require your permission with regards to the release of any personal information held on the data-base

Items published in the Newsletter do not necessarily represent the views of the RNARS. The RNARS is affiliated to the RSGB.

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](http://www.rnars.org.uk)

## CHAIRMAN'S CHAT



**David Firth**  
**2E0GLL@mail.com**

The Collingwood Summer Show has been and gone on a day of glorious sunshine which I am sure attracted many visitors to the notion of a day out. Judging by the number of members who were slumped in their seats afterward we could tell they had been very busy during the afternoon. We had the assistance from a Leading Hand and two Juniors who trawled the field handing out leaflets and pointing the way to our building on the edge of the showground. Later, several of our stalwarts scattered themselves into the crowds doing a sterling job directing the public to our threshold. One of our attractions was a 'build your own crystal set' project for kids -and they got to keep it -if it worked. Very successful. Also on display were data mode demonstrations and live weather satellite images of the UK, and ATV with live clips of the show being televised, while Mick Puttick could be found gently tapping his Morse key in the corner as GB6COD. Earlier in the day Martin Longbottom brought in a supply of doughnuts, biscuits and tins of fizzy drinks to keep us all going. A big thank you to all of our members who supported us behind the scenes with ideas and on the day by being there. Without you it would not have been possible. Not to be outdone, and with some little energy left a few of us set up our RNARS stall in the Chaplaincy on 'bacon butty' morning a few days later. More of that further on.

Propagation has been difficult of late making it impossible to establish QSOs on the HQ net. We took the opportunity to investigate the yagi array on mast number two which revealed an almost complete break in the copper screen of the feeder going into the balun box. Having replaced the entire cable run an analysis of the aerial system has shown a marked improvement in received signal performance. Well done to all involved on such a breezy day.

Best wishes to you all,

*David*

## MEMBERSHIP MATTERS

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

<b>New Members</b>		
John Pengilly	M6JYS	5048
Dave Rogers	M6OVD	5049
Mark Lyons	Ab~initio	
<b>Re-joiners</b>		
Mike Robertson	G4USX	3254
Paul Steed	G0VEP	2447
Bob New	G0BSJ	2427
Mike Rowe	G7BLX	4651
John Goheen III	KB2ADL	4716
Mike Curwen	G4ZEZ	3332
Eddie Lingard	G3WNQ	4581
Flemming Christensen	G4MJC	1982
Ray Schulz	DK5VC	2638
<b>Changes</b>		
Mike Moore (new callsign)	M6POY	5043
Alan Rackett (new callsign)	M6UIT	5044
<b>Resigned</b>		
<b>Silent Keys</b>		
Fred Jones	G2IV	1136
Alan Croft	G8CJM	1657
Edgar Cowperthwaite	G4UJI	2881
Roger Bellenot	G0TEL	4337
Paul Stappenbelt (was lapsed)	PA3EBA	2999
Brian Weeden	G2FSH	4633
Paul Godfrey (was lapsed)	M0PSW	4778
Hermann Meiss (was lapsed)	DF7QN	4583

Congratulations to Mike Moore M6POY and to Alan Rackett on their new call signs. Both can now be heard on VHF/UHF.

## AGM TIMETABLE

Our AGM will be back home in **HMS Collingwood this year on 13<sup>th</sup> October** and all members are encouraged to attend. It will be held in the Warrant Officers and Senior Rates' Mess at 14.00. The timetable of events is:

10.00	HQ Shack opens for members Commodities will be on sale. Any orders placed will get free P&P.
11.30	<i>Up Spirits</i> in the HQ Shack
12.15	Hands to Lunch Lunch will be funded by the Society. All those who wish to partake must inform the Secretary when applying for security clearance or notifying the Secretary of their intention to attend the AGM so he can advise the Mess Manager.
12.30	Any special dietary requirements should be advised to Joe the Secretary so he can make special arrangements with the Mess Manager.
12.30	Bar open AGM in the Mountbatten Suite followed immediately by an EGM to
14.00	ratify changes to the Constitution. The changes will be published separately. This will be followed by
15.30 approx	Tea and biscuits along with the Annual Raffle organised by Mick G3LIK.

***Members who do not already hold a valid pass for HMS Collingwood must inform the Secretary by 21<sup>st</sup> September of their intention to attend giving Name, nationality, date of birth and car details (manufacturer, model, colour and registration) if arriving by car.*** This is so he can inform Security on the Main Gate. Members who already hold an Amenity Pass for HMS Collingwood are reminded that they expire on 30<sup>th</sup> September and that they must have a current pass in order to gain entry. Renewal forms must be sent to the Chairman by 7<sup>th</sup> September.

**Joe G3ZDF Hon. Sec.**



## ARE YOU WELL EARTHED?

Doug Hotchkiss G4BEQ

The importance of a well matched aerial in any amateur radio station is well known, or should be. However it is well worth mentioning that just because you have managed to get your SWR meter to read 1:1 with a bit of twiddling of the AMU does not mean the aerial is working well. Far from it. You could disconnect the aerial and place the feeder in a bag of sand and get the same result but negative contacts, even very local ones. Don't get me wrong, SWR is important



because modern transmitters have a protection circuitry that shuts down the RF amp in cases where the reflected power is high, or gives up altogether. If your transmitter is set to 50 watts you are hoping this is leaving the aerial, however if your SWR is around the 1:3 mark then something like 25% is being reflected back to the transmitter causing it to back off and produce less power. A high SWR does not necessarily mean a poor aerial; it could be caused by bad connections, poor or corroded joints. OK so we are all now making sure we have a perfect aerial, but how many consider the earthing system? If we are lucky and can erect a well balanced aerial system then we only need to concern ourselves with an electrical safety earth, unless of course our equipment is 12 Volts and we are using batteries. It is worth remembering that if you are using the house wiring earth it is very prone to mains borne interference and makes a very poor RF earth. Ideally your electrical safety and RF earths should be separate from the house wiring earth. If we are using an end fed aerial a good RF earth is very essential. The ideal RF ground would be to have your equipment mounted in a boat floating in salt water, or living over a copper mine. Unfortunately this for the majority of us is beyond our abilities.

Living in a flat or a shack in the bedroom/attic can cause problems so how can the problem be resolved. You could convince your transmitter that all is well by using an electrical quarter wavelength long wire, open at the far end, connected to the rig's earth, and laid along the floor. You would need a wire for each band/frequency you operate on. Insulate the far end as it can get rather hot. Alternatively, you could purchase an Artificial RF Ground, needing only one wire which you could snake round the shack's skirting board. MFJ and other firms produce these at a price. Having lived in a few odd places in my time I have often resorted to using one, though not a commercial one as



they are expensive, you can “roll your own” as they are not difficult to make, and much cheaper. These days you can find all the information you need on the internet. The circuit I am using came from an article published some years back in Practical Wireless by GD4EIP. This is available on the internet so will not show it here in case the editor is pushed for space. Lucky him having so many dedicated club members anxious to fill the pages of the News Letter.

So, back to the “junk box” which is a “must” for any dedicated amateur? This is why it is essential for all amateurs to belong to a good radio club, as you can always raid other members “junk”. In my case Simon, G0IEY and Julia, G0IUY both RNARS members, helped out by providing me with some suitable wire for the coil, a single pole 12 position switch, and at one of the rallies found the terminal posts for the princely sum of £2. I obtained the meter from a pile of “junk” donated to the RNARS. Julia found me a suitable metal box at another rally at a cost of £8. All other bits I already had. For £10 and a couple of hours work I had an efficient earth system equal in performance to a commercial unit.



To obtain the best results connect your transceiver or AMU to the correct terminal post on the back of the unit, which is the red one on mine, with the shortest possible lead. Mine stands on top of the AMU. Connect the counterpoise wire, which should be about a quarter electrical wavelength of the lowest frequency you operate on, to the other (blue) terminal post. Be careful not to reverse the wires (It is only those members who take advantage of receiving the Journal electronically who have the benefit of seeing everything in glorious colour.....worth a thought). Adjust the two controls to obtain maximum deflection on the meter. If the needle hits the stops then adjust the meter sensitivity pot. That is the one nearest the meter on my unit. Try several induction settings for the best reading. You may also have to readjust your AMU controls. Once you have carried out your initial trials make a note of the various knob positions so in future they can be set up very quickly albeit depending on conditions minor adjustments might be required.

**Doug**

## DIVERSE REPORTS

### ***RNARS Stall open for business at HMS Collingwood:***

The RNARS pitched a small stall in the Chaplaincy building during the weekly bacon buttie/roll Tuesday morning stand-easy. There was interest in the display of radios, some of which were quietly tuned to the local repeater. We have begun first our recruitment activity where most of our young men and women can be found in large numbers. We spent time with them chatting and showing off our radios to the trainees who were surprised to learn of our existence; one or two even believed that building 512 was a 'secretive' specialist group... Well I never! That perception has got to change.



### ***The Radio Communication Museum of Great Britain:***

Radio Communication & Operating Centre, located in the City of Derby

Mike Gloistein GM0HCQ/3455 writes:

A newly formed museum which I was fortunate to visit a few weeks ago -not yet open to the public, but you can arrange a visit by contacting them first. It is hoped to **set up a maritime station** with original equipment that they hold in the collection. The museum founders are also looking for personal background accounts to go with the displays, and some of our members may well be able to assist. The museum is a registered charity and is being funded and built by enthusiasts and volunteers. web: [www.radiocommunicationmuseum.org](http://www.radiocommunicationmuseum.org)  
email: [stephen.haseldine@radiocommunicationmuseum.org](mailto:stephen.haseldine@radiocommunicationmuseum.org)

### ***The Cornish Net Has Changed From Richard Benton***

Now takes place on Mondays at 19:30 with Richard Benton at the helm  
G4WKW, 2503

## Despatches from Glen Loake:

### LUTON RALLY 2018

The weather Gods were in a good mood and the rain held off. This rally is held at Stockwood Park Luton. We arrived about 08:00 and set the table up, with the help of BADARC RN4961. Together we run the stand at these rallies. There were at least 150 stalls set up and furious trading was going on by 09:00. I took my 5 band vertical and Henry MØZAE/p, RN 4955 made a few contacts using the club rig. Eight members signed in. In all a good day, and this rally/boot sale is too good to miss, there being no traders, only amateurs selling to amateurs.

### MILTON KEYNES 2018

Arrived at 08:00, put the pole up and hoisted the Ensign. About 30 tables were outside, including us, and 10 inside tables started trading. The weather broke suddenly at 10:00 and it poured nonstop, sending every one for cover. We piled everything back into the cars and called it a day! 3 signed in, and no commodities sold. It must have been disappointing for the organizers, after all their hard work

### HUNTINGDON 2018

Arrived at 08:00 laid out the table. The buyers started to arrive about 09:00 and trading commenced. We were inside the hall with about another 10 tables. Outside were 40 more stalls, that were lucky with the weather being better.

73. Glenn GØGBI & 3481 Henry MØZAE, 4955

### RSGB - New Syllabus For 2019

**T**he RSGB has published its findings on the current syllabus and intends to release an updated version to take effect in August 2019, having taken on board various comments and criticisms from a variety of interested parties. An interesting comment has been noted in that the view (from officialdom) is the Intermediate course is too easy, so elements of the Advanced course will be included in the new Intermediate course material. The documentation can be found on their website and downloaded in PDF format, all at the following website page:



<https://rsgb.org/main/clubs-training/tutor-resources-2/syllabus/syllabus-2019/>

## YL - DIVERSE REPORTS

**Various YL Activities - Maren Lorentz (DK9MOS) RNARS Including contributions from:**

**Heather Holland (ZS6YE) and Tina Fock (OE3YTA) Koko Myoshi "Mio" (JR3MVF), and other YLs**



Maren Lorentz

Maren's communique tells us about various activities by YLs and is herself attached to U99 (DL0DMB) Museum Group where they keep the radio room active.

### YL's active in Bhutan as "A52YL Group." April & May:

On April 29, 2018, Kyoko "Mio" Miyoshi, JR3MVF (Osaka), and Kay, WA0WOF (Kansas, USA), joined Junichi Tojo, JH3AEF, and Jusei Kitai, JA3IVU (also from Osaka), on their 7th trip to the Kingdom of Bhutan.

Mio and Kay had been issued A52YL as a group license, and the two OMs used their calls, A52AEF and A52IVU, respectively. In addition, Mio and Kay were issued individual licenses. Mio's is A52YLM and Kay's A52YLE. Kay (WA0WOF) answered QSL requests for A52YL, A52YLM, and A52YLE; while also using LoTW. No bureau cards and Internet was not available.

They had three radios and were operating at an altitude of around 10,000' (ft) at Dochula Eco Retreat, described as the most scenic spot in Bhutan. To see pictures of the team, operating site and antennas see the QRZ.com page of WA0WOF

### From. Mio A52YL (JR3MVF) 4 Jun, 2018:

Hello, Kay WA0WOF and me Mio JR3MVF, were on the air in Bhutan as A52YL From 29 April to 5 May. We enjoyed very much and had many QSO with SSB, CW and FT8. I attach photos on this e-mail. 33 Mio (JR3MVF/A52YL)

Dochula Eco Retreat is located about 30 km away from Thimphu, the capital of Bhutan. The Dochula pass lies between Thimphu,



and the ancient capital of Punaka, has panoramic views of the snow-clad Himalayan mountain range. Dochula is at an altitude of 3150m above sea level, with less oxygen, which can cause altitude dizziness, but the location is excellent for radio operations. The climate in Sept. Oct, April, May is favourable during the day, although it is cooler at night it is rarely too windy.



### **Amateur Radio Background Bhutan:**

AC5PN, N.Chhawna was the first Bhutanese to go on the air in 1955. He was followed 7 years later in April 1962 by a group VU2US/AC5, sponsored by the "Amateur Radio Society of India". AC5PN was also instrumental in helping Gus Browning W4BPD (Sk) in obtaining operating permission for his Bhutan Dxpeditons. Gus Browning was the first western amateur operator to operate from Bhutan in 1965 -a legendary Ham from the USA, (Dx Hall of Fame 1967).



Denise Le Cleach (F6HWU) was the first YL to transmit from Bhutan during September 2000. She was also the oldest Ham to operate from Bhutan. A French national, she was born in 1924 and operated from Bhutan in 2000; she was then over 76 years old!! She operated under the group Callsign: A52FH. 'September 2000 Clipperton Dx Club Expedition.'

In January 2001, Glenn Johnson (W0GJ) and family became operational as A52GJ, his wife Vivien (KL7YL) as A52VJ, daughter Melissa (N0MAJ) as

A52YL, son Mark (N0MJ) as A52MJ, second son Paul (W0PJ) as A52PJ. Paul was the youngest ham to operate from Bhutan – at just 13 years of age.

### Giro Rosa Cycle Race - July:



The '*Giro d'Italia*' is an annual bicycle race in which riders from all over the world compete, through some of the most breath taking scenery of Italy. The 29th running of the women's Giro d'Italia, or Giro Rosa, took place from 6 to 15 July Raced over ten stages, it is considered the most prestigious cycle race of the women's calendar and was first held in 1988. Our Italian radio sister, **Erica (IZ0EIK)** asked for support for this radio event held for only the 2nd time, which follows the cyclists through each stage.

Leading into:

### La Radio In Rosa - Radio In Pink - Giro Rosa:

On-Air every day with the Women's Italian Cycle Tour. Awarded by URI (Union Radioamatori Italiani), this event was established in honour of the Tour of Italy in Pink. A very simple award which is issued for each stage of the race, through a single contact with an on-the-air station, during the day, and at the end of the event, with the presentation of the Tour Jerseys (Maglie del Giro). La Radio in Rosa is a diploma awarded by The Italian Amateur Assoc. and each stage has its own pretty QSL card. The stage stations are active on each stage of the race, and they can be located on or off site -even located somewhere else in Italy. The station who makes the contact with the nominated On-Air station will receive a Special Stage Diploma/Certificate and a coloured jersey according to the number of stations contacted successfully. All YL and IQ URIs can be active during the course of the day and we would expect the participation of many Italian YL's or even foreign participants from other associations. Those participants will be awarded a Diploma/certificate for the event.



**Museum Ships Weekend - June:** Maren writes:

Kiel lies approximately 90km (56 mi) north of Hamburg. It is a major maritime centre located on the Kiel Fjord and the Kiel Canal (Nord-Ostsee-Kanal), Kiel has also been one of the traditional homes of the German Navy's Baltic fleet. Here the Laboe Naval Memorial lies on the Baltic coast, approximately 10 km northeast of Kiel, is where submarine museum U-995 rests. She was built in 1942 and commissioned in 1943, with a length of 67.10 m (220ft 2in), and was capable of operating at depths of up to 230 metres (750 ft). At the end of the war on 8 May 1945 she struck her colours at Trondheim, Norway, and surrendered to the British before being transferred to Norway in 1948. In 1952 U-995 became the Norwegian submarine Kaura and was taken out of service in 1965. U-995 became a museum ship at the Laboe Naval Memorial in October 1971.



Submarine U-995, Laboe Naval Memorial,

**U-995 - Submarine - DL0DMB:** <http://marinefreunde.com/eng/intmusact.htm>

At the International Museum Ship Weekend (IMWE) members of the "U995 friendship crew" were active in the submarine's original radio room, in morse code and voice, trying to catch other museum ships on air worldwide. The annual IMWE gives visitors to the submarine U995 the chance to get an idea of how radio contacts are made. Of course, they will also learn a lot here about submarines and the DMB. The photo of the Radio Crew L to R: Jack DK9OS (my OM), Bob M0BZZ, Jonny DL4HJ, Bob N4XAT, Maren DK9MOS, Bill G0ELZ and Harry DL6LV.



**YL Maren Lorenz (DK9MOS) tells us about operating onboard U-995:**

Now that the International Museum Ship Weekend for 2018 is over and we are all back in our home countries. It was a lot of fun again. A total of 108 museum ships took part. U-995 (Call sign DL0DMB) is a museum ship of the German Naval Association or Deutscher Marinebund DMB, located in Laboe/Kiel Bight. The Museum Ships Weekend is organised by another museum ship the US Battleship USS NEW JERSEY (NJ2BB). Bob (N4XAT) is also a member of the NEW JERSEY and the "U-995 friendship crew" was in Laboe.



During this busy event I received the Certificate of Merit (Crew member and radio operator U-995) from Angela 2E1GDC, who did not operate the radio - pictures Angela 2E1GDC and Maren DK9MOS. We worked from the original radio room of U-995 with our own radio equipment, having made over 80 QSOs during the two days

event -mainly Europe; from OH Finland to YO Romania -and reached 4 museum ships out of the 108, but it is a fun event in spite of the propagation not being good! While one ham is on the radio, the others tell the visitors about our hobby and of course something about U-995. I have attached a picture of the radio crew; showing from left to right:

**73/88 de Maren**

**Advanced Licence Videos**

The Cornwall Amateur Radio Club has some 19 training videos on youtube that might be of interest to anyone studying for their advanced licence under the current syllabus. They cover various advanced topics, which may be helpful. Their websites are given below; the second one is more specific:

<https://www.youtube.com/channel/UCClZGcyTF7iK7Pk5kNNiGmA/videos>  
<https://www.youtube.com/channel/UCClZGcyTF7iK7Pk5kNNiGmA/playlists>



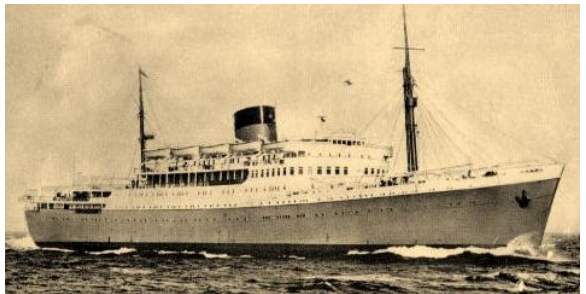
## SS KENYA CASTLE

Jim Smith MM0CJF, RNARS 4593

### My time aboard Union Castle Liner - SS Kenya Castle - April 1956 to August 1957

I joined SS Kenya Castle in April 1956 as an Assistant Steward, having just come off a Ben Boat; SS Benmachdui which I had joined as a cabin boy aged eighteen to the astonishment of the Chief Steward who told me I was too old to be a cabin boy, so next trip would be made up to Assistant Steward; and he kept his word.

SS Kenya Castle was quite an experience for me. It was my first passenger liner, until now the only ships I'd sailed on that carried passengers had been the passenger cargo ships with twelve or less, this was because we didn't have to carry a doctor on board. My duties were in the main dining saloon, I had two tables, one of six seats and the other four, a total of ten. Two sittings, for breakfast, lunch and dinner in the evening, between meal times you had other duties to perform.



The working day started at 05:00 when you were given a small glass of lime juice and a salt tablet which was mandatory, you had to take it. And then someone shoved a bucket into your hand which contained a scrubbing brush, bar of soap a cloth and said follow that man, and we all trundle off half asleep to scrub a section of a companionway, and if you were not scrubbing you were cleaning port holes with Brasso before you even had breakfast. At 07:00 you had to be standing by your tables ready for your first sitting of breakfast which finished at 09:00, and then you could have your breakfast in the dining saloon approved by Chief Steward, this went on for all meals until the ship came back to Blighty. The food was outstanding; not so in the crews mess, they had ships cooks, and we had chefs. If there were no passengers on board we went to the crews mess for our food but as soon as the first passengers came on board we took our meals in the dining saloon after the passengers. After lunch which finished around 02:00 you had two hours off, this was given to all catering staff in every ship in the Merchant Navy, I am not sure if this applied to the deckies, they had to keep watches we didn't.

Entertainment for the crew varied, the ship had a Pig and Whistle in the bow where most of the crew spent all their spare time, some did go to the common room where you had maybe a hobby to follow or read etc. I was never in it as I never seemed to have anytime to myself. If I was not in the laundry room, I would be helping the man in

the silver room as all the ships utensils and platters were of silver. He couldn't cope on his own and besides that I didn't mind, it was a good duty, it came in very handy, as his best friend on board was the Chief Steward and the Head Chef. So I was kind of looked after by them. I only wish that I could remember his name, he was an unusual character because he never ate food; he had two bottles of stout for breakfast, lunch and dinner every day. I could not convince him that the human body needs solid food, then one night I was on my way to help him when I was stopped by the Head Chef. He had made up a big platter of chicken and all the trimmings, and he said in his best English as he was German, "get him to eat this", which I replied, "I will try".

On entering the silver room (I will call him Bill because I can't remember his name). Bill said; "Jim I can't eat all that, you will have to help me", so I had two dinners that night. I was eating some of it but still encouraging him to eat a bit more and he managed a good portion of it to give him credit, he did well. When I returned the half empty platter back to the galley the Chef was delighted. I could do no wrong in the ship after that when I managed to get his friend to eat.

Unruly passengers were very rare on board this ship, but on one occasion I was approached by the Second Steward after we'd been at sea for about ten days. He told me that he had two more passengers for my table. I asked him if we'd stopped somewhere during the night; "no he said, I can't get them settled, they are a Scottish pair and you being a Scot, they will be alright with you." When they came down for dinner that evening, I had them seated on my table of six facing each other. I won't say where they were from, but their surname is quite common where I come from, but they didn't have the Doric, (the dialect of the North East of Scotland).

I went to take the gentleman's order; he said to me in a quiet voice, "now I don't want a lot of whatever I ask for, just give me a little bit." "That's fine", I said, "whatever you want I will see that you get it". To which his wife spoke up in a very loud voice; "we have paid for this you will eat everything there is!" To which I replied; "this has nothing to do with you Madam. I will get to you in a minute". It took the wind out of her sails, she didn't expect that. I was tempted to say; "This is my table and you better behave yourself". But didn't, even if I had the authority to take her off my table. I think this why I got landed with her, the other stewards and passengers had had enough of her.

My card was marked; she made my life a hell until she got off at Cape Town. Every evening when she came down for dinner she made a grand entrance throwing apples and oranges down the stairs that led into the dining saloon with stewards rushing to pick them up before someone got hurt tripping over them and shouting and laughing at me, "here she comes Jim"; she was completely intoxicated. Her husband was a retired doctor the reason he just wanted a little bit of food was that it was too easy to put on weight and there was no way to get rid of it unless you ran around the deck and I think he was too old for that kind of exercise. He was a really nice gentleman he came down to see me before he left the ship to thank me and slipped an envelope into my hand and he said please don't tell her I gave you this.

On our next trip returning towards the UK from Africa, I was stopped suddenly by a woman sitting at a table on her own. I stopped and asked; "Can I help you Madam?" It was the doctor's wife who had given me a hard time on the previous trip; she asked me if she could dine on my table. Alarm Bells were ringing in my head now; "O no I am full up", I said. I enquired about her husband was he with her? To which she replied, "no he took a flight home". I never saw her again in the dining room and wondered if she had been put into quarantine and had her meals served in her cabin?

We heard the Royal Yacht was in the vicinity escorted by HMS Kenya and HMS Kenya would be coming alongside us. We were told to keep our course and Kenya would do all the manoeuvring. A breaches buoy was sent over and exchanges were made. I was never sure what was transferred between the ships, but our Captain was ex Royal navy, and the Captain on Kenya was a friend of his. It was something the passengers and crew could enjoy, photographs were taken of this scene but I can't seem to find any now. HMS Kenya took off at speed to continue her escort duties, and when we arrived in Mombasa, there was the Royal Yacht but she was roped off and under guard and we couldn't get near her.

We did get some time off when in Mombasa where we stayed for five days and if you didn't have any passengers you could go off for the day which four of us did. We hired a black Ford Consul with the latest round nose. We managed to get it on the strength of my provisional license. There were two Irish lads, an English man and myself to set the scene for you. One of the Irish guys had a full license but he had broken his foot. His mate could drive, but had lost his licence and my pal from England couldn't drive.



Leaving Cape Town we headed for St Helena, an Island off the West coast of Africa where Napoleon Bonaparte was exiled. The house he stayed in looked very dank, and not much else to see but lots of trees and foliage, however it was good to be away from the ship. The next port of call was Ascension Island with no shore leave there. Next stop Las Palmas then home to Blighty. I enjoyed my time on this ship but it was time to move on and see a bit more of the world.

This ship didn't have routine inspections like they did in mixed passenger cargo ships. The week before leaving London, boat drill would be performed at the dock side for the benefit of the Board of Trade. I was taken by a crew member down to an alleyway in the lower decks between two automatic doors which was controlled from the bridge in case of the ship sinking and told to stand there, and he never told me anything else. So off he went with the other lads to position them.

I am standing there thinking what the hell am I doing here, it was a bit scary and I am imagining all sorts of things that could happen if this was for real. When along came a group of officials from the Board of Trade, and one of them asked me why are you here. And I couldn't tell him, all I could say was that I was told to stand here. No one bothered to explain to me what it was all about. To this day I will never understand how we passed the inspection. I found later on that I was there to guide any passenger away if the ship was in distress.



### **SS Kenya Castle - Finale**

I had the pleasure of meeting up with my old ship again in Invergordon on the Moray Firth. She'd been sold to a Greek shipping company and renamed "Amerikanis". I got in touch with the Harbour Master at Invergordon who kept me informed of her movements. He sent me a letter telling me when she would be arriving at the port and also said the Captain knew of my interest in the ship. I was given permission to stay on board for the whole day and go around the ship, talk to the crew and have a meal on board. She looked different, I think she'd been cut in half and a section put in. In the old Kenya you could walk from bow to the stern in the lower decks. But on the Amerikanis you couldn't, it was blocked off. The galley was all stainless steel, the dining saloon looked tiny compared to the original, but I was told no changes had been made to the saloon; the passage of time can play tricks on your mind. In the aft section of the ship, an entertainment lounge which was an added addition to the ship with lots of bars; she was no longer a liner but a cruise ship. I got my picture taken behind one of the bars by a crew member. It was a good day all round and she sailed that afternoon; her speed was 17 knots when she passed Peterhead around 22:00. I watched her disappearing into the darkness of the night never to see her again.

**Jim**



### **A fine sight to see!**

HMS QE completing an early RAS during one of her recent crew training phases

## MEMORIES OF HMS MERCURY

**Doug Turk**

The photograph is of NAN 12 CLASS ordinary telegraphists adult new entries 1950. I am the one fourth in from left and our instructor was CPO Tel Nelson. I believe I am the only one left now as all of the others have passed over the bar. There was another class which was NAN 13 and these were 'ordinary signalmen' one of which was Peter O' Toole (Lawrence of Arabia). Both classes were housed in nissen huts and you can observe them in the photograph. All ratings were housed in the huts and officers in the main house.

The hut was heated by a coke burning fire in the middle of the hut which we could only light after classes in the evening. The coal was rationed so one of us would go out in the dark, sneak under the wire to the coal compound and bring some more coal back to the hut as winter at Mercury was very cold.



Doug 4th from the left at HMS Mercury 1950

One evening the main house caught fire and that night I was on the trailer pump party housed in a different building. We jumped out of bed and 'towed' the trailer pump to the front of the main house where the main staircase was on fire. We could not start the engine for the water pump, the officer of the watch was going mad at us, but thankfully the Fire engine from Petersfield arrived and put the fire out. There was a lot of damage to the main staircase which had to be rebuilt.

There was a Commissioned Communications Officer by the name of Jackie Condon who was about 60 years old and all he did was to sneak around the buildings trying to earth some poor rating out of uniform, etc, and during Saturday morning inspections of the huts we had to disappear, normally to the 'Broadwalk,' and guess who would be hiding there, but Jackie Condon trying to catch someone 'not saluting' him from about 100yds. My Memories include dancing with the WRNS from Soberton in the cinema with a sloping floor, beating for the Officers shooting game on a Saturday afternoon, the pubs, the

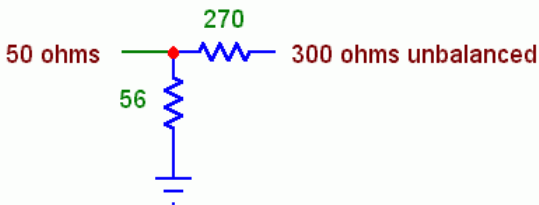
George at East Meon, Rising Sun, Clanfield, Bat and Ball, Hambledon, touch-typing to music and in particular, the 'Teddy Bears Picnic,' getting snowed in during the winter, going home to Farnham on my motor bike, and so on. On passing out I was drafted to HMS Vengeance, back to Mercury then drafted to HMS Starling, back to Mercury, and drafted to HMS Morecambe Bay in the Far East during the Korean War for two and a half years. Back to mercury for Leading Telegraphists course, drafted to HMS Granville, back to Mercury, drafted to HMS Maidstone, back to Mercury and then asked by the Divisional officer if I would like to join HMY Britannia. I said, 'What is the alternative Sir' and he said 'HMS Eagle.' I said, 'In that case Sir I will take the Yacht,' which I joined in December 1954. After two years on the Yacht I had a compassionate draft to Whitehall Wireless in London as my wife had a serious illness and then, back to Mercury followed by demob, so I have very many happy memories of that wonderful Establishment

Doug

## SCRATCH-BOX CIRCUITS

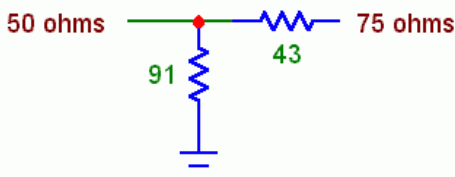
### Circuits to tinker with

#### 1. 50 to 300 ohm matching pad



Loss is approx. 13.3 dB. For a calibrated voltage output, set the input signal to 1.88 times the desired output voltage level in microvolts.

#### 2. 50 to 75 ohm matching pad



Loss is 5.6 dB for 5% values. For a calibrated voltage output, set the input signal level to 1.55 times the desired output voltage level in microvolts. (For 1% resistors, use 43.2Ω and 86.6Ω. Loss is 5.7 dB.)

Ham-radio.com



## SEA STORY - continued

© Eric Bray M0HFF

I prepared to turn in, at ten-thirty. I had been experimenting with assorted objects that I had lined up along the outside edge of my bed, in a bid to discourage the backsides of the returning leave-men. I must have found a combination that worked, as I slept through for the first time, until six a.m. when a strange movement disturbed me. The ship seemed to be surging forward, then bobbing vertically, before springing back again. This was repeating every few minutes, while a heavy whirring sound was emitting from an open hatch in the corner of the mess. I couldn't recall it having been open before, as a table normally lived there! Intrigued, I crawled out, and went to look. The hatch covered a vertical passage, a man-hole, I suppose, that went down about forty feet, into the bowels of the ship. At the lighted bottom, a large steel rod began to rotate, and then the ship surged, and began bouncing. The propeller shaft stopped, and so did the ship. They were testing the engines.

As I was now awake, I dressed, did the things that everyone does, first thing, then went forrard, to the Master's office where I read the copy of Daily Orders that was pinned to the notice board. Daily Orders was the days' programme of events. They were usually things like, 'Men under Punishment muster at 'x' location, at 0700', or 'Store Ship' and a time, rather like a TV programme listing.

Today, they told me that Hands would be called to Stations for Leaving Harbour. Dress no 2's, at 1030z, along with a few other mundane things.



Bacon frying smells wafted up the passage, as the galley shutters crashed up. The food was vastly improved on the offerings of the previous month. The atmosphere in the mess, this morning, was brittle -not the usual casual easy-going back chat and name-calling. Little things caused tempers to flare as people pushed and shoved, trying to get their uniforms ready for the Harbour Stations, before going to normal duty musters at eight. It was not helped by the lack of space, now that everybody was aboard, and the mess was full to bursting. Twice the Leading Hand had to step in, nipping anger in the bud. The third time, he wasn't quick enough, and an RO2 went sprawling, blood splattered from his nose. His crime was that he had borrowed the iron for a moment, while he chased a crease out of his collar, and the user, who wasn't actually using the iron at that moment, took umbrage. The L.S. shoved through the crowd of bodies, grabbed hold of the puncher, and threw him at the bulkhead. "I know we're only going out for a shake-down, and we'll be back on Friday, so calm down, and act like intelligent beings for once, so stop messing about, and act like it!" Nobody moved, rooted to the spot. "Move it!" There was a general scramble for the doors. I

hadn't known that we were returning on Friday, the 'buzz' hadn't reached me, because I didn't matter.

Up in the EWO, Slinger, Bagsy and I were detailed to scrub out the EWO flat. "Where's Tommo?" Slinger asked. "He's not coming. He fell down an escalator, at Euston, and broke his leg. So, we're one down before we move an inch!" Harry shrugged, as he wandered off to find something to not do. We were just finishing off at ten when LRO Jackman told us to go down to the mess, change into no 2's, and report back, pronto. We followed Pete Snark out onto the Flight Deck, then forward, along the starboard side. We were lined up along the edge of the deck adjacent to a circular steel plate on an angled scaffolding mast, which I think was some sort of radio antenna to do with a data down-link from somewhere, it hadn't been properly explained, as it didn't concern us. (Like most things!). After a bit of swapping about, to get our heights something like matched up into an even slope, we stood there like a line of daisies in a flower-bed, waiting for something to happen. The sky was leaden grey, and an icy wind flogged our bell-bottom trousers against our legs. Someone's cap was tossed over the side by a sudden gust. "Chin-stay's down!" Came the order, over the p.a. followed by "Go and get another cap from somewhere! Next rating to lose one is on defaulters!" A sheepish, bare-headed seaman ran for the hatch to below. We waited.

It started drizzling. Soon, all our neatly pressed creases had dropped out, as the wool-mix serge of our uniforms soaked up the rain like blotting paper. Slowly, the edges of my, and everyone else's, cap drooped as the felt and cardboard rim soaked up the water, and shrank, crushing my skull. I shoved it up an inch. An icy rivulet of rain found its way down my neck, dribbled down my spine, and was sopped up by my waistband. When that was saturated, the rivulet continued, down between my buttocks, down my left leg, and into my boot. We stood there, getting colder and wetter.

Hermes swayed suddenly, as some unseen force pushed it. The p.a. called 'single up', whatever that meant. A few minutes passed, with nothing further happening. My boot began to overflow. "Slip Springs!" The p.a. yelled. Hermes swayed again as a P.O. leaned carefully over the edge of the deck, then made a hand sign to the bridge. Our siren spluttered, then cut loose with an ear-splitting parp that echoed multiply from many places around the dockyard. Hermes twisted a little, as it swayed again, sending us all wobbling on stiff legs. Acrid smoke blew across the deck, choking us. Now we were drowning, freezing, AND suffocating!

From below, near the port bow, a small boat siren sounded pap-pap! We lurched again, making us all sway drunkenly, as the deck surged sideways. Slowly, Middle Slip jetty moved away from us, revealing an ever-increasing expanse of filthy swirling water and debris. A large paddle-wheel tug pushed in between the jetty, and us, then leaned on our hull. The wheel on either side boiling the water as the power was applied. We swayed again, and began to swap ends in slow motion. The nameplate on the tug, under its bridge, read 'SAMSON'. "Hey!" I whispered to Daisy. "Is the other one 'Delilah'?"  
"No, Goliath!"



"Stop that chattering!" A voice barked.

"Can't 'elp it, P.O.!" Someone said. "Me teeth are doin' it all on their own!"

"Watch your lip, boy!" Then, softer. "It IS lovely weather!"

Slowly we were pushed round until we faced outwards. One tug held our stern off, against the pressure of the wind, while two more pushed the bow round 180 degrees. Pap, pap, pap. Our siren commanded, just before the p.a. said "Starboard fi – er wrong microphone! Disregard!" The tug beneath our feet backed off, then the deck beneath our feet began to shudder gently, as our props began turning. PAAAAARP from the siren, followed by a command from the p.a. "Attention on the Upper Deck. C in C Fleet." A bo'sun's call squealed the 'still', a long drawn out single note. There was nothing to see, now, apart from the other side of the harbour, a mile away. Samson thrashed along behind, in case something fell off or broke, but we were slowly out pacing it. "Standaaa-tease!" The p.a. bellowed, followed by the two tone, falling notes of the whistle.

Across the harbour, barely visible through the falling curtains of drizzle, the tall phallic symbol of HMS Dolphin, the submarine base, drifted past. "Attention on the Upper Deck!" The p.a. gargled. "Flag Officer Submarines!" "Standaaa-tease!" The end of the breakwater drifted past. The Southsea to Isle of Wight hovercraft howled past, creating its own cloud of spray as it weaved between the slower surface craft, tugs, yachts, cruisers, and us. It would be parking up on the landing area at Ryde before we reached the Outer Spit buoy. (Not that I knew that!). Faintly, a few cheers and whistles reached us from the old fort just outside the breakwater. Perhaps there were a few relatives crowded amongst the watchers on the thick walls. Now we were out in the Solent, the tugs gave up the chase, and went back home for a cup of tea, leaving us to our own devices. One boat chased stubbornly after us, waiting for us to stop and drop the Harbour Pilot off. One of the odd, infamous, circular sea forts drifted past, the sea splashing on the ragged stonework. Occasional glimpses of the Isle of Wight showed, between veils of rain. We came to a halt, and transferred the Pilot. His boat sheered off. We jiggled a bit, as the power came back on, and we picked up speed. "HH-Attention on the Upper Deck!" The p.a. gargled, "Duty watch to muster. Upper deck party, when dismissed, report to your mess-decks. Upper deck, facing aft, Dis –miss!" We all turned right, to face the Ensign, on its staff. Except Slinger, who turned left. Then we started diving for the various exits from the deck. Old on a minute!" R.S. Tony Welch yelled. "My lot, down, change and back to the EWO, except the afternoon watch. You get your kit sorted out. I'll see you at twelve, and not a second later! Scat! Roap! Aft is that way!"

"Sorry RS!"

"I suppose you got confused, because both ends are square?"

"Er, yes, RS!"

"And you thought we were going backwards!"

"Well, aeroplanes have their propellers at the front!"

"Get below before I change my mind! I'm too wet to argue with you!"

"Yes, RS!"

Back in the mess, I stripped to the skin, towelled off, and put a fresh set of clothes on. I squeezed over a pint of water out of my no 2 suit, then wondered how to get it dry in time for this evening. Back in the EWO, it was Morse tape time, until lunch. A heavy curtain had been drawn around the UA8/9 consoles to reduce the stray light, while the duty watch were busy logging everything that appeared on the screens. At five to twelve, the afternoon watch came crashing in, interrupting everybody. Slinger was looking a bit pale and sweaty. LRO Jackman came in. "Is everyone here?"

"Yeah, Jacko, Henry Siddall agreed, "I am!"

"Where's Micky?"

"He's gone for a slash, he'll be up in a minute."

"Ok." Jacko looked at Slinger. "What's up with you? Are you going down, or coming on?"

"I'm on watch for the afternoon." Slinger replied, missing the question entirely.

"I meant, - Are you ill?"

"I'm not feeling too hot."

"Flu?"

"I don't know, yet, LRO."

LRO Rorke came in then. "OK, Jacko, I've got the weight. Sorry, I was caught short."

"You still have ten seconds! Young Roap doesn't look too good, otherwise everything seems to be working."

"Ok. Push off, I'll see you at four a.m."

"I doubt it, you'll be asleep then!" RS Welch put his paper down, and glanced at the wall clock. "Everyone but the on-watch, out! Get your kit sorted after lunch. Be on time for your watches!" There was a mass exodus. Hermes was feeling the sea, rolling slightly, to somewhere about six degrees either side of perpendicular. Each cycle took about ten seconds to complete. The motion was exaggerated by our height above the water, so the actual movement was somewhere in the region of three or four feet sideways, as well as forwards, as we moved out into the Channel.

Lunch was 'babies heads', individual steak and kidney puddings in a suet pastry, with chips and beans, followed by ice-cream. That seems like a reasonable combination, but there is one thing I haven't mentioned yet. The 'plates' were really trays, made of steel, with three indentations. One was large, and rectangular, for the main course, next to it was a smaller rectangular one, for the sweet, and finally, a round one, for the cup, or bowl, whichever. As you may know, steel is a good heat conductor, so the steak pud cooled down rapidly, and the ice-cream melted equally quickly, as the temperatures balanced up!

**Eric MOHFF**

#### **Committee Membership**

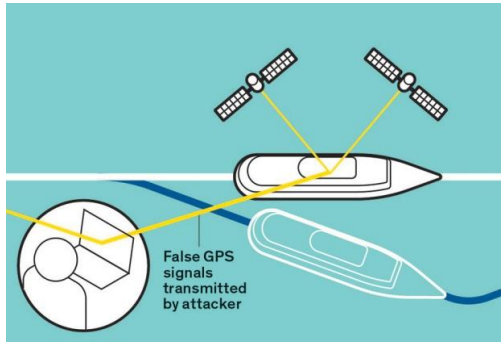
This is just a reminder that we are still looking for volunteers to become members of the Committee. You don't have to live in the vicinity of HMS Collingwood to be able to attend meetings in person, you can attend by Skype. If you are interested drop me a line.

**Joe G3ZDF, Hon. Sec**

## CYBER WARFARE

### **Ships off course in GPS spoofing attack by Russian cyber weapon**

Spoofing is a word that has been around for quite a long time. Basically, it means passing-off something that is false as a genuine article for gain, but that is not all. In modern times the advent of computer systems in every facet of our working lives and at home has created a huge playground for spoofers in general. Whether it be the puerile behaviour of kids at home hacking into any of the huge defence systems or other people's personal accounts -just for fun, or the more sinister spoofing of national and international systems to create significant strategic damage to other countries for more sinister reasons. Recent attacks or 'cyber attacks' as they are called have brought national banking systems to their knees creating havoc in a number of countries. If we care to think about it such things as panic in the civil populations of targeted countries, infrastructural meltdowns and political mayhem without the means to truly identify who the enemy might be or to give direction to the armed services where to point their weapons are all possible.



Spoofing Navigation Signals

The whole business of spoofing in relation to banking, navigation, commerce and domestic scenarios relies on communications, pure and simple. In all of these areas it is the transmission of radio signals that provides precise control. Your bank and mine derive their precise timing for data and monetary security from the timing signals transmitted by GPS satellites, as do stock exchanges, finance agencies hospitals, factories, hauliers and retailers. Spoof these and either data corruption or data loss will result in certain catastrophe. Mostly, computer scams rely on spoof web pages to trick people into thinking that they are on the right page while performing financial transactions -is the one scenario we are most familiar with by reputation; if not for real, the spoofing of navigation signals is the most dangerous to shipping and flight operations. It is known that the Russians are deliberately jamming and spoofing radio signals used in GPS. They deliberately blocked GPS signals in the Black Sea, and the worrying aspect of this is that none of the bridge crews on several vessels were aware of it until the jamming stopped. A short timed experiment to

evaluate this new type of irresponsible hazard was conducted in the English Channel not so long ago, by 'switching off' GPS signals in a localised area off the coast of Kent. The results showed that for just a short measure of time vessels had travelled twelve to fifteen miles without their GPS systems registering any errors. One of the reasons why the band plans given to us by OfCom should be adhered to is because on certain bands we share the spaces in proximity to frequencies allocated to beacons and global marine and aeronautical operational services. When GPS fails they need those services.

For example, you can make good money by ferrying aircraft to and from the Canadian shoreline, but for much of that journey it is over the sea and formerly without GPS it was done by dead reckoning on a wildly changing compass needle. Then GPS changed all that and in theory -never in practice- one could establish a comfortable altitude, switch on 'George' the autopilot and the GPS, go for a nap... Even then, mistakes very often ended in tragedy. Flying to Iceland you can fly over the deepest of fjords with spectacular views of glaciers and the mountains, and if the weather holds off you're in for a safe landing and a decent night's sleep. If you have been spoofed you may well run into cumulus granitus while in cloud, or be forced to land in the wild with just a few minutes reserve of fuel! Imagine spoofing GPS radio signals in this scenario? It is murderous!



A Modern Ship's Bridge

Spoofing on the trading floors may consist of price fixing and opportunism for financial gain as well as political influence. Take for example the first Iraq war. A short time after the midnight declaration of war somebody, somewhere started selling shares in oil -lots of them! The complete reverse since oil is a strategic resource. We are talking about millions of pounds of money being laundered and nobody could pinpoint who was doing it ('the mob'). A spoof trader may create a web offer selling a strategic commodity at a cheaper price than at the going rate. Others are gulled into following suit by lowering their prices, but here's the twist. The spoof trader cancels his prospective sale and bulk-buys the commodity from one of the other traders at the cheaper price. Sneaky! Ultimately, the message here is that with spoofing at the national level stock exchanges could fail, currencies would collapse followed swiftly by socio-economic collapse. It is just as damaging as false news on the web that

feeds the cravings of those who need information in the 'now' without thinking about its sources. Courtesy of radio signals to our mobile phones, land lines and sat-comms.

The transmission of radio timing signals has become crucial to everything that is important to us. Some may remember the airway into and out of Berlin. Like most things during the cold war the airway was the result of a military treaty guaranteeing freedom of access to West Berlin. Harassment was always not very far away. I remember sitting at the back of a Pan-Am Clipper watching two Russian aircraft hurtling straight at us at speed on the port side one morning. Slightly ahead of the nose, they looped around us in tight formation and struck out back towards the north whence they came. Fantastic view and a sobering reminder. Here too, the Russians were all intent on spoofing our radio beacon signals in their attempts to capture Western military and civil aircraft. Just as well that RAF aircraft had navigators to counter the questioning look on their pilot's faces. "Just stay on track." It is this new kind of electronic warfare that is maturing across the board in every area of technology. We now call them 'Cyber weapons' and instances of it as 'Cyber attacks.'



Who switched off the GPS No. 1?

To some of us who have served in military roles in communications and systems hardware/operations this may come as no surprise. Might even be a logical conclusion. The recent cyber attack on the NHS took over a month to sort out, though it is suspected that there is still a lot of clearing up to do in concert with the political fallout. If truckers can carry in-cab spoofing gadgets to fool the signals to the GPS trackers fitted to their vehicles then it is almost open season for organisations and individuals to do what they want -for a minimal cost.

Recent events where there have been a few nasty collisions between US warships have created no small amount of comment about the possibility of cyber attacks on the American fleet. Could this be a modern day plea in the

land of plea bargaining to cover up sloppy seamanship? If indeed these collisions were the result of such attacks, then it would be a dark day to herald the beginning of the fall of one of the strongest & powerful military machines in the world. However, it might be wrong to presume too much because of the way in which military vessels are operated, using multiple systems. The most likely way around spoofing is to mimic them and use several platforms not all relying on satellite or other forms of lofty radio communications systems. It seems obvious; GPS in conjunction with eLoran and perhaps the Mk-I eyeball? If your GPS is telling you that you are in the middle of town when in fact you are all at sea, then you get the picture that something is wrong -back to dead reckoning and be quick about it!



Did we just have a multiple cascade security failure?

Radio manufacturers are used to being called upon to produce case-hardened military digital equipments with their ruggedized silicon components tough enough to withstand nuclear blasts, heavy impacts, and EMC-pulse weaponry. Now they have to consider protecting the radio signal processing firmware embedded in their memory modules, as well as, cope with GPS timing

and data failures and, spoofed signals. It could be that those random over the horizon radar (OHR) signals and other radio bursts emanating from the east; you know, the ones that temporarily overload our receivers for a second or two are just a covering for other forms of radio disruption. If we care to think about it, a modern approach to signalling is the QRP digital mode -well below the 5Watt threshold. Some of us have tried WSPR and FT-8 with varying degrees of success. FT-8 has an incredible 250mW maximum transmission power level and in my view falls well within the subliminal communications definition where signals may not even be detectable, requiring sophisticated wave correlation techniques to pull them out of the background noise. With all of this noise created by cyber weapons that we find deliberately penetrating our amateur bands -like Olga in Moscow and others deliberately flouting international agreements, we can see that there are nations and national

*If your GPS is telling you that you are in the middle of town when in fact you are all at sea, then you get the picture that something is wrong!*



agencies out there who, for one reason or another, want to disrupt our way of life. We are seeing and beginning to realise just how fragile satellite radio communications systems actually can be. While we may be romanced by the notion of having some chit-chat with the current occupants of the ISS now and then, the other hand is hidden where we can only suspect what is going on.

At a recent GPS conference in the US many visitors found their mobile phones were not working properly and were unable to connect to the local networks. It was put down to a 'leaky' GPS simulator blanking out mobile radio signals from nearby telephone masts, but the questions begin coming. We know for example, in the event of hostilities all the mobile networks in the UK will be disabled -here's the big but, how do we tell whether or not it is a genuine or a jamming signal sent to disrupt communications? We don't, but as the Americans would say; it could be due to a cascade security failure? Such a thing...

**Ed.**

**The Demon Tapper**



"What chyah mean - can I do Morse?"



**ANNUAL MEMBERSHIP FEE IS JUST A FIVER  
WHEN YOU OPT FOR EMAIL COPIES  
OF THE NEWSLETTER**



## NEWS OF THE OTHER SIDE

Janes.com

### Russia's new Spectrum EW system enters service



The Russian Ministry of Defence (MoD) announced on 28 August that a new electronic warfare (EW) system, designated Spectrum, has entered service with an inaugural exercise in the Urals. The complex is based on an AMN-233114 Tigr-M 4x4 vehicle, which has fitted to its roof an array of mission systems, including an optical surveillance suite and a large container. The Spectrum (pictured) is not the first

Tigr-based EW complex in service with Russia. It is likely to serve alongside Leer-2, which is believed to be capable of disrupting radio communications and direct artillery fire. (Russian MoD). The vehicle is manned by specialists from the brigade-level EW forces that Russia operates. They are typically charged with interrupting or disrupting enemy communications. However, the Spectrum is described as a vehicle for "tracking of the specified territories where potentially dangerous objects can appear".

### **VACANCY**

#### **Newsletter Editor**

**Do you have the time?**

**Are you up to the job?**

You will need to have a good command of English and English grammar to be able to compile and edit articles and photos submitted for publication four times a year. You will need to be familiar with MS Word or MS Office or similar. It's challenging but rewarding since the target audience will be RNARS Members and radio amateurs who are linked to the Society. Contact the Society's Hon Secretary for details.

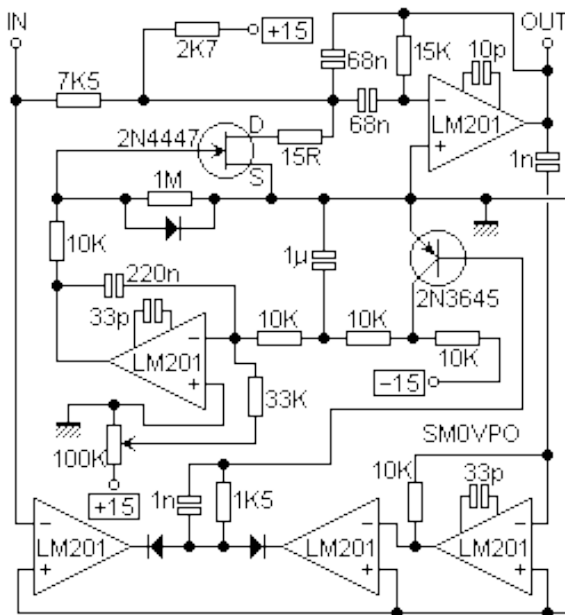


## SELF TUNING CW FILTER

Harry's Homebrew

"QRP" receivers and transmitters, for HF and CW are often based upon VFO tuning which can be a problem, especially when using the higher frequency bands. I have found that frequency drift is quite annoying at the best of times, but back in 1972 I found this little circuit. It is a narrow band-pass filter, based upon the LM201 OP-Amp. The circuit should work using other OP-Amps, but I

have not tested this; I only used the LM201. Supply voltage is  $\pm 15\text{V}$  volts and is supplied to all OP-Amps.



The OP-Amp with the 10p compensation capacitor is the filter which is tuned by the 2N4447 FET acting as a variable resistor. The remaining OP-Amps form comparators (there are no compensation capacitors); an integrator (the middle one) and a differentiator (bottom right). These chips adjust the frequency of the filter so that there is 180° phase difference between the IN and OUT signals to the filter. This only occurs

when the filter is tuned to the incoming audio frequency. With the values given the filter will track an incoming tone from 330Hz to 3KHz.

I cannot claim any originality for this circuit, but It does work very well though. I had always attributed it to the late G8ABZ, my "mentor" in the 60's and early 70's. The circuit was transcribed from the back of a beer-mat but I have, however, recently been shown it in an article from EDN/EEE in Feb 1972. Now that I have seen the original article you do not have to muck around with the capacitor values as I did. Many thanks to those who have helped me dig out the circuit, and to the originators of the article; Gordon DeBoo & Roger Hedlund.

de HARRY, Lunda, Sweden.

## HQ SHACK - OPEN DAY

2nd JUNE 2018



**It was a good day for cricket and a good day for the crowds to turn up at our door on Saturday morning from ten o' clock onwards.** Families spent the first part of the day doing the rounds of the kiddies entertainments leaving other more serious displays until later -by that I mean the Field Gun competition- the annual blood match where you can hear the splintering of finger bones like the snapping of twigs under your feet on an autumn day's stroll through the woods. Congratulations to the crew



Keith Woodland

**The Victorious HMS Heron Field Gun Crew**

from HMS Heron for a magnificent run! It was the firing of the cannons that kept us mindful of the afternoon when parents and their exuberant offspring would be seeking a cool escape from the afternoon sun. And indeed they did. A steady trickle in the late morning became a fast running stream of visitors coming and going -not without some challenges. Those not wowed by satellite pictures of southern England or television clips of the crowds surging (or should that be milling) around outside building 512 had a chance to build their own radio from component parts -and keep it if it worked! And they always told us nothing in the world is free... It was lovely to see some of the kiddies scampering off into the sun with their mums and dads gently clutching their little trophies for them. It was a good idea that emerged from one or two brain-storming sessions in the planning stages, and it worked well. Good job there Tony!

GB3RN went live early on with Mick Puttick at the key on the FT-1000. That's him opposite looking for a firkin of ale -I think. It certainly was that hot inside. We didn't appear to have any of the technical problems that reared up on previous occasions, so it looks as though our previous technical efforts have paid off. The ATV Group who volunteered to take up a bay this summer can be seen as represented by David Williams who took on the role of Production Engineer while Simon, Julia and Frank went out with cameras in-hand to photoshoot the events outside. There's Joe on the right of the picture, in the foreground demonstrating his cool look look with a casual air.

While below we have a glimpse in to the worlds of morse code and of crystal set design and build projects; It has to be said long before the crowds descended upon us, care of our nimble footed gatherers! The general feeling after the event was that of being thoroughly worn out in



**A huge Thank You to all those who made Open Day a success**

some cases, but nevertheless happy that it all went better than we thought it might. There was some interest in the data modes bay with one late comer who was simply wowed with the ease in which we were able to download satellite images and combine them with decoded data modes using our HF equipment

## IN THE NEWS!

### New radio technology for Indian Navy

The Defence Acquisition Council on Wednesday approved the procurement of more than 260 Software Defined Radios (SDR) for the Navy at a cost of more than Rs. 490 crore. *"This is the first indigenously designed and developed SDR to be procured by any of the three services. These will replace the existing systems on-board warships," a defence source said.*

*The Hindu, Thurs. 5th July 2018*

### Military radio contract boost for south Wales plant

General Dynamics UK south Wales has secured two new MoD contracts in a deal worth £364m. Engineers at the new plant at the old site of the Oakdale Colliery, Caerphilly, will maintain the specialist Bowman radio for the armed forces. Last year, the firm secured a share of a £45m MoD deal for work, safeguarding 150 jobs.

*BBC NEWS*

### Farnborough Airshow launch of futuristic new Tempest jet fighter

It will include autonomous capabilities, enabling it to fly either with a drone or with a pilot on board. The jet will may enter service as early as 2035 as an eventual replacement for the Eurofighter Typhoon... It will be built by Team Tempest, a consortium including BAE Systems, Rolls-Royce, Leonardo, and MBDA. The UK will invest 2 billion pounds in the project.

*Intelligent-aerospace.com 16th July 2018*



### First trials of F-35 aboard HMS Queen Elizabeth begin this autumn

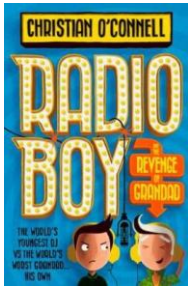
(Though somewhat later than planned)

In late August HMS Queen Elizabeth will leave Portsmouth for her *Westlant 18* trip. The ship will be away for around four months and, although not an operational deployment, this will be her longest and most demanding period at sea so far. The centrepiece of the deployment will be the fixed-wing First of Class Trials (FOCT) with F-35Bs touching down on her deck for the first time.



*savetheroyalnavy.org 9th July*

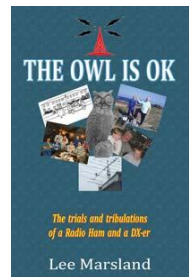
## BOOKS CORNER



8+ ISBN: 9780008200596

Christian O'Connell is back with more hilarious adventures of Spike, super-star radio DJ... and trouble-prone ordinary kid. The world's youngest DJ is still the talk of the town. A town that's about to turn against him. Radio Boy and his team, Artie and Holly, are back and continue to broadcast live to the world from Spike's garden shed. Then, Granddad Ray comes to stay. Spike decides to cheer him up by inviting him onto the show. He becomes an instant hit with the listeners and Spike keeps him on as a new team member. But things get really awkward when Spike realises Granddad Ray only has three stories and keeps telling them over and over again. Spike is forced to sack his own Granddad, who swears vengeance on his own grandson. Granddad Ray is the world's most competitive man and he always plays to win - at any cost...

For over 30 years Lee Marsland has been a licensed radio amateur. In that time and in 'his own words', there have been plenty of 'trials and tribulations'. Lee brings to this book a light hearted look at how his hobby has become more of a way of life that defines him today. Lee has written this book in an easy to read style that really brings over his Liverpool heritage. His tale of becoming a radio amateur and its challenges is a great read that provides many a chuckle. Written by Lee Marsland, GODBE

**New Publication:**

60 years of the German Navy "Wir.Dienen.Deutschland"  
June 28, 2016 by Heinrich Walle.

Als Bundesmarine war sie bis 1989 im Rahmen der NATO Teil der Abschreckung im Kalten Krieg. Seit der Wiedervereinigung nimmt sie als Deutsche Marine im Rahmen des atlantischen Bündnisses und im Einklang mit den Vereinten Nationen an weltweiten Einsätzen zur Schaffung einer gerechten Friedensordnung teil. Zugleich leistet sie ihren Beitrag zur

Sicherung der internationalen Seewege. Das größte Potential der Marine sind nicht die neuesten Waffensysteme oder die effizienten Strukturen und Prozesse, die gerade in den vergangenen zehn Jahren dem Wandel sozialer, politischer und wirtschaftlicher Randbedingungen anzupassen waren, sondern ihre Männer und Frauen.

## STATION HOURS METER

Jürgen H. Timcke, HB9ANE, RN 3493

### Useful complement to the station: a main switch appliance

I have had the idea for a long time, but now that I have a new station I can start bringing into use some of my intended projects -it didn't make sense to build them for the old station. One of them was a working hour meter to have the exact data about the operating time of the TRX itself and, of personal interest, to know how many hours of my life I spent as an operator with amateur radio. Because of that I built the following described little appliance which I name, based on its main function, "main switch appliance."

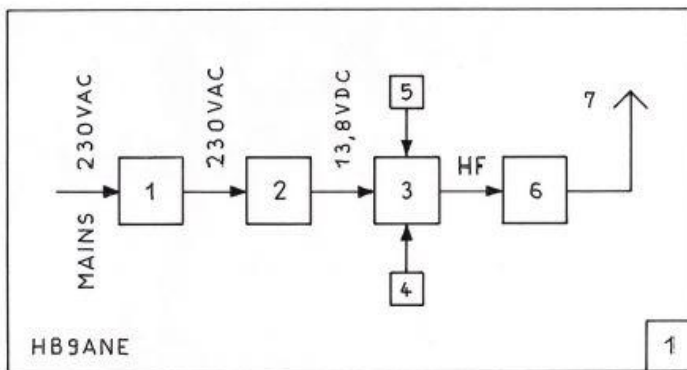


Figure 1 - New Station Block Diagram

Figure 1 shows:

- |                           |                            |
|---------------------------|----------------------------|
| 1 = Main switch appliance | 2 = Power supply PSU-1250, |
| 3 = TRX YAESU FT-450D     | 4 = Straight key           |
| 5 = Headphones            | 6 = SWR-meter              |
| 7 = Windom-antenna        |                            |

Its most important component is the "main switch" (Panic Button/Kill Switch) to be able to disconnect the mains supply in the case of any trouble, isolating the whole station with one switch. Additionally, I installed the previously mentioned working hour meter, an ammeter to indicate the current taken from the mains



during “transmit”, a white signal lamp to show "switched on" (which indicates also that at the surface socket the outlet voltage for the power supply is available) and a red signal lamp which shows that the phase is connected correctly at the surface socket.

### The circuit and its components

Figure 2 shows the circuit, special explanations to it are not required.

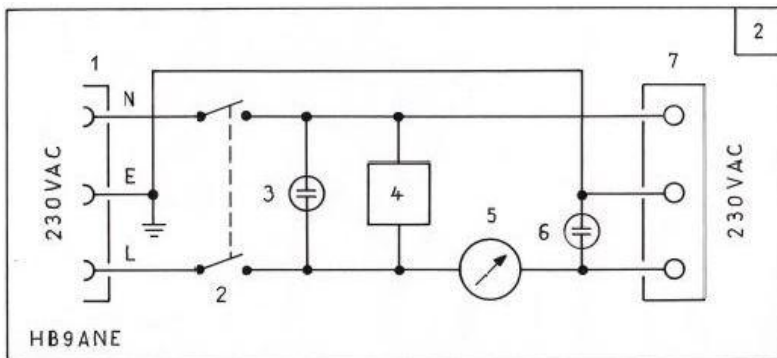


Figure 2 - The circuit and its components

Following the installed components are listed. For each of them is mentioned: „number in the circuit – designation – technical data“.

- < 1 – Appliance inlet – 250VAC, 10A
- < 2 – Main switch – 250V, 15A
- < 3 – Glow lamp – 230VAC, white
- < 4 – Working hour meter
- < 5 – Moving iron ammeter – 6A
- < 6 – Glow lamp – 230VAC, red
- < 7 – Surface socket – 250VAC, 10A

## The design

The mechanical design is very simple: it consists only of the parts base plate (wood core plywood,  $s = 16$  [mm] thick), front panel (aluminum, half-hard,  $s = 2$  [mm] thick), rear panel (Pertinax,  $s = 6$  [mm] thick) and two supports (aluminum, half-hard,  $s = 2$  [mm] thick) to stiffen the rear panel with the base plate.

To simplify the wiring and to have a better overview during this work I made a little Pertinax-board,  $s = 2$  [mm] thick, to have fix points for solder on the wires to the various components, see figure 6

A shielding of this appliance is not required and because of that also no metallic casing, that means no casing at all.

## The finished appliance

The figures 3, 4, 5 and 6 show the finished appliance. It is positioned directly beside the TRX and to avoid its movement at operating the main switch it is screwed on the lower board of the stand (see the photo in the NEWSLETTER, Autumn 2017, page 31, below).



Figure 3 - Front Panel

Figure 3 - Front panel:

The mains switch in the middle, the two indicators above it, the ammeter to the left and the hours meter to the right.

Figure 4 shows the rear panel consisting of the inlet for moulded (computer) type power leads and the mains output socket -continental style.





Figure 4 - Rear panel view showing inlet and outlet sockets



Figure 5 - Topside view rear



Figure 6 - Topside view front

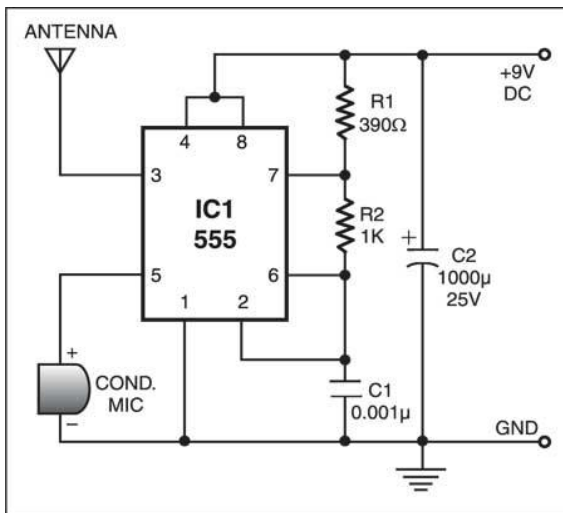
Drawings and photography: Author  
Layout: Rolf Rüttimann

**Jürgen**

## LOW POWER TRANSMITTER

electronicsforu.com

Here is a simple low power radio transmitter for transmission up to 25 metres. It is basically an AM modulator whose signal can be received on the normal AM radio. It can also be used as an AM radio tester. One project for the ab-initio student of radio. Could also prove to be a useful gadget for the remote control of other things with some minor tweaks to the design.



The radio transmitter circuit IC 555 (IC1) is used as a freely running multivibrator where the signal frequency is set to be above 540 kHz. Here the circuit is designed for a frequency of around 600 kHz. The frequency of the multivibrator can then be calculated as follows:

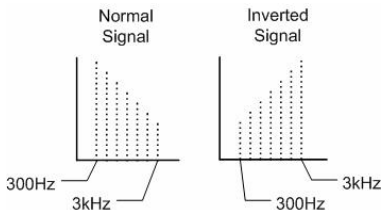
$$f = 1.443(R1 + 2R2)C1$$

where resistors R1 and R2 are in ohms, capacitor C1 is in microfarads, and the given frequency f is in hertz.

The tuning can be changed to another frequency by simply replacing R2 with a variable resistor or C1 with gang capacitors. But it may increase the complexity of the circuit. A condenser microphone is used for speaking. The IC 555 chip is used as a voltage-to-frequency converter. The output of the condenser microphone is given to pin 5 of IC1, which converts the input voltage or voice signal into its appropriate frequency at output pin 3. This frequency produces an output signal that can be detected by a nearby radio receiver, and you can hear your own voice in that radio. Note that the receiver should be AM type. If there is no noise in receiver, tune it to 600 kHz. The circuit operates off a 9V regulated power supply or a 9V battery. For antenna, connect 2-3m long wire at pin 3.

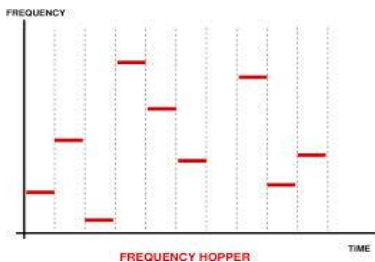
## HOW DOES RADIO ENCRYPTION WORK?

**A**udio encryption is the process of encoding information in such a way that eavesdroppers or hackers cannot understand it, but authorized parties can access it. In two-way radios encryption modifies a voice signal using a coding algorithm. This algorithm is controlled by an encryption key. The encryption key is used by the transmit and receive radios to enable the voice signal to be coded and decoded for both radios. Therefore, all radios involved must have matching encryption keys to receive transmissions.



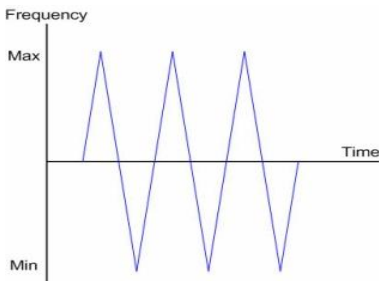
**Fig. 1 - Simple Voice Inversion**

**Inversion scrambling** inverts all of the frequencies and volume of the voice signal. In figure 1 on the left, all the voice signal frequencies at 300Hz are inverted to 3kHz. The volume level is also inverted.



**Fig. 2 - Frequency Hopping**

**Frequency hopping** encryption adds a greater degree of security than simple inversion. In this method the frequencies and frequency rates change irregularly as seen in figure 2. This causes the voice signal to "hop" over a number of different frequencies and frequency rates. Some commercial radios have used this technology in the 900MHz band.



**Fig. 3 - Rolling Code**

**Rolling code** inversion uses a method where the voice signal is inverted at a constantly changing rate. In figure 3 on the left, the signal starts at an upward inversion frequency direction and climbs to the upper limit. Then, it reverses direction and inverts at lower frequencies until it reaches the lower limit. It is a more robust form of encryption than simple voice inversion.

## RAFARS & Royal Signals ARS Nets

RAFARS	Time	Freq	Control
Daily	1100 A 1830 A	3.71 3.71	GØSYF    GI4SAM G3HWQ    MØRGI
Monday	1900 A	3.7	G3PSG    GØBIA
Tuesday	0730 A 1400 A 1900 A	14.27 7.015 3.567	G4IYC
Wednesday	1500 Z 1530 Z	14.29 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    M3V/RB
Monday	1830 A	3.585	GM3KHH (RTTY)
Tuesday	1400 A	7.17	MØOIC
	1600 Z	14.18	G4BXQ
Wednesday	0600 Z	14.143	Various
	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

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



## RNARS Nets

**Mick Puttick G3LIK**

All frequencies are +/- QRM. DX nets are GMT; UK nets are GMT or BST as appropriate. The list is compiled by Mick Puttick G3LIK [mick\\_g3lik@ntlworld.com](mailto:mick_g3lik@ntlworld.com) – 02392 255880 **who must be informed of all changes.**

UK	Time Local	Freq	Net	Control
Daily	2359-0400	145.727	Midnight Nutters	Vacant
Sun	0800	3.667	News 0830	G3LIK
	1030	7.065	Northern Net	GM4VUG
				GØGRY
	1100	7.02	CW Net	G4TNI
Mon-Sat	1030	7.065 / 3.743	Bubbly Rats	GØGBI      GØOKA GDØSFI      MØZAE
Mon	1400	3.575 / 7.02	QRS CW	GØVCV
	1900	7.088 / 3.743	North West-News 2000	GØGBI
	19:30	145.400	Cornish Net -Falmouth	G4WKW
Tue	16:00	7.068 / 3743	HQ Shack	GB3RN
	1900	7.028 / 3.528	CW Net	G3RFH
Wed	1400	3.74 / 7.088	White Rose	G4KGT
	1930	3.743	SSB News 2000	GØOAK
	2000	145.4	Stand Easy	Vacant
Thur	1900	3.542	Scottish CW	Vacant
	2000 GMT	1.835	Top Band CW	GØCHV      G4KJD
Fri	1600	10.118	CW	SM4AHM
Sat	0800	3.74/7.088	GØDLH Memorial Net	GØVIX
DX	Time GMT	Frequ	Net	Control
Sun	0800	7.015/30555	MARAC CW	PA3EBA/PI4MRC
	1430	21.41/14.329	RNARS DX	WA1HMW/GD0SF/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	VK CW	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/GD0SF/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/GD0SF/W1USN

### RN Activity Frequencies

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

## RNARS COMMODITIES

Doug Bowen GØMIU

Item	Price
<b>Body Warmer</b> , embroidered with the new RNARS logo, your name and callsign. Colour: Black only Sizes: S to XXXL	£30-00 P&P £4-00
<b>Polo shirt</b> , embroidered with new RNARS logo, your name and callsign. Colour: Navy only Sizes: S to XXXL	£16-00 P&P £4-00
<b>Sweatshirt</b> , embroidered with the new RNARS logo, your name and callsign. Colour: Navy only Sizes: S to XXXL	£16.00 P&P £4-00
<b>Fleece jacket</b> , embroidered with new RNARS logo, your name and callsign Colour: Navy only Sizes: S to XXXL	£21-00 P&P £4-00
<b>Gold blazer badge</b> with <b>new RNARS logo</b>	£10-00 P&P £2-00
<b>Lapel badge</b> with <b>new RNARS logo</b>	£2-00 P&P £1-00
RNARS Log Book	£4-00 P&P £3-00
Cap with RNARS (new) logo	£10.00 P&P £4.00

Size in inches:

Small 36-38	Medium 38-40	Large 40-42
Extra Large 42-44	2 Extra Large 44-46	3 Extra Large 46-48
4 Extra Large 48-50		



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Name: \_\_\_\_\_

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Telephone: \_\_\_\_\_

Email: \_\_\_\_\_

Advisable to check before ordering as to availability in your size

Item Description	Size	Colour	Qty	Price	P&P	Sub Total
<b>Total Payment £</b>						
Enclose cheque payable to: <b><i>Royal Naval Amateur Radio Society</i></b>						

**Overseas members, please add £5 to cover additional postage.**

Send orders to:  
 Doug Bowen GØMIU  
 14 Braemar Road, Gosport, PO13 0YA  
 E-mail: g0miudoug@btinternet.com

Please allow fourteen days for delivery and while these prices are correct when going to press, prices do vary and are subject to change



## HMS AMETHYST - FAR EAST STATION





## **PROPOSED ALTERATIONS/ADDITIONS TO THE RNARS CONSTITUTION 2014**

Changes in bold italics

### **Change 1**

#### Section 3. MEMBERSHIP - Grades of Membership

New sub-section (f) within the grades of membership:

***f) Under 25s who may qualify as either grade (a) or grade (b)***

As ratified at the 2017 AGM. Following sub-section headings below to be adjusted to read (g) and (h)

### **Change 2**

#### Section 3.1 Constitutional Requirements For Membership

Changes to sub-section (c) and the addition of sub-sections (d) through to (e):

##### ***MISCONDUCT***

- c) No member shall be expelled without first having ***been informed of a complaint made against them, and shall be*** given an opportunity to appear before the Committee. ***If it is found there is no case to answer, the Committee shall have the authority close the investigation.***
- d) ***All representations shall be investigated by the full Committee, a quorum of Committee members or a sub-committee appointed by the Chair. Sub-committees shall report their findings and conclusions to the Committee at the next committee meeting or, at an extraordinary committee meeting called for that purpose. All information; whether material or otherwise; will be deemed confidential to the Committee, and not publicly made available during investigation. The Committee will discuss and vote on the most appropriate action to take, and will then inform the parties of its decision which is final. And where discretion allows, the outcome published accordingly.***
- A clash of interest in these circumstances is where a representation of misconduct is a personal matter involving a Committee member, or where a Committee member is the subject of a misconduct complaint. The Committee member shall not take part in any further enquiries or discussions (except as defined in (c) above) of the Committee during its investigation and its findings made known.***
- e) ***Any attempt to influence the outcome of Committee hearings, etc by bullying, obstruction, harassment or intimidating behaviour, or publicly divulging personal or confidential information, or otherwise will be viewed as misconduct.***



## **PROPOSED ALTERATIONS/ADDITIONS TO THE RNARS CONSTITUTION 2014**

Changes in bold italics

### **Change 3**

This is a new section that reflects upon the necessity of adherence to legal requirements.

### **6. POLICIES & PROCEDURES**

***Occasionally, laws are passed requiring the Society to produce policies and procedures that are in compliance with national legislation. Breaches of the rules may call for corrective action within the sphere of the Society's influence, but may otherwise be offences that have to be reported to the authorities and further actions may lie beyond the remit of the Society. All members are required to read such documents and act in accordance with Section 3 of the constitution.***

All other following sections to have their numbering adjusted accordingly.

### **Change 4**

#### **SECTION 8 COMMITTEE STANDING ORDERS**

- i. Section renumbered resulting from earlier additions.
- ii. The addition of two further sub-sections (f) and (g): including the reinstatement of the principle of sub-committees from the original constitution:
  - (f) The Committee shall have the power to appoint such sub-committees and representatives, and co-opt members onto the committees, as they may deem necessary in the interests of the Society.***
  - (g) At meetings of the Committee, or any Sub-Committee appointed by the Chair, each member shall have a vote and the Chair of each committee shall have a casting vote.***