Horndean & District Amateur Radio Club Journal

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Horndean & District Amateur Radio Club
Founded in 1975

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Contents

Articles, letters of interest, photographs are always needed and should be sent to the Editor :-

I use Microsoft Publisher to produce the journal so am happy to accept articles/photographs via email. A Word document or Picture attachment. Just use Journal article or Journal picture as the subject matter.

Opinions expressed in the journal are not necessarily those of the HDARC. The editor has the right to reproduce the articles for our affiliated club journals/ newsletters. The Editor decision is always final.

Closing date for next journal is : July 3rd

Editorial

Hi everyone

Well what a time we are all living in. I for one have never experienced anything like this. I've not been grounded since I was a nipper. I was expecting the worse with this issue of the journal ,but you, the members, have come up trumps

Not being able to get out mobile has been the worst for me as my home QTH is a poor location.

But the most important thing is for everybody to remain safe and sound.

Ralph 2E0HES
Journal editor

Club Clothing

Sweatshirts Polo-Shirts T-Shirts Fleeces
Sizes: Small = 36 - 38"- Medium = 38 - 40"- Large = 40 - 42"- XL = 42 - 44"
Available with club logo only or logo, name & callsign
Cap - One Size only: with adjustable strap - Stitching in Yellow

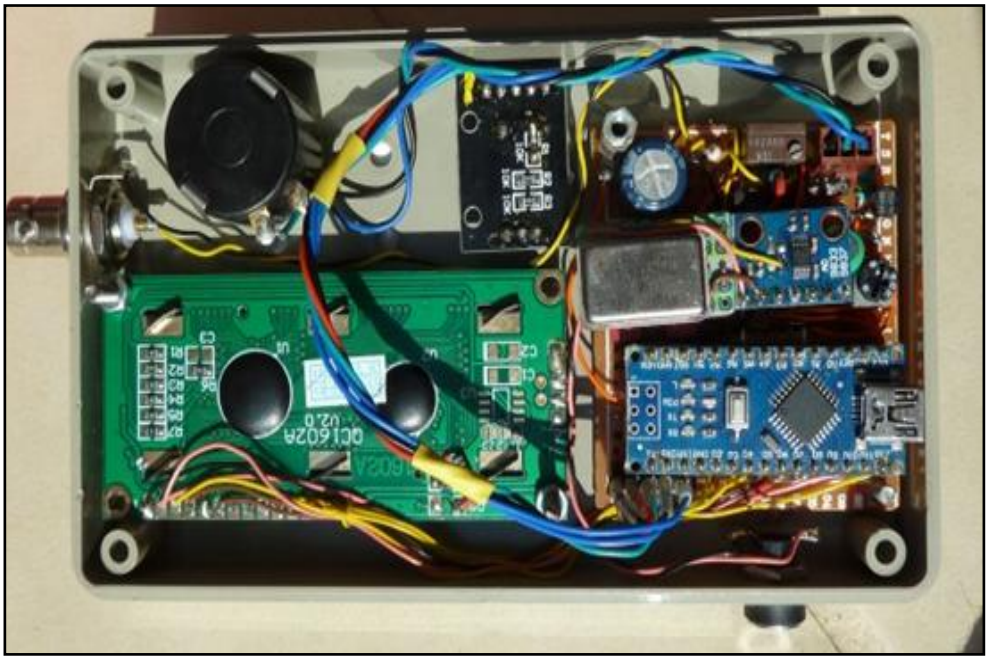
Available with callsign only or callsign and/or name

Some items available in various colours, see **Stuart G0FYX** for details

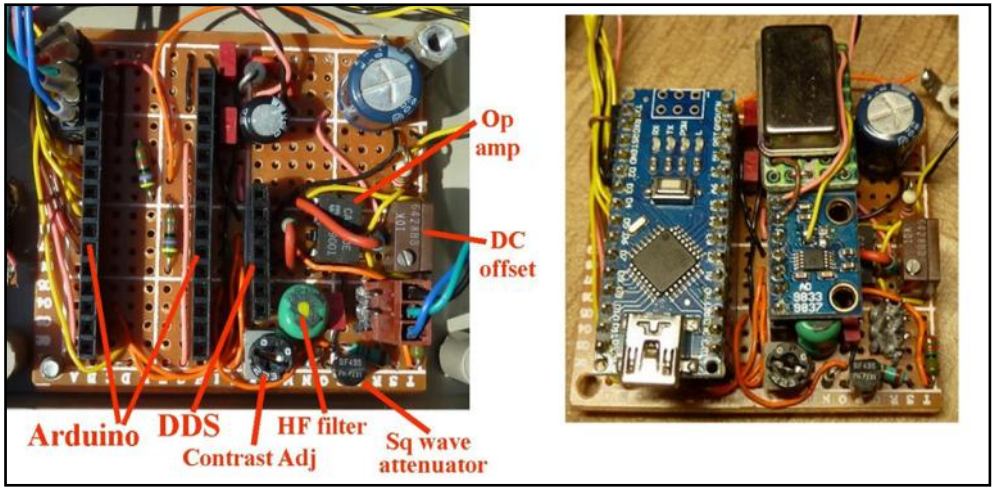
Amplifier

WHAT AND WHY?? Whilst building an amplifier I wanted an audio sine wave swept across a range of frequencies at a constant amplitude to test it. The 'interweb' showed some inexpensive DDS (direct digital synthesis) modules using the AD9833 chip. These work by using a look-up table containing the instantaneous values of a sliced-up sine wave. The values are read sequentially and the numeric value sent to a DAC (digital to analogue converter). The result is a sine wave made of small steps. The faster the table is read the higher the frequency of the sine wave produced. This DDS will also produce triangle and square waves.

BRAINS REQUIRED. The DDS module is controlled using a serial interface, where data bits are loaded sequentially using a clock signal. This means the unit needs to be controlled with a micro-controller. My controller of choice these days is the Arduino which has an Atmel microcontroller fitted to a PCB with power supply and support circuits, making a self-contained unit that can be connected to a PC using a USB lead. Chinese clones can be found for as little as £3. A free IDE (integrated development environment) can be downloaded with loads of tutorials to get you started, using a version of the C programming language. When used with a LCD display and rotary encoder, a useful instrument can be made with a range of functions.

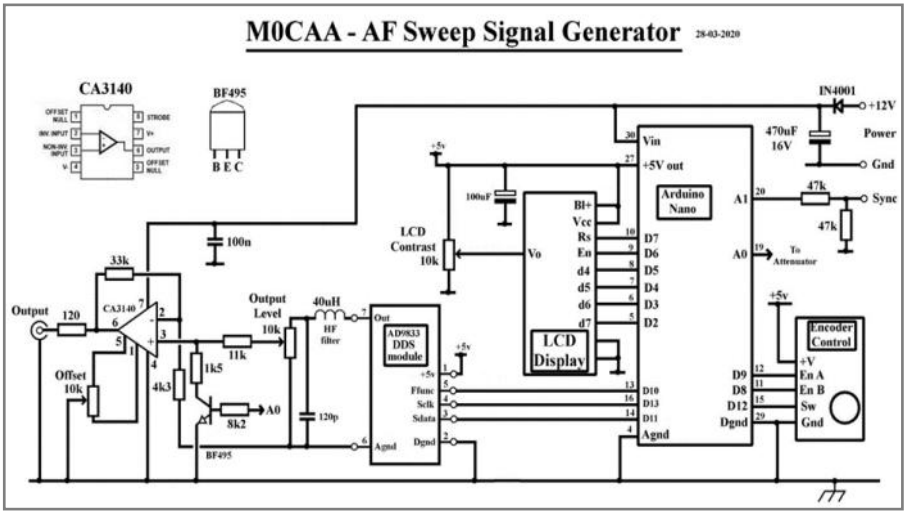


FUNKY LIBRARY The IDE has a library of pre-written 'functions' which when included in your program allow control of the DDS and display without the pain of ploughing through the data sheets and writing your own code. This makes it simple to output the desired waveform/frequency and display messages. This project is not original and there are many examples of DDS generators on the net but I've not seen one with a sweep feature.



ANOTHER CAA BODGE.

The AD9833 module as purchased had a 25MHz frequency oscillator and was specified as producing 0 to 12.5MHz with 28-bit resolution. The output DAC is only 10 bits so the best sine wave will be made up of 1024 steps but for higher frequencies the number of steps is reduced. Um well, it might produce something at 12.5MHz but above 1MHz it would be a rubbish sine wave. The library function allows frequency adjustment with a one Hz resolution, however I'm trying to make an audio generator so I don't need the high frequencies but would like clean lower frequencies. My solution was to replace the 25MHz oscillator with one from an old PC card which produced 1.843213MHz. This means everything is divided by 13.5633, so between 10Hz and 30KHz the output quality is pretty good. My software lets you go to 500KHz but above 100KHz the sine wave is awful.



THE UPS AND DOWNS. The output from the DDS is 0.6V peak to peak for sine and triangle but 5V ptp for square waves, so a 0.12 attenuator is automatically switched in to make all modes the same.

The output has a DC offset, so to make the unit useful an operational amplifier with gain of 8.7 was used with a level control to give an adjustable output from zero to 5V ptp, with an output impedance of 120 ohms. A sync output is provided to trigger an oscilloscope at the start of a sweep cycle. I'm using an old CA3140 op amp from the junk box so need to use a 12V power plug. Preset pots are used to adjust output offset and display contrast. A cheap 2-line 16-character (HD44780) display was used. The whole thing was built on a piece of perforated matrix board (10 for £3!).

SOFT FURNISHINGS The software uses a state machine to cycle through to different settings and starts with a 1KHz sine wave at switch on. As with most homebrew it evolved as I used it, so the code is not very elegant now! If anyone's interested I'll put more details on 'io.groups' when this is published.

All the best and happy hacking - Mike CAA & Sue BOZ

Message from the Chairman

Ladies and Gentlemen,

With much regret, I and the officers and committee have had to cancel all meetings for the foreseeable future. I am sure you are all aware of the reason why we had to do this. Hopefully, when the situation improves, we can all get back to enjoying our club activities.

As you all know, we have vulnerable members, both young and old who may be susceptible to COVID-19; therefore, I would urge you all to take the necessary precautions to protect yourselves and your families concerning this virus. “Keep safe.”

In the meantime, how can you support your club? Since we all are communicators I would urge you all to use the club nets which will run on both Wednesday and Friday evenings at 19:30 on 2 metres; other nets are the top band and 70cms; we will review other bands such as 6,15 and 10 should the interest, or need occur. I would like to thank Nev for his idea of meeting up on the radio on Friday evenings which in many ways keeps the continuity of our regular club meeting going. As you may be aware Deverell Hall has now closed its doors in compliance of HM government recommendations similarly with the hill fort.

I am investigating the possibility of a webinar, using, Zoom, Moog or the system Russ mentioned from his technical group. Ideal for student training; we must all remember that not everyone can use their radios yet. That said, any student who has a radio capable receiving, on the frequencies I have mentioned, by all means, listen in. The designated frequencies are on the club website. If anyone has any other ideas that may keep us all sane during our necessary stay at home, please let us know. In the meantime, the committee and I appreciate your support and wish you all good health also your families. Keep safe.

73, Ken G0JWL, Chairman and Training manager of the HDARC.

There but for the grace of God.....

By Doug. G4BEQ

This article is brought about through my reading in a magazine a report written by the Master of a merchant ship to his owners. Like a good joke it has many variations. I first came across the version I am about to pen when I took over as C.O. of the Divisional School in Portsmouth. For those readers who are not 'navy' orientated, I should explain that the school's purpose was to train senior rates and officers in man management, or the "whole man" which was the "in" term of the day. Every aspect of management was taught ranging from accounting to welfare. One subject that I was responsible for was report writing. This covered rating's certificates, S264's etc, officer's reports, S206's, and general reports. The content, I might add, as opposed to the Queen's English. I make that point because from the many scribblings that I have done for this journal, you will all be aware I hold no qualifications in that subject. Well. I did start life off as a Boy sailor. Who said a Midshipman was the lowest form of life in the Navy? He obviously had never served as a Boy.

Like many of you that have held training roles, I found that students always remember the gaffs and mistakes you make in preference to the more serious content. This trait can often be used to advantage, not only does it amuse the student but ensures you have their attention.

I have no idea who dreamt up this skit on report writing so cannot give him or her the credit, and as I said at the start it can be adapted in many ways. In this case the preamble to the report is of my making and the report I adapted to suit the subject.

To be in command of a ship is the ambition of every seaman officer. However, it can be a frightening experience with some unexpected and unwanted problems. A "Captain" of a ship is totally responsible for its safety even if he is not onboard. He takes the ultimate responsibility for any mistake or error his officers or crew make. He gets the credit of course when they do well. Should an incident occur that could have serious consequences, a Report of Proceedings is forwarded to a higher authority. They will examine the report in detail and decide what further action should be taken, if any. This, in the Royal Navy, could mean a Court-Martial for the officer in command. In the Merchant Service you could lose your Masters Certificate. Having set the scene I will now tell you the sad story of an RNVR officer who was in command of a Corvette during the later stages of the second world war. Lieutenant Commander "X", I will not disclose his real name as he could still be alive and read this article, joined the navy when hostilities broke out in 1939. He was a dedicated yachtsman and held a Yacht masters Ocean Going Certificate. He was of good education and background, his father being the Mayor of ..... , so he was a natural for a commission in the Royal Naval Voluntary Reserves. He spent his first sea appointment in one of the large battleships that was swinging round a buoy at Scapa Flow. Once the "phoney war" was over, and the Battle of the Atlantic began, he found himself quickly transferred to one of the hastily built corvettes as Navigating Officer. As the war progressed, he slowly

climbed up the chain of command until at last he was given his own command.

This in fact occurred a few months before "D-day". He distinguished himself during this period and was awarded the DSC. As things eased down in the channel and surrounding waters, their Lordships thought it would be an excellent idea for His Majesty's ships to visit the Channel and Continental Ports that had been liberated. Lieutenant Commander "X's" luck now changed dramatically, resulting in his Court-Martial and being relieved of his command. The tragedy of this story is that in no way could he have foreseen or prevented this incident. He was the victim of the system. In other words he was the boss, and the buck stopped there.

The incident that I am referring to is best shown by my reproducing the Report of Proceedings he wrote to their Lordships.

Report of proceedings

Sir,

I hasten to submit this report to their Lordships so that any false or misleading press reports can be quickly refuted. In particular any that appear in the foreign press.

On approaching our nominated berth at Antwerp, the Yeoman noticed a newly qualified Ordinary Signalman making a signal hoist. He immediately rushed over and grabbed the halyard and tried to lower the hoist. Ord. Sig. Bunting refused to release his hold. The Yeoman, in a very loud voice, shouted "Let Go". I would like to say that Bunting is a very pleasant and willing rating, but is not yet fully familiar with the ship's routine.

Unfortunately, the Yeoman's voice was clearly heard on the fo'c'sle prompting the Fo'c'sle Officer to issue the order "Let Go". The fo'c'sle Petty Officer immediately knocked off the slip, and the anchor dropped. The ship at this time was travelling at eight knots resulting in the cable being torn out of its deck clench, causing considerable damage to the cable locker and sparking off a fire in the paint locker.

The sudden drag of the anchor caused the ship to veer violently to starboard and into the tidal basin where there is a bascule road bridge across the entrance. The Bridgeman acted with surprising speed, and immediately raised the bridge to clear the way, but in his excitement forgot to stop the traffic. Consequently a car and a cattle transporter arrived on the fo'c'sle The fo'c'sle party were ordered to round up the pigs, but at the final muster it was found that one pig was missing. I did notice later that the cook was wearing a blood stained apron. However, the loss of one pig was easily explained away by saying it had gone over the side. The crash and commotion on the fo'c'sle unnerved Able Seaman B.M. Lever, who dropped a grenade into the Holman Projector which he was disarming prior to berthing. This shot the projectile into a barrage balloon being flown by a merchant vessel who was leaving harbour.

The balloon came down allowing the mooring cable to foul the propeller. This wound the cable up and dragged out the ship's mainmast. I am informed that the Master of the ship is submitting a separate report regarding the sinking of a Coaster with which he collided. I ordered the port anchor to be dropped, at the same time

ordering "Full Astern". This brought the ship to a stop, but not before the mast fouled some overhead cables. At about the same time all shore lights went out.

Unfortunately, I had dropped the port anchor in a forbidden area where there were electric and telegraph cables. The fouling of the overhead cables caused the supporting pylons to collapse and fell on the Port radio mast causing all radio communication to fail. Because the telephone system was also defunct, I had no immediate means of contacting the harbour tugs to assist me off the mud. I ordered the Yeoman to call up the Port Offices by light, but no one answered. I was informed later that they were unable to reply due to the lack of power.

To further complicate the situation, the sentry on the depth charge rails lost his balance as we ran aground, and inadvertently grabbed the release on the port rail to steady himself. Four depth charges were released, and although primed, the First Lieutenant assures me they were set to safe. As the tide will rise to some twenty-eight feet, they do cause me great concern as I understand the safety factor is forty-two feet and that will be exceeded at high water as we are on Spring tides. I have therefore requested divers as a top priority.

The Engineer Officer informs me that apart from damage to the condensers due to mud through the intake, a damaged propeller and a bent shaft, the ship has no other underwater damage.

The First Lieutenant, as a matter of priority, has taken the names, addresses and insurance particulars of the drivers of the vehicles which landed on the fo'c'sle and I submit these in order that their Lordships can institute a claim against them for damage they caused to the guardrails and four-inch gun mounting. I suspect a new barrel will be required. The starboard anchor was not buoyed, but we think we know where it is as well as the 10 shackles of cable.

I would like to commend the gallant conduct of Leading Seaman Montague Whaler, coxswain of the sea boat. It was due to his skill and diligence that all the crew of the sunken coaster were saved. The Captain of the Coaster was immediately taken to the sick-bay where he was sedated and handcuffed to his bunk as he was in a highly emotional state. This perhaps is not surprising, as he is not British and does not have the same self control one expects from a British seaman. The Harbour Pilot who was embarked, broke his leg when disembarking due to his being totally inebriated. I must take full responsibility for this.

Due to the very highly excitable nature that he displayed when the anchor was first let go, I instructed the Second OOW to escort him to my cabin in order that he could compose himself. I had failed to correctly lock my wine cupboard, and it was discovered later that he had consumed two bottles of my best malt whisky.

In conclusion, I would recommend that the Signal School impress upon trainees that flag signals are not hoisted at night, as it appears to me the over enthusiasm of Ord. Sig. Bunting was the root cause of this unfortunate train of events.

I have the honour to be, Sir,

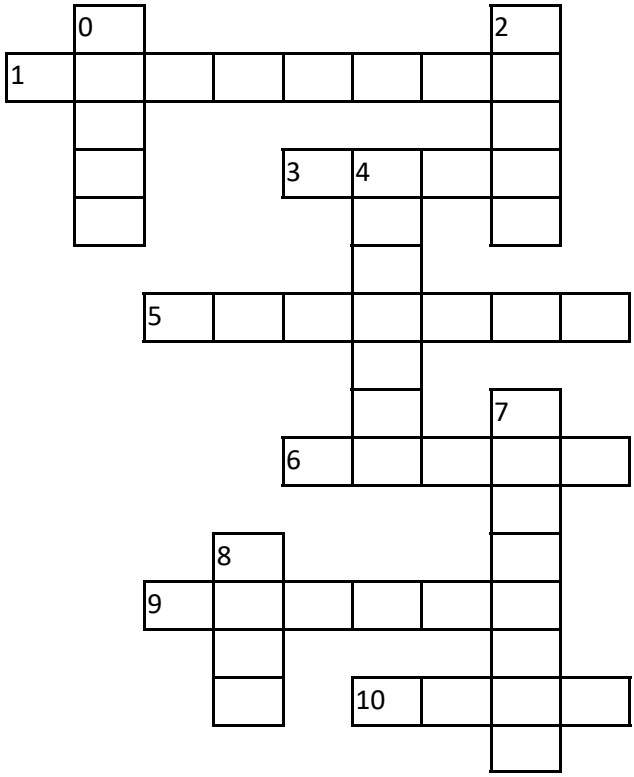
Your obedient servant,

Lieutenant Commander in Command.

Nuggets from the net

If you see anything funny or interesting send to me for inclusion.
Send to the editor at landscape@sky.com

Crossword

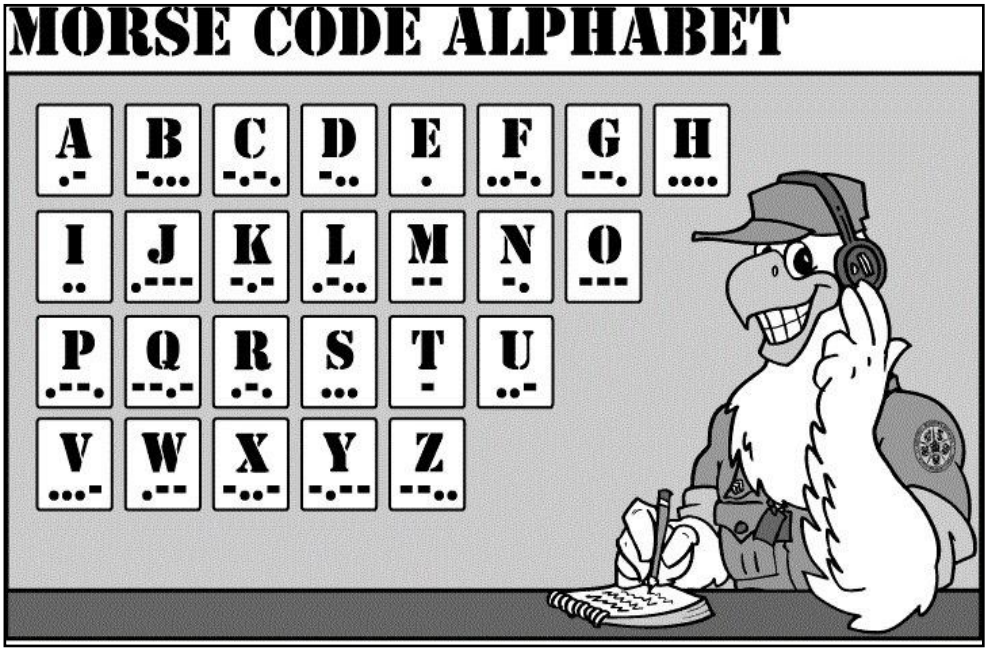


0 Down	almost a sphere according to the united nations (5)
1 Across	Antenna or rectifier (4 4)
2 Down	50 or 60 cycles for car hire maybe (5)
3 Across	Pardon would be a better reply (4)
4 Down	You maybe good but your still one of these (7)
5 Across	Meet the ram as he gets a grip from pams (7)
6 Across	Its never going to be a motorway (5) 6 and 8
7 Down	Unique designation for you (4 4)
8 Down	Could be a wedding or pop (4) 6 and 8
9 Across	My aroids have grown over the years (6)
10 Across	Yes could be an American soldier (4)

Feel free to email the Editor with any bits of news or maybe an unusual contact, something you read, or other bits of interest.

Bits and bobs

So we are in the midst of a lockdown now I for one am going to use this time to try to learn Morse code, as the rules of the G4BEQ CW Award have changed there has never been a better chance to put CW to good use. I've been told G4FON is a good bet for CW trainer, but other sites are available.



When is the closing date for submitting articles for the journal?

The closing date for the next Journal is given at the bottom of the contents page of each Bi — monthly Journal.

So if you are hoping to get your article/item in the next issue then be sure to send it direct to the Editor before this date.

Otherwise your article/item may be delayed until the next issue before our members have the pleasure of reading it.

Getting to know you - Simon G0IEY - Trainer

What is your marital status and age (optional)?

Very Happily Married to Julia, With regard to age, too old to do what my brain wants to do.

At what age did you get into radio and what got your attention?

About 8 years old, I had help to build my first RX and was hooked (SWL). I went on to build my single channel Radio Control (Valve both TX & RX), to control my model boats & Hovercraft which I designed and built. When I finished my Apprenticeship and had completed the first parts of becoming qualified, I earned my living testing & calibrating Test Equipment for MOD (N). Later I was advised to take the RAE by a colleague who was a G4, which I took with the training of Len Newham G6NZ, and became G6XJR. 3 years later I took & passed the Morse Code Test and became G0IEY.

What is your favourite part of the hobby?

Building Electrical/electronic devices and talking when time allows to other amateurs on the radio and people desiring to join the happy throng. Trying to pass on what I have got out of the hobby at training courses to others.

What set up do you have at home?

A mixture of manufacturer's offerings plus home brew and a reasonable array of aerials fed by low loss coax. I don't have any preference to any particular brand of equipment but purchase what works best for me & within the price bracket.

If you could have any radio which one would it be?

The best operational set without too many layers of menu driven functions. No particular manufacturer as they all offer very expensive models which at a quick look would fit the bill.

Where do you see the hobby going in the next 5 years?

I think because at the moment software is the bye word, it will develop along the SDR framework which allows upgrading without using a soldering iron to it. Problems will become worse with regard to noise floor level because of the relatively poor attention made to EMC regulations and the very small number of hard working/overstretched people available to test/ alleviate those occurrences at present.

Simon, Thank you

Now for our HDARC exam secretary/social secretary

Julia Tribe  **G0IUY Social Secretary**

What is your marital status and age (optional)?

I am happily married, and now a pensioner.

At what age did you get into radio and what got your attention?

From the age of 14 I was involved in a local car club and did many activities that had been organised. I was a navigator in rally events and had to use a radio as a means of communication from within the car back to the clerk of the course and HQ.
Later on when I was around 19 yrs I used my late fathers CB radio where we sat on top of Portsdown Hill to make as many contacts as we could.

I made many friends during the years that followed. When CB became legal and the use of inappropriate language became the norm, we came away from using CB altogether. A short time later through my father and Simon I was introduced to Doug G4BEQ who was a Radio Amateur and Chairman of the HDARC. We became SWL's and joined the club. I used an Icom IC2E Handheld connected to a homebrew Slim Jim.

Following on from my dad and Simon obtaining an Amateur Radio licence I was encouraged in 1984 to do the RAE course with Len Newnham G6NZ in Portsmouth. When sitting the exam at Highbury College later that year which was a two part paper, I passed the licensing conditions first time, but failed the technical section. Not having done radio/electronics as a job or hobby found this area a struggle. I persevered and although failing a second time, went on to finally achieve a pass in Dec 1986. I had G1XJR as a B Licence call. To become a full licence holder (A class) I had to study and sit the Morse code exam in Winchester during the freezing cold period in January of 1988. I passed and eventually got the call sign G0IUY which is what I wanted.

What is your favourite part of the hobby?

My favourite part of the hobby is to speak with other amateurs and members of the public when attending club special event stations and other club activities. To sit at a radio long term doing nets or contests is not so appealing. To be involved in the training side of Amateur Radio and helping other newcomers into the hobby is far more rewarding.

What set up do you have at home?

At home I have several handheld radios and portable antennas, but for the main station the equipment used comprises a mixture of old and new technology with various antennas for the HF/VHF bands. The full-sized G5RV gives fantastic coverage.

If you could have any radio which one would it be?

Due to the constant change in technology and the digital era, any make of radio that is not too difficult or challenging to use would be ideal.

Where do you see the hobby going in the next 5 years?

With the way in which Amateur Radio is changing who knows when or if the hobby itself will continue!

Julia, Thank you

This is a 1940's poem that was passed to me from my Dad who passed away recently. For those of you of a certain age this will definitely strike a chord, for the youngsters just think of it as retro!

88's Sue M0BOZ

RADIO SEDUCTION

When the wind was a series of whistles and wails that are wrung from a wireless set. By the conscious zeal of a radiophile with a super superhet;

When the moon was a ghostly pea-lamp bulb lighting a phantom dial,
And 200 volts did a dance of death in electronightmare style;

When, as I say (I'm a family man...), conditions were as I have said
(...Accustomed to being believed, you see) and the wife and the kids were in bed,

Left alone with the radiogram, alone in the dead of the night
(I had had enough of the highbrow stuff, and was never a man for the Light),

Left alone as I said before.... Oh, let's have a full stop first.
I suddenly thought of the licence I bought. I'd have more for my money, or burst!

With supple ease I uncrossed my knees and as carelessly rose to my feet;
With a casual air of savoir faire I advanced to the set . . . and defeat!

I tripped on a simply ridiculous thing, on which anyone might have gone wrong;
I was tuning a short wave station in with the thingummy set to "Long".

An incredible thing!- The station came up. And more incredible yet!-
It came where the lettering said it should come. (The name of the place I forget.)

It came where the lettering said it should come (It might have been Timbuctoo;
It might have been Moscow or Hilversum) and softly the music seeped through.

It came where the lettering said it should come (as I see I have mentioned before)
And sweet as the sound of a sirens' song sang my short wave troubador.

Soft through the atmospherics stole the notes of her haunting refrain,
And loth to lump less than the loudest I twiddled the tuner again.

I twiddled the knob in the middle (not much) and it happened - alas! - as I feared:
(It was only the teeniest twiddle — a touch!) the station disappeared.

Then I lunged at the set like a madman (misquote), shrieking a curse to the sky.
Lashed by the loss of my long-felt want, lured by my Lorelei.

I swung the condenser (I think it was that) through unstable ethereal miles,
In a fruitless attempt at seduction with the various knobs and dials.

In pursuit of my station I twiddled the knobs the rest of the long night through,
Using every conceivable wireless wile, to wit to wooooo wooooo wooooo.

I followed that fugitive station for the whole of that feverish night.
The knob on the left came away in my hand, and I twiddled the one on the right.

I followed that fugitive station (Again!) getting ever more irked and annoyed
As she will-o-the-wisped like a syncopist around the solenoid.

At daybreak the following morning, when the family rolled out of bed,
They came downstairs for their breakfast and discovered me lying there, dead.

Bamboozled by hand-capacity, and other ridiculous larks,
I had overheated my filaments and erupted in showers of sparks.

Now the wireless set is green with age and copper carbonate,
And I, erstwhile its owner, am honoured on earth as "the late."

The aerial mast is broken in two and is rotting away at the root,
And my bones lie buried beneath it — alas! (As if anyone cared a hoot!)

But still when the wind is a wireless wail and the moon is a pea-lamp glow
My ghost tries to pick up the station that spurned my advances long ago.

At dead of night in the Heaviside layer my spirit goes out on the prowl,
Annoying the listening public with its wolf-like whistle and howl.

CAA's Tomato Free Source

The dark ages

Way back when dinosaurs roamed the earth and electronics glowed in the dark, we used to calibrate the tuning dials on radio sets with a crystal calibrator or marker generator, like the Heathkit HD20. These used a quartz crystal oscillator (which maintains an accurate frequency) at a low RF frequency, with the output squared up to generate many harmonics.

How's that work?

If we use a 100KHz crystal the harmonics would cause a signal (or marker) to be found every 100KHz right across the ham bands. Tuning in to these allows an analogue tuning scale to be calibrated. Some vintage signal generators had them built in. The advent of frequency synthesis with its digital read-out made this obsolete (no fun). My old Yaesu FT101B rig has one built in, as it has an analogue VFO and drifts all over the place.

More ancient history

After the invention of the transistor, electronics moved rapidly forward. Driven by things like the Apollo missions and the development of the digital computer, multiple transistors were packaged together as integrated circuits (ICs) to form circuit blocks. Binary switching circuits for Boolean functions like ANDing or ORing (called 'gates') were developed as families. So, Diode-Transistor Logic was 'DTL' and Transistor-Transistor Logic was 'TTL'. The '74' series is one such TTL family.

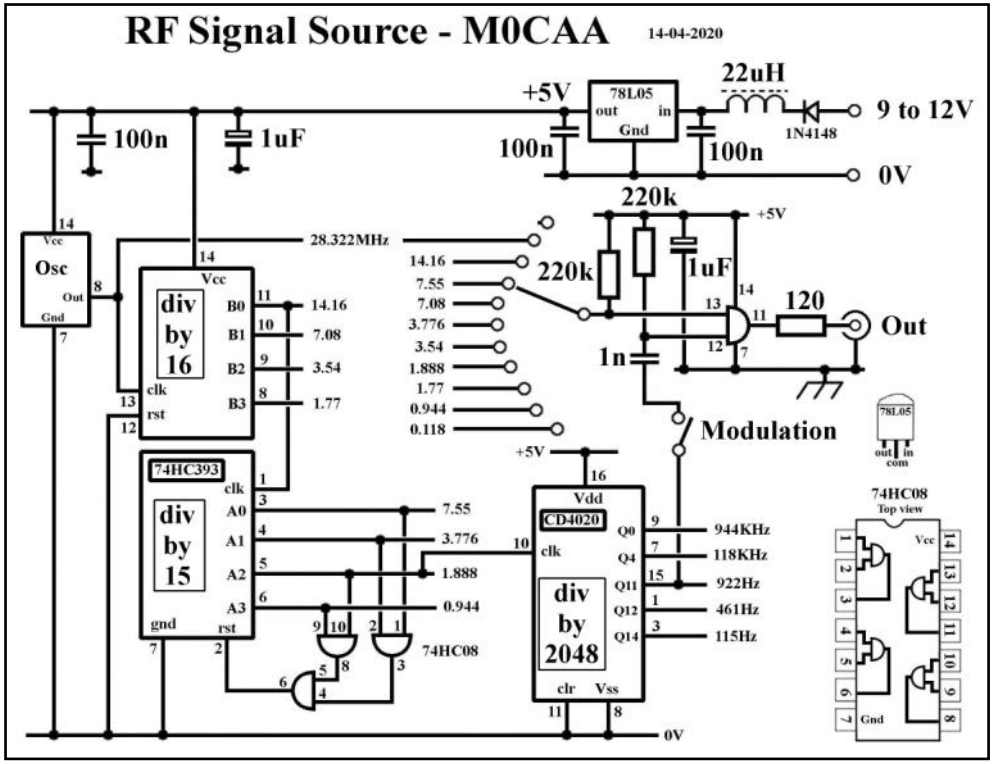
As well as logic there were also groups of transistor that allowed 2 stable states (bi-stables). These could be used to store binary numbers (as a kind of memory) but with the addition of some 'routing' circuitry could be used to 'count' pulses. If bi-stables were cascaded, then each stage would divide a pulse train by 2 and the count would ripple down the chain. In this way a frequency could be divided by powers of 2. Later on FETs reduced the power required in the '4000' series. The voltage levels for '1' and '0' were different so the '74' series thresholds were changed and we got the '74HC' series'.

Strange numbers

Individual ICs could contained multiple counting stages and most had a 'clear/reset' pin, which resets all the counters to zero. If several of the counter outputs are fed into an AND gate, whose output activates this reset, then a count of any number can be achieved. For instance if the output from the 1st and 3rd stages are ANDed, then when the binary count gets to 101, ie (4+1), the system will reset, so we can divide the frequency by 5. However the output waveform won't be symmetrical.

When I were t' lad..

Years ago I built a marker generator but I wanted a range of different output frequencies falling in the various amateur bands for testing receivers. I used a high frequency oscillator in the 10m band (28MHz) and used IC counters to divide this down to get frequencies in the 20, 40, 80 and 160m bands, with a switch to select the desired one. I used 2 counters, one divides by 16 and the other by 15. This gives a good selection of frequencies. Another '4000' series divider was added to allow an audio tone to modulate the signal for AM use. The 120 ohm output resistor protects against shorting the output.



What you been doing?

Well, I've been playing with antennas recently and finding reliable stable signals to compare different designs is really hard. My thoughts turned to that old marker generator, the case had gone but the circuit board was still intact. Could it be used as a radio signal source? OK, it's near field and an electric field so won't get to propagate properly as an electromagnetic wave with a magnetic component, but it might provide some useful comparison information.

Have a bash

I made a case by taking some sheet aluminium and hacksawing out the shape. Then put it in the vice and hitting it with a hammer to bend it up into a 2 part case- what fun. The circuit board was fitted and a posh label made and stuck to the case. I could have fitted a 9V battery but decided on an external power source as batteries tend to leak in the case if left. The power consumption is small so it will run for hours.

Does it work?

The output is about 5 Volts peak to peak at the lower frequencies but drops to around 3V p2p at 28.322MHz.

A 13cm piece of stiff wire is used as an antenna probe, this provides a small signal that won't cause interference to anyone else. Obviously don't connect this directly to a receiver or you'll fry it, just connect a short length of wire to the radio's antenna socket nearby Harmonics of the 118KHz position appear in all the amateur bands, even the 6 and 4m bands.

It works well to provide a check on the functionality of radio sets and you can check image and adjacent channel performance too. With an SDR receiver connected to the antenna it's interesting to see the 'comb' of harmonics across the band and their relative amplitudes at different frequencies. How useful it will be for antenna testing is yet to be seen. If nothing else it gives you something to do with those old logic ICs in the junk box!

All the best and happy hacking -
Mike M0CAA & Sue M0BOZ

The HDARC Journal printing history

In 1982 Dan Bernard G4RLE & Doug Hotchkiss G4BEQ (who is now our President) started the Newsletter; it was generally 4 issues a year printed on A4 paper stapled in one corner. When Dan became Silent Key, it was only produced as and when Doug could find time to fit it in, or when members sent him articles to use.

The Doghouse Logo first appeared on the cover in 1990, and by 1991 also proudly stated it was Edited and published by the Club.

In July 1992 the Newsletter Editorship was taken up by John Taylor-Cram 2E1COC and was produced monthly by a method of cut & paste (literally with scissors and paste) and then duplicated or later photocopied by an printer friend of G0FYX.

It is interesting to note that home computing/ printing at that time was in its infancy, so normally not possible for most people. Even those that could only had dot matrix printers or possibly access to a wet photocopier at work, which explains the poor quality of some of these early issues, as only the larger firms had dry copiers. So John received either hand written or generally poor copy to start with, this was then sometimes re-typed before being cut up and pasted to the master sheets to be sent to the printer.

Even when computers first arrived for home use, it was still an issue as scanners and email as we have today still didn't exist. And printing was still poor by today's standards at least for large quantities at home, also at that time because there was no email as we now know it, maybe limited 'Dial-Up' for home use. As some 90 copies had to be printed, duplicators (wet copiers) were still the only way to do it cost effectively. Even when the Newsletter became printed as an A4 magazine rather than single sheets stapled together (A3 paper folded to A4 and stapled on the centre fold), it was still printed on a printing machine that used the wet ink process.

For a short while, the club was donated a 'wet ink' machine by the then printer who was packing up shop and moving North. This machine was impressive in lots of ways; firstly its size (it only just fitted through the garage door and stood just over a metre high and long). The ink came in small plastic containers not unlike the smallest milk containers you get. It came in three colours black, red & blue and for each colour there was a separate drum in its own case, so in theory you could print in three colours by changing drums and the master copy; the mind boggles when you even contemplate doing it.

A master still had to be produced for each page, but fortunately computers were now available and with an ink jet printer could produce good masters. The problems came when printing; this was fine in the warmer months when the ink dried reasonably quickly, but during the winter months in a cold garage this gave problems of the print from one page deciding it would rather be on the facing page with the end result of lots of smudgy or dotted pages.

The other major problem was that it printed all 90 pages in less than a minute, fine you are thinking it didn't take any time at all to print the thing?! Answer, no it didn't if you got it right, but if you got it wrong when printing the second side as you still had to turn the paper over manually, there were 90 sheets of scrap paper instantly!!

Remember, this had to be repeated for each page of the newsletter, master in, print, change master for second side, replace paper (the right way round) press the print button and pray! If your prayers were answered you had 90 pages of a newsletter, if not start all over again. So not one but two chances of getting it wrong, either the master or the paper; it certainly made you focus your mind on the job and not let it wander.

Maybe it was fortunate that this machine failed, and another printing firm who had been only to willing to supply the consumables at retail cost, were not interested in helping us to fix it, but would be willing to take it of our hands!

Luckily by this time I had acquired a old mono laser printer, and the whole thing changed for the better, nice clear print and mostly very clear pictures. This also enabled the newsletter to be reduced in size to the current A5 booklet we have today. Initially this was still time consuming as it was still a case of print one side, and getting the paper the right way round to print the second side. But worth the effort because of the improved quality; it was then decided by the club's committee it should be renamed, and called the 'Journal'. The other bonus was no more masters to get the wrong way round. At this stage I could print the inside pages but not the cover as this was, for quite a few years, printed on heavier paper 160gsm. So I had to print the cover at work. In December 2005 the change to bi-monthly printing of The Journal was decided upon.

Again with progress came colour printing and being able to print the cardstock. The next upgrade was the luxury of double sided printing and no longer having to remember which way to put the paper in; with this it was now possible to print the whole journal in colour which started in 2007, but it was decided the cost became too great to sustain, so we dropped back to just a colour cover a few years later. By this time email was the way to go, and the Journal hard copies have now reduced to just a few, the bonus of having it delivered by email is the whole magazine is in colour rather than just the cover.

During its life the club's newsletter/journal has had five editors; Dan G4RLE & Doug G4BEQ who were the ones who started it off in 1982, then John 2E1COC who took on the editorship in 1992. Doug G4BEQ came back to take control in 2007, followed by Sean M0XAN in 2007, Mike M0ZDZ took over in July 2018 and our current editor Ralph 2E0HES who has taken up the reigns this year, and is keeping us informed by keeping this long standing publication going.

So please help Ralph to fill the pages with what you are up to, radio related or not, it is all of interest. The preferred methods of input are computer generated in Word or something similar, but circuits drawings or musings sent in on paper can now be copied in if that's the way you do it.

Peter G8PIQ

Horndean & District A.R.C Information.

Club Call signs ***G4FBS (Held by MØKTT); G6RST (Held by G4WQZ)***

Club Website **http://www.hdarc.co.uk**
(Maintained by Neil 2E0LNX)

Club Groups.io site *Administrator is Stuart GØFYX*

Club Facebook Page *https://www.facebook.com/hdarc1975/*

Club Twitter Account *@HorndeanARC*

Club Meetings *Held at Deverell Hall, 84 London Rd, Purbrook, Waterlooville, Hants. PO7 5JU, on the 1st and 3rd Friday of each month. Commencing at 1900.*

Club Nets ***All times are local and frequencies plus/minus QRM.***

Sunday *0900 CW until about 0930 then SSB on 1950 kHz.*
Net controller:- Stuart GØFYX

2000 FM 433.450 MHz
Net controller:- John G4WQZ

Monday *1930 SSB 1950kHz*
Net controller:- Stuart GØFYX

Wednesday & Friday
1930 FM 145.375 MHz
Net controller:- John G4WQZ

Club Membership

Joining fee £2 . Annual fee £26. Those aged 10-18 pay half this rate, and under 10's have free junior membership. For Europe and rest of the World fees please contact the Membership Secretary. All annual fees payable on November 1st. If fees not paid by the following January 31st, membership is ended.

News of club members

With the club introducing a Friday 2m net, this is an ideal way for club members to keep in touch. This net is in addition to the usual Wednesday 2m net. Both are at 1930 local time on 145.375Mhz. What a great hobby we have that enables us to do this. Please join in if you are able, even only for a short while.

There are lots of items FOR SALE. Please see the FOR SALE tab on the club website (www.hdarc.co.uk). Items include books and a variety of equipment. Some of it is free, just suggesting a donation to club funds.

Diary

At the time of writing this (early May), Deverell Hall is closed due to the Coronavirus situation. We do not know when club meetings can resume. In the meantime many of us are keeping in touch via the 2m nets (see above).

It may be possible for someone (or more than one) in the club to run GB special event stations for the Museums-On-The-Air weekends on June 20th/21st and 27th/28th.

This 'n' that

The RSGB Club Championship series of contests is still underway. June dates are Data on the 1st, CW on the 10th, and SSB on the 25th. July dates are CW on the 6th, SSB on the 15th, and Data on the 23rd.
Full details at https://www.rsgbcc.org/hf/rules/2020/r80mcc.shtml

For those interested in Data, specifically FT4, there is a monthly contest. Dates are June 15th and July 27th..
Full details at https://www.rsgbcc.org/hf/rules/2020/r80m_ft4.shtml

Need CW practice? - contact John MØHTE via john.taylor177@ntlworld.com

Another reminder about the HDARC trophy; John MØHTE, who was the winner in 2019 chose the phrase for 2020. It is **HDARC FOUNDED MCMLXXV ENCOURAGES MEMBERS IN THE PROFICIENT USE OF TELEGRAPHY** . Qualifying period is October 1st 2019 to September 30th 2020. Work different stations, the last letter of whose callsign makes up the phrase . Closing date for log book extract entries to Stuart GØFYX is October 2nd 2020, and the winner will be announced at the AGM, planned for Friday October 16th 2020..