



# Chelmsford Amateur Radio Society Newsletter

## September Meeting

Tue 4-Sep-2018, 7:00-9:00pm  
Oaklands Museum, Moulsham Street

## 999 Emergency Communications

By CARS Members

Steve Shorey G3ZPS trained with the Government (MOD) as a professional electronics engineer before joining the Metropolitan Police in 1983 as part of a team to replace their ageing radio systems.



His light-hearted talk will cover the history of Emergency Service Communications touching on the Telegraph, Telephone, the innovative work he undertook in the Met and what the future holds into the 21st Century...

- and he is one of the youngest original G3 call holders in the UK!

Our Prize Raffle and Refreshments will also be on offer



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## Club Diary

Tue 4-Sep-2018	999 Emergency Comms – Past, Present & Future	Chelmsford – Oaklands Museum, 7:30pm
Thu 6-Sep-2018	Foundation Course and CW Classes	Danbury 7:00pm
Mon 17-Sep-2018	Skills Night	Danbury 7:00pm
Tue 2-Oct-2018	CARS AGM and after-break talk	Chelmsford – Oaklands Museum, 7:30pm

## Club Nets

CARS meets for talks/events on the first Tuesday of the month. The subsequent Tuesdays have club radio nets as follows:-

- 2<sup>nd</sup> Tuesday in the Month – VHF**  
 The CARS VHF FM Net uses GB3DA from Danbury starting at 8pm (local).  
 GB3DA is 145.125MHz Input and 145.725MHz Output - and CTCSS-only (110.9Hz), 2min timeout  
 If for any reason GB3DA is not available then 145.375 Simplex will be used. Vertical aerials are best for this
- 3<sup>rd</sup> Tuesday in the Month - UHF**  
 The CARS UHF FM Net uses GB3ER from Danbury and starting at 8pm (local).  
 GB3ER is 434.675MHz Input and 433.075MHz Output - and is CTCSS-only  
 Vertical aerials are best.
- 4<sup>th</sup> Tuesday in the Month - HF**  
 The CARS 80m Net on "3756kHz" Night, SSB and starting at 8pm (local).  
 Horizontal aerials are best. The idea is to enable distant CARS Members to join the Net.
- 5<sup>th</sup> Tuesday in the Month (when there is one!) - MF**  
 This is the CARS Top Band Net on 1947/1950 kHz +/-QRM, LSB and starting at 8pm (local).  
 Horizontal aerials are usually used for this Net. A reminder - limit your power to a max of 30 Watts, please.

## Training & Exam Dates

Our training pages have the 2018 sessions listed for Foundation, Intermediate and Advance.

Our training manager Peter M0PSD is keen to hear from candidates for the 2018 courses, as well as any needing practicals or other help.

After the summer break In September we have our 38<sup>th</sup> Foundation course and Morse Classes will restart. A 6-wk fast track course will also cover Advance (with an exam slot on Dec-6).

Course	Dates	Comment
Foundation-38	Thu Sep-6 <sup>th</sup> – Oct-11 <sup>th</sup>	Please register your interest asap!
EX-1, EX-2, EX-3	Sep-17, Oct-15, Nov-19	Extra Exam Sessions - Monday evenings
Advance-22R	Thu Oct-25 <sup>th</sup> – Dec 6 <sup>th</sup>	Foundation/Intermediate practicals/exams also available

Contact: Peter Davies M0PSD, [training2018@g0mwt.org.uk](mailto:training2018@g0mwt.org.uk) Web: [www.g0mwt.org.uk/training](http://www.g0mwt.org.uk/training)

## August Meeting: Constructors Competition

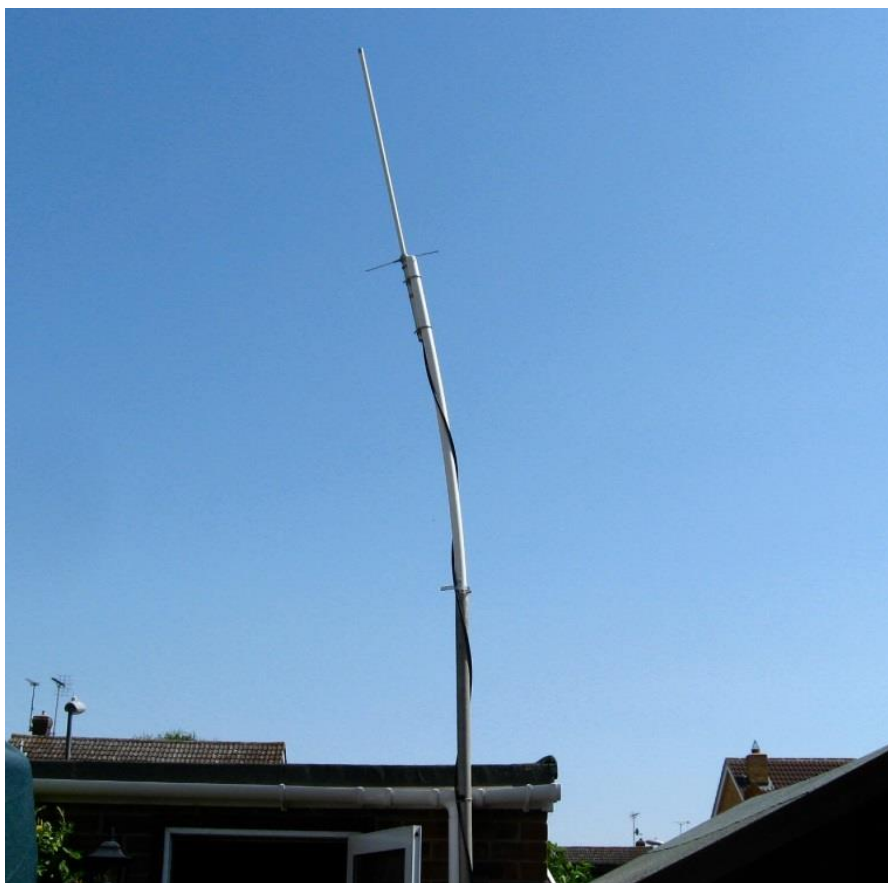
The August meeting featured both the annual Constructors Competition and a bonus talk after the break on the recent GB5RC Radio Caroline Special Event Station

The three main entrants for the constructor's competition were:-

- John G8DET , An antenna tale – which is below but was prefaced by an interesting tale – see Colin's separate write up!
- Andrew 2E0ONH – who brought his portable setup for digimodes
- Peter Bridgeman G3SUY – A homemade 2m 50W FM/AM/CW transceiver

John described how he first erected an Aluminium pole with a 2m Vertical Aerial on the top. This was designed to look inconspicuous – and stayed like this for 6 months while the neighbours got used to the installation. However reports via GB3DA were poor and during one CARS Net the suggestion “Put the aerial up higher” was made.

No suitable Ali pole was available but a length of “Solvent Weld” plastic pipe was found to fit together with a length of “Push Fit” and so did the job of raising the aerial. It did enable a much better GB3DA/GB3ER signal to be obtained. It also shrugged off the high winds during winter. However starting in June 2018, Chelmsford experienced 2 months of high temperatures which caused the plastic pipe to expand in the side facing the Sun and distort the aerial – much to the amusement of the audience.



**John G8DET: Antenna – with plastic pole wilting in the summer heat**

The next entry was by Andrew 2E0ONH. He had configured a Raspberry Pi with LCD display along with his Yaesu radio and USB interface to create a very capable portable combination that could run the popular WSJT-X digimodes suite. He had also added extra software including GridTracker. This is a free companion programme that takes the decodes and plots them on a map

You can get Grid Tracker from <https://tagloomis.com/grid-tracker/>



Andrew 2E0ONH: Power supply and Raspberry Pi with Yaesu FT-857 and SCU-17 USB Interface unit

The final entry was a 2m transceiver homebuilt by Peter Bridgeman. This featured an unusual combination of a DDS frequency source (Direct Digital Synthesis) – but with a Valve Poweramp! – As Peter couldn't make it on the night, Colin G0TRM presented this on his behalf.



Peter G3SUY: 144 MHz Transceiver Valve PA topside – but with Synthesiser+CTCSS

Voting by the audience then occurred over the tea break and raffle. The result was that Andrew came 1<sup>st</sup>, Peters transceiver 2<sup>nd</sup> and John's antenna 3<sup>rd</sup>. Colin picked up the second prize on behalf of Peter G3SUY



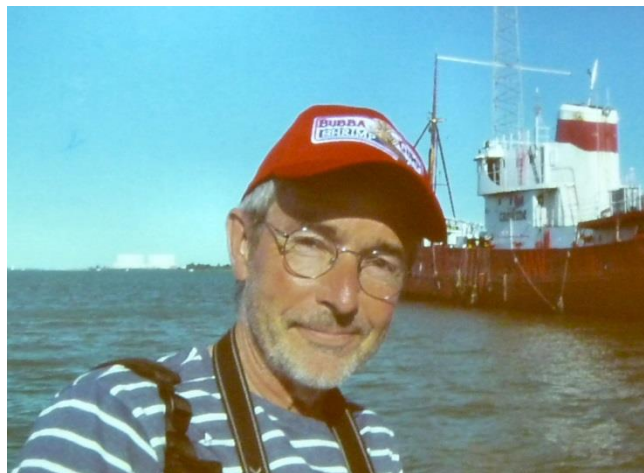
**Taking a closer look!**



**Receiving their mugs and cash prizes – with Chairman Peter M0PSD and President Tony G4YTG**

**GB5RC Radio Caroline**

After the tea break and raffle we had a bonus when Jim Salmon 2E0RMI gave a brief presentation on his visit to GB5RC the Radio Caroline Special Event Station on 5<sup>th</sup> August (the third time it had been activated). The MV Ross Revenge is moored in the Blackwater near Bradwell and transmits on 648kHz (the former BBC World Service frequency). A boat trip that included himself and Chris G0IPU resulted in some nice photos that helped round the evening off. See also <https://www.qrz.com/db/GB5RC>



Note: Jim has a webpage with more photos at: <http://www.emmatoc.com/radioradio-3/4594393848>

## August Meeting, Take-2 ! - by Colin G0TRM

The August 2018 Constructors competition was due and for once I did not make an entry not even my usual offering of a Morse key, so apart from preparing the prize money envelopes and later producing the winners certificates for presentation at the AGM I had no involvement. However I was overtaken by two unexpected events which meant making an entry of sorts.

The first unexpected event came about during the afternoon of the event when Peter Bridgeman G3SUY paid me visit and on the off chance asked me if I would present his entry to the members as he was unable to attend. This I agreed to do and was duly given an A4 sheet containing the main details together with a verbal run down of the 2m transmitter he had designed and built from scratch.

Peter explained his personal reasons for constructing his 2 metre AM/FM/CW transmitter; firstly to learn how to make a VHF phase locked loop and use it as a signal source, to use the transmitter on the CARS monthly 2m net and occasionally to use AM in the all mode segment of the band. Wherever possible the transmitter assembled using surplus components from the junk box. Club members will know that Peter has already made a 5 watt 70cms FM transmitter that he uses on the CARS 70cm net.

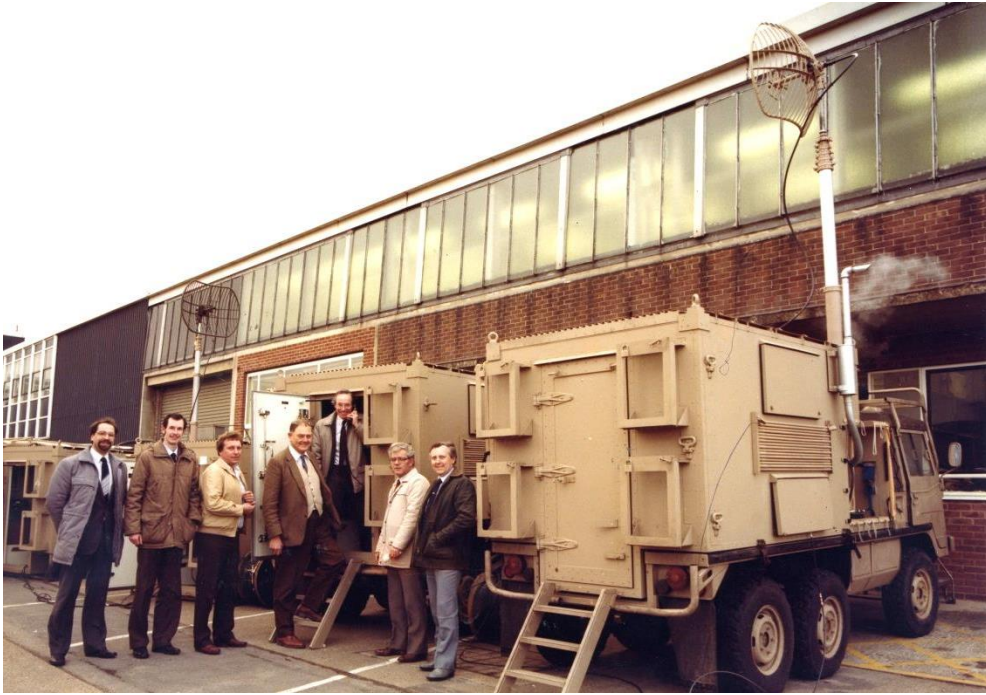
When the time came to talk about it at the meeting I tried to remember all the features Peter had told me about his entry



The transmitter covers AM/FM/CW. The AM carrier power output is 25 watts (plate and screen modulation) with FM being achieved by applying filtered audio directly to the PLL loop amplifier. Output power is normally 25 Watts but there is an option of increasing the carrier to 100 Watts for FM and CW, the output power being selectable by doubling the HT voltage. It has three switched crystal controlled frequencies, or an inbuilt DDS VFO can be used for non-channelized operation. The output valve is QQV07/50. Front panel controls and meters ergonomically placed and labelled. Peter completed all the metal work to a high standard. He gets very good reports for the voice quality of his signal.

## That Picture at the Beginning

The second unexpected event occurred when I arrived at Oaklands for the meeting; John Bowen G8DET was setting up a laptop and displaying a picture on the overhead projector. As John's competition entry was a description of his 2m antenna installation he had chosen, entirely at random, a picture of several military vehicles featuring mast-mounted dish aerials to accompany his talk. He had not realised it but much to his surprise I was in the picture amongst other Marconi engineers grouped near one of the radio vehicles. Having briefly told him the story of why I was in the picture he immediately said I should tell everyone else about it. So after his opening remarks about the picture he called on me to speak.

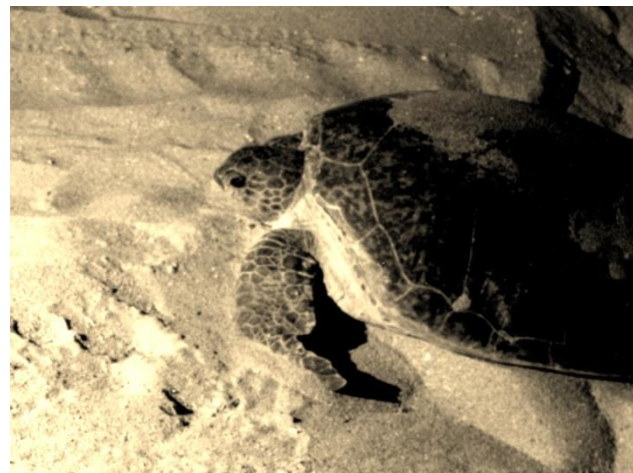


**Colin G0TRM is standing in the open doorway of a Triffid vehicle and another CARS Member, Arthur Wreford, G3EHZ, Marconi Design Engineer is to his right.**

I explained that the vehicles shown in the picture taken at the Marconi Waterhouse Lane works were part of large consignment due for export to the Sultanate of Oman. They were to be used as a communication network starting in the capital Muscat and through a series of similar hilltop stations reaching far out into the desert where the Oman army would be holding military exercises in front of many very important guests from invited surrounding States. The vehicles designed and manufactured by Marconi contained high quality 32 channel UHF Triffid radio equipment operating between 1.35-1.85 GHz with an output in the region of 2.25 watts. I was part of a small design team issuing wiring and assembly instructions to the factory. When everything was ready for dispatch I was invited by the company to travel to Oman to help set setup and to maintain the equipment as required. I spent two six weeks periods there, with several weeks at a time in the desert under canvas. We had a main service area again under canvas with cooking facilities and a freezer and we catered for our individual meals. Although we were in the middle of the desert, much appreciated was the ability to call home using a standard household phone on the end of a few hundred feet of cable running up the hillside to the radio wagons, with direct dialling in both directions via the on-site Plessey exchange and 1980's technology.

During off duty periods we were able see some of the country and take a few photos I have included one which may be of interest showing a Giant turtle on its way to lay its eggs which we were able to watch. They come ashore late at night crawl up the beach perhaps for 50 yards and having scrapped a deep hole they lay perhaps 50 or more eggs and fill the hole in afterwards. The season is quite long and we also saw newly hatched baby turtles from previous visits making their way down to sea.

There a few made up roads apart from the city areas; others were made by bulldozer cutting tracks in the hard sandy, stony surface often obliterated by the wind and rain. When it rains it rains in Oman and floods can occur quickly in places. The capital Muscat is very modern in many respects and everywhere is clean and safe. It is over 30 years since my visits to Oman so things may be quite different now.



## Skills Night Returns

Following a summer break, Monday evening, 7pm September 17th 2018, is Essex Skills Night, run and hosted by the CARS Training Team.

It does not matter whether you are a club member, or from other clubs, not licensed, or just interested - All are Welcome, and it is Free!

This Autumn sees some new features...



### Provisional Activity list:-

- **Radio:** Andrew 2E0ONH will be displaying his mobile field equipment which won him this years Constructors Competition.
- **Digital-1:** Perry 2E0XPD showing Digital Modes
- **Digital-2:** Chris 2E0CUU with D-Star
- **Exams:** In the Exam room, CARS [Exam Session EX-1](#) will be underway for Intermediate candidates
- **Hands-on:** Training Practicals and Slim-Jims will be underway in the Hawkins Room
- **Training/Subs:** Pauline 2E0EUH will be available for Membership renewals and Exam/Course Enquiries
- **For Sale:** There will be a CARS mini Table Top Sale. We have two tables available at a cost of £3.00 per table (Tables must be booked in advance). Previous CARS [Training Radios for sale](#) will be available "try before you buy"
- **Regulars:** We also also hope to be joined by Jim 2E0RMI and Essex CW Amateur Radio Club (ECWARC), with advice for new starters as well as the more experienced.

and of course...

- **The Quiz:** A Fun Quiz with Murray G6JYB and any technical advice or questions

Refreshments: Tea, coffee and nibbles will be on offer too, thanks to our team in the kitchen, keeping customers happy! - Donations are most appreciated

## Resignation of a Chairman

No doubt most of you would have heard I am stepping down as Chairman.... I hopefully have left my mark. I have enjoyed being Chairman, and it has helpfully pulled me out of the doldrums after my operation and recent illness.

However I am staying on as Training Manager, as training is my passion. It is nice to help would-be and existing amateurs reach their goals.

The new Chair-person needs to be someone who has a warm and friendly manner, and is able to communicate with all. They must be impartial and objective and be able to build a good team to help the club move forward. So here is what to look for...



A Chairperson should:-

- 1) Make all members feel valued
- 2) Strive for consensus, and use casting vote sparingly
- 3) Listen to others
- 4) Encourage new faces onto the committee
- 5) Plan for the future
- 6) Make new members welcome
- 7) Allow others to take responsibility
- 8) Be Supportive of Training and Activities
- 9) Keep calm
- 10) Know when to stand down.

Hope to see you all at the AGM, on Tuesday October 2<sup>nd</sup> at Oaklands Museum, Chelmsford.

**Peter M0PSD**

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## UK Amateur Licensing History

Murray has been collating quite a bit of licensing history and this is now on the RSGB page at

<https://rsgb.org/main/operating/licensing-novs-visitors/uk-licensing/licensing-history/>

It includes scanned copies from various post war documents and has been assisted by a number of amateurs including Carl G3PEM

It really is quite illuminating to see how licence conditions and frequency bands have changed over the years from the days of the Postmaster General via the DTI/Radiocommunications Agency etc

Some of it is very topical as the collection includes the 1980s 50MHz permits. Since then we have had over 40 years of 6m activity despite it not being an ITU Allocation – the top amateur item for WRC-19 next year

## More Equipment for Sale

Revised prices are now available for are our four HF / VHF transceivers which are available for sale (including Flight Cases) – see photos below. In addition we have available to any good home...

- Advance H-1
- Dynamco Oscilloscope
- HP 5246L Electronic Frequency Counter (DC-50MHz)



Yaesu FT-747GX, HF Transceiver, £200



Icom 720A, HF Transceiver, £300



Yaesu FT847, HF-UHF All-mode Transceiver £595



Icom 7200, HF+50 MHz Transceiver, £625

In the first instance - Please contact Peter M0PSD if you are interested

More Info is also on our sales page at: <http://www.g0mwt.org.uk/society/sales.htm>

## Essex CW Boot Camp

Date: Saturday October 27th

Venue: 3rd Witham Scout & Guide HQ - Rear of Spring Lodge Community Centre, Powers Hall End, Witham, Essex CM8 2HE

- Doors open at 08:30 for registration. Begins at 09:00; Finish approx 16:30.
- Registration fee £10
- Parking and refreshments etc

Contact Andy G0IBN 0745 342 6087, [g0ibn1@yahoo.com](mailto:g0ibn1@yahoo.com)

## Training, Exams & the New Syllabus

Following an age in development, RSGB has released 'Syllabus-2019' the biggest overhaul since the current system started. Now the new syllabus has been released and having taken a good look, its fair to say that the Licensing Exams will have more content and thus be harder. But we have time to get our heads around it.

With our setup already in place with Construction and Practicals, and with Murray G6YJB (Lead Trainer) expertise with our slides, we should be ready when the time comes.

At present we are building a New Training Team. A new well-qualified team of RSGB-registered Assessors, plus assistant Trainers to cover all our needs. In addition we also have a good experienced team of Invigilators to cover all our Exams.

We now have the ability to take an Individual or a number of candidates on our Exam dates.

**Our next Foundation course is our 38<sup>th</sup> and commences on Thursday 6<sup>th</sup> September** and we still have a limited number of places available.

Know anyone interested?

Now is the time to get on the ladder.

All our Training is undertaken at Danbury Village Hall. CM3 4NQ  
Refreshments are always available, manned by our willing volunteers

**We also have taken the initiative to do exams once a month** whether it is Foundation, Intermediate or Advanced at Danbury. The Extra Room (quiet and secluded) has been booked (at the end of the building). Some places have already been taken. We can also offer Foundation/intermediate Exams on Thursday 6<sup>th</sup> December or any other of our numerous Exam nights throughout the year

**Advanced Course** - This year because of the demand by our own trainees, we will be running a 6-week revision course & Exam for the Advanced. Anyone interested is more than welcome to join us. Dates are Oct-25<sup>th</sup> through to the Dec 6<sup>th</sup> Exam night, at a cost of £65.00 including Exam Fee.

All candidates are welcome at Chelmsford Amateur Radio Society  
you do not have to be a member.

Whether you are on an online course and just starting/finishing one with Essex Ham or are self-taught, we can accommodate you for your Practicals and Exam, either Foundation or Intermediate. Our latest arrangements can even accommodate just one person.

Email:- [training2018@g0mwt.org.uk](mailto:training2018@g0mwt.org.uk)

with your Name, Callsign and Phone No and I will get back to you.

or give Peter a call on 07747 130777

**Peter Davies M0PSD**

Training Manager, together with our Extensive Training Team.

**Extra Exam dates**

As per the previous page, we have added a series of monthly exam dates coinciding with Skills Nights

Exam Session	Exam Date
EX1	Monday 17-Sep-2018
EX2	Monday 15-Oct-2018
EX3	Monday 19-Nov-2018

The new sessions above are in addition to the main course exam sessions we have scheduled for

- Foundation Course Exam Thursday October 11<sup>th</sup> and
- Advance Exam December 6<sup>th</sup>

The revised syllabus that takes effect in August 2019 means that anyone thinking of upgrading would do well to contact us and take their exam fairly soon before the changes take effect!

Contact Peter M0PSD or check our training page at <http://www.g0mwt.org.uk/training/>

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**Help Still Wanted !!...**

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Editor: [editor@g0mwt.org.uk](mailto:editor@g0mwt.org.uk)

Newsletter and Archive: <http://www.g0mwt.org.uk/newsletter>