

G3WSC  
G6RC  
GX3WSC

# CARC News Bulletin

Crawley Amateur Radio Club

Feb - March 2017  
Editor: John G4PEO  
[www.carc.org.uk](http://www.carc.org.uk)

## Other Clubs & Events

### Horsham ARC (HARC)

<http://www.harc.org.uk>

2nd Feb: Software Defined Radio

Mar - TBA

### Crystal Palace REC

<http://www.g3oou.co.uk/>

[cprec.html](http://www.g3oou.co.uk/cprec.html)

3rd Feb: AGM

3rd March: Spectrum Utilisation

Efficiency - 4G and Beyond by Ian

Clark

### Sutton & Cheam

<http://scrs.org.uk>

16th Feb: Choosing a VHF/UHF

Radio - G8DOH

16th Mar: TBA

### Mid Sussex ARC

[www.msars.org.uk](http://www.msars.org.uk)

3rd Feb: Air Ambulance

10th Mar: Green Antennas

### CATS (Coulston)

[www.catsradio.org](http://www.catsradio.org)

Feb 13th: The GB3XP Repeater

Project/St. Helier Hospital. M0SGL

Mar 13th: Roll Your Own PCB's

### Dorking & District Radio Club

<http://ddrs.atspace.com/>

Feb: 7MHz mini transceiver project

(part 2) / IC7300 demo

Mar: TBA

### Other Meetings/Events

Harwell Radio Rally, Didcot

Leisure Centre, OX11 8AY

Sunday 12th Feb. 10am - 3pm

<http://g3pia.org.uk/>

### BRATS Radio Rally, Rainham

(Kent) School for Girls. ME8 0BX

Sunday Feb 26th. 10am

[www.brats-qth.org](http://www.brats-qth.org)

### Updates to the CARC programme:

<http://carc.org.uk/events/>

or contact Richard, G3ZIY:

[Richardg3ziy@gmail.com](mailto:Richardg3ziy@gmail.com)

News Bulletin items contact G4PEO:

[john@g4peo.net](mailto:john@g4peo.net)

## CARC DATES

February 22nd (Wednesday)

The Icom IC-7300

Alex M1YAP / Mike G0KAD

March 22nd (Wednesday)

GB7MH Upgrades (D-Star/DMR)

Paul, G7KBR



CARC meetings are held in our clubroom at  
Tilgate Park, Crawley, West Sussex.

Every Wednesday: 8pm

Every Sunday: 11am - 1pm

Formal events are normally held on the last  
Wednesday of the month, 7-30pm for 8pm.

For further information about CARC, please

Contact the Hon Secretary:

Phil, M0TZZ, [secretary@carc.org.uk](mailto:secretary@carc.org.uk)



Welcome to the February / March 2017 edition of the News Bulletin.



With the start of a new year thoughts turn to contests once again. Shown above is a 2m 1KW PA (400 very clean watts at the antenna!) being built by **Mike G0KAD** in time for the contesting season. To discover what contests we will be participating in, see page 6, and for an overall description of club contest activity, make sure you read the article on page 7 by **Alwyn, G8DOH**.

### Local Repeaters

GB3MH: 145.625/88.5(FM) GB7MH: 439.6375(D-Star/DMR)

GB7EG: 439.7625(DMR) GB3WS: 145.750/88.5(FM) GB3NX: 430.850/88.5 (438.450)(FM)

GB3NS: 439.675/82.5(FM) GB7NS: 439.1625(DMR) GB7ID: 430.975 (438.575)(FM/Fusion)

GB3HO: 430.8875/88.5 (438.4875)(FM) GB3HY: 430.900/88.5 (438.500)(FM)

### Local DX Cluster

GB7DXS : Telnet 81.149.0.149 Port 7300

Chairman: Keith Evans (G3VKW)

Vice Chairman: John Pitty (G4PEO)

Training Lead Instructor: Malcolm Harman (G3NZP)

QSL Manager/News Editor: John Pitty (G4PEO)

Committee Member: John Longhurst (G3VLH)

Shack Manager: Mike Davies (G0KAD)

Hon Secretary: Phil Moore (M0TZZ)

Hon Treasurer: Howard Palmer (G4PFW)

Exam Secretary: Phil Moore (M0TZZ)

Committee Member: Richard Hadfield (G4ANN)

Committee Member: Alex Sheppard (M1YAP)

Programme: Richard Drinkwater (G3ZIY)

## Calendar Items -February & March 2017

### The Icom IC-7300 Transceiver, - Mike, GOKAD & Alex M1YAP. Wednesday 22nd February.

A presentation on this attractively priced and exciting new transceiver.

The IC-7300 is a standalone 100w\* (with ATU) HF - 50MHz/70MHz software defined radio transceiver that does not require a PC in order to operate. Hence it has most of the attributes of an SDR radio, but, with the addition of knobs/buttons and a built-in touch screen spectrum/waterfall display. The IC-7300 has made quite a name for itself already; find out why tonight.

\*(50w - 70MHz)



Photo: Courtesy Icom Inc

### GB7MH Upgrades - Paul G7KBR. Wednesday 22nd March.

Paul's talk will describe the recent changes made to the 70cm GB7MH repeater at Turners Hill, operated by the Ashdown Forest Repeater Group. The changes now mean the repeater can operate in dual mode D-Star/DMR, and Paul will describe the design of the Multi-Mode Digital Voice (MMDVM) repeater. Paul will also give a brief overview of the UK Brandmeister Network of which GB7MH is part.

## Previous Meetings & Events

### Fish & Chip Supper - December 2nd 2016



Photos: G3VJM



## Previous Meetings & Events - cont

### CARC AGM - 25th January 2017



Photo M1YAP

The CARC 2017 AGM took place on a very cold and misty Wednesday evening, with 21 members in attendance. **Keith, G3VKW** gave the Chairmans report which can be found on page 8, whilst the incumbent committee, as listed at the bottom of page 1, were re-elected.

Two items of good news from the meeting - yearly subscriptions will be held at 2015/16 rates/£40 (adult). As always, please pay your subs to **Howard, G4PFW**, as soon as possible, details of the payment methods available are shown below. Also, on Wednesday evenings, *only* when there is a presentation/lecture scheduled, tea and coffee will be free, so now there is no excuse for not attending! One other item of note is that the surplus equipment sales are now cancelled due to increasingly diminished returns against the considerable work involved.

The date of the 2018 AGM will be Wednesday January 24th.

## Club News

**Renewals** - Hon Sec **Phil, M0TZZ** advises the methods available this year:

1. Cash or cheque to **Howard G4PFW** in person at the Club
2. Bank Giro Credit (or BACS) to our bank – please email Howard on [treasurer@carc.org.uk](mailto:treasurer@carc.org.uk) who will give you the details and instructions
3. By PayPal. Please go to <https://membermojo.co.uk/carc/> and press the Join Us/Renew button. On the next window, since you are renewing and not joining, click the “Sign In” link. Sign in with the email address we have on record for you and follow the instructions. Add linked members if needed (normally only for family membership) or press Next. Press Select Payment. Select Pay with Paypal and follow the instructions. You will be asked to confirm or edit your personal information – this is held by the Club only, and is not being shared with anyone else. **This method involves a small charge to us so please use methods 1 or 2 above if you can.** You can also pay by debit or credit card this way, but this also attracts a charge. This is actually simpler than it looks here, but I’ve listed all of the steps for clarity

### Training - Malcolm Harman G3NZZ CARC Lead Instructor

Various intelligence received leads me to believe that there are those amongst our previously successful Foundation students who may wish to upgrade to an Intermediate licence.

I therefore propose to run a series of drop-in sessions on Sunday afternoons late March/early April. A couple attendances should be sufficient to complete the practical assessment process, thus making it more flexible as far as your weekends are concerned.

For self-study candidates the exam would be held over a single weekend on a date to be arranged, but if needs be we could run a couple of two hour tutorial classes beforehand. However whatever your preference I would recommend first reading the “Intermediate Licence, Building on the Foundation” book by Steve Hartley available from the RSGB shop.

If you would like to participate, please e-mail [training@carc.org.uk](mailto:training@carc.org.uk) to register your interest and we'll get something organised. To make it all worthwhile we prefer to run such courses for about six people.

May I also say that after seven years in the job it's now my objective is to reach a total of 100 passes for all three licence levels combined before going "Training QRT". I have thoroughly enjoyed putting something back into the hobby and thanks to all the people who have helped me over the years. I am currently six short of my target, but in the meantime still available for Foundation and Advanced exams as well as Intermediate. **Malcolm - G3NZZ**

### Training Vacancy

As mentioned above, and following the currently planned exams, **Malcolm G3NZZ** has indicated he wishes to 'retire' as CARC lead training instructor. To date, during his 7 year tenure, Malcolm has instructed 101 candidates resulting in 94 passes at all levels; a remarkable achievement.

It goes without saying that the club, plus all the candidates throughout those 7 years, are greatly indebted to Malcolm for all the hard work, time and energy he has freely given in helping, guiding and instructing those candidates to attain their various grades of amateur license. Although Malcolm will be able to take it a little easier, there is still a small matter of climbing St. Leonard's church tower at Turners Hill to look after GB3MH/GB7MH!

Upon Malcolm's 'retirement', the club will be requiring a Lead Instructor to take over the clubs training duties. As Lead Instructor you would take over the structure of CARCs Amateur Radio training and exams, and you would be supported by **Phil M0TZZ**, **Keith G3VKW**, and **Dick M0RXZ**. If you have training experience and wish to apply please contact either **Keith G3VKW** or **Phil M0TZZ** in the first instance.

## **Club News - cont:**

### **Programme**

Thanks go to **John, G3VLH**, for all his previous hard work as Events Secretary, and who has now stood down from this duty. Not an easy job by any means, in not only having to come up with fresh and interesting speakers, hoping they will actually respond to your emails, and then if successful, having to juggle dates in order to synchronise their availability with club dates.

We are fortunate that **Richard, G3ZIY**, has agreed to take over the role, but of course needs your help in suggesting topics and speakers which he will then chase up/arrange if possible. So don't leave it all to one person, if you have any ideas/thoughts etc, please get in touch with Richard, he will be *very* pleased to hear from you.

Richard's email: [Richardg3ziy@gmail.com](mailto:Richardg3ziy@gmail.com)

### **Club WSPR Contest - G3VKW / G3YSX**

Following on from the WSPR competition held in February 2016, that so many club members enjoyed, the club thought that it would be interesting to organize a similar but simpler competition for **MARCH 2017**.

The rules, devised by **Keith, G3VKW** and **Stuart, G3YSX** have been changed and also made simpler this year.

There will be three classes:

Single Band 30m

Single Band 20m

All bands.

For single band entries, you may only transmit a WSPR signal on the band of choice during the period of the contest. Any one member transmitting on more than one band will be classified as entering the all band section.

An entrant in a single band class will score one point for every DXCC entity (country) as defined by the ARRL for DXCC that reports reception of their transmission and reports it to the master WSPR log.

An entrant in the all band class will score one point per entity per band.

The maximum power permitted in the single band classes is 250mW.

The maximum power permitted in the all band class is 5W.

Entrants in the single band categories may only use a simple antenna such as a vertical, dipole, or cobweb. In case of doubt the CARC chair will determine if the antenna qualifies. Entrants in the all band class may use any type of antenna.

Additionally special mention may be made of unique and interesting statistics in the scoring noticed by Stewart.

Ongoing results will be reported on the CARC blog as per last year.

Best of luck, and I hope you enjoy this years competition - Keith G3VKW & Stuart, G3YSX

### **WSPR Reporting Resources**

To check your WSPR 'progress' (activity/database/maps/stats etc) go to: <http://dev.wsprnet.org/drupal/>

Also, you can download to your Apple iOS phone/tablet the **WSPR watch** app (free), or to an Android device, **WSPRnet Viewer for WSPR** (free).

## Club News - cont:

### QRP Labs (WSPR) Update

Of possible interest to those members who have built, or are intending to build the QRP Labs Ultimate3S (WSPR) transmitter, and perhaps are also contemplating participating in the All Band / max power 5w section of the CARC WSPR contest, then the following will interest you!

Hans has recently designed and released a 5W HF PA kit (\$20) that is fully compatible with the Ultimate3S, the board being the same size as both the transmitter kit and the relay-switched filter kit. The PA can of course be used standalone for other projects.

Features:

- 1) Approx 16dB of gain at HF
- 2) IRF510 MOSFET PA stage providing 5W or more RF output from 200mW drive (varies by band)
- 3) Raised-cosine keying envelope generation
- 4) Option for standalone envelope shaping, without external microprocessor control
- 5) 80 x 37mm PCB, compatible with Ultimate3S transmitter kit
- 6) Discrete component power modulator with foldback current limiting
- 7) Designed for typically 12V or 13.8V operation
- 8) Large heatsink
- 9) You can substitute the RD15HVF1 transistor for VHF or UHF operation

Ultimate3S TX Kit: <http://qrp-labs.com/ultimate3.html>

5W PA: <http://qrp-labs.com/pa.html>

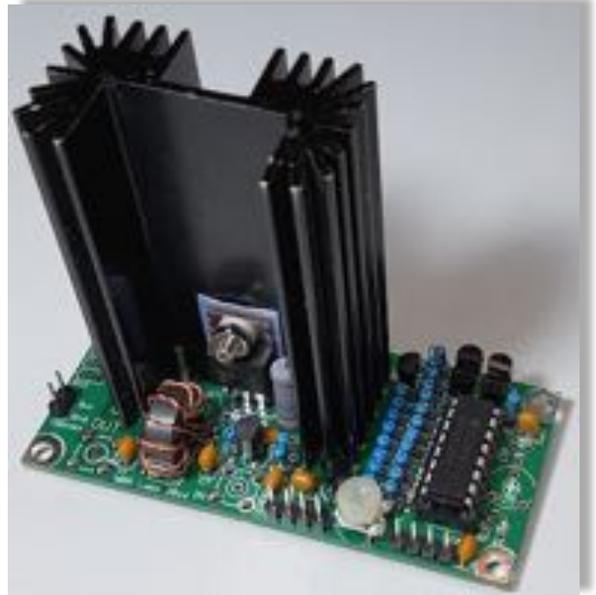


Photo courtesy Hans Summers

### Possible Club Project - Frequency Counter - Alan Jamieson

Some members may have noticed articles on a frequency counter project in recent issues of the Crystal Palace Radio & Electronics Club newsletter. Developed by their member Alan O'Donovan, the counters are easy to construct, modestly priced and rather more accurate than most cheap Ebay-type counters. The counters are based around a real-time clock module and an Arduino Nano microcontroller. The Nano can be supplied pre-programmed or you can load the software yourself if you prefer.

#### Specifications:

Range: c.500khz-75Mhz (varies with ICs used in front end)

Resolution: 1hz

Accuracy: +-2 parts per million from 0C to 40C

Sensitivity: Input signal range between 250mV and 500mV.

Construction: all through the whole parts on generous 108x103mm pcb v1.0

Add-ons: a 10x prescaler can be added to the board using surface mount parts (extra cost about £4)

A suitable enclosure is available from a commercial supplier for £5.20 plus post.

Crystal Palace have offered to supply pcb's if we wish to run a club project. Cost of the kit would be £15 but we need 10 orders to get best prices on components.



If you wish to participate please advise chairman **Keith G3VKW**  
[g3vkw@btconnect.com](mailto:g3vkw@btconnect.com) (if you haven't already).  
Any questions to **Alan Jamieson**  
[alanjam@senet.com.au](mailto:alanjam@senet.com.au)

Photos courtesy Alan O'Donovan/CPREC

## Club News - cont:

### Club Contests

A reminder that every month throughout the year, the yearly RSGB VHF/UHF UKAC (UK Activity Contests) are held, with a different day of each month, (currently Tuesday or Thursday evenings throughout the month), allocated for each of the VHF/UHF bands as shown in the table below. (All times local).

These are short, (1hr FM / 2.5hrs SSB), very gentlemanly 'contests' which you can enter on behalf of yourself, as well as simultaneously for your club, either from home, the CARC shack, or portable. You can enter as many or little times as you like, with your score from each session counting towards an overall score per band, and if entering on behalf of the club, your score will count towards the final club score, for the year, for each UKAC, so it's very useful that as many club members as possible take part! If just entering on behalf of the club, you do not have to be an RSGB member as CARC is affiliated to the RSGB. Logs can be easily uploaded via the RSGB contest web site.

This year, in order to broaden the appeal of UKAC, an FM only section, (4m/2m/70cm), has been created allowing entrants to take part utilising existing 4m/2m/70cm FM transceivers/vertical antennas etc. The RSGB describes the addition of FM as follows: *These contests are intended to provide a place where stations who have FM equipment can come on and get a feel for contesting, and hopefully move-on over time to more conventional contesting on SSB. As such - we've tried to make the rules simple and equipment requirements simple.*

Unfortunately there is no overall description of the UKAC's on the RSGB contest web pages for people interested in getting involved for the first time, so for more (detailed) information go to the RSGB VHF Contest Calendar :

<http://www.rsgbcc.org/cgi-bin/readcal.pl>

and then click on the individual contest headings to delve into the rules, and/or speak to **Stuart G3YSX** or **Mike GOKAD**.

Suggestions for logging and also how to upload your log, (or enter a paper log), can be found here:

<http://www.rsgbcc.org/vhf/howto.shtml>

If you do enter please forward your scores (per month) to me, **G4PEO**, for inclusion in the News Bulletin.

Contest Name/Band	Date	Time UTC
144MHz FMAC	Every 1st Tues	1900-2000
144MHz UKAC	Every 1st Tues	2000-2200
432MHz FMAC	Every 2nd Tues	1900-2000
432MHz UKAC	Every 2nd Tues	2000-2200
1.3GHz UKAC	Every 3rd Tues	2000-2200
SHF UKAC	Every 4th Tues	2000-2200
50MHz UKAC	Every 2nd Thurs	2000-2200
70MHz FMAC	Every 3rd Thurs	1900-2000
70MHz UKAC	Every 3rd Thurs	2000-2200

### Other Contests

The CARC contest team, together with members of the Reigate Amateur Transmitting Society (RATS), will again be participating in some of the major VHF/UHF contests this year. Scheduled so far for the CARCRATS team are:

144 - 432MHz March Contest (4th/5th)  
144MHz May Contest (20th/21st)  
VHF NFD (1st/2nd July)  
144MHz Trophy (2nd/3rd September)  
October 432MHz - 245GHz Contest (7th/8th)

If you would like to get involved, or for more details please speak to **Mike, GOKAD** or **Alex, M1YAP**. Rules for the above contests can be found by clicking on the RSGB VHF Contest Calendar link above.

## VHF/UHF Contesting with CARCRATS - Alwyn Seeds G8DOH

The Crawley and Reigate Clubs have been active in VHF and UHF contests since the 1960's. In recent years they have combined in a joint group Crawley Amateur Radio Club-Reigate Amateur Transmitting Society or CARCRATS for short.

We operate in the Open Section of the major contests from a site overlooking the English Channel, near Dover, an easy drive from Crawley, and which allows large numbers of contacts into the other European Countries, even when propagation is poor.

2016 was an excellent year for CARCRATS. We started the year with the March 2m and 70cm Contest, battling the cold, the wind and the rain to win on 70cm and come 2nd overall.

For the May 2m Contest that year we survived the nearby thunderstorms and moved up from 3rd place in 2015 to 2nd place in 2016.

The big event of the year was, as always, VHF National Field Day. This is a huge logistical and operating challenge with complex multi-aerial array systems to be fielded for 6m and 2m (we did not operate on 4m in 2016) together with 4 stack arrays for 70cm and 23cm.

We were unlucky enough to have one of our vans driven into by a car that lost control on the winding A258 but excellent teamwork rescued the situation and got us operating on all bands. The thunderstorms came to us again, but did not prevent us from winning on 70cm and coming a close 2nd on 2m and 23cm to move up from 3rd place overall in 2015 to 2nd place, in 2016.

We did not operate as a team in the September 2m Trophy Contest in 2016, due to other commitments, so our final outing of the year was the October UHF Contest, where we added 23cm to our usual 70cm operation and were joined by G6TRM, enabling us to add contacts on 10GHz also.

We won on 70cm and came 2nd on 23cm to secure overall 3rd place, the same position we occupied in 2015.

We completed the year's (2016) contesting by entering the December 2m Affiliated Societies Contest. Our A team came 4th out of the 61 clubs participating and we had enough operators to be able to field a B team, also.

A change in the RSGB Contest Rules for 2017 will enable Crawley to register as a National Club, so that all members, irrespective of station location, will be able to contribute to the Club score.

We will start 2017 with the March 2m and 70cm Contest on 5th and 6th March and look forward to achieving even better results in 2017 than we did in 2016.

In addition to these major contests team members operate frequently in the UK Activity Contests and other minor contests throughout the year.

We welcome new members to the team, whether seasoned operators or new licensees. Proficient CW operators are especially welcome.

If you are interested in VHF/UHF Contesting, please contact **Mike Davies, GOKAD** to be added to our Yahoo Groups mailer so that you can be kept up-to-date with CARCRATS news.

73

Alwyn Seeds, G8DOH

## Keith G3VKW Chairmans AGM Report

Derek Atter G3GRO Long time President and Driving Force behind CARC.

The Club has received a very generous legacy from the merchandising of Derek's equipment. The club therefore thought it right to have a Commemorative Plate commissioned in Derek's honour, presently given at the Microwave Round Table, as microwaves were of great interest to him.

I would also like to thank the club members who spent many hours sorting through Derek's equipment and components in his two shacks and garden shed. Also, thank you to the team that removed the Tower from his QTH, for which the family were very appreciative.

### Talks & Other Internal Events.

Talks were given on:- Outside Satellite Broadcasting, by Malcolm G3NZZ. Early Amateur Radio Equipment by G3VKW. The Annual Surplus Equipment Sale. DMR Radio, by Dennis G0OLX. Off Air Frequency Standards, by Bob Burns G30OU. Hamvention Special by Stewart G3YSX and Richard G4ANN. Do you know how your Antenna works, by Walter Blanchard G3JKV. Choosing a VHF/UHF Radio, by Alwyn Seeds G8DOH.

Regarding the Surplus Equipment Sale, the committee has decided it has run its course due to online "Bring and Buys", and Auction sites. It takes quite a lot of the organisers' time. Looking at the "Frugal Prices" achieved, we only received £38-00 profit for 4 hours work and 4 club members' time, therefore the committee took the unanimous decision to cancel this event.

This year, we hosted the Microwave Hamnet Symposium, The Microwave Round Table, and we were successful at winning the HARC CARC Challenge.

The Annual Fish and Chip Christmas 3 course dinner was another success this year. Thanks to Lorna XYL M0TZZ, and Jane XYL of G3VKW for the planning, preparation, and execution of the event once again. Also thanks to the other club members' wives who did a sterling job at washing and clearing up afterwards. Unfortunately, attendance was down this year, as we have had many long time supporter's move away. Therefore, fortunately, there will be room for others at this year's dinner! So put it in your diary the 1<sup>st</sup> Friday of December, however, this may change to the first Saturday if the event moves to a luncheon. Who would support this event if it changes to a Saturday Lunch? Who would prefer it to remain an evening event? Who wouldn't consider attending anyway?.....

I was approached in late 2015 to see whether we might consider allowing SCARF to use our club house for their meetings. In previous years we have had an arrangement for them to do so, yet sadly this was terminated by us due to a dispute. However, this did happen many years ago. This latest request was discussed at committee, and after being given guarantees that the same problems would not arise, we have decided to reinstate the arrangement with SCARF. This is chaired by Adrian G4LRP of the Horsham Club who is the also RSGB Deputy Regional Manager.

### External Events.

Sadly, we held no external Club dinners this year. In the past few years we held two, but while comfortable, the venue's mishandling of some previous events has somewhat soured its reputation. We will try to find a new venue for this year and reinstate at least one Club dinner, hopefully for May or June and, if successful, another in late Sept /Oct.

The club, due to HF Conditions, and lack of support, decided not to participate in Museums on the Air, which turned out to be a wise decision due to a Solar disturbance on the day. It is fun to put a special event station on air, so perhaps some of our newer members will take up the mantle, as the pileups can be fun and quite large. This helps newer licensees gain experience in pile up management.

We attended both the Eastbourne Rally and the C.A.T.S. Bazaar, which was held in an excellent new venue. We had very good results at CATS and managed to sell quite a few SK items which had been cluttering up the Club House. Thanks also to Barry M0HBM for allowing us to store the equipment in his garage.

Finally, have you all seen the NEW CARC.ORG.UK Web site? If not then please take a look [www.carc.org.uk](http://www.carc.org.uk) The club is indebted to and would like to formally thank Dominic G6NQQ for all of his hard work and advice, this at a time when he was very busy commercially and also getting married!! Also to Mike Guest who managed our Club's website for many years. The committee agreed with me that due to their efforts we are offering both Honorary Membership's for 2017.

## *Chairman's Report cont:*

### Contests

We held an internal Club W.S.P.R Contest which seemed to be very popular, looking at the amount of entries. So, this year we will do it again but with easier scoring and less categories. This will be held in March and you should have received a copy of the rules by email. If you haven't please let me know.

The CARCRATS Contest Team have done very well in the events that they have entered, notwithstanding Mike GOKAD's lucky escape with a BMW, the van he was driving wasn't so lucky.

### Finances

Club Finance's due to the Tea Fund, and Hosting, and new members, has ensured we have made a very small amount of profit. This means the Subs for 2017 will remain at the present level. I will let Howard, the CARC Treasurer, explain the finance's in more detail to you. Also, as way to hopefully increase the audience on Talk Nights, there will have free tea and coffee provided in the future.

Another club improvement for members is that you can now pay your membership dues online via Card or PayPal, but do bear in mind that PayPal takes a small fee.

Training - See Malcolm's separate report.

### Repeaters

As you may be aware, The Ashdown Repeater Group, although separately run by David Lake and Malcolm G3NZP, due to some RSGB restrictions in the past, is very closely linked to CARC. Recently the CARC Committee were made aware that the AFG repeaters running costs were out stripping their income, and their reserves were becoming a grave concern. This was put to the CARC committee who agreed that we would financially support ARG if it runs into day to day financial issues. This brings AFG more integrated within CARC. It is worth saying that this decision was not taken lightly, however due to the daily number of CARC club members who use the Turners Hill Repeaters, it was felt this was a justified decision. Since this decision was taken, several benefactors have donated quite a sufficient amount to keep this facility available, with no financial support needed from CARC. Can I remind all members who use the Repeaters, to consider donating loose change, or more, into the donations pot near the tea bar. These facilities do use electricity and require maintenance.

Paul G7KBR has spent considerable amount of time building and setting up the new multimode 70cm repeater GB7MH and has recently joined CARC as an Honorary Member.

### Shack etc.

I would like to put firmly on record our thanks to Rob and Adrian Barter, who have sadly left the CARC area for Devon. We thank them for all their hard work; on remodelling the Shack, entrance hallway, and new test bench, and for providing the New Flat Screen Info system in the entrance hall, which is driven by a Raspberry Pie. Also on the workforce was Mike GOKAD, and Alex M1YAP. Thanks guys.

I would like to thank Alex M1YAP for his New Design CARC LOGO, This is now available to all members on a tremendous variety of clothing from our suppliers in Devon. Please see John G4PEO as he has a huge catalogue of Polo Shirts, Sweat Shirts, Fleeces etc. which are very reasonably priced and the club gets 5% back on all orders.

Keith G3VKW