

C.D.A.R.S.

June 2025

CHESHAM & DISTRICT AMATEUR RADIO SOCIETY MONTHLY NEWSLETTER

E-M-E Moonbounce - A Brief History.

We meet the 2nd Wednesday each month at The Golden Eagle Pub in Ashley Green and every 4th Wednesday each month at the Ashley Green Memorial Hall, Ashley Green, HP5 3PP



Report

Photo Report Of The
MOTA Weekend at Brill
Windmill

Regulars

*Dates For Your Diary
*Radio Rally Dates
*Contest Results

Want to write something for the newsletter?
Then you can contact me on
cdarsnews@gmail.com

Can't find that elusive part or have anything for sale?
Why not drop me an email and put it in
'For sale and wanted'.

Learn About.....

What are you interested in? Here are a few useful links:



FISTS CW Club

Promoting Morse Code for 36 years 1987-2023

<https://fists.co.uk>

VK3TBS

Learn About VARAC

<https://vk3tbs.home.blog/2024/03/06/vara-varac/>

Essex Ham

FT-8 Basics

<https://www.essexham.co.uk/ft8-basics-explained>

Essex Ham

What is PSK31? The Basics.

<https://www.essexham.co.uk/psk31-the-basics>

Welcome to LCWO.net

Learn Morse Code (CW) Online!

<https://lcwo.net/>

Electronic Notes

What is RTTY? The Basics.

https://www.electronics-notes.com/articles/ham_radio/digimode/s/what-is-rtty-radio-teletype.php

Meshtastic and MeshCore

Information and Downloads to build your own LoRa Node or Repeater

<https://meshtastic.org/>
<https://meshcore.co.uk/>



Morse Code by Ray Burlingame-Goff (SK - 29th July 2021)

<http://www.g4fon.net/>

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Chairman	- Dave Keston (G8FMC)	Secretary	- Malcolm Appleby (G3ZNU)	Treasurer	- Matt Whitchurch (M1DTG)
	- Guy Plunkett (M0GUY)		- John Hall (G0ODQ)		- Peter Holliday (2E0PTH)
	- Roger Fellows (2E0TGU)				

All the above are members of the committee and can be contacted on cdars-committee@googlegroups.com

Newsletter Editor - Roger Fellows (2E0TGU) newsletter submissions to: cdarsnews@gmail.com

Welcome

Welcome to the June edition of the CDARS newsletter. Well the weather has been fairly kind during May and certainly made the Mills on the Air weekend at Brill Windmill very enjoyable. Shorts, hats and sun cream were the order for both days.

The featured article this month is the history of E-M-E or Moonbounce. While it is evident that some serious kit is required to achieve a result, it's surprising how little power is actually needed. However, I suspect perfect weather conditions plays a major part in achieving a result. Has anyone been involved with E-M-E? We'd love to know of any experiences.



Roger 2E0TGU

As I write this we are just a day away from the club B-B-Q/Antenna play day at John G0ODQ's QTH. Full report and photo's next month. Talking of next month (July) it's time for VHF Field day once again at the field in Wiggington. Plans are already in motion for the weekend so watch out for emails with information of what and when things are happening.

As ever there are all the usual regular items in the newsletter so until next month, enjoy.

Roger 2E0TGU.

DID YOU KNOW?....

.....In Chile in 2010 a collapse at the San José copper-gold mine buried 33 men 700 meters (2,300 feet) underground. The complexity of the situation required unconventional approaches for the rescue operation. That's where HAM Radio kicked in.

Radio Club de Chile and Radio Club Copiapo provided the equipment and established all of the radio communication inside the mine itself and decisively helped the rescue operation. The story has a happy ending, as all 33 miners were rescued.

Chairmans Ramble

P.S. on the G8FMC EFHW (End Fed Half Wave):

After a few 80m CC sessions I am convinced that my EFHW is a little down on a dedicated Dipole, which means I am slightly less able to break a pile-up when running 100W. However the difference does not seem to make much difference to my scores? (which are equally modest on either antenna as I guess my elbows are not sharp enough for this 80m punch-up!)

On Wednesday 14th May we had our informal (pub) meeting at which we presented the Dennis Kind shield to Roger G3MEH for services to the club. A bit late but it was all engraved and up-to-date. Roger has promised NOT to take it up to Leicester when he moves!



Dave G8FMC

My diary this last few weeks has got a bit mad, most of it non-radio domestic stuff. There has also been some planning & prep for the CDARS Bar-B-Q (Sat 31st May) plus early stage planning for VHF Field Day (W/E 5-6 July). This is a CDARS weekend competition/contest where we welcome all members, not just the regular 'Contesters'. For those just curious who want to swing by for an hour or two to see what goes on, you are welcome. If you fancy a stint 'on-the-mic' just say & you can have a shout from the hot-seat. We will probably have a mast erecting session in the Wigginton field on the Friday afternoon/early evening where I will be looking for some help. More later on the email group.

Well, the long very dry period has broken with some rain that no doubt farmers and gardeners are very grateful for. It could be that HF propagation might also benefit, even if only marginally. Wet ground is going to be a better ground-plane & might improve HF band take-off a little? I had an afternoon tea appointment for a few of the Winslow community in town on Tuesday & it rained quite hard between 3.00pm & 3.30pm. This is just when we were walking to the venue for a 3.30pm start! We got a bit wet. Ah well, it was only water & we soon dried off & enjoyed a chat over tea & sandwiches etc.

Winslow seems to have more activities & more motivated people to run them than many other small towns and villages. As a chap on my own these days, I can have an appointment (to meet other people and/or do things) almost every day of the week.

One fine day I might find enough spare time to finish building that 70cm Transverter that has been more than 50% built, but been on-hold for some years!

73 all, Dave K, G8FMC (Chairman & Contest Coordinator)

Contests/Operating

The UKAC progress for 2025: (under the NRS banner)

We continue to out-number & hence (as a group) generally out-perform Hereford in the UKAC's.

Awaiting several results; however the latest overall results now stand at:

NRC & Friends = 5246pts (Normalised 1000pts on all bands except SHF)

Hereford = 33744pts

Spalding = 2748pts

So still well clear of Hereford at the moment, but they do seem to be trying to catch us on some bands, so it is still a bit early to relax.

80m CC's: (also under the NRS banner)

John G4CZB continues to use G8N to good effect, with a bit of support from a few of us. NRC are at present in 12th place out of 45.

VHF Championship: (under the CDARS banner)

The sessions on 3rd & 4th May were well supported, with good results. This means that 4 of the 11 events have now been completed.

The overall position at present is:

Hereford = 3111pts

CDARS = 2930pts

Sheffield = 1777pts

On 3rd May the 432MHz Trophy AFS section was won by us = 1000pts!

Individual placings of note:

Phil & friends M0N 4th out of 12 in the Open section, operating from his site at the Bovingdon farm.

Matt G0XDI 4th out of 42 in the Single Operator Fixed section; with John G0ODQ in 6th and Roger G3MEH in 9th,

plus a few of us farther down the list.

On 4th May the 144MHz event we again won the AFS section = 1000pts! M0N managed 5th out of 8 in Open; but up against the big teams on top sites. The M0N score was only a little below 3rd & 4th places. (very tight in the middle) Matt G0XDI 5th out of 41 in the Single Op Fixed section; with Charlie G0SKA 10th, Roger G3MEH 13th plus a few more supporters.

John G4CZB/P, who was in the BackPackers, also entered a very useful log in the Single Op open section.

Also on 4th May was the 10GHz event, where Hereford fielded a few but Dave G4RGK made a good effort & avoided a 'Nil Point' situation for CDARS. Thanks Dave

It is a shame we have no other microwave operators in our group.

continued.....

1st Backpackers on 4th May:

John G4CZB/P travelled up to IO93EG and bagged 2nd place; well done John.
(As well as submitting his log for the Championship as mentioned above)

My noise on 70MHz after dark is crippling. I am contemplating abandoning that band altogether & swapping my dual-band beam for a larger 6m only one?

Such a shame as at one time 4m was my favourite VHF band. When the noise floor increases in excess of 20dB as one turns the beam & the waterfall display goes all white, it really is sole destroying. Even the excellent DNR in the Yaesu FTDX-10 can't cope with that!

70MHz CW contest:

This was on Sunday 11th May, so clashed with the Brill Windmill weekend. It is an individual event (not club) but part of the VHF CW Championship.

Malcolm G3ZNU & I decided to have a dabble from the Windmill site, 'just for fun'. In spite of a late start (due to yours truly forgetting the driven element of the 3 ele LFA beam & needing to dash back home!) activity was quite low, so with just a little over half the time Malcolm managed to work most of the available stations.

Result = 2nd place in the Restricted section! Great result Malcolm.
Dave G4RGK & Roger G3MEH also operated from their homes in the Open section.

CW is not dead, but still very much alive.

I would love to be able to do it, but I tried in earnest more than 30 years ago & it did not work then, so no hope now at my very advanced age! (Just had yet another birthday) It has been established that it is the same part of the brain that is used for music and languages etc (Morse is another 'language') I was hopeless at those when at school, so that is my excuse & I am sticking to it.

73, Dave K, G8FMC

E-M-E Moonbounce - A Brief History

Earth–Moon–Earth communication (EME), also known as Moon bounce, is a radio communications technique that relies on the propagation of radio waves from an Earth-based transmitter directed via reflection from the surface of the Moon back to an Earth-based receiver.

History

The use of the Moon as a passive communications satellite was proposed by W.J. Bray of the British General Post Office in 1940. It was calculated that with the available microwave transmission powers and low-noise receivers, it would be possible to beam microwave signals up from Earth and reflect them off the Moon. It was thought that at least one voice channel would be possible.

Radar reflections off the moon were received and recognized as such in 1943 during German experiments with radio measurement equipment, as reported by Dr. Ing. W. Stepp in *Der Seewart* magazine. Stepp noted a “perturbation”, which “appeared, had a duration of several impulses, and larger impulse strength than the strongest nearby targets. It didn’t appear until about two seconds after switching on the transmitter and disappeared (pulsatingly) correspondingly later after switching it off. But the rest of the echo image appeared and disappeared at the instance of switching the transmitter on/off. The ‘perturbation’ only occurred when the antenna was aimed to the east, and it disappeared immediately upon a major change of direction, but reappeared only about two seconds after rotating back to the original direction. Apparently we had detected the rising moon behind the clouds with the equipment. It explained the gradual disappearance of the impulses by the reflecting body slowly moving out of the strongly focussed, horizontally aimed beam, as it rises above the horizon.

It was not until the close of World War II, however, that techniques specifically intended for the purpose of bouncing radar waves off the moon to demonstrate their potential use in defense, communication, and radar astronomy were developed. The first successful attempt was carried out at Fort Monmouth, New Jersey, on January 10, 1946, by a group code-named Project Diana, headed by John H. DeWitt. It was followed less than a month later, on February 6, 1946, by a second successful attempt, by a Hungarian group led by Zoltán Bay. The Communication Moon Relay project that followed led to more practical uses, including a teletype link between the naval base at Pearl Harbor, Hawaii and United States Navy headquarters in Washington, D.C. In the days before communications satellites, a link free of the vagaries of ionospheric propagation was revolutionary.

The development of communication satellites in the 1960s made this technique obsolete. However, radio amateurs took up EME communication as a hobby; the first amateur radio moon bounce communication took place in 1953, and amateurs worldwide still use the technique. Radio ham Ray Noughton (VK3ATN) of Birchip, Victoria, Australia accomplished Australia’s first moon bounce with a home-built 250 m wide, 30 m antenna with a 100 watt signal in 1970. (NASA scientists, having had ridiculed his DIY project, claiming that at least a kilowatt would be required, invited him to the U.S., all expenses paid, to learn from his grassroots engineering. Naughton later became involved in Australia’s first satellite, Australis-OSCAR 5).

The effect has even been put to artistic use. Composer Pauline Oliveros used moonbounce in her 1987 work *Echoes from the Moon*, and in 2024 German musician Hainbach experimented with moonbounce and created an audio plug-in to reproduce the effect.

Current EME communications

Amateur radio (ham) operators utilize EME for two-way communications. EME presents significant challenges to amateur operators interested in weak signal communication. EME provides the longest communications path any two stations on Earth can use.

Amateur frequency bands from 50 MHz (6 meter wavelength) to 47 GHz (6.38 mm) have been used successfully, but most EME communications are on the 2 meter, 70-centimeter, or 23-centimeter bands.

Common modulation modes are continuous wave with Morse code, digital (JT65) and when the link budgets allow, voice.

Recent advances in digital signal processing have allowed EME contacts, admittedly with low data rate, to take place with powers in the order of 100 watts and a single Yagi–Uda antenna.

World Moon Bounce Day, June 29, 2009, was created by Echoes of Apollo and celebrated worldwide as an event preceding the 40th anniversary of the Apollo 11 Moon landing. A highlight of the celebrations was an interview via the Moon with Apollo 8 astronaut Bill Anders, who was also part of the backup crew for Apollo 11. The University of Tasmania in Australia with their 26-meter (85') dish were able to bounce a data signal off the surface of the Moon which was received by a large dish in the Netherlands, Dwingeloo Radio Observatory. The data signal was successfully resolved back to data setting a world record for the lowest power data signal returned from the Moon with a transmit power of 3 milliwatts, about 1,000th of the power of a flashlight lamp. The second World Moon Bounce Day was April 17, 2010, coinciding with the 40th anniversary of the conclusion of the Apollo 13 mission.

In October 2009 media artist Daniela de Paulis proposed to the CAMRAS radio amateur association based at the Dwingeloo Radio Observatory to use Moon bounce for a live image transmission performance. As a result of her proposal, in December 2009 CAMRAS radio operator Jan van Muijlwijk and radio operator Daniel Gautchi made the first image transmission via the Moon using the open source software MMSSTV. De Paulis called the innovative technology “Visual Moonbounce” and since 2010 she has been using it in several of her art projects, including the live performance called OPTICKS, during which digital images are sent to the Moon and back in real time and projected live.

Source: Wikipedia.



The Dwingeloo Radio Observatory in North Eastern Holland

*Photo Attribute to: Uberprutser - Own work, CC BY-SA 3.0 nl,
<https://commons.wikimedia.org/w/index.php?curid=32621318>*

Mills on the Air Weekend at Brill Windmill

Once again CDARS members were involved with the annual 'Mills on the Air' weekend on Saturday and Sunday 10th/11th May. For the last 27 years Denby Dale Radio Club had been the organisers behind the event. This year Nunsfield House Amateur Radio Group have taken over the mantle and would appear to be taking the event to new heights.

As in the past CDARS ran two stations, an HF station in the round house of the mill using the Kenwood club radio, and, as the weather was superb all weekend, the VHF/UHF station was sited outside, using the club Yaesu FT897, alongside the camper of Roger 2E0TGU, which also doubled as the support for the pump up mast provided by Mark M7EFR. Unfortunately Mark couldn't be with us as he had an urgent appointment with the sun in Barbados. Antennas for the weekend were the OCF dipole for HF and the usual white stick Diamond X50 for VHF/UHF.

Having got the antennas up we suddenly realised when connecting radios to their respective coax there were no microphones. Oooops!! A quick dash back to Roger 2E0TGU's QTH to gather a radio with mike, FT991, and another mike for the FT897, (no one had a mike for the Kenwood easily available), once back we were soon up and running.

The rest of the weekend went relatively smoothly with a good number of contacts. Dave G8FMC and Malcolm G3ZNU competed in the RSGB 70 MHz CW contest on Sunday morning. (See Dave's contest page for more.) There were a lot of visitors, especially on Sunday, who took an active interest in not only the mill but what CDARS were doing also.

A big thank you to Andy, the head of the Brill Society that looks after the mill, for once again allowing us to be there for the weekend.

Roger 2E0TGU.





Contest Calendar for June and July 2025

June - HF

Day	Date (2024)	Time (UTC)	Contest Name
Mon	2 Jun	1900-2030	80m CC DATA
Sat-Sun	7 - 8 Jun	1500-1500	NFD -CW
Wed	11 Jun	1900-2030	80m CC CW
Mon	16 Jun	1900-2030	RSGB FT4 Contest
Thu	26 Jun	1900-2030	80m CC SSB

June - VHF

Day	Date (2024)	Time (UTC)	Contest Name
Tue	03 Jun	1800-1855	144MHz FMAC
Tue	03 Jun	1900-2130	144MHz UKAC
Wed	04 Jun	1700-2100	144MHz FT8 AC (4 hours)
Wed	04 Jun	1900-2100	144MHz FT8 AC (2 hours)
Tue	10 Jun	1800-1855	432MHz FMAC
Tue	10 Jun	1900-2130	432MHz UKAC
Wed	11 Jun	1700-2100	432MHz FT8 AC (4 hours)
Wed	11 Jun	1900-2100	432MHz FT8 AC (2 hours)
Thu	12 Jun	1900-2130	50MHz UKAC
Sun	15 Jun	900-1300	2nd 144MHz Backpackers
Tue	17 Jun	1900-2130	1.3GHz UKAC
Thu	19 Jun	1900-2130	70MHz UKAC
Sat-Sun	21-22 Jun	1400-1400	50MHz Trophy Contest
Tue	24 Jun	1830-2130	SHF UKAC
Sun	29 Jun	900-1200	50MHz Contest CW

July - HF

Day	Date (2024)	Time (UTC)	Contest Name
Mon	7 Jul	1900-2030	80m CC CW
Sat-Sun	12-13 Jul	1200-1200	GR2HQ Challenge
Wed	16 Jul	1900-2030	80m CC SSB
Sun	20 Jul	900-1600	International Low Power Contest
Thu	24 Jul	1900-2030	80m CC DATA
Mon	28 Jul	1900-2030	RSGB FT4 Contest
Sat-Sun	26-27 Jul	1200-1200	IOTA Contest

July - VHF

Day	Date (2024)	Time (UTC)	Contest Name
Tue	01 Jul	1800-1855	144MHz FMAC
Tue	01 Jul	1900-2130	144MHz UKAC
Wed	02 Jul	1700-2100	144MHz FT8 AC (4 hours)
Wed	02 Jul	1900-2100	144MHz FT8 AC (2 hours)
Sat-Sun	05-06 Jul	1400-1400	VHF NFD
Sat-Sun	05-06 Jul	1400-1400	VHF Fixed Station Contest
Sun	06 Jul	1100-1500	3rd 144MHz Backpackers
Tue	08 Jul	1800-1855	432MHz FMAC
Tue	08 Jul	1900-2130	432MHz UKAC
Wed	09 Jul	1700-2100	432MHz FT8 AC (4 hours)
Wed	09 Jul	1900-2100	432MHz FT8 AC (2 hours)
Thu	10 Jul	1900-2130	50MHz UKAC
Tue	15 Jul	1900-2130	1.3GHz UKAC
Thu	17 Jul	1900-2130	70MHz UKAC
Sat	19 Jul	1400-2000	70MHz Trophy Contest
Tue	22 Jul	1830-2130	SHF UKAC

Dates For Your Diary



Listed below are dates of RSGB, UK and International contests for 2025.

4th June VHF-UHF FT8 Activity Contest 1700Z-2100Z,

5th June NRAU 10m Activity Contest 1800Z-1900Z, (CW) and
1900Z-2000Z, (SSB) and
2000Z-2100Z, (FM) and
2100Z-2200Z, (Dig)

7th - 8th June ARRL International Digital Contesys Digi (No RTTY) 1800z - 2359z

7th June - 8th June 10-10 Int. Open Season PSK Contest 0000Z - 2400Z,

7th - 8th June UKSMG Summer Contest All Modes 1300z - 1300z

7th - 8th June IARU ATV 1200z - 1800z

7th - 8th June IARU Region 1 Field Day, CW 1500Z, - 1459Z,

7th - 8th June RSGB National Field Day, CW 1500Z, - 1459Z,

8th June UKuG Low Band 0900z - 1500z

15th June Practical Wireless 2m QRP AM,FM,SSB,CW 0900z - 1600z

22nd June WAB 6m Phone AM,FM,SSB 0800z - 1400z

21st - 22nd All Asian DX CW 0000z - 2359z

29th UKuG 5.7/10GHz All Modes 0600z - 1800z

Full details and more contests at: <https://www.contestcalendar.com/contestcal.html>

Please double check dates, start/end times etc in good time prior to the event.

Radio Rally Dates.

Full details of the events are available in Radcom & the RSGB website.

June 2025

1st - Spalding & DARS Annual Radio Rally, Spalding Football & Rugby Club, Spalding. PE12 6AF.

8th - Mendips Radio Rally Church Lane, Farrington Gurney, BS39 6UA.

14th - Rochdale & District Amateur Radio Summer Rally, Ipswich Radio Rally) Horden, Rochdale. OL12 7QR.

15th - East Suffolk Wireless Revival (Ipswich Radio Rally), Kirton, IP10 0PW

29th - Cornish Radio Amateur Club G4CRC Rally, St. Clement, Truro TR1 1TN.

July 2025

4th-5th-6th Saffron Walden Radio Ham/CB Rally, Lovecotes Farm, Henham Village, Bishops Stortford, CM22 6BH.

August 2025

10th - Flight Refuelling Hamfest. *(Further Details to Follow)*

(All information courtesy of Radcom & the RSGB website)



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For Sale and Wanted

SK sale of the shack contents of the late Bryan M0IHY (Items with Dave G8FMC)

ITEM	ASKING PRICE or O.V.N.O.
1. Power Mag 145 – large magnetic mount + cable (new £62) New & boxed.	£40
2. Comet CHA-250HD/BXII Multi-Band HF Vertical Antenna (new £350) 250W SSB 75W Data. See March 2024 PW review. As new,unused	£220
3. Moonraker MRQ750 2m/70cm Mobile whip (new £35) Unused as new	£25
4. HF Mobile/portable antenna PL259 fitting e.g. large mag-mount? Unused	SOLD
5. Modified Cobweb antenna (Polish) (new £200)	£70
6. Sangean ATS-909X2 all-band portable receiver £225 ish new boxed	£150
7. QRM Eliminator X-phase 1-30MHz - £45 new	£25
8. Kent Straight key	£65
9. CW Keyer TC 701 - £70 new	£45
10. Soldering Station (basic) 60W	Offers
11. IGEN Max regenerative receiver. eBay US has an unbuilt kit at £160.	£50
12. Lead-free solder & cleaner (in bag)	Offers
13. SWR meter Moonraker SWR-300 120-500MHz £35 new	SOLD
14. Austcol Radiation Meter MT525 -£25 online average price new.	£10
15. Signalink USB sound Card 8pm. £120 new	SOLD
16. Metro VNA in case (£270 new)	£175 (Reserved)
18. Prepp Comm multi-band morse transceiver. Approx £358 new.	£225
19. MFJ Super Hi-Q Loop Remote Control . Unknown model.	?
20. QRP Kits EFHW Tuner	Offers

Please initially contact Dave G8FMC if interested:- g8fmc547@gmail.com