Newsletter

Chesham & District Amateur Radio Society

www.g3mdg.org.uk October 2021

We meet the 2nd and 4th Wednesdays of the month at the Ashley Green Village Hall, Ashley Green, HP5 3PP

Welcome

For those contesting, HF is tailing off whilst VHF is taking up the slack, these next couple of months are going to be busy on VHF.

With the evenings drawing in it would seem appropriate to have club projects on the 2nd Wednesday of the month, any suggestions would be most welcome to get the ball rolling.

Thanks this month go to:

- Dave (G8FMC) for his article on UNUN's and End Fed Half Wave antenna's,
- Malcolm (G3ZNU) for his SSB Field Day 2021 article.
- Peter (2E0PTH) for his pictures of SSB Field Day.
- Mike Richards (G4WNC) for his Zoom talk on digital modes.

September has been a busy month, made moreso by queues at the petrol pumps.

Bryan M0IHY

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Contact details

Chairman - Jeremy Browne (G3XZG) Secretary - Malcolm Appleby (G3ZNU)
Treasurer - Matt Whitchurch (M1DTG) Editor - Bryan Page (M0IHY) Angie Page (M6WTL)

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

Chairman's Ramble

I am writing this a little earlier than usual as we are off to Norfolk for a few days, though by the time you read it, we will probably be back. It is in fact, like most people this summer, the first time we have spent nights away from home since before the pandemic, unless for me at least, you count a night sleeping by the rig at field-day.

This month I have to report the sad death of one of our members, Dave, G8LZE. Some of our membership knew him personally, though as a recent member who lived slightly out of area, he had not been able to attend meetings. He will have been a familiar voice and callsign to those operating on the VHF bands, particularly in contests, and is a sad and sudden loss.

Turning to happier things, we have again had an active month. Field-day at the beginning of the month was a very enjoyable event, and thankfully dry and not as cold as two years ago. I think the final score was 373 QSO's, though it will take some time to get the adjudicated entry, and it was very good to see members dipping their toe into contests who had not previously experienced them.

Once we had sorted the trap out, the club's dipole worked well on the bands that were open and we had no complaints of interference, though to be honest I didn't expect any.
We even put up the club tent quickly.
Many thanks to all those who contributed to the event in whatever way.

We have also had two well-attended meetings at Ashley Green, testing and checking the large amount of coax we seemed to have, and disposing of some of it, with many thanks to Dave for bringing his very robust test gear, and a talk by Matt, for which also many thanks, on his vertical antenna.

We have also started recording the talks, so that those who cannot attend will be able to see them on the website. Thanks to Malcolm for doing the editing in order to make that possible.

With a five Wednesday month, we have also arranged a talk on Zoom by Mike, G4WNC, though by the time you read this, that will have happened, so probably more about it next month.

We have more or less got the programme together now up to Christmas, but any ideas for topics that you would like covered, or better still, can cover yourself, would be greatly appreciated.

Propagation conditions are changing noticeably on the HF bands, with long path QSO's around the equinox. Let's hope for good conditions over the autumn and winter.

Off to Norfolk tomorrow. I'll take the handheld, it may be there will be some activity on local repeaters.

73's, Jeremy.

Editor's Muse

Thanks to Matt (M1DTG) and Guy (M0GUY) for transporting the generator and tent to and from the field at Wiggington, my apologies Guy for leading you along the back roads in Berkhamsted and over the multiple (must be in 2 figures) speed humps, but it was quicker than getting caught in the roadworks traffic in Berkhamsted High Street.

With the winter months approaching it would be nice to find a few 'projects' for club builds over the coming months, all suggestions welcomed.

Bryan M0IHY

SSB Field Day 2021

After a break in 2020 due to the COVID pandemic, CDARS was active once again in HF SSB Field Day, held on 4th / 5th September 2021.

Every year the rules and contest sections seem to change, and this year the only section that suited us was the “Low power unassisted multi-operator” section.

Low power means 100W maximum, which suited our barefoot TS590SG.

The other main limitation in this section was we were allowed only a single wire antenna, and two support poles. We decided to use the trap dipole and the two fibreglass push-up masts that the club had recently received as a donation from an inactive amateur. We had used the trap dipole at Brill Windmill and at our club QTH so we know that should work all right. We decided to use the two fibreglass masts to support the middle section of the trap dipole, so that the weight of the coax (Mini 8) would not lower the feedpoint too much, and then droop the ends down with long cords to keep the ends as high as possible.

The tent and antenna up and ready for testing.

It was easy to put the masts and antenna up, so plenty of time to check out the match with an antenna analyser. Unfortunately this showed absolutely no resonance at 80m, but a good match at 40m. Nothing for it but to drop the antenna and check all the connections. After some prodding and dismantling we discovered a corroded connection on one of the traps which had not caused a problem before, but had now gone fully intermittent. A temporary re-make of the connection and we were good to go!

The generator, rig and antenna behaved themselves for the whole weekend. There was brisk business on 40m at the start, with some excursions to 20m, and switching to 80m later in the day. There was almost no activity on 15m and none on 10m, we will have to wait for more sunspots.

Dave (G8FMC) in at the start.

Malcolm (G3ZNU) on the night shift.

SSB Field Day 2021

With time to spare on the Sunday it was the turn of the 'newbies' to operate.

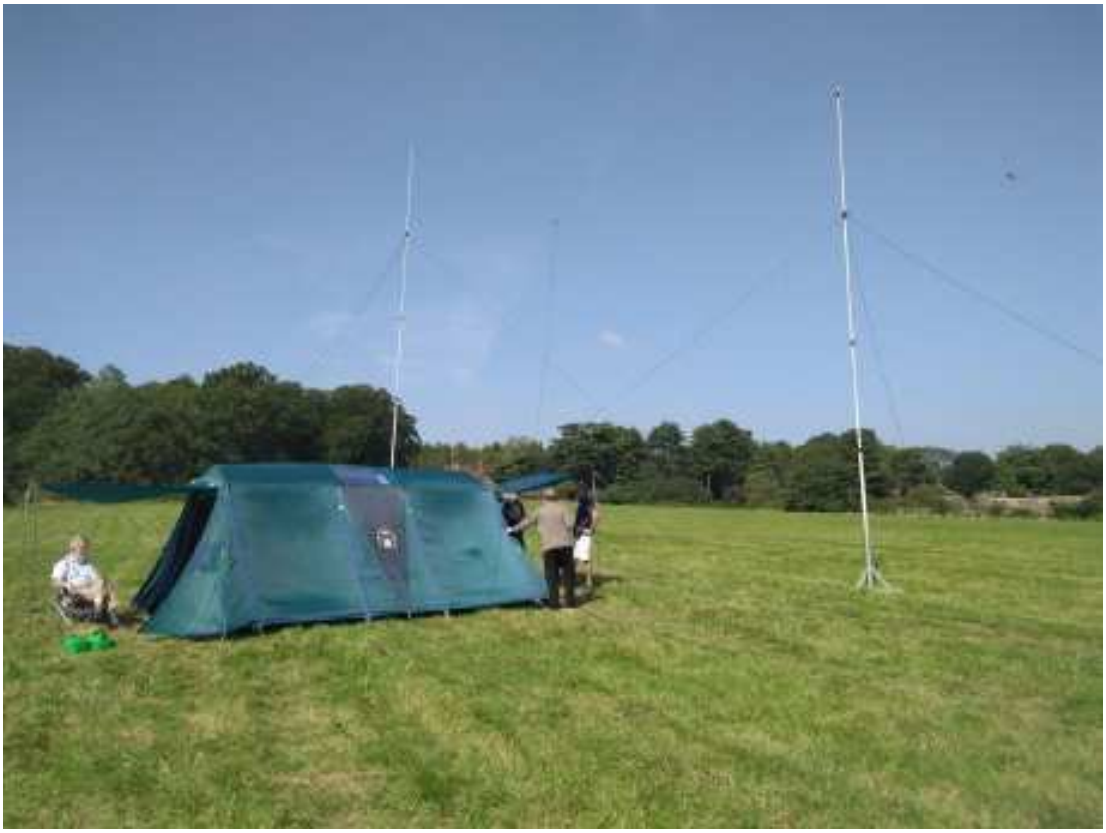
The Sunday proved slower, but was a good opportunity for some of our more recently licensed operators to try their hand and gain some contest experience.

We finished the weekend with a respectable 373 QSOs, and much enjoyment by all.

Thanks to all the members taking part:
G3XZG, G3ZNU, G8FMC, G8MFH, M0IHY, M6WTL, M1DTG, M7RMF, M7CKP, M0GUY, M0JCQ, and thanks to G3MEH for temporary storage of equipment and access to the outside tap!

Malcolm G3ZNU

Both Antenna and tent were up within an hour of arriving.



We couldn't have picked better weather for it.

SSB Field Day 2021

A few pictures from Peter (2E0PTH)

Malcolm (G3ZNU) in at the beginning on Saturday.

Peter's (2E0PTH) first sight on Sunday morning, visibility was that low!

This shot was taken 64 seconds after the previous picture.

Sunday just gone 12:30pm, what a beautiful day.

...and a few from M0IHY

An old paste table (courtesy of G8FMC) to deaden the noise, it works surprisingly well.

Now where did I put the spout? Hmmm...

SSB Field Day, a BIG thank you...

Saturday 4th September - 9:10am
Matt arrived at our house to pick up the generator, tent and fuel cans, Angie and I had already got them round to the front of the house to save time.

Matt made his way to the field while Angie and I drove to Ashley Green to meet Malcolm.

Ashley Green - 9:35am
Here we picked up rigs, power supplies and anything else needed for the field day.

Wiggington - 10:00am
We were surprised to see Matt parked up at the entrance to the field, the gate was padlocked and we were unaware of the code, a quick phone call to Jeremy revealed it to be his birth year and within 5 minutes Matt, Angie, Malcolm and I were in the field.

Erecting the tent was simple, you learn from your mistakes (VHF Field Day) and within the hour both the tent and antenna were up and theoretically ready for action, that was until Malcolm put his antenna analyser on the trapped dipole, it was resonant on 40m and nothing else, a quick examination of the joins from the traps indicated a wire had pulled out of a crimp which left the antenna very slightly unbalanced!

We started the generator after discovering the on/off switch was for the ignition and not as I had thought for the mains output (my fault), maximum choke, pull the chord and then push the choke off and away it runs. In all the generator ran for around 18 hours on less than the contents of 3 cans of fuel (when we got it home it weighed far more than when we took it with more fuel than when we started), a very frugal machine.

Angie and I left Wiggington at 3:00pm as we had a delivery coming to our house, by 6:30pm we'd dealt with the delivery and cooked and eat dinner, we arrived back at Wiggington around 7:00pm and stayed till 9:00pm.

My blooper of the day was when I filled the cans up at the Shell station in Tring, I inadvertently left the spout (we only had the one spout between the 2 cans) at the garage. On filling the generator up at around 9:00pm I discovered the spout was missing but was able to pour the contents into the generator tank, Matt then drove to Tring to fill the cans up only to find the spout, still in the position I left it some 8 hours earlier!!

Sunday 5th September - 7:35am
After ordering breakfast and coffee for 3 at McDonald's off the A41 at Bourne End midway between Hemel Hempstead and Berkhamsted we arrived back at the field just as Jeremy was surfacing, time to start the generator and have breakfast and coffee.

The morning started well with several QSO's in a short space of time, things went quiet at around 8:40am, this was an opportune moment for Peter (who had arrived a short while before) to take over the logging while Angie and I came back home to get a little more sleep (it's amazing how your ability to survive with little sleep drops off quite rapidly the older you get!).

At 1:30pm we were back to find several more people had arrived to support the field day effort.

Wiggington 2:00pm
We 'broke camp', everything was very well organised with many hands making light work of it.

Overall the weekend was a great success with everybody giving something to make it so, a BIG thank you to all those attending and helping out without which the weekend would not have been possible.

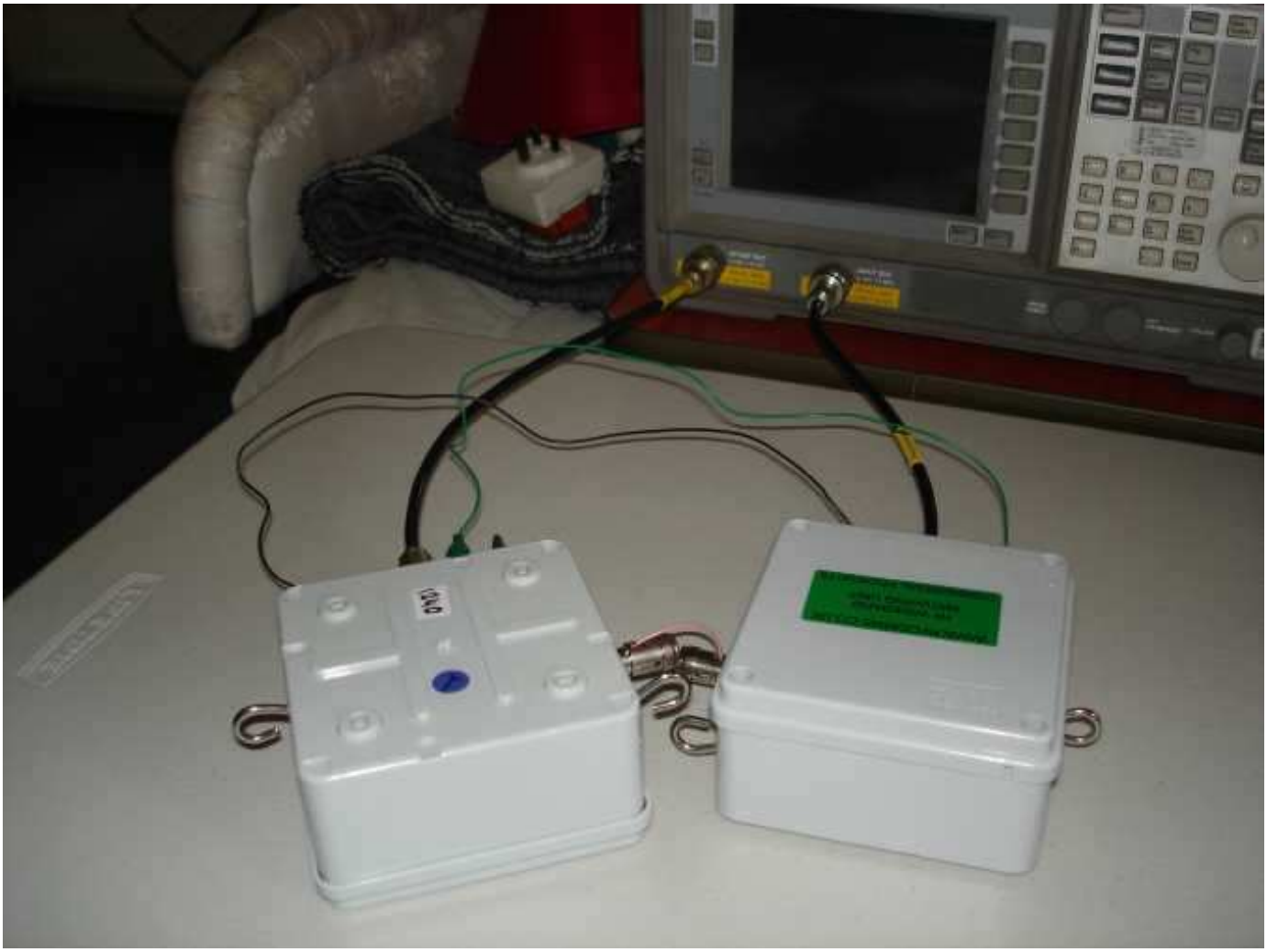
Bryan M0IHY

G4ICD 49:1 UNUN's for EFHW (End fed half-wave)

Test results (Stage 1 of investigation of EFHW Vertical primarily for HF bands)

Test setup for 'Stage 1':

2 * 49:1 UNUN's connected back-to-back with short wire link between each High Z terminal. Plotted on HP analyser + tracking generator, from 1.8MHz to 30.0MHz.

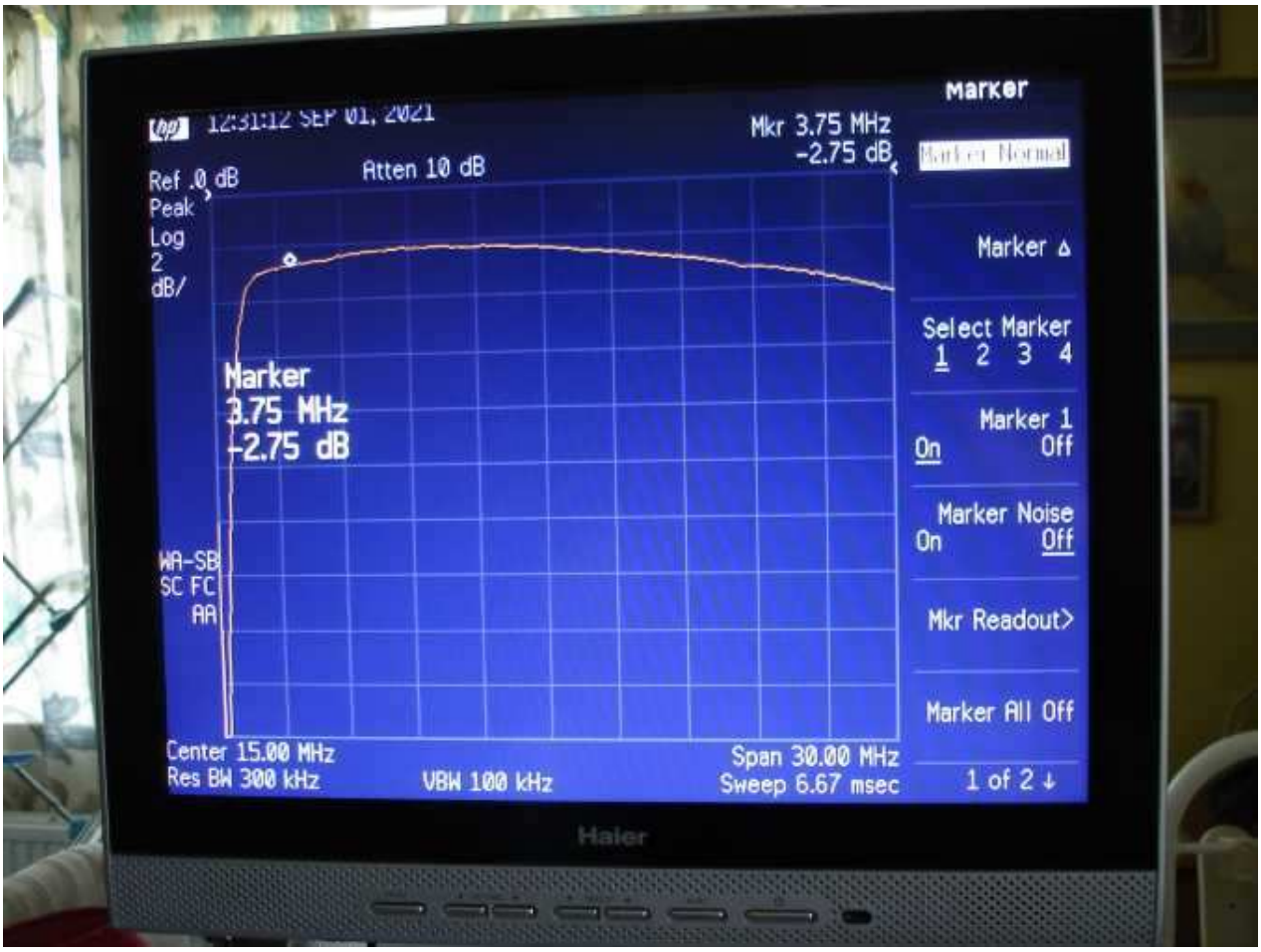


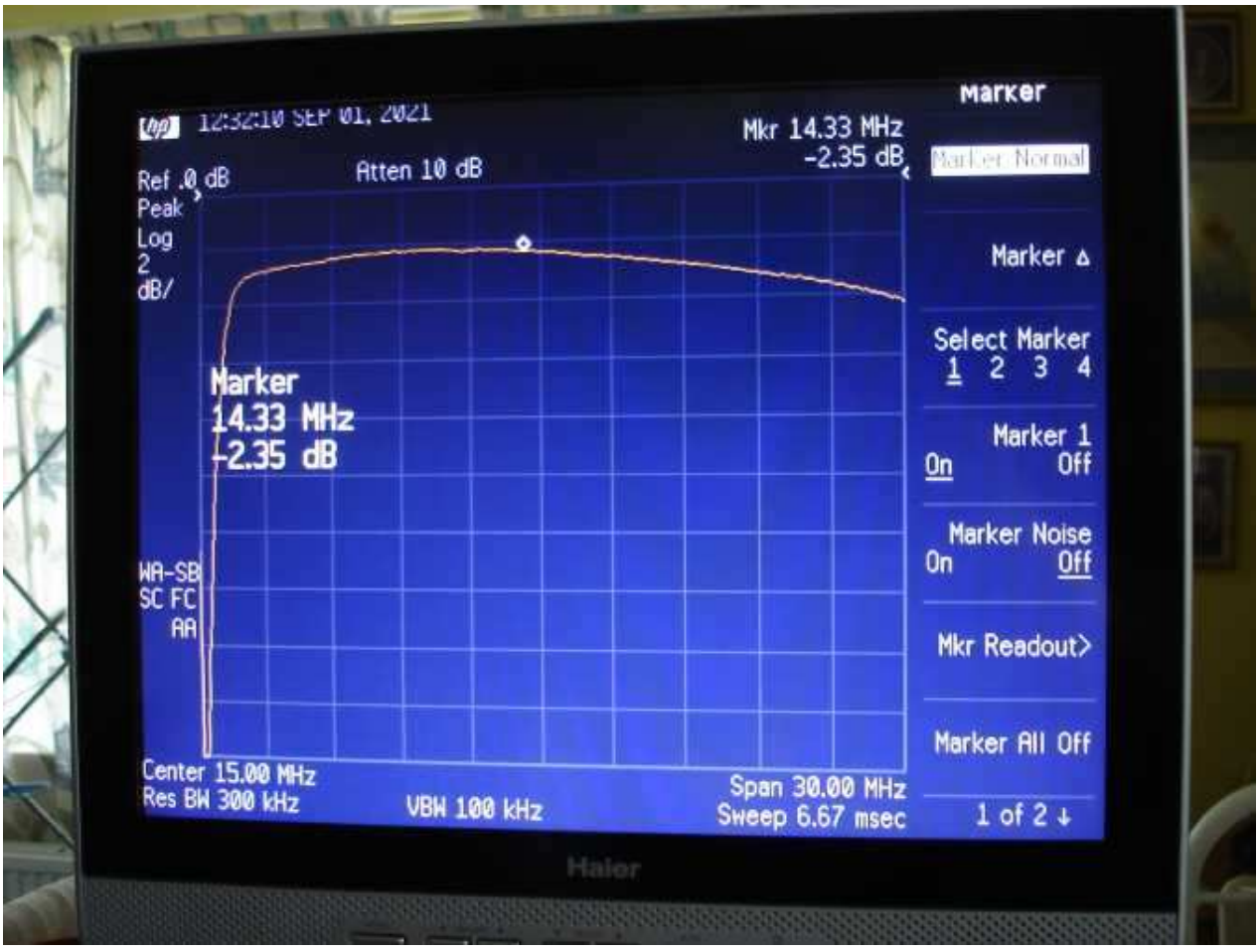
Test equipment

Key results logged as below:

Freq. MHz	Loss for 2 x UNUN	Loss for 1 x UNUN	Approx Efficiency %
1.8	-3.3dB	-1.65dB	68%
3.75	-2.75dB	-1.375dB	73%
7.05	-2.37dB	-1.185dB	75%
14.33	-2.35dB	-1.175dB	75%
21.3	-2.89dB	-1.445dB	73%
28.58	-3.9dB	-1.95dB	63%

G4ICD UNUN's for EFHW (End Fed Half Wave)





G4ICD UNUN's for EFHW (End Fed Half Wave)

Considerations regarding comparison with ¼ wave vertical:

The losses/efficiency of a 49:1 UNUN do not seem very good (compared to e.g. a centre-fed Dipole, which should be 90% or better, however not drastic & possibly compare quite favourably with a ¼ wave vertical?

The high-current (max radiating) part of a ½ wave vertical, is by definition a ¼ wave higher than a ground mounted ¼ wave vertical, so will generally have a clearer take-off. Unless they are mounted on flat open ground with NO obstructions (Houses, trees, shed's with tools in, garden furniture etc) a ground-mounted ¼ wave is very likely to have an obstructed 'take-off', which will significantly reduce the radiated field.

A ground-mounted ¼ wave vertical requires a good earth to work efficiently. On the sea-shore with salt water in front is very good! (DX-peditions have proved this) A VERY good mat of Radials to form an artificial earth is normally required, usually comprising up to 64 wires of varying lengths, some a full ¼ wave long.A single spike in the ground will work (after a fashion) but will be VERY inefficient, maybe as bad as 10% or even worse? (i.e 90% of your TX power wasted!) Note: a Dipole in free space is 72ohms. (lower near the ground, hence generally a good match to 50ohm coax for most modest systems)A ¼ wave vertical with perfect earth will be 36ohms (1.5:1 SWR). A good match to 50ohms indicates earth-system losses & wasted energy heating the ground!

An EFHW (End fed half-wave) fed via a 49:1 UNUN will have minimal earth-return currents because it is a high-Z point (high voltage minimum current at the end of a ½ wave). A minimal earthing system (basic earth-spike?) or even just the coax feed sheath is generally sufficient. The ground conductivity (and lack of radials) may still reduce the launching of a strong wave? (except over salt-water) which could influence the efficiency of the overall system?

Dave G8FMC

Keep an eye out for further information from Dave in a later newsletter.

Mike's (G4WNC) Zoom talk

Mike Richards talk on "A Pictorial Introduction to Data Modes" was well attended with I believe 28 people logged onto the session, it was very well explained and gave an insight into how digital modes worked with examples on how to conduct an FT8 contact.

For those interested in Raspberry Pi's Mike has written a book "*Raspberry Pi Explained for Radio Amateurs*" which is available from the RSGB online shop, in it he explains how to set up your Raspberry Pi and how to build popular radio applications such as FLDIGI, WSJT-X, JS8Call, QSSTV, Dire Wolf and YAAC from scratch, all tried and tested (I have this book and have followed his well written instructions). Explanations on SDR, Linux, Hardware, Programming, and many other subjects are covered within the 199 page book, a worthwhile read.

For those who are not into building your own software applications Mike offers pre-loaded and tested Raspberry Pi micro SD cards for *Data Modes*, *Spy Server*, *RTL-SDR*, *APRS iGate Receive Only Node*, *MotionEyeOS Security System* and *PiAware* flight tracking, all reasonably priced at https://photobyte.org.

October

HF

Day	Date (2021)	Time UTC	Contest Name
Sun	03 Oct	0500-2300	DX Contest
Mon	04 Oct	1900-2030	Autumn Series CW
Wed	13 Oct	1900-2030	Autumn Series DATA
Sun	17 Oct	1900-2030	RoLo CW
Mon	18 Oct	1900-2030	RSGB FT4 Contest
Thu	28 Oct	1900-2030	Autumn Series SSB

VHF

Day	Date (2021)	Time UTC	Contest Name
Sat-Sun	02-03 Oct	1400-1400	Oct 432MHz-245GHz Contest
Tue	05 Oct	1800-1855	144MHz FMAC
Tue	05 Oct	1900-2130	144MHz UKAC
Wed	06 Oct	1900-2100	144MHz FT8 AC
Tue	12 Oct	1800-1855	432MHz FMAC
Tue	12 Oct	1900-2130	432MHz UKAC
Thu	14 Oct	1900-2130	50MHz UKAC
Sun	17 Oct	0900-1300	50MHz AFS Contest
Tue	19 Oct	1900-2130	1.3GHz UKAC
Thu	21 Oct	1900-2130	70MHz UKAC
Tue	26 Oct	1830-2130	SHF UKAC

November

HF

Day	Date (2021)	Time UTC	Contest Name
Mon	01 Nov	2000-2130	Autumn Series DATA
Wed	10 Nov	2000-2130	Autumn Series SSB
Sat	13 Nov	2000-2300	Club Calls (1.8MHz AFS)
Sat	20 Nov	1900-2300	2nd 1.8MHz Contest
Thu	25 Nov	2000-2130	Autumn Series CW
Mon	29 Nov	2000-2130	RSGB FT4 Contest

VHF

Day	Date (2021)	Time UTC	Contest Name
Tue	02 Nov	1900-1955	144MHz FMAC
Tue	02 Nov	2000-2230	144MHz UKAC
Wed	03 Nov	1900-2100	144MHz FT8 AC
Sat-Sun	06-07 Nov	1400-1400	144MHz CW Marconi
Tue	09 Nov	1900-1955	432MHz FMAC
Tue	09 Nov	2000-2230	432MHz UKAC
Thu	11 Nov	2000-2230	50MHz UKAC
Tue	16 Nov	2000-2230	1.3GHz UKAC
Thu	18 Nov	2000-2230	70MHz UKAC
Tue	23 Nov	1930-2230	SHF UKAC

'Air Miles', how far have we gone? / results

So, how have we done this month?

FT8 is top of the leader board this month, 17m is the favoured band and Japan is the favoured country.

Although it's been relatively quiet this month James has done well with his DX having amassed almost 4.25 million Air Miles this year so far!

(Running totals in red)

General

Most Miles

M0JCQ	1,269,294	4,200,899
G3XZG	43,190	631,873
G3ZNU	20,365	852,124

Most QSO's

M0JCQ	247	2,141
G3ZNU	32	855
G3XZG	19	435

Longest QSO

M0JCQ	3D2USU(16192)	3D2USU(16192)
G3XZG	N7XM(5160)	VK4DX(10286)
G3ZNU	SP2FRY(1267)	**YB1BML(7316)**

Shortest QSO (miles)

M0JCQ	G0MKI(3)	G3MEH(0)
G3ZNU	G0MKI(27)	G4WJS(7)
G3XZG	DL9MDW(420)	G4UZE(8)

Average per QSO (miles)

M0JCQ	5,139	1,962
G3XZG	1,350	739
G3ZNU	1,072	1,959

Maidenhead Squares

M0JCQ	247	1,265
G3ZNU	32	559
G3XZG	19	377

QSO Economy Drive

High miles per Watt

M0JCQ	161.92(100)	122.17(100)
G3XZG	51.60(100)	102.86(100)
G3ZNU	12.68(100)	73.16(100)

Low miles per Watt

M0JCQ	0.04(100)	4.10(100)
G3ZNU	0.28(100)	0.07(100)
G3XZG	4.20(100)	0.08(100)

By Band

160m

30m

G3XZG	2	70

12m

2m

G3ZNU	30	178
M0JCQ		373

80m

20m

M0JCQ	97	917
G3XZG	17	157
G3ZNU		35

10m

70cm

60m

17m

M0JCQ	149	388
G3ZNU		44
G3XZG		12

6m

G3ZNU	2	578
G3XZG		173
M0JCQ		314

23cm

40m

15m

M0JCQ	1	27
G3ZNU		7

4m

'Air Miles', how far have we gone? / results

By Mode

CW

G3XZG	19	435
G3ZNU		30

FT8

M0JCQ	132	774
G3ZNU	32	739

MFSK

M0JCQ	115	812

By Country

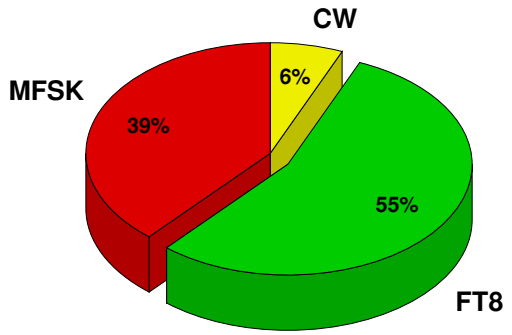
M0JCQ	36	319
G3ZNU	7	197
G3XZG	9	176

This month's totals

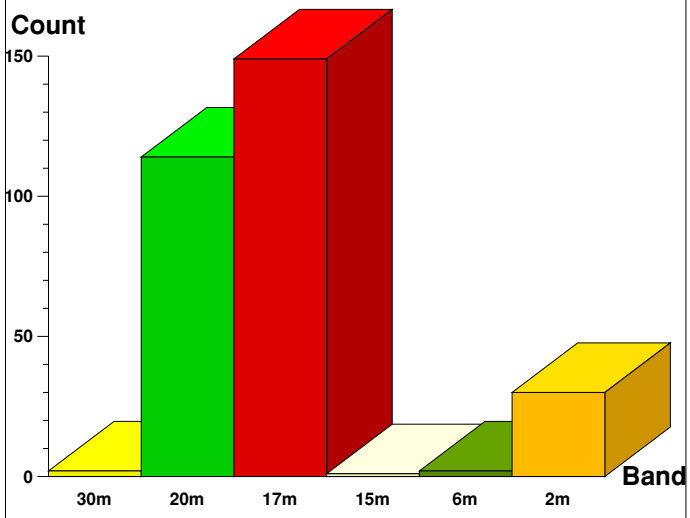
Countries visited	-	36
Most visited Country	-	Japan - 58 times
Total Mileage	-	1,332,849
Total QSO's	-	298
Average miles per QSO	-	4,472.65
Total locators visited	-	210
Most visited locator	-	PM95 14 times

'Air Miles', September at a glance

This month at a glance (accumulative)



By Mode



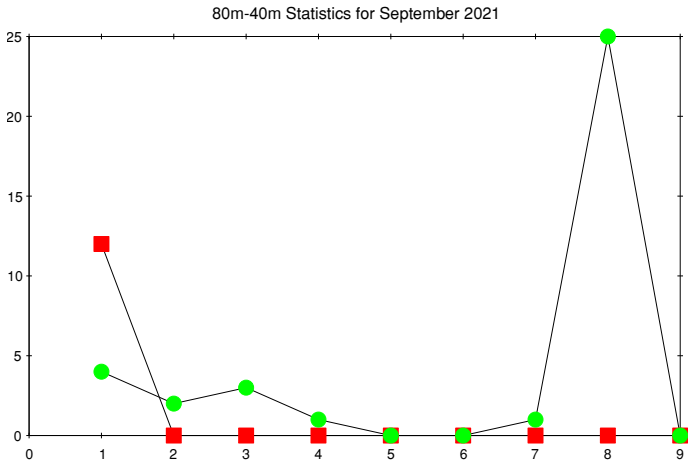
By Band

No pretty display this month, far too crowded requiring a magnifying glass to see the results!

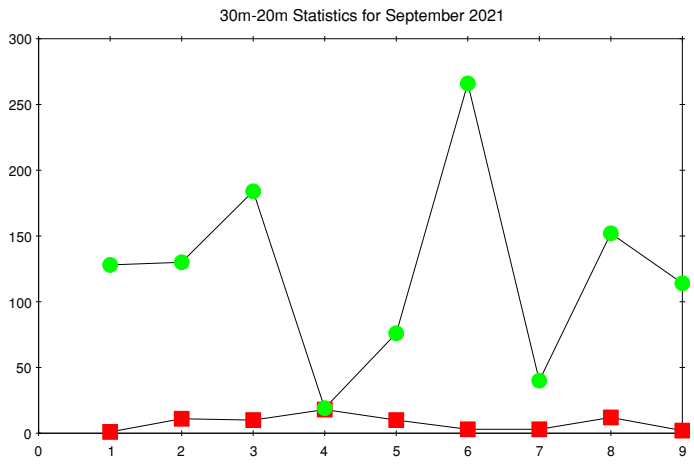
Japan	58	Canada	3
Russia	57	Bulgaria	3
United States	37	Norway	2
Ukraine	21	Hungary	2
Germany	15	Czech Republic	2
Italy	12	Belarus	2
Greece	11	Austria	2
Poland	10	Sri Lanka	1
England	9	Republic of China (Taiwan)	1
Netherlands	7	Qatar	1
Indonesia	6	People's Republic of China	1
Spain	5	Mongolia	1
Romania	5	Malta	1
Denmark	5	Latvia	1
Thailand	3	Iran	1
Switzerland	3	France	1
Sweden	3	Estonia	1
Finland	3	Algeria	1

QSO Countries

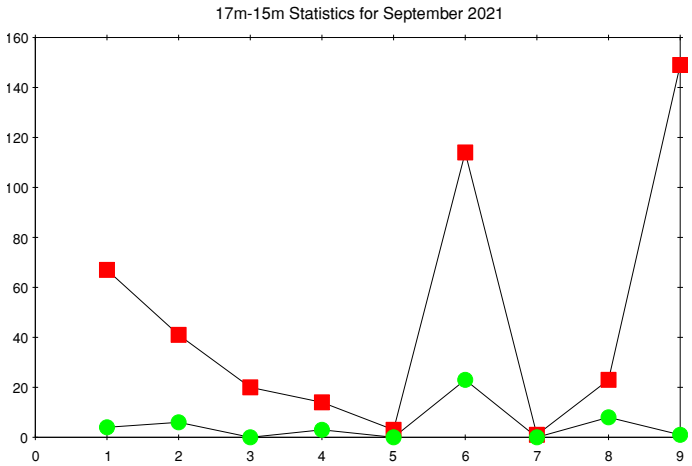
'Air Miles', bands by the month



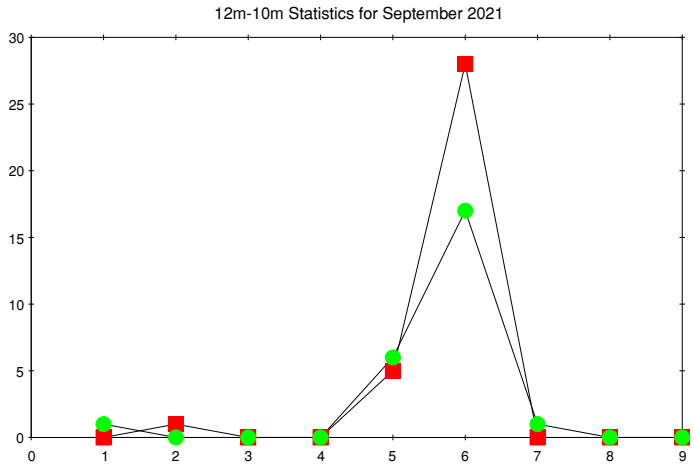
80m - 40m



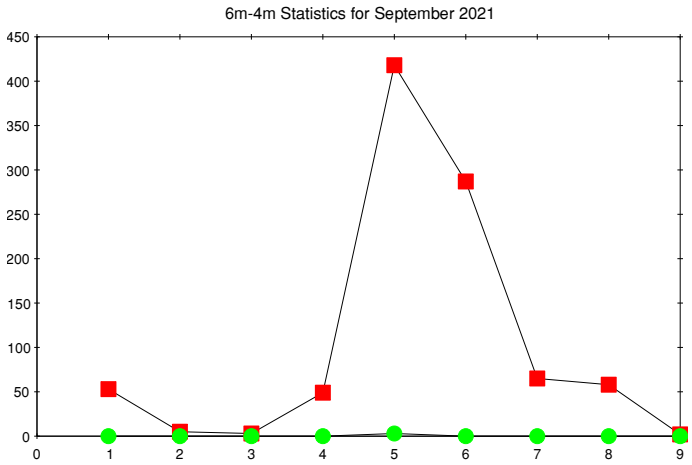
30m - 20m



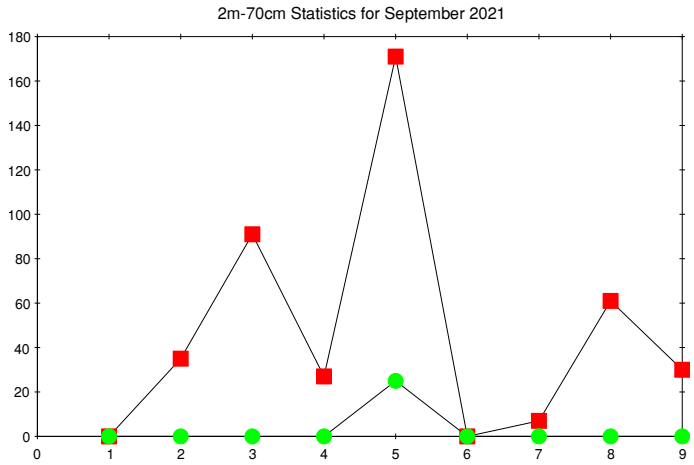
17m - 15m



12m - 10m



6m - 4m



2m - 70cm

Any other business