BRASSPOUNDER

December 2021, Issue 163

Greetings Dear FISTS and welcome to this latest issue of BP.

As you know we have had major repairs and decorations done here at YVM Towers following a fire. Well, Our builders are moving on apace. The house is still full from morn til night but at least it's getting there...light at the end of the tunnel. One interesting thing is the state of new LEDs these days. I needed two new flouro strips fitting to my workshop but it seems they aren't available anymore, only LEDs. So the builders fitted four very bright LED strips to me ceiling and I felt a chill run down my spine as I imagined all the HF RFI destroying my beloved radio fun! I gingerly took the KX2 into the workshop, lights off and with a few feet of wire plugged into the antenna. Zero noise...I turned the LEDs on and...zero noise! Well I'm blowed. If I put the wire antenna in very close proximity with the lights I could hear some noise but even inches away, nada, zilch, nuffink. I am impressed.

Members update…

Dave G0AYD sent me this about his little uSDR transceiver I mentioned last time:

> Hi David,
> SO far on my usdx the furthest ive worked on 5 watts on battery power on my off centre fed dipole is 1,870 miles1,000 miles,760 miles,200 miles south of paris a brit living in alicante who was on a local beach using a dx commander rapide,all on 20 mtrs plus a guy in co durham on 7.028.and numerous other contacts so far so im very impressed with this tiny radio.Who needs a linear !!!!!. Dave G0AYD Fists 15892 gqrp 3309 cw ops 2159.rasrs 4209.

Operating

As I type this it is Monday after Christmas and I have been as busy as everyone else yet I did find some few moments to grab on-air time. Once again, as has been the case for some time now, there is considerable activity on the higher HF bands. - 18, 21, 24 and 20 MHz - with precious little on 80, 40 and topband. Disappointingly I cannot hear a soul on the higher bands even though there are many DX spots (mostly spotted by our American cousins). This peeves me because Japan, China, many islands and Hawaii (yes, an island I know) are all on there!!! Oh for a big beam I guess! Has anyone actually managed any dx on these bands?

Once again many bands are polluted by the nonsense that is FT8 etc…but worse than this (oh yes there is…) is the machine gun of machine generated morse. As if the CQ wasn't fast enough, when you get the report its ridiculously fast and clearly a macro wazzing it out at 45wpm. I can only think that there is a trend, a worrying trend, towards seeing Morse code as just another data mode and so letting the computer do it and do it fast. Why? Do these philistines not see the beauty that is inside well sent and head read Morse code? It's like listening to Bach at four times speed just to say you've listened to Bach but actually, you just want it done with. It's worse than pointless but I don't know how to combat it. Perhaps answer

with either slow morse or morse deliberately sent badly so that no machine can read it and the op has to head read or move on…naughty!

Now that my shack has been rebuilt I have managed to get both my Tenetec Orion 2 back up and running but also a Yaesu FTDX5000. I have these two behemoths alongside each other on the desk so that I can compare them. Unsurprisingly the Tentec is in many case the better radio…you'll go a long way to find a radio better than ANY Tentec. Unless the Yaesu is really well set up the Tentec beats it, but once the Yaesu is fettled it can hold it's own - but that's all it can do so far. I shall continue to mess with it and hopefully report back a better result at a later date. Of course the Yaesu has 200 watts as opposed to the TT's 100, but I have a 500w linear which my TT can drive extremely well and when it does they become an unbeatable pair. Im not yet convinced the 200 watts is worth the asking price - it's barely worth an S point!

S-Meter Calibration

By Carl Luetzelschwab K9LA
September 2017

If you only do casual operating, you probably don't need to calibrate your S-meter. This also applies to contesting, as the signal report for most contests has evolved to 59 for Phone and 599 for CW.

On the other hand, if you're doing scientific research (for example, monitoring signal strength during a solar eclipse like the one that occurred on August 21 of this year) or comparing antennas on the air, then it's important to make sure your S-meter is calibrated.

What does "calibrating your S-meter" mean? It means knowing exactly how many dB there are between each S-unit. It also means having an anchor point in terms of absolute power. This anchor point is generally accepted to be S9.

But why do we have to go through a calibration procedure? Didn't Collins Radio make 6 dB per S-unit and S9 = 50 microvolts (-73 dBm into 50 ohms) a standard?

It's true that Collins did have those values as a standard a long time ago. I believe many individual manufacturers did adhere to 6 dB per S-unit in the early years, but this fell by the wayside because there wasn't an official document that new manufacturers signed up to. In 1981 the IARU (International Amateur Radio Union) even adopted the Collins standard as a recommendation. Unfortunately a recommendation has no teeth to it.

How do the S-meters on modern receivers compare to the Collins standard? Figure 1 gives tabular data (power in dBm versus S-meter reading) for three of my receivers on 20-Meters. Figure 2 graphs this data. These three receivers do not have a separate preamp switch, so all that is noted is the setting of the attenuator.

	Kenwood TS-180	Yaesu FT-747	Ten-Tec OMNI-VI Plus	Collins standard
	ATT off	ATT off	ATTN off	---
S9+20	-54	-62	-45	-53
S9+10	-63	-70	-57	-63
S9	-72	-80	-66	-73
S8	-77	-83	-72	-79
S7	-82	-86	-78	-85
S6	-87	-89	-83	-91
S5	-92	-92	-88	-97
S4	-95	-97	-93	-103
S3	-99	-101	-103	-109
S2	-102	-104	-110	-115
S1	-105	-107	-112	-121
S0	-108	-110	-114	-127

Figure 1 - Power in dBm vs S-meter reading

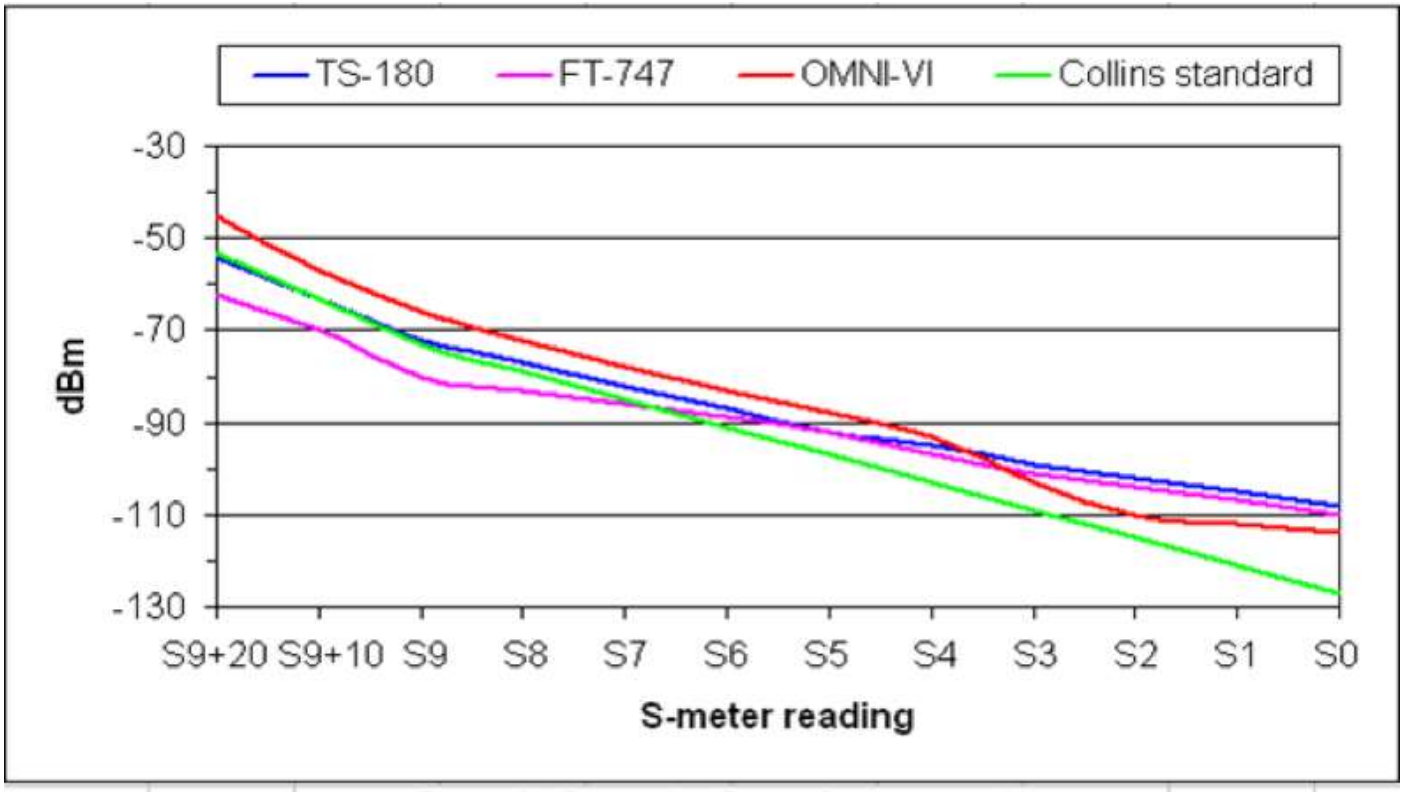


Figure 2 - Power in dBm vs S-meter reading

Three conclusions can be made from this data.

1. The TS-180 comes closest to the anchor point of S9 = -73 dBm. The other two receivers are off by 7 dB (one is higher, one is lower).
2. The TS-180 and the FT-747 exhibit approximately 5 dB per S-unit down to S3. The OMNI-VI is also about 5 dB per S-unit down to S4, but then takes a radical jump of 10 dB from S4 to S3
3. Below S3, the S-meter on all receivers is only 2-3 dB per S-unit.

This data highlights why you need to calibrate your receiver if you're doing any kind of serious work. For example, if you're comparing antennas and one antenna is S2 and the other antenna is S1, you might conclude that the gain difference is 6 dB per the old Collins standard. But by knowing the calibration, the real difference in gain is only 2-3 dB.

How do you calibrate your S-meter? The best way is to use a calibrated RF signal generator and a step-attenuator. Leave the receiver AGC on (otherwise the S-meter won't work). Note the power in dBm at each S-unit value. Also record the attenuator setting and/or preamp setting. You may even want to take data at different combinations of the attenuator and preamp (if your receiver has separate controls). Note the power in dBm at each S-unit value. Figure 3 shows the test set-up.

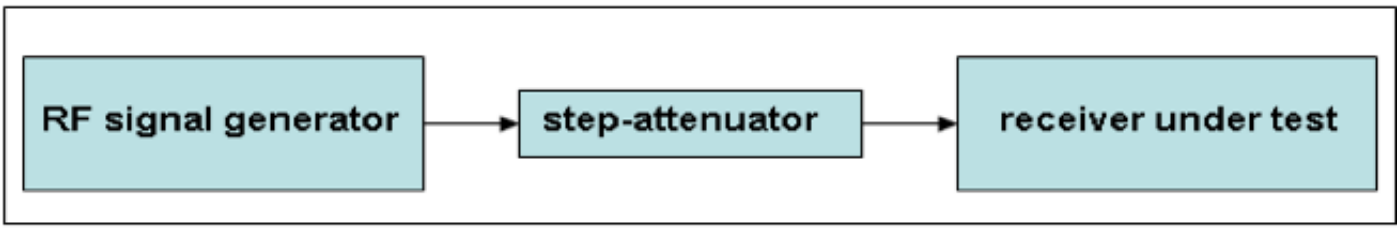


Figure 3 – Test set-up

Finally, you should calibrate your S-meter on the different bands to be totally accurate. A good example for doing this is my OMNI-VI - on 160-Meters the delta between S-units is a dB or two different from the 20-Meter data, and the absolute power at S9 is several dB different compared to 20-Meters.

I think that's me done for now. I hope your Christmas was amazing and that you managed to get some good goodies from Santa (where "good" is "what you like!"). I haven't yet managed the Exchange Your Gift Week but pity the poor soul who hears mine…I managed a beautiful new stole and a pyx! Don't be ashamed if you need to google them.

Happy new year and have a good 2022.

David
G4YVM. FISTS 15868

Band plans

Now, if you're anything like me you will have your favourite bands (and often frequencies too…I sometimes wonder why they invented VFOs at all!) which often leads me to wonder what is the band plan of a band I rarely use. The bands used to be in logbooks quite often and were in the front of the FISTS logs I produced (I still have a handful left) but more often than not, I have to Google the band plans. Then I end up on the usually impenetrable RSGB version of the plans rather than the usually very clear and concise ARRL version - which of course is not the one I should use.

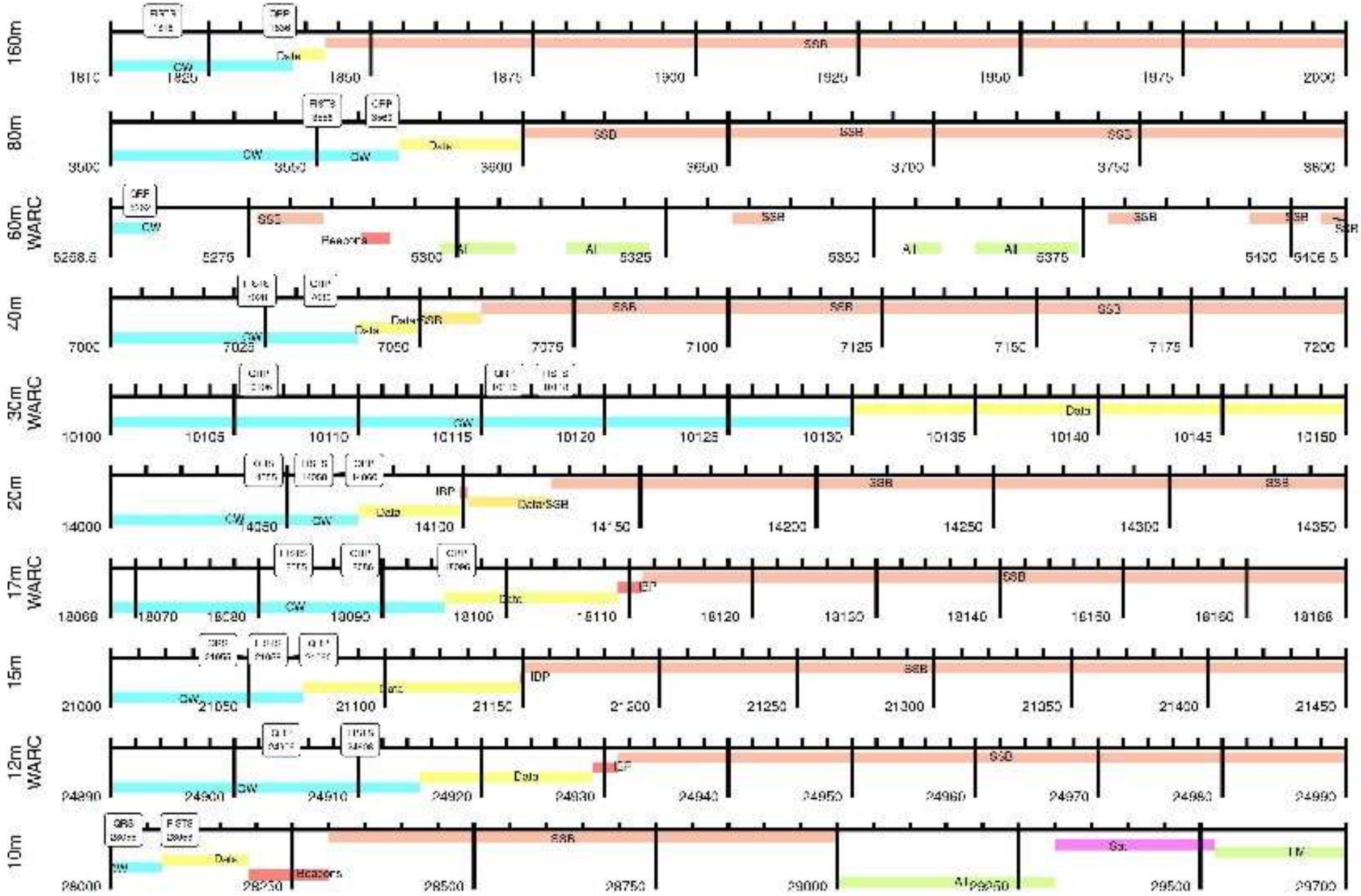
Anyway, all of the above is a long winded intro to the picture below. Researched and produced for us by Graham M7GRW and reproduced with his kind permission.

M7GRW

Check RSGB bandplans for precise details

RSGB HF bandplan

Dec 16 2021 v1.0



Comments for Mechanical Key Days December 2021

Entrant	Comments
Chris G3XVL	Only caught 1 member (G4LHI) thanks Peter!
Peter G4LHI	G4LHI Claim for Dec MKD but I'm afraid the band condx were not at their best, lots QSB & QRM ,but I made it in spite of that. Hi. Mni tnx to the organizers of this great event. Keep Safe 73 Peter
Paul M0GSX	Hi to all at FISTS, Hope everyone's well, please find attached my MKD Log for December 2021. Only Managed 2 contacts with Non – FISTS Members, conditions on 40M were good but the band wasn't fully open here in the West Midlands, but great to give the keys an airing. Thanks to all at FISTS for the sterling job you all do behind the scenes for us. Paul M0GSX #17642.
Erkki OH7QR	Hello David, here comes my MKD log. Only 9 QSOs this month. All the best and take care. 73 Erkki OH7QR 8318

Results for Mechanical Key Days December 2021

Callsign	Position	Points
G4LHI	1	33
OH7QR	2	13
G3XVL	3	7
M0GSX	4	2

Comments for Ladder November 2021

***New to the 2021 Ladder in November is Simon M0ILR https://www.qrz.com/db/M0ILR

Entrant	Comments
Greg DL3GJ	Just a few QSOs... 73 de Greg DL3GJ
Les G0DFC	All the best have a good Christmas, Tu all
Richard G0ILN	28 November at 18.30 on 80m near total blackout just some distant contest stations.. After calling CQ for an hour I gave up! Thanks to all who gave me a call. Richard G0ILN.
Peter G3JRH	Only managed 1 session this month. Peter G3JRH
Chris G3XVL	Seasons greetings !
Peter G4LHI	G4LHI Claim for November ladder but I'm afraid the band condx were not at their best, lots QSB & QRM & a contest on all bands for the 28th ladder, but I made it in spite of that. Hi. Mni tnx to the organizers of this great event. Keep Safe 73 Peter
John G4LRG	Difficult conditions all round made it hard work but great to see a decent amount of members finding a way around the big worldwide contest. Thanks to all for the points.
Richard G4TPJ	Always good fun - good cw practice.
Ray G4XUZ	Could only manage the first ladder Sunday this month, but good fun as always. 73, Ray G4XUZ.
John G4YTJ	My plan to be on for all four sessions in November failed dismally as visitors meant that I couldn't operate at all on 14th. The afternoon of 28th was dire - so much so that I was beginning to wonder if my aerial had survived storm Arwen, although my ATU was tuning in the normal positions. The evening was little better but after several attempts I managed to work John G4LRG in Bishop Auckland. Finally my friend Chris G4IIC called me using his experimental 80 magnetic loop, but since he isn't a Fists member my score was only four for the month. Nevertheless it was a rewarding contact because although he is only about 6 miles away we struggle to make contact on any band!
Chris G5VZ	An interesting month with a 20m opening to north America on the afternoon of the second Ladder Sunday. Cycle 25 may make the 2022 Ladder a very exciting proposition!
Simon M0ILR	Really enjoyed it! :-)
Pete M5ABN	Log for November, thanks for all the points & looking forward to December. Have a healthy and happy xmas. Vy 73 Pete M5ABN
Erkki OH7QR	Hello David, please find attached my Ladder log. No qsos on 28th Nov, because of QRM caused by contesters. All the best and take care. 73 Erkki OH7QR 8318
Norbert ON4ANE	28/11/2021 CQ WW CW ongoing, hrd some stations on 80m but weak, tried to make a contact but no success 73 de Norbert ON4ANE
Jan PA0SIM	Oktober 28th heard and worked only Richard G0ILN on 80m because of the contest. No response to my calls. 73 Jan PA0SIM

Results for Ladder November 2021

Callsign	Posn	Prev	Move	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
G0ILN	1	1	-	972	67	88	106	113	104	91	84	99	89	72	59
G4LRG	2	2	-	820	85	73	96	90	51	65	67	75	83	91	44
G4LHI	3	3	-	766	79	69	59	73	67	63	76	74	82	75	49
M5ABN	4	5	⇧	709	51	68	76	77	70	65	67	61	51	69	54
G0BON	5	4	⇩	678	70	96	106	92	78	87	66	83			
M0GSX	6	6	-	442	30	57	55	62	55	53	33	69	28		
G3XVL	7	7	-	400	51	47	40	36	21	9	18	48	50	53	27
2E0DPH	8	8	-	384	57	51	30	64	36	12		12	38	45	39
G4TPJ	9	9	-	374	48	60	54	59	39			57	9		48
ON4ANE	10	=12	⇧	306	12	19	25	30	16	24	36	39	33	42	30
MW0BGL	11	=12	⇧	300	19	24	42	38		3	30	36	39	45	24
G0JHK	12	11	⇩	297	48	19	17	45	49		15	15	21	56	12
G3ZRJ	13	10	⇩	292	45			36	32	32	52	77	18		
G5VZ	14	17	⇧	285	40	38	15	3	32	36	18	28	13	27	35
G3JRH	15	16	⇧	275			39	51	43	24	24	16	15	42	21
OH7QR	16	15	⇩	274	24	23	21	17	25	19	29	25	48	24	19
G4XUZ	17	18	⇧	268	18	21	38	29	39	12	24	33		24	30
DL3HR	18	14	⇩	256	42	42	49	37	28	42	16				
PA0SIM	19	19	-	231	21		30	12	21	24	27	33	18	36	9
G4YTJ	20	20	-	206	15	25	24	24	27	15	12	30		30	4
G0DFC	21	21	-	180		12	38	35		24			24	22	25
M0SHM	22	22	-	162	30	12	9	18	12	12	9	21	15	6	18
MI0WWB	23	23	-	136	33	24	58	21							
M0DRK	24	24	-	129	21	12	15	27	21	12				15	6
SQ9S	25	25	-	115	1	15	20	15	9	4	10	21	12	8	
M0RSU	26	26	-	111	26	33	24							28	
G7WHI	27	27	-	109		48		52		9					
HA2ZB	28	28	-	93		14	27		3	11	9	10		14	5
G3ZOD	29	29	-	66	6		9	9	3		6	12	6	15	
G4RHR	30	30	-	60				27	21					12	
G4KLE	31	31	-	59			35	24							
DL3GJ	=32	34	⇧	52				32		3		5	3	4	5
PG4I	=32	32	-	52	33	19									
M0MCL	34	39	⇧	51									21	15	15
G0LLX	35	33	⇩	48			6		9	23		10			
G0TLU	36	37	⇧	47			4	3	6		12	6	3	6	7
G4DNP	37	35	⇩	46	7	6	12	3		3	3		3	9	
M0LPZ	38	36	⇩	44		3	6	9	3	3	3		4	13	
M0UZE	39	38	⇩	39	9	6	6	6	6	6					
IZ0ONL	40	40	-	29			29								
M0ILR	41	-	⇧	21											21
LB5DI	42	41	⇩	20			5							15	
SA1CCQ	43	42	⇩	17	17										

PA0VLD	44	43	⇩	14	14										
IW2JJS	45	44	⇩	12	5		3						4		
G4TGJ	46	45	⇩	6	6										
2E0HTZ	=47	=46	⇩	4						4					
IK1VQO	=47	=46	⇩	4			4								
OZ8AGB	49	48	⇩	3	3										
GX0IPX*				45					18	27					
MX5IPX*				15		15									

* *Check log*

December 2021

First day	Last day	Event	Times
Sat 25 Dec	Fri 31 Dec	FISTS Europe Exchange your Gift Week	0000-2359 UTC each day

January 2022

First day	Last day	Event	Times
Sat 01 Jan	Thu 30 Jun	EuCW Snakes & Ladders winter/spring season starts	0000 UTC
Sun 09 Jan		FISTS Europe Ladder	1400-1600 UTC, 1800-2000 UTC
Sun 23 Jan		FISTS Europe Ladder	1400-1600 UTC, 1800-2000 UTC

February 2022

First day	Last day	Event	Times
Sun 13 Feb		FISTS Europe Ladder	1400-1600 UTC, 1800-2000 UTC
Sun 27 Feb		FISTS Europe Ladder	1400-1600 UTC, 1800-2000 UTC
Sun 27 Feb		FISTS Europe 2m Chronophage 2022	2000-2230 UTC