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Cockenzie & Port Seton Amateur Radio Club is affiliated to the Radio Society of Great Britain and holds the call signs MM0CPS and GM2T which are used for our special event and contest entries.

The Club was formed by Bob Glasgow BEM GM4UYZ in 1984, to help the local amateurs get to know each other.

Far from being just a local club we have members regularly attending from the Borders, Dumfries, Strathclyde, Fife and Newcastle.

The Club meets on the first Friday of every month in the lounge of the Thorntree Inn on the old Cockenzie High Street from 7pm till late.

Editorial

May already, who can believe that, where has the last four months gone as far as I am concerned, they have just vanished. It is also hard to believe that we will soon be into the major holiday season of the year assuming we can get away due to the Covid restrictions. Well all I can say where has the year disappeared too. I had great plans to play more radio, maybe do more on my family research but alas it has not happened. Maybe this year I will get around to some of the "best laid plans"

First, some sad new. It is with great sadness to report that Margaret GM0ALX sadly passed away on the 1st April due to a burst Aneurysm. Margaret and her husband Gavin GM0ALW were major driving forces in the borders running the Kelso Amateur Radio Club and Rally. Margaret made so many people happy with her chats through the Borders Repeater whilst they were on their travels. I for one was one of those people as I used to go to Hawick with work on a regular basis. Margaret also was instrumental in giving many new licensee's their first QSO and making them feel so much at ease. On the air she was a fantastic operator and did not stand any nonsense and it was a pleasure watching her very calmly put them in their place. Our deepest sympathies go out to Gavin and the family currently.

Amateur Radio has lost a great servant so from us all Margaret RIP

So, what has happened this month, from the club events point of view nothing really happened accept for our Monthly Activity Day. No GMDX convention or normal visit to Blackpool for the NARSA Blackpool Rally due to Covid restrictions. On the Training front I have started a Full Licence Training course with 7 candidates, so I wish them all the best. In May I have someone lined up to do a Foundation Course starting on the 22nd May so if you know anyone who maybe interested in joining can you get them to get in touch with me ASAP

My training Program dates for the 2021/2022 training are not fixed due to Covid and the availability of the Community Centre for Face-to-Face classes so I am doing the training on an adhoc basis. If you or anyone you know is interested, then please contact me at bob.gm4uyz@talktalk.net.

To the future, this month we have our annual DF night, Friday 14th May on 144MHz which we can run due to the lifting of Covid restrictions (as I write this) but if for any reason I must cancel it then I will place a post on the Club's Website and Facebook page. Rules will hopefully be attached to the newsletter plus can

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found up on the website as well. To keep ourselves safe as maybe in some else's car then I suggest we all wear Face Masks unless you are the only occupant in the car. The fox again is Ricky GM1PLY. Starting location is the old Pond Hall car park. Take the left hand turning after the garage if you are driving east and head the 100 yards down to the bottom of the road. If you go too far you will be in the sea.... It starts at 19:00, assemble at 18:30. This is a real fun night and has produced many funny stories over the years that we have done it so come on folks come along and join in I can assure you; you will have fun. (By the way DF'ing is not as easy as you think). This year the fox as I write this I need to confirm up.

Also starting soon is the "Contesting Season", as I like to think about it with PW QRP, 6M Trophy, VHF Field Day, IOTA from Tiree and CQWW SSB. The question is still whether we can operate any of these contests in a Multi Operator environment. Announcements will once again be placed on the Club's website and Facebook Page if they are happening. Moving on, one thing that has come out of the Tiree organisation is finding out who is going and who is not as this has enabled operating rota's to be produced which at the end of the day does give everyone a "play at radio" but as important, a well-

earned rest. If you have not done any contesting why not come and give it a try you may just like it. I do admit it is like the "old" CW scenario you either love it or hate it.

Not to forget those not interested in contesting well we still have our demonstration and special events. We intended to start off with the Museums Weekend at the National Mining Museum over the weekend of 23/24th June but the Museum has just informed us they will not be open so this event has been cancelled (see below). Not forgetting the Club's Activity Night in May and June as well. As you can see there is still plenty scope for getting on the air one way or another.

In June, the talk by Simon Brown MM6OXH/2M0OXH which had to be cancelled from April due to Simon not being well has been rescheduled to Friday 18th June - ZOOM Event Talk (19:00) on "Large Scale Software Defined Radar - A Practical View"

That is it then, with something for you all to think about enjoy the newsletter and we will see you all on DF night and all our other events if they can go ahead.

Bob GM4UYZ

International Museum Weekend NOW CANCELLED

It is with great sadness that our visit to the National Mining Museum at Newtongrange on 18 to 20th June 2021 as part of International Museums Weekend has been cancelled. I had a "pencilled in" booking for the event done back in December. As COVID restrictions were lifted on the 26th April regarding museums I contacted the museum and the following is the response I received:

"Thank you very much for your email. Unfortunately the museum will not be reopening this month or next month and I am unsure about what will be happening in June. Our Chief Executive is not keen on us taking venue hire bookings which means I am not able to accommodate your request on this occasion. I apologise as I think it would have been nice to have you all on site."

It is a shame but until COVID is fully over and everything returns to normal this is going to continually happen. We live in hope it will all be over soon.

Hopefully everything will be back to normal in 2022 and we can visit there once again.

Activity Day Report

March Activity Day – “YOUR” selected day between 11th to 17th April 2021 00:00 to 23:59

This was our fourth of 2021 where you can select your day to operate during the one-week selected period..... so reports below on who or who did not manage to take part.

Activity Day Rules and updated log sheet for 2021 have now changed:

Can be found using the following link:

<http://cpsarc.com/downloads/>

Look under Activity Days for the Downloadable files then you are all ready for the 2021 Activity Days.

The 2021 files are as follows.

2021-ACTIVITY-DAY-LOGSHEET-V1.23

2021 New Monthly Activity Day Rules V5

Apologies first:

Julian MM0YTA

Apologies but I still have not got "my ducks in a row" yet ...

Malcolm MM0YMG

Sorry Bob None from me I am afraid. Quite a lot of local DMR testing but only my weekly RAYNET Sunday nets otherwise

Reports:

Bob GM4UYZ

[Decided again this month to play "Data" so tried a few bands – 2M: Nothing, 15M: Nothing, 17M: Nothing so ended up with a few QSO's on 20M and 40M and the bulk was on 20M. Manged a UA0 \(Asiatic Russia\) so chuffed with that. Made one or two stateside QSO's but again the bulk was Europe. Did I enjoy it yes, I really did so for me that is the main thing?](#)

Duncan MM0GZZ

I worked a few today as work will get in the way the rest of the week. A promising start to the day with VK3BOB 16,897km, VP8LP 13,015 and PP6EOJ Brazil 8099 km band conditions were good at the times I managed to get on as you see in my short log .

Martyn MM0XXW

The one day I had a wee bit of time and the conditions were terrible but still I managed a few even one on SSB

Craig MM0NBW

I decided this month to try and do a bit of greyline and

comparison with the propagation forecast for 20 metres using the fast digital mode FT4. Starting about an hour before sunset the band conditions seemed a bit odd, with plenty of callers in Europe, but extraordinarily little heard from the Americas. I could see on PSK Reporter that my signals were being received +dBs by stations across the US that I could not hear. Not helped as I have an extremely low dipole antenna. Despite that, early in the log was K4WPC in Salem, Virginia at 5907 Km's, followed quickly by N7RO in Washington state, 7142 Km's and KL7J in Alaska at 6758 Km's. A few new DXCC for me during the evening, including XP3A, Greenland and PJ4DX, Bonaire. Best of the day was WQ6Q in California at 8164 Km's.

I was not noticing any great greyline effect. A couple into the Iberian Peninsula, but as predicted there was nothing to Africa or East Asia. Greyline had already passed Alaska and north western USA by the time I started. Propagation did seem to be good from the west, their daylight into my twilight. To that extent the propagation forecast was holding up, but the band started to diminish very soon after darkness, from around 19:45, finally closing completely for me around 20:20, well short of the predicted 22:00. I had noticed that there was an increase in geomagnetic activity over the past few days, with a minor magnetic storm between Tuesday and Thursday, so this may have had an impact on the band closing early.

Although I do a fair bit of digital modes, I did a quick analysis of my log and to my pleasant surprise the majority of my QSO's are phone.

James MM0LQF

In terms of updates, it has been crazy with work (apologies for missing club night), but I got a new radio, the FTDx10, and am loving it so far! - Really big improvement in RX from my FT-450D (The USB/ touchscreen/etc is great), and decent value considering you 80% of features of the DX101, for less than half the price.

Andy MM0GYG

Log attached. Just the one QSO this month as I did not have much time for radio. I spent the first part of the week recovering from food poisoning and the second half enjoying the sunshine and my grandsons.

Jim MM0DXH

"A new mode for me this month for the activity day and one that is a great way of keeping an eye on propagation was FT8. After working out how to set

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WSJT-X programme to talk between the PC and Transceiver, QSOs started coming in from all directions. A late-night surprise was working VK7XX (Tasmania) long pass whilst I was beaming to South America. Amazing to think the wee signal exchanges of FT8 flew over the Atlantic, South America and the Pacific to and from the southern Australian island of Tasmania. Always something new to try with Amateur Radio.

George MM0JNL

Please find attached my monthly activity sheet for April. Contacts that day are from the post-news net after my GB2RS broadcast.

Keith MM0KTC

Not much in the way of activity during the period, mainly down to work and antenna problems. Have a look at my QRZ.com log, and you will see I have had some fun with FT8.

Ronan MM0IVR

I have attached my log for this month's Activity Day. There were a few contests running this weekend, so I had a bit of a dabble in the CQMMDX CW contest on Saturday. I was using 5 watts so was pleased enough to get the few contacts I did over the couple of hours I was on. No huge distance records as usual, but one nice surprise was working Jeff, TZ4AM, in Mali on 15 meters. He was not in the contest but sounded busier than a lot of those that were!

Bob MM0LBF

Scarce pickings frae me this last week Bob. Pleased to have come across Ross on the Bass Rock

Thomas M0THL

My log attached. Unfortunately, my best contact of the week was the night before activity week - the US Virgin Islands. But there were plenty of opportunities to work the east coast of America this week.

Pete MM0INE

Once again, activity was a bit sporadic so far in April. Managed to get on the air a bit most days - usually for a bit of a rag chew on 60m. Cannot say conditions have been great across HF but did manage to work one of the Russian special event stations for Yuri Gagarin commemoration on 20m. Also a couple of 60m QSOs outside UK. 60m has been somewhat better for the longer distances while mid-range inter-G has been poor. I hear it is open to US after dark maybe. Just put up a 60m dipole to compare against the 160m doublet. So far looks reasonable and can use it direct (no tuner) on higher frequency channels. Now just need to figure out where to run the coax so the mower does not chop it up!

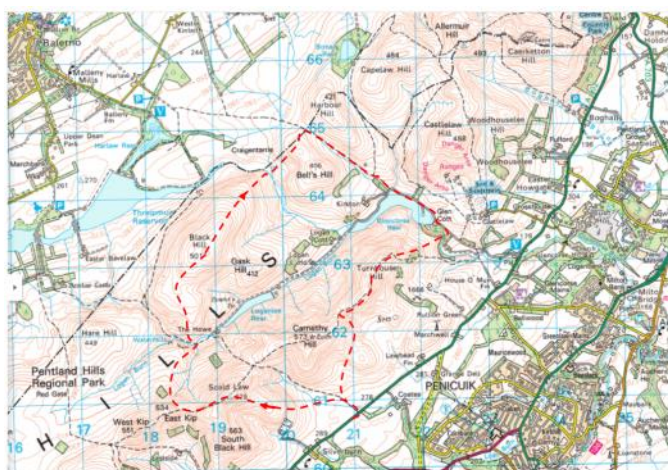
Rafe MM0RPX

Another handful of contacts on 40m using FT8. Was not a huge amount of activity going on when I was on.

Colwyn MM0YCJ

Monday 12th April 2021 was the chosen day for my activity session. It was yet another day in the lockdown of the SARS-CoV-2 pandemic, but at least the sun was shining. Therefore a lockdown walk was needed, and we set off to The Pentlands Regional Park. There are 4 car parks inside the SARS-CoV-2 Edinburgh travel limit for us and we had fallen into an unofficial tactic of not starting from the same car park two days in a row. The car park that day was the lay-by on the A702 between Flotterstone and Silverburn, where there is a footpath going north rising to the col between Scald Law and Carnethy hill. I had a heavy rucksack with all my mobile radio kit, as the end of the travel restrictions was that Friday, and I thought a big sack was a good idea to try to get myself used to load carrying again!!!

We climbed onto the summit of Scald Law and then headed west to another intervening col between it and East Kip. Then descended into the intervening glen and the final climb onto the chosen peak; GM/SS-167 Black Hill, height 501m (1644feet). Locator IO85IU. There is a very distinguished summit cairn and we hunkered down in a nice dry peat hag trying to shelter from the gentle, but cold breeze stroking the hilltop.



Lunch was on the menu and I set up a 2 element Yagi held aloft by two telescopic ski poles, before sitting down to eat my sandwiches. I had switched on the VX7 and while refuelling at 13:00 hours I heard a conversation between GM4COX (Jack in Strathaven) locator IO85br 39 kilometres away and GM0WRR (John) 57 Km away. I asked for a break and was rewarded with my first two contacts. GM4COX

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helpfully sought any others on air, and I had a tricky QSO with MM7AJE/P (Paul in Paisley), Locator IO75su some 73km distant. Sometimes working QRP (5watts) requires fine tuning.

All went quiet AND THEN, GM4UYZ came blasting in. One cannot be sure that the maximum transmission power was not exceeded, but it was good to speak with Bob (locator IO85mx) 25km away. Great to hear from him and he bagged a couple of SOTA points for Black Hill, although he had not logged them as I was writing this account.

I think that GM4COX had spotted me on the SOTA website as I then spoke with two SOTA regulars GM0AXY and GM4YMM (Christine and Ken in Edinburgh), locator IO85jw just 11km away and at 13:32 MM0XPZ (Steve in Greenock another regular) 94km away was the final contact for the day.

It had got cooler, and the sun was behind a cloud, so I decided not to use the HF kit. We packed and from the summit headed northeast down to the path linking the Glencourse reservoir to Balerno. We followed the busy track round the reservoir then took a steep climb up onto Turnhouse Hill. From there it was a short descent back to the col leading to Carnethy, but we decided to head round this fine peak back to the car park on the A702. A fine walk and a fine activity day rolled into one.

Summary

DATA is the winning mode this month with 213 QSO's. Next best was CW with 27 QSO's. Out of the 269 QSO's being made: CW = 27, SSB = 7, DATA = 213, FM = 22, AM = 0.

Best HF DX on DATA was by Jim MM0DXH working VX7XX (Long Path) on 14Mhz at 22673kms into Tasmania best CW QSO's this month was by Ronan MM0IVR (running 5W QRP) working NT0K at 6237kms into the USA and on SSB the best DX was by Martyn MM0XXW working R2DOT on 14MHz at 2490Kms into European Russia

Nice to see a mixture FT4 and FT8 being used on DATA with FT8 the leading mode this month with 115 QSO's, next FT4 with 98 QSO's.

QSO's to report on VHF and UHF and upwards were on FM by Colwyn MM0YCJ/P out in the Pentlands on 144MHz, George MM0JNL in the borders on 144MHz and Bob MM0LFB contacting a rare activation on the Bass Rock just off North Berwick. Best DX was by George MM0JNL working GM4PKJ at 112kms in Montrose.

A nice turnout out this month with a total of 15 people

taking part. With this Coronavirus still about it gives you a great opportunity to play at radio. Keep it up folks..... Thanks to everyone for your log they are so much appreciated.

Summary of who did what:

Total QSO's = 269 where: CW = 27, SSB = 7, DATA = 213, FM = 22, AM = 0

<i>Bob GM4UYZ</i>	<i>DATA: 12 x 40M, 18x 20M</i>
<i>Duncan MM0GZZ</i>	<i>DATA: 30 x 20M</i>
<i>Martyn MM0XXW</i>	<i>SSB: 33 x 20M</i>
<i>Craig MM0NBW</i>	<i>DATA: 22 x 20M</i>
<i>James MM0LQF</i>	<i>DATA: 62 40M</i>
<i>Jim MM0DXH</i>	<i>DATA: 40 x 20M</i>
<i>Andy MM0GYG</i>	<i>CW: 1 x 40M</i>
<i>George MM0JNL</i>	<i>FM: 14 x 2M</i>
<i>Colwyn MM0YCJ</i>	<i>FM: 6 x 2M</i>
<i>Keith MM0KTC</i>	<i>DATA: 2 x 80M</i>
<i>Ronan MM0IVR</i>	<i>CW: 6 x 40M, 16 x 20M, 2 x 15M</i>
<i>Thomas MM0THL</i>	<i>DATA: 15 x 20M</i>
<i>Bob MM0LFB</i>	<i>CW: 2 x 20M FM: 1 x 2M</i>
<i>Pete MM0INE</i>	<i>SSB: 5 x 60M, 1 x 20M</i>
<i>Rafe MM0RPX</i>	<i>DATA: 5 x 40M</i>

DATES FOR YOUR DIARY FOR THE 2021 ACTIVITY WEEKS

<u>MONTH 2021</u>	<u>ACTIVITY WEEK</u>
May	9th to 15th May 2021
June	13th to 19th June 2021
July	11th to 17th July 2021
August	8th to 14th August 2021
September	5th to 11th September
October	10th to 16th October
November	7th to 13th November
December	12th to 18th December

Thanks for taking part in the activity day week and I hope you will continue to do so in 2021. The dates for the 2021 are now set, see the above table so would love to see many more on as well so why not make it your 2021 target., there is nothing else to do with the Coronavirus restrictions in place.

Bob GM4UYZ

KENWOOD TS2000 FITTED WITH DRU-3A

DIGITAL RECORDING UNIT AND WINTEST

The Digital Recording Unit (DRU-3A) is an optional item that requires to be purchased and installed in the TS2000 radio. This unit provides 3 messages that can be recorded and played back which is extremely useful if you are taking part in a contest, saves suffering from a "sore throat" from continually calling the same message for example – "CQ CQ CONTEST THIS IS GM4UYZ GM4UYZ CALLING CQ AND BYE"

Using WinTest as the Contest Software you can recall and transmit these messages using the Function Keys (F1, F2, F3) on the keyboard. This makes operating a lot easier.



Recording the Messages

The following applies to each of the 3 messages.

Message 1

Select SSB, FM or AM

Use the same mode for transmitting and receiving

If VOX is ON press [VOX/LEVEL] on the radio to switch the function OFF

Press [FUNC], [1/CH1/REC] to record the message for channel 1

"•|| REC WAIT" and "AP1 –" appears

To exit the Record Standby mode and quit recording the message, press [CLR]

Press and hold [1/CH1/REC], then begin speaking into your microphone.

Release the [1/CH1/REC] when you have finished your message.

Approximate recording time for Channel 1 is approximately 30secs

Message 2

Select SSB, FM or AM

Use the same mode for transmitting and receiving

If VOX is ON press [VOX/LEVEL] on the radio to switch the function OFF

Press [FUNC], [2/CH2/REC] to record the message for channel 1

"•|| REC WAIT" and "AP1 –" appears

To exit the Record Standby mode and quit recording the message, press [CLR]

Press and hold [2/CH2/REC], then begin speaking into your microphone.

Release the [2/CH2/REC] when you have finished your message.

Approximate recording time for Channel 2 is approximately 15secs

Message 3

Select SSB, FM or AM

Use the same mode for transmitting and receiving

If VOX is ON press [VOX/LEVEL] on the radio to switch the function OFF

Press [FUNC], [3/CH3/REC] to record the message for channel 1

"•|| REC WAIT" and "AP1 –" appears

To exit the Record Standby mode and quit recording the message, press [CLR]

Press and hold [3/CH3/REC], then begin speaking into your microphone.

Release the [3/CH3/REC] when you have finished your message.

Approximate recording time for Channel 2 is approximately 15secs

Message Playback

You can play back the message in Channel 1, 2 or 3 to check or to send. It is also possible to make a longer message, by consecutively playing back the message of more than one channel, linking them together.

You can even repeatedly send a longer, linked message by using the Repeat function. To switch this function ON, access Menu No. 29A and select ON (Default is OFF) then select the repeated interval time in Menu No. 29b (Default is 10 seconds)

Checking Messages

Select SSB, FM or AM

Use the same mode for transmitting and receiving

If VOX is ON press [VOX/LEVEL] on the radio to switch the function OFF

Press [1/CH1/REC], [2/CH2/REC] or [3/CH3/REC] depending on which channel you want to check

For example "Δ PLAY BACK" and "AP1- -" while playing back the message in channel 1

To interrupt playback , press [CLR]

To play back another message in sequence press the corresponding key [1/CH1/REC], [2/CH2/REC] or [3/CH3/REC] while the first message is being played

Up to three channels can be queued

Sending Messages

Select SSB, FM or AM

Use the same mode for transmitting and receiving

Press [VOX/LEVEL] on the radio to ON or OFF

If you switch VOX ON ignore the next step

Press [SEND], or press and hold mic [PTT]

Press [1/CH1/REC], [2/CH2/REC] or [3/CH3/REC] depending on which channel you want to check

For example "Δ PLAY BACK" and "AP1- -" while playing back the message in channel 1

To interrupt playback , press [CLR]

To play back another message in sequence press the corresponding key [1/CH1/REC], [2/CH2/REC] or [3/CH3/REC] while the first message is being played

Up to three channels can be queued

If you pressed [SEND] or Mic [PTT] press [SEND] again or release Mic [PTT]

Erasing a Recorded Message

Press [FUNC], [1/CH1/REC] , [2/CH2/REC] or [3/CH3/REC] depending on which channel you want to erase.

"•|| REC WAIT" and "APn -" appears, where "n" represents the channel number

To erase the recorded message, press and hold the same key as in step 1 [1/CH1/REC] , [2/CH2/REC] or [3/CH3/REC], and press [CLR] at the same time.

A beep sounds and the message is erased.

Changing Inter-Message Interval Time

For repetitive message playback, you can change the interval between each series of messages. Use Menu No. 29B, and select the time in the range of 0 to 60 seconds

Changing Playback Volume

Turning the MAIN AF or SUB AF control does not change the volume for playback. To change the volume, access Menu No. 14 to select the playback volume level from OFF and 1 to 9

WINTEST LOGGING SOFTWARE

To allow WinTest to play the messages stored on the TS2000 DRU-3A Digital Recording Unit LUA SCRIPTS must be downloaded from the internet and then placed in the SCRIPTS directory in WinTest.

There are various LUA SCRIPTS that have been written by Bob Wilson N6TV for various radios and a whole list can be found at Win-Test Lua Scripts by N6TV (kkn.net) the one that is required is the TS590scripts.zip. Click on this link and it will download this ZIP file onto your PC. As it is a ZIP file it needs to be unzipped and the files put into the directory {Appdata}\Scripts directory.

I have both a Windows 7 and a Windows 10 PC and they are downloaded to the following directory. C:\ProgramData\Win-Test\scripts\

Usage:

To assign a script to a Function Key

In Win-Test Select – Tools and then select Scripts Manager

Select the script (Single Click) i.e. PlayF1

Click Properties

Click Define

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Press the function key you wish to assign i.e.F1

In key field it will display the selected key i.e.F1

Click OK

Then the next script PlayF2

Then do actions 3 to 6 above

Then the next script PlayF3

Then do actions 3 to 6 above

Select the script (Single Click) i.e. PlayHalt_590

Click Properties

Click Define

Press the function key you wish to assign i.e. ESC

In key field it will display the selected key i.e. ESC

Click OK

To allow the Function keys to work then the last thing that needs to be configured is as follows:

Select OPERATING from the Main Selection -File, Edit, Operating, etc

Select TECHNIQUE

Select ADVANCED SO2R

If you do not it will not work

Now load up or create a contest with the option of either PHONE or MIXED

Once the contest log is totally loaded.

Working the Greyline

What is Greyline propagation?

The greyline - also known as the terminator - is the line where the earth is transitioning from day into night or vice versa as seen in the map below.

Greyline propagation is the effect that enhanced long range communications becomes possible on the lower



HF and LF bands between two stations located along the greyline.

This phenomenon has been subject to much investigation and Steve Nichols (G0KYA) has written extensively on the subject.

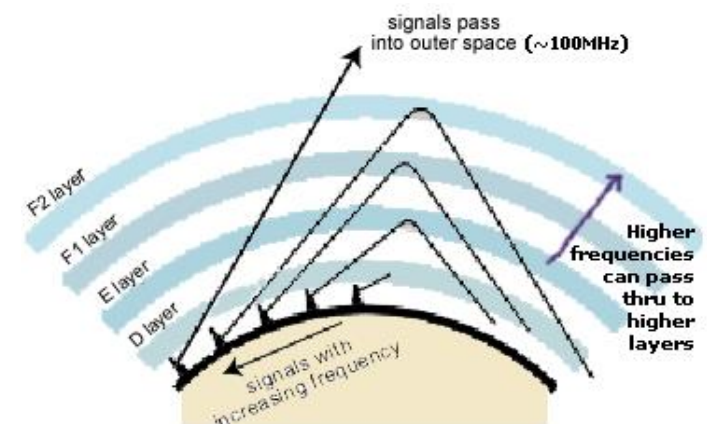
The greyline effect is understood to affect frequencies below 10 MHz. G0KYA states that it is most noticeable on 40, 80 and 160 metres as these are more impacted by the D layer than the higher bands and argues that a different mechanism, which he calls "skip focusing" is at work on those higher HF bands.

How does greyline propagation work?

The mechanism behind greyline propagation may be described as follows. As darkness falls and the D layer at 60 – 90 km above the earth rapidly diminishes, the reflecting and attenuating effect of the D layer on the lower bands reduces until it disappears.

Meanwhile the F layer being higher at 150 – 500 km above the earth, remains lit by the sun for longer, retaining a higher electron density and ability to reflect signals up to the MUF for longer distances.

The reverse mechanism is true for the transition from night into day, with the F layer being lit and energised by the sun earlier than the D layer.



Source – Newhams -[MUF | NewHams.info](http://MUF/NewHams.info)

Relative D layer absorption – depending on time of year

Frequency	Attenuation per hop (db)	Attenuation per hop (S points)
21 MHz	6	1
7 MHz	40	7
3.5 MHz	100	17
Top band	250 - estimate	41

Source - "Amateur Radio Operating Manual" - RSGB

Sunrise-Sunset differences

Traditional greyline wisdom states that greyline propagation normally takes place between stations which are experiencing a sunrise-sunset or sunset-sunrise – i.e. station A is at sunrise and station B at sunset.

According to G0KYA, experiments carried out by N4KG show this to be true, but suggests that enhancements always peak before sunrise to the west and before sunset to the east for 80 and 40 metres. That is to say that as a UK station you may expect just before dawn conditions to be better towards America, than towards Asia, but just before sunset the reverse to be the case.

A series of experiments carried out by G0KYA and others suggests that there is a measurable improvement or 4 to 6 db between two stations along the terminator who are both experiencing sunrise or sunset at the same time.

Skip Focusing

As noted earlier, G0KYA proposes that at frequencies above 10 MHz greyline propagation does not give any real improvement to signals. However, there is a noticeable improvement when working above the MUF when one station is in daylight and the other is to the east of the daylight station and is on or near to the terminator – i.e. in twilight. So looking toward Asia from the UK as Asia moves into darkness could prove to be a worthwhile tactic.

Skip focusing is the subject of ongoing long-term study as yet inconclusive, and so there is no clear definition of what this phenomenon is.

Summary

- Affects 10 MHz and below as these frequencies are more impacted by D layer.
- As D layer disappears, F layer remains lit by the sun due to higher height above the Earth and therefore retains higher electron density for longer.
- As D layer disappears signals no longer attenuated.
- Optimum times for greyline effect are the spring and autumn equinoxes as these periods are not subject to the same extremes as mid-winter and mid-summer.
- Width of the greyline is wider at the poles than at the equator.
- Look to see greyline effect during twilight, i.e. up to 30 minutes before and after sunrise/sunset.
- One rule in radio propagation – nothing is set in stone. There is no certainty to that conditions will be as predicted or that you are guaranteed to work any particular station just because it is on the greyline. So get on the air and give it a go!

Craig Snedden – MM0NBW

References

- [Grey Line HF Radio Propagation » Electronics Notes \(electronics-notes.com\)](#)
- [Radcom Article - May 2006](#)

"Amateur Radio Operating Manual" - RSGB

HF Propagation Prediction

HF Propagation Prediction May 2021

Summary

Best chance of DX – Asia and Americas using CW/Data on 40, 30 and 20 metres during most periods.

Best SSB phone DX – 40 meters during darkness and 20 metres during daylight Asia, Africa and Americas.

Best inter G SSB phone QSO's are, as expected on 80 metres throughout the 24 hours. Some possible on 20 and 40 metres.

12 and 10 metres are predicted to be poor, but possible SSB late morning to early evening, with CW/Data a couple of hours either side of these times.

Long Term Solar Summary – April 2021

Solar Cycle 25 has officially started. Cycle 24 reached minimum in December 2019 and peaked in April 2014 with a peak average of 82 sunspots. Solar Cycle 25 is predicted to have a slow start and anticipated to reach maximum between 2023 and 2026. Consensus is that it will peak in July 2025 (plus/minus 8 months). Solar Flux (SFI) is predicted to tip over 100 in January 2023.

Cycle 25 is predicted to be similar to Cycle 24 with a weak peak activity – 95 to 130 sunspots, which is below average of 140 to 220 sunspots.

Sunspots and Propagation

Frequencies above 15 MHz (17 metres amateur band and shorter) will open sporadically. 40m is more likely to stay open all night and should produce good DX. Best DX is likely to be on 20 metres at all times. As solar activity picks up, this will lead to more D layer absorption, weakening 160, 80 and to some extent 40 through daylight hours.

Usual caveats apply; This information is a broad summary from a number of sources using models based on historical and predicted data using ideal antennas with some allowances made for location, QRM and QRN. Band conditions fluctuate constantly and may improve or deteriorate at any time. Predictions are short-path propagation.

SSB predictions are based on combined path reliability (REL) and S/N ratio predictions above 65%. CW/Data combined REL and S/N ratio above 35%. Modelled on 100W SSB – Dipole at 15 ft. Your equipment may be more or less efficient than the model which will negatively or positively impact real results.

Unpredicted QSO's are always possible, so use this information as a guide only, in conjunction with DX Cluster spots and your own ears!

Modelled on 100W SSB – Dipole at 15 ft. All times UTC.

80 Metres - 3.5 MHz

00:00 – 07:00	SSB QSO's Inter G, Ireland and Northern/Central Europe and Baltics. Possible SSB to Western Russia and Eastern Canada. CW/Data modes may be possible to North Africa and eastern Canada/USA
07:00 – 17:00	SSB QSO's limited to a couple of hundred miles. CW/Data modes may reach Northern Europe, picking up around 15:00.
17:00 – 23:00	SSB conditions build with good inter G and Northern Europe. Baltics and eastern Canada/USA may be possible later in the evening.

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40 metres - 7 MHz

00:00 – 07:00	SSB QSO's in Northern Europe, North Africa, Baltics and European Russia. Eastern Canada, eastern USA possible. CW/Data modes may be possible to, South and Central America and USA.
07:00 – 17:00	SSB possible to eastern USA in the early to mid morning, but reducing to Europe and inter G as the day progresses. CW/Data modes possible into north Africa, south America, and Eastern USA, but diminished by mid morning.
17:00 – 23:00	Early evening sees SSB in Europe, north Africa, Eastern Canada, European Russia and inter G, building westwards as the evening progresses. CW/Data modes to North and South America and north Africa, possibly into Asia

30 Metres - 10 MHz – CW & Data only

00:00 – 07:00	CW/Data modes good to southern Europe, Central and South Africa, and across the Americas.
07:00 – 17:00	CW and Data modes good throughout Europe, North Africa and Central America.
17:00 – 23:00	CW/Data modes good through Europe and Africa. Possibility of India, Asia, Ant-arctica and western Australia around 20:00.

20 Metres - 14 MHz

00:00 – 07:00	Band closed to poor until around 04:00, with CW/Data possible into eastern Europe, Arabian Peninsula and Africa. SSB restricted to Europe and north/central Africa around the same time.
07:00 – 17:00	SSB good into central and southern Europe, Greenland and Baltic states, North/Central Africa and South America mid morning. SSB may be possible into east Asia and USA late afternoon. CW/Data modes into Africa and south and central America, Australia, Asia, Japan, China, India, Western Australia, New Zealand and USA.
17:00 – 23:00	Early evening sees SSB in Europe, Africa, Arabian peninsula Asia, moving westwards to South America until around 23:00. Early evening also sees CW/Data possible to east Asia, Africa and south America. Diminishes around 23:00

17 Metres - 18 MHz

00:00 – 07:00	Band closed until around 05:00 with SSB possible across Africa. CW/Data possible to India, western Asia and Australia.
07:00 – 17:00	SSB possible to southern Europe, South America Africa. Australia from early afternoon. CW Data modes possible to Australia, Indonesia, India and Antarctica.
17:00 – 23:00	SSB possible to southern Europe, South America, West and South Africa, diminishing around 23:00

(Continued on page 12)

(Continued from page 11)

15 Metres - 21 MHz

00:00 – 07:00	Poor conditions - Band effectively closed.
07:00 – 17:00	SSB to Europe and southern Africa and South Atlantic/South America later in the period. CW/Data possible to Asia and South Atlantic.
17:00 – 23:00	SSB to, Europe, Africa and South Atlantic/South America until around 22:00 when band effectively closes.

12 Metres - 24 MHz

00:00 – 07:00	Poor conditions - Band closed.
07:00 – 17:00	Possible SSB, CW/data to South Africa, and Europe from around 12:00
17:00 – 23:00	Possible SSB, CW/data to South Africa, and South America – Band closes around 22:00

10 Metres - 28 MHz

00:00 – 07:00	Poor conditions - Band closed.
07:00 – 17:00	Poor conditions - Band closed.
17:00 – 23:00	Possible SSB to South Africa and south Atlantic from around 17:00 around 20:00

Data from

Prop Charts

<http://infotechcomms.net/propcharts>

VOACAP Online

<http://www.voacap.com/hf/>

ITURHFProp

<http://www.predtest.uk/index.html>

Solar Cycle

[https://www.weather.gov/news/190504-sun-activity-in-solar-cycle?](https://www.weather.gov/news/190504-sun-activity-in-solar-cycle?fbclid=IwAR1rG9yClKzY8xnQzDbvms66ErvmjTLIGwcYoFB)

[fbclid=IwAR1rG9yClKzY8xnQzDbvms66ErvmjTLIGwcYoFB](https://www.weather.gov/news/190504-sun-activity-in-solar-cycle?fbclid=IwAR1rG9yClKzY8xnQzDbvms66ErvmjTLIGwcYoFB)
[ndv_C_Dae2soy1osQE8](https://www.weather.gov/news/190504-sun-activity-in-solar-cycle?fbclid=IwAR1rG9yClKzY8xnQzDbvms66ErvmjTLIGwcYoFB)

Sunspot Watch

<http://prop.hfradio.org/>

MARITIME CALLSIGN QUERY

A question appeared as part of some Full Licence Questions answered and I put for example in International Waters GM4UYZ/MM as my identification as that is what I had always been taught and read. I decided to query the answer with Ofcom and below is their answer. I think it has been one of these areas that has changed and we weren't told about it, my opinion by the way.

Thank you for your enquiry. The question is whether the call sign of an amateur radio station must – or may – include an RSL, when operating 'Maritime Mobile'. Clauses 2(1)(a), 2(2) and 17(1)(u), as well as Note (d) IV of the Licence refer. The corresponding sections of our online guidance (https://www.ofcom.org.uk/_data/assets/pdf_file/0026/82637/amateur_radio_licence_guidance_for_licensees.pdf) – para 2.15 to 2.19, 2.43 to 2.48 and 2.115 to 2.116 also refer.

The purpose of an RSL is to identify the nation of the UK or Crown Dependencies in which the station is being operated. For example, under Clause 2(2) of the licence, an amateur radio station operating in Scotland must insert the RSL 'M' after the initial character of the call sign. If that station then moved to operate in Northern Ireland, it must insert the RSL 'I' and if it then moved to operate in England, then (unless it were an Intermediate station) it must not use any RSL.

If, when operating Maritime Mobile, a station were somewhere between the low water mark and the limit of UK Territorial Seas, Clause 2(2) would apply. This is because the expression 'Vessel at Sea' is defined as:

"a Vessel operating on the seaward side of the low-water line along the coastline as marked on large scale charts officially recognised by the relevant coastal state;"

The vessel would still be in one of the nations of the UK or one of the Crown Dependencies.

However, if the 'Vessel at Sea' were beyond the limit of UK territorial seas (and were thus on the high seas) it would not be in any single nation of the UK or any of the Crown Dependencies. In those circumstances, Clause 2(2) would not apply. This then suggests that the unenhanced national call sign, without the RSL, should be used. For the avoidance of doubt, the unenhanced call sign is a national call sign and not an 'English' call sign. To be inherently 'English', a call sign must include the RSL 'E' or (for a club) 'X'.

The purpose of a call sign (Clause 13(1)(a)) is to ensure that the station is clearly identifiable at all times. We are aware, of course, that some radio amateurs, with a main station address other than in England, routinely identify their station with their call sign including the RSL. If a radio amateur with a main station address other than in England were therefore to include an RSL when operating Maritime Mobile and outwith UK territorial seas, while it might not comply with the letter of the Licence Ts and Cs, I think it comparatively unlikely that we would take action against the radio amateur for that alone, if the station remained clearly identifiable.

CONTEST CALENDAR

For anyone interested in contesting there is something for everyone. Contesting is not just about winning although that is the aim; it is about taking part, having some fun, honing your operating skills, helping you understand propagation and It is also a good opportunity to test out your station at home to see how it is performing.

Happy Contesting.....

**** PLEASE NOTE THAT DUE TO THE CORONAVIRUS SOME CONTESTS MAY NOT HAPPEN OR COULD BE RESTRICTED IN NATURE i.e. NO MULTI-MULTI STATIONS ****

Extracts are from the RSGB Radio Sport VHF & HF contest and the WA7BNM Contest Calendar

(<http://www.hornucopia.com/contestcal/perpetualcal.php>)

May 2021

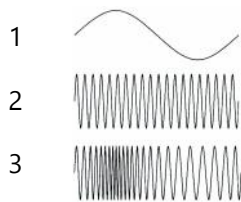
10-10 Int. Spring Contest, CW	0001Z, May 1 to 2359Z, May 2
RCC Cup	0300Z-0859Z, May 1
SBMS 2.3 GHz and Up Contest and Club Challenge	0600 local, May 1 to 2359 local, May 2
ARI International DX Contest	1200Z, May 1 to 1159Z, May 2
AGCW QRP/QRP Party	1300Z-1900Z, May 1
7th Call Area QSO Party	1300Z, May 1 to 0700Z, May 2
Indiana QSO Party	1500Z, May 1 to 0300Z, May 2
Delaware QSO Party	1700Z, May 1 to 2359Z, May 2
New England QSO Party	2000Z, May 1 to 2359Z, May 2
RSGB 10GHz Trophy Contest	0800Z-1400Z, May 2
ARS Spartan Sprint	0100Z-0300Z, May 4
MIE 33 Contest	2300Z, May 4 to 0300Z, May 5
VHF-UHF FT8 Activity 144MHz	1900Z-2030Z, May 5
RSGB FT4 Contest	1700Z-2100Z, May 5
CQ-M International DX Contest	1200Z, May 8 to 1159Z, May 9
SKCC Weekend Sprintathon	1200Z, May 8 to 2359Z, May 9
VOLTA WW RTTY Contest	1200Z, May 8 to 1200Z, May 9
Arkansas QSO Party	1400Z, May 8 to 0200Z, May 9
RSGB 70MHz Contest CW	0900Z-1200Z, May 9
4 States QRP Group Second Sunday Sprint	0000Z-0200Z, May 10
RSGB 80M CC SSB	1900Z-2030Z, May 10
RSGB FT4 Contest	1700Z-2100Z, May 12
NZART Sangster Shield Contest	0800Z, May 15 to 1100Z, May 16
His Maj. King of Spain Contest, CW	1200Z, May 15 to 1200Z, May 16
RSGB 144MHz May Contest	1400Z, May 15 to 1400Z, May 16
RSGB 1 st 144MHz Backpackers	1100Z-1500Z, May 16
Run for the Bacon QRP Contest	2300Z, May 16 to 0100Z, May 17
RSGB 80M CC DATA	1900Z-2030Z, May 19
Baltic Contest	2100Z, May 22 to 0200Z, May 23
RSGB 70MHz Cumulatives #3	1400Z-1600Z, May 23
QRP ARCI Hootowl Sprint	0000Z-0100Z, May 24
SKCC Sprint	0000Z-0200Z, May 26
RSGB 80M CC CW	1900Z-2030Z, May 27
CQ WW WPX Contest, CW	0000Z, May 29 to 2359Z, May 30

TEST YOUR KNOWLEDGE

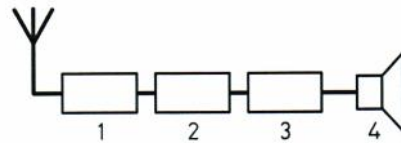
1. **Input power is measured in**
 - a. Amperes
 - b. Volts
 - c. ohms
 - d. Watts.
2. **A filament bulb is placed in a continuous circuit with 12 Volt battery and glows. What is the effect if the battery is replaced with a 12Volt alternating current source?**
 - a. The bulb goes out.
 - b. The bulb will glow brightly and burn out.
 - c. The bulb will glow very faintly.
 - d. The bulb will continue to glow as before.
3. **The United Kingdom's mains electricity supply has a frequency of**
 - a. 50Hz
 - b. 60Hz
 - c. 100Hz
 - d. 50Khz
4. **"Top Band" is the name amateurs sometimes give to the 160 metre band. To what frequency band does this relate?**
 - a. 1.81MHz - 2.0MHz
 - b. 3.5MHz - 3.8MHz
 - c. 7.0MHz - 7.1 MHz
 - d. 14.00MHz - 14.35MHz

5. **Which waveform in the diagram represents the carrier?**

- a. Waveform 1.
- b. Waveform 2.
- c. Waveform 3.
- d. None of them.



6. **An amateur decides to change the frequency band of operation but forgets to check the antenna matching. An effect of this may be that the**
 - a. antenna is overloaded
 - b. wrong frequency is transmitted
 - c. transmitter may be damaged
 - d. transmitted signal sounds distorted.
7. **The connection between block 1 and block 2 in the block diagram of a radio receiver will be carrying**



- a. a large number of radio signals on different frequencies
 - b. a single radio signal that has been amplified
 - c. lots of different audio signals
 - d. just one audio signal.
8. **The screen of a coaxial cable must be properly connected to the body of a PL259 plug in order to**
 - a. prevent water getting in
 - b. confine the signal within the cable
 - c. stop the cable coming apart
 - d. make a neat appearance.
 9. **Which one of the following antenna can focus the radio signal in a particular direction?**
 - a. Dipole.
 - b. End fed.
 - c. Ground plane.
 - d. Yagi.
 10. **One reason for matching the output of a transmitter to an antenna is to**
 - a. improve the frequency drift characteristic
 - b. improve frequency stability
 - c. save d.c. input power
 - d. ensure maximum power is transferred to the antenna.

Club Events

7 May 2021	Club Night via Zoom unless we are able to go to the Thorntree, check Facebook for details
9-15 May 2021	Activity Day (pick any day that week)
14 May 2021	1st 144MHz DF Hunt
4 June 2021	Club Night
13-19 June 2021	Summer Solstice Activity Day (pick any day that week)
18 June 2021	Zoom Talk by Simon MM6OXH: Large Scale Software Defined Radar - A Practical View
19/20 June 2021	Museums on the Air—Cancelled
2 July 2021	Club Night
3/4 July 2021	RSGB VHF Field Day
11-17 July 2021	Activity Day (pick any day that week)
24/25 July 2021	RSGB IOTA Contest
6 August 2021	Club Night
13 August 2021	Mini Rally (cancelled)
21/22 August 2021	Lighthouses on the Air TBA

Club Attire

The club has a design for Club T-shirts, Polo-shirts, Sweat-Shirts, Fleeces and Jackets and all of these can be obtained from Patricia Bewsey Designs

When making an order please quote 'Cockenzie & Port Seton Amateur Radio Club' to ensure that the Club Logo will be placed on the required garments.

Cost will depend on garment and should cover the garment and logo, call sign addition will be extra.

If you wish to add your call sign to the logo then please ask at the time of the order.

Order from:

PATRICIA BEWSEY DESIGNS,

Tel/Fax: 01620 850788

Mobile: 07970 920431

Email: patricia.bewsey@gmail.com

Note: the shop at Fenton Barns is now closed

All Club in-person activities are under review due to the ongoing COVID restrictions, keep an eye on the website and facebook group for up to date information.

Answers from May 2021 newsletter "Test Your Knowledge":
1D, 2D, 3A, 4A, 5B, 6C, 7B, 8B, 9D, 10D

FOXHUNT RULES

Date : AS PER EVENTS CALENDAR

Time : MEET AT 6:30PM FOR A BRIEFING PRIOR TO A 7:00PM START

Place : The CAR PARK at the Seafront (Where Old Pond Hall was) (From Edinburgh turn 1st Left past the Garage)

PORT SETON

Grid Ref. NT408 759

ORDNANCE SURVEY LANDRANGER MAP No.66

Entry Fee : £2:00 PER PERSON, TO BE DONATED TO THE CLUB FUNDS

Frequency : 145.275MHz, FM, VERTICAL POLARISATION

Fox Call sign : GM1PLY/M

Fox Power & Antenna : MAXIMUM 1W : ANTENNA ¼ WAVE VERTICAL

Hunt Area : THE FOX WILL BE LOCATED WITHIN THE AREA ON ORDNANCE SURVEY LAND RANGER MAP No.66 BOUNDED BY THE FIRTH OF FORTH TO THE NORTH, THE LINE JOINING GRID REF. NT560728 and NT560855 TO THE EAST, THE LINE JOINING GRID REF. NT370728 and NT370738 TO THE WEST. A SMALL MAP SHOWING THIS AREA WILL BE ISSUED TO ALL COMPETITORS AT THE START.

TX Times : TRANSMISSIONS BY THE FOX WILL BE 30 SECONDS EVERY 5 MINUTES. THE FIRST TRANSMISSION BEGINNING AT 7:00PM, FOLLOWING TRANSMISSION TIMES WILL BE 7:05PM, 7: 10PM.etc. THE FINAL TRANSMISSION WILL BE AT 8:45PM AND WILL REVEAL THE LOCATION OF THE FOX AND THAT OF THE POST HUNT MEETING. (Normally the Lounge Bar in the Thorntree Inn)

Access : THE FOX WILL BE IN A POSITION WHICH IS ACCESSIBLE BY CAR

(4WD NOT NECESSARY!)

TX Ban : NO TRANSMISSIONS, OTHER THAN THOSE OF THE FOX, SHOULD BE MADE ON THE HUNT FREQUENCY AT ANY TIME DURING THE EVENT

Vacate : ONCE A TEAM HAS FOUND THE FOX THEY SHOULD LEAVE THE IMMEDIATE AREA AND SHOULD NOT TRANSMIT ON ANY FREQUENCY WHILE IN THE VICINITY OF THE FOX

Equipment : ONLY ONE SET OF DF EQUIPMENT IS TO BE USED PER TEAM AT ANY ONE TIME.

Hunting : DURING THE HUNT PLEASE TRY TO BE CONSIDERATE TO OTHER ROAD USERS WHEN CHOOSING YOUR STOPPING POINTS ANY TEAMS FOUND TO BE BREAKING THE ROAD SPEED LIMITS IN ANY AREA WILL BE DISQUALIFIED IMMEDIATELY SIMILARLY, ANY TEAMS FOUND TO BE BREAKING ANY OF THE ABOVE RULES WILL BE DISQUALIFIED

Winner : "THE HYBSZER TROPHY" WILL BE PRESENTED TO THE DF WINNER. THE TROPHY WAS DONATED BY RON GM0NTL IN MEMORY OF BILL GORDON MM0BXK/GM8ZLI WHO DIED IN JANUARY 2010.

