

HORSHAM AMATEUR RADIO CLUB

HARCNEWS

Coming Shortly

Sept 4th Club Evening Mystery talk

Sept 6/7th Club Event SSB Field Day

Oct 2nd Club Evening Junk Sale

September 2003

Sponsored by:

nevada[®]

THE BANDS AT A GLANCE

by John Matthews G3WZT

Recent changes to licensing regulations means that many amateurs have access to the HF frequencies that they were once denied unless a Morse test was taken. Some of the licensees with these new privileges have only ever operated on the VHF bands and consequently, have limited knowledge of the workings of the HF and LF bands.

From this viewpoint, I was asked to write a few words on the basis of “what can I work and when” on the HF/LF bands. So, all “ancient” G3 and G4’s, skip to the next article!

Most will appreciate that this task is pretty well impossible in a few paragraphs, as many people, both amateur and professional, have spent a lifetime investigating propagation principles and how to predict them. What I will attempt to show here, is a very simple and generalised, “band by band” indication of what is most likely to be heard, or worked, at certain times and frequencies. The primary intention is to provide some helpful information for newcomers to the HF bands. I

have said nothing regarding the WARC bands, but just read between the lines frequency wise for a rough idea.

There are of course published F layer propagation predictions, which appear in each edition of RadCom. They are displayed in tabular format with individual amateur bands shown against time of day for various places around the World. A coloured number against each entry indicates “expected circuit reliability” and signal strength. Read the key at the bottom of the table and all will become clear. Predictions provided by the RSGB propagation studies committee are also available on the Internet at www.g4fkh.demon.co.uk

160 METERES (TOP BAND)
Generally considered as a local natter band by many, this band can provide DX from around the World given a suitable antenna and knowledge of how the band works. During the hours of daylight, Top Band will provide ground wave coverage across a large percentage of the UK. During the hours of darkness things change very considerably

and pretty much all of continental Europe can be worked with fairly modest set-ups. It is also possible to work Asia and Australia if a careful watch is kept on the “Grey line”.

Grey line propagation is a line around the Globe where dusk or dawn is available to stations at each end of the QSO. Enhanced propagation is often available for stations operating on the Grey line and is a means of working the greatest distances on 160M. If you want to see the World Grey line in real time colour, take a look at <http://dx.qsl.net/propagation/greylines.html>

80 METRES

Considered by most as another daytime “waffle band”, 80 Metres is similar in very many ways to Top Band. Worldwide DX can be worked on 80 if you have the desire to make life a little more challenging. Once again darkness or Grey line hour working are essential if you want to work any countries outside of the UK or the nearer parts of the continent. Like Top Band, 80M is not really affected by the 11 Year Sunspot cycle and for this reason it is possible to work DX without relying on Sun spot activity as you would on the higher bands. 80M is essentially a much more pleasant band to use during the

winter months. There are two main reasons for this.

- 1] There are more hours of darkness.
- 2] Atmospheric noise due to electrical storms in the Northern hemisphere summer months are vastly reduced during the winter.

It is not uncommon in the winter months to be able to hear and work ZL stations around dawn (Grey line long path propagation). Timing wise, this coincides with antipodean evening, so activity is likely to be higher. At the opposite end of the day, our evenings, JA and VK stations are likely to be heard around their breakfast time. This is more likely to be direct, short path.

Summing up, 80M is a fascinating band with something for the “G Nets”, the DX chaser, and just about everything in between. The choice is yours; antenna’s permitting of course.

40 METRES

Forty is a band with many similarities to 80M. The major difference is that things are a lot easier. For a start, antennas are half the size of those required for 80M and a full size quarter wave vertical becomes a practical proposition. Propagation is pretty similar to 80M but distances are extended.

This is more likely to be noticed during the daytime when ground wave signals will be found to extend much further than they do on the lower band with good strong signals around most of Europe.

One important thing to be aware of with this band is the need for a good selective antenna, receiver, or both. Very strong broadcast stations operate within close proximity of the Amateur 7MHz allocation and RX cross modulation due to strong sky wave signals at night can cause problems.

A good all round band for the beginner to try, with signals to be heard for most of the day and night, and like the other “low bands” it is seldom effected by Solar activity and the Solar cycle.

20 METRES

Twenty metres can really be regarded as the “workhorse” of the HF bands and is seldom without DX of some sort during the hours of daylight. A good band for working into Australia and the Far East, especially around the earlier part of the morning, i.e. breakfast time.

By late morning, stations from the USA can usually be heard. For most of the day pretty well all of

Europe should be within reach. Unlike the lower frequencies, 20M is very much affected by the Solar cycle and with cycle 23 now well on the way down DX propagation is not what it was a year or so ago.

This fact is also responsible for the band “closing down” earlier with openings extending less into the hours of darkness as the cycle progresses on its inevitable downward slide. A good all round band if you want to work some DX without big antennas. Simple vertical ground planes go well on 20.

15 METRES

A very good band for DXing when it is open. Unfortunately with the decline of cycle 23 this band will become much less active. 15M is a band which will only normally provide propagation during daylight hours.

However, when it is going well it's a lovely band and can provide really good DX into places such as Japan in the mornings up to midday. Like 20M, plenty of European stations can be heard throughout the day. Make the most of 15 now if you can, things will only get worse over the next few years as the cycle declines.

10 METRES

All comments regarding 15M are relevant to 10M but more so. Probably the most favoured and loved band by those that have used it during the peak of a Sunspot cycle. This band can provide fabulous DX with very big signals from distant places when it is truly open.

This unfortunately is not the case now, but 10 can still “open up”, particularly so during periods around the Spring and Autumnal Equinoxes. The other point to remember about 10 is that it is not only affected by F layer propagation. During the summer months it is often open due to Sporadic E propagation.

This leads to very strong signals up to approximately 2000km range from April through to September; but, as the name suggests, it is of a very sporadic nature and cannot be relied upon.

Also, as its E layer propagation, single hop distances will always be limited to around the 2000km mark. Just like F layer propagation, Sporadic E is Sun driven and openings usually occur during the hours of daylight. So, all is not lost on 10 at the moment but things should really start to improve by around 2010!!

6 METRES

As six is one of the bands I enjoy using, I will include it here as it is on the crossroads of HF and VHF, and as such, has attributes, which can be enjoyed by both the keen HF or VHF operator. Six probably supports more modes of propagation than any other band. It is this aspect, which to me, makes it one the more interesting amateur allocations from an operating point of view. Six meters supports E layer propagation (Es), Meteor scatter (MS), this takes place in the E layer, Tropospheric (in the troposphere), Auroral, Auroral E, Trans Equatorial and F2 propagation.

It is F2 that likens six to the HF bands, and this is what makes it such an interesting band during the peak years of the Sun spot cycle. Worldwide coverage can be expected during the peak, with places such as Australia and Japan workable in the mornings if you are in the right place at the right time.

Most of these modes are available during the hours of daylight but there are of course regular exceptions. Multi hop Sporadic E to the States and Caribbean is often heard past midnight. This is not a function of the 11 Year cycle and occurs almost every Year

stateside openings occur during the winter months. Last Christmas day was a classic opening of this type but does not bode well for family harmony!!

INFORMATION

There are of course many places where information on band conditions can be found. The start of this article mentioned HF predictions, which are a useful source of information. Real time band conditions are best observed by connecting to the “DX cluster

network”. You can do this by radio link to GB7DXS on 2M, 4M, or 70cms, or via the internet by going to

<http://oh2aq.kolumbus.com/dxs/>.

This site shows real time DX spots around the world. Auroral activity from NOAA satellites can be seen at:

<http://aurora.n1bug.net/> .

There are links to these and many other sites of interest, including Grey line from my own VHF pages, which can be seen at

<http://www.qsl.net/g3wzt/index.html>

August Evening Foxhunt.

The wily foxes were hidden not very far from the start location; in fact within walking distance. We were next to the Horsham MotoCross circuit which can easily be viewed from above (see Multimap.com) but the OS map does not have it!

As it is in the middle of nowhere, reached by a long single track road, the only way of finding it is to plot lines on a map exactly as Steve G4TPO did. His three lines all met up where we were, and he was first. The wrong approach was to zoom off as fast as possible.

Just before the last transmission at 8:30, Mike G4EFO was second closely followed by John G3WZT, in third place. Other teams were out-foxed!

Start 7pm.

1st. 8:04pm Steve G4TPO

2nd. 8:28pm Mike G4EFO

3rd. 8:29pm John G3WZT, and Janet.

Many thanks to those who took part. The MotoCross track is used every two weeks on Sundays. We can hear it from ‘ZBU Mansions, and it is an easy cycle ride!

Alister G3ZBU, Helen M0DEY and Gerald M3GCR.

Shortwave Radio's Best Kept Secret

£449

P&P £10



...until NOW!

PALSTAR R30 Portable Communications Receiver

After surveying all the SWL receivers on the market, Palstar President and chief engineer Paul Hrivnak and his design team put their heads together to produce a SWL receiver that performs in a real world setting with no overloading in the front end. Combining their years of experience in designing and manufacturing amateur radio equipment they came up with a small, portable unit that performs like nothing you've heard. The R30 won't disappoint you, but don't take our word for it. Here's what an eHam.net reviewer had to say, "I think this [R30] is one of those not too well known jewels that is already a precious commodity to those who own one."

High quality basics, Small footprint and Portability.

The R30 HF shortwave receiver is a compact high performance radio capable of receiving multimode signals in the 100Khz to 30Mhz spectrum. It provides excellent strong signal handling, high sensitivity and dynamic range to eliminate annoying intermodulation interference. The radio also features 100 programmable memories, variable rate tuning and switchable bandwidths in all modes. All this squeezed into a footprint that fits inside a sheet of paper (8"x9"x2.5"). The R30 receiver is also equipped with a 10AA cell internal battery pack that automatically connects to the radio when the external adapter plug is disconnected allowing portable operation.



Don't just take our word for it...

Check out the user reviews on eHam.net where the Palstar R30 consistently receives the 5 Star Rating! 'Great SWL RX'... 'Best I have used!' ... 'Wow-that audio!'... 'Amazing Radio - Exceptional Value!'

**W.R.T.H
HANDBOOK
Best HF Design
2002
★★★★★
RATING
OVERALL**



Specifications

- 100KHz - 30MHz AM, SSB, SW
- 20Hz, 500Hz tuning steps, synthesized (*low phase noise performance*)
- 500KHz up/down
- 45MHz 1st IF, 455 kHz 2nd IF
- RF derived AGC, fast/slow
- 4-pole crystal filter at 45 MHz
- Ceramic filters fitted
- Bandwidth, 4kHz AM and 2.5 kHz SSB
- 6-digit LCD display
- Analog S-Meter
- 100 channel memory
- 5W low distortion full fidelity audio amp
- External soft muting
- Line Audio output
- +18dBm 3rd order intercept
- 455kHz IF output
(On current rev J mainboard only)
- Switchable 7 pole input filters
- Internal batteries (*not included*) or 12V
- Ultra miniature size 8"(w) x 2.5"(h) x 9"(d)
- Weight: 7 lbs

PALSTAR[®]
...where **QUALITY** counts

nevada[®]

Exclusive Distributors of **PALSTAR PRODUCTS**
www.nevada.co.uk

023 9231 3090

Unit 1 • Fitzherbert Spur • Farlington • Portsmouth • PO6 1TT