

QRO v QRP

By G8MNY

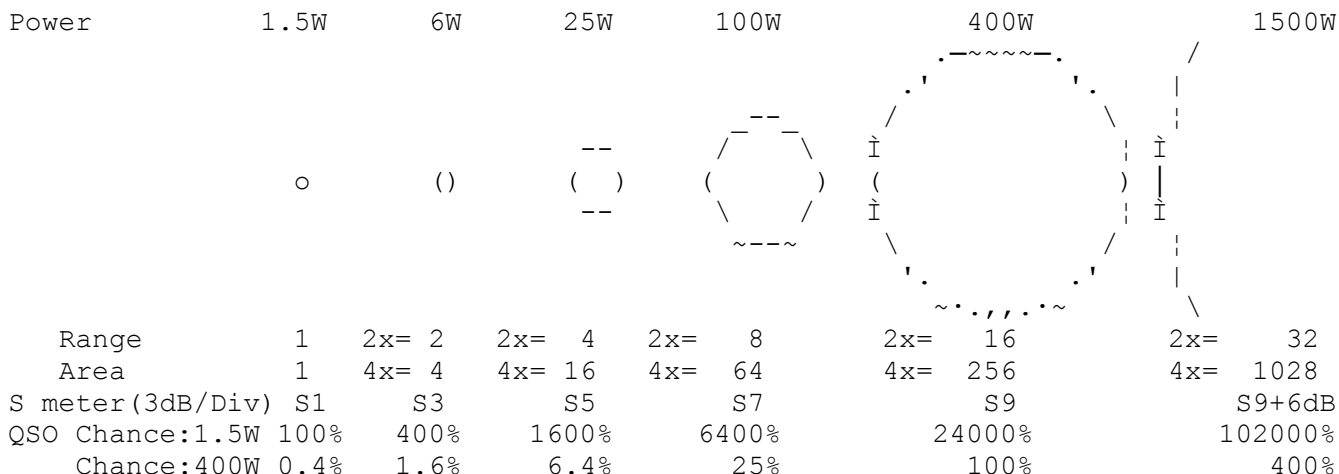
(New Apr 14)

(8 Bit ASCII graphics use code page 437 or 850, Terminal Font)

For years I have run as much QRO as I could muster. The main reason of course is to be heard as far as possible & increase the chance of working that Dx, or even having a contact at all. Also having a very small footprint with QRP can mean your constantly fighting to keep your frequency on a busy band.

SIMPLE MODEL

Here is a simplistic statistical view of what power does in terms of range, area covered, & hence the chance of a QSO, (based on +6dB = to double the range & 4x the area of RF).



CHANCE

Now chance is strange thing & much Dx is worked with QRP, often due to the extensive endeavour of keen QRP operators.

With HF of course there is multiple hops & this model will show step skip effects too (rings of skip "NO GO" & "GO" etc). Noise QRN @ Rx end & QRM from other station or modern electronics QRM, all impinge greatly on the contact chance.

At VHF the curvature of the earth can be a limiting factor.

BEAMS

By increasing the ERP with a beam, the range is increased, but not generally the footprint area. That depends on stack/bayed configuration. (less lost into space etc.) The actual chance of a contact therefore is often not increased, but the amount of Dx is!

QRO HOGGS

Of course it is worth saying, if all were to run QRO, the bands will be jammed with signals, Lots of Rx overload effects & some Tx splatter. So the number of total QSO might well decrease! To avoid Tx splatter linears should be properly 2 tone tested. Due to the underun exciter PA used when driving a high power PA, the result can actually be a cleaner signal than the exciter at full power!

QRO ALIGATORS

Not being able to Rx weak signals well, while running QRO, greatly cuts down the contact chance, to just those also running QRO !! So a QRO station should endeavour to have a better than average Rx set up.

## NOISE FLOOR

Here I use a 2nd Noise cancelling aerial with JPS ANC-4 to give 2-3 S points improvement, as well as Noise Eliminating BHI DSP LS for typically a further 12dB noise reduction.

## ASYMMETRIC QSOs

Often an asymmetric QRO to QRP contact is possible, where a dual QRP QSO would be unlikely due to both weak signals with QRN & QRM at each station! A good one way path makes all the difference & corrections needed in the weak direction get through much quicker.

See my Tech bul "Stacking, Baying or Boxing Ant", "BHI Noise Eliminating DSP LS" "AF 2 Tone Test Osc Design". "QRO Dummy Loads" & various PAs.

Why Don't U send an interesting bul?

73 de John G8MNY @ GB7CIP