

## **6 Meter DX Repeater at Mt. Climie 53.950 MHz**

There is activity at the lower end of the 6M band around 50.110 to 50.300 MHz but during enhanced signal conditions, due to Sporadic-E and Tropospheric ducting, the high altitude repeaters are often overlooked.

High altitude repeaters that have automatic beacon function enabled can be very useful to indicate a lift in DX signals and enhanced signal conditions.

Many DXers say their antenna is only tuned from 50 to 51 MHz and they will not try any other frequency.

In addition to this DXers are usually only horizontally polarised and claim that they will never work a repeater with a horizontal antenna.

Often this can be proven wrong. For example I have worked many stations who use 6m capable HF rigs but only have an HF antenna attached.

How signal is rotated via a Sporadic-E opening is complex and anyone's guess.

This is similar to the rotation I have experienced when the AO-40 satellite was in operation and what moon bounce operators have also reported. Signals do not follow theoretical paths if the E layer, F layer, through the ionosphere or over the horizon DX is involved.

The polarization of the signal can often change and the polarisation can vary.

What I am suggesting here is that the 53.950 MHz (395 designation) can be worked using most variations of antenna. Why not try it?

### **About the 395 Mt. Climie Repeater**

This repeater is built from a GE MastrII converted mobile rig. Transmitter output is 70 Watts to the antenna feeder cable. Feeder cable is LDF-450 foam Heliac ensuing best performance at the RF populated Mt. Climie site. The DPRE-4 -50 duplexer is from duplexers.eu and dipole antenna a modified commercial 90 MHz broadcast antenna. [1]

395 beacons ZL2VH/R in CW Morse code every 30 minutes so DXers can monitor for a lift in band conditions. For local users this beacon can be muted at their receiver by using CTCSS squelch tone 151.4 Hz.

With T-SQL enabled on RX only voice traffic is heard passing through the repeater. When the beacon keys the radio S-meter is displayed but no beacon audio is heard.

395 transmits on 53.950 MHz and receives on 52.950 MHz (-1 MHz offset)

Picture 1: 395 Repeater-Controller-PSU Installation at Mt. Climie.

Picture 2: 395 Duplexer next to D-Star and 3cm 10368.275 MHz DX Beacon. [2]

Picture 3: 395 Folded Dipole Antenna.

Picture 4: 395 Repeater schematic.

[1] <http://zl2vh.org.nz/assets/image/repeater/395-block-diagram.png>

[2] <http://zl2vh.org.nz/beacons/>

Let's work some repeater DX and experimentation with cross polarisation techniques on 395.

73 and good DX. John M Wysocki. ZL2TWS