

NEWSLETTER ARCHIVES

LF AT G3KAU.

Having received the Licence Variation document to operate on 73KHz the first steps were taken to get on the air. The old trusty Windom antenna with the feeders strapped together was pressed into service. An Audio signal generator with 6V output served as a TX. A few miserable milliamps appeared in the feeder but alas nothing was heard at G3GRO's QTH, 1.6 kilometres away. Next step was to improve the antenna system. Information gleaned from reading the available literature indicated that it was important to resonate the antenna with a loading coil in series with the vertical feeder. A home brew capacitance meter was used to measure the capacitance of the antenna to ground (2 inch dia copper pipe 5 feet long drilled into the lawn). It proved to be 420pF, very near to the theoretically calculated value. The vogue at the time was to wind enormous physical size, single layer loading coils to cope with the high voltages involved and the large inductances required. According to the experts any ferrite loading was strictly taboo. G3GRO and G3KAU, being somewhat contrary guys, promptly wound loading coils, multi layer fashion, 2.5" dia and 7' long loaded with ferrite rods. After experimenting with different grades of ferrites the coils worked fine. Coil inductance was adjusted to series tune the antenna system against ground and some 80mA were measured in the vertical wire at G3KAU. On test, reception at G3GRO and G3KAU was 539 in either direction. Guglielmo had nothing on us!! No two way QSO ensued as we had no system for easy change from transmit to receive. G3GRO went on his holiday and further tests were temporarily suspended.

Meanwhile a 73kHz record was established by G4JNT who's signals were received at a distance of 100k one way only. Next a two way QSO took place at a distance of 30k. Previous record stood at a distance of 100metres. On GRO's return we had an excellent two ways QSO 589 both ways, but we have missed the record boat by two days.

There were very few stations equipped for transmission and reception and most work was done in beacon mode. Reports started coming by phone, by letters, cross band on 80 metres and on the "Black sheep" reflector on the Internet. G3KAU's antenna system was improved by degrees, finally becoming an asymmetric "T" Marconi 70ft high with two parallel wires top, 120ft long. Earth system comprises 8 copper pipes 8ft long, drilled into the lawns at intervals and interconnected to the Versa tower base and the copper water main pipe 35ft long and buried 6ft under the surface. The prime mover is the I-IF Yeasu FT 990 transceiver. Reception is direct on 136K14z and via an up-converter to 24Mhz on 73MHz. For transmission either 13.6Mhz or 7.3 MHz from the 990 is divided by 100 and driving a much modified commercial 13K Electronics audio amplifier with 300w output. At this power level the loading coil with a "Q" of 400 produces some 20.000v RF and must be treated with due care as we have found out to our cost. RF burns are very painful and long healing!! KAU's coils are now remotely tuned. Best "DX" on 73kHz was G3PLX in Cumbria at 420 kilometres. This was one way only as G3PLX had no TX, but he received my slow morse signals (5 seconds dots) aurally and on a computer "waterfall display"). Things have improved rapidly since 13) 6KHz band was opened for us and most European countries. It was very much easier to bridge longer distances with the same basic equipment and QSOs were made with many "DX" stations. The first pinnacle of success for G stations was to work E10CF in Malin Head at 720k from G3KAU, worked on the 14.2.98. Many modifications and dead Power Fets later, G3KAU worked OH1TN on the 17.11.98 at 18.00, distance of 1835k. At present improve merits to the KX system, computer interface and a 1KW amplifier are in progress. All the work on LF is done on CW or Data, but KAU tried once a low power SSB mode with G3GRO. It worked very well, but the telephone started ringing with reports from all over the UK. Pity it took the whole 136 band!

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