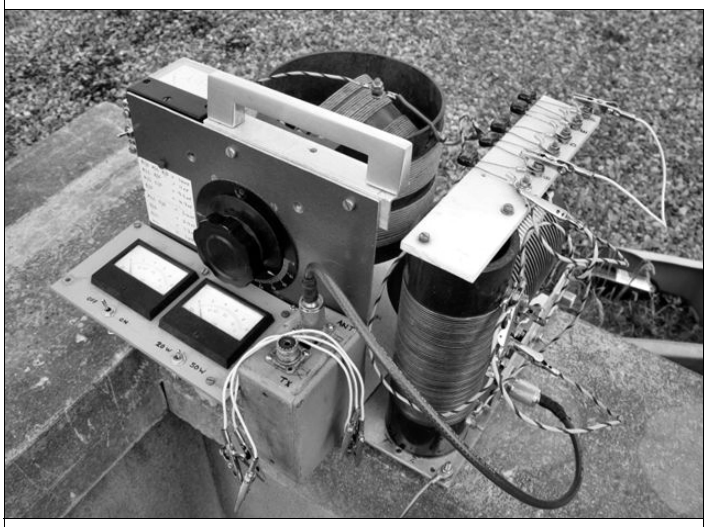
500 kHz - The Historical Band
by
Finbar O'Connor, EI0CF

A Winter night, the wind blowing in off the Atlantic, snow on the mountains nearby. Inside, the warm glow from radio equipment in a radio station perched on the edge of Ireland's North coast.

I pulled the Morse key a little closer, peered at the small message notepad on the desk, glanced at the big radio room clock, watching the second hand tick ever closer to midnight.
It was the night of the 31st December 1988, a bit of history in the making. Malin Head Radio, callsign EJM was going off the air, for the last time on 500 kHz, and I was the guy rostered to do the honours.

An hour earlier, my fellow Radio Officer, who was manning 2182 kHz and the various VHF channels, glanced at me in surprise as Scheveningen Radio PCH, in Holland, suddenly came up on 500 kHz with a huge signal and announced they were closing down on 500 kHz and 2182 kHz with immediate effect. To say we were surprised was an understatement.
Along with Norddeich Radio DAN, in Germany, they were the dominant and most powerful signals on MF. We had long suspected they were running huge amounts of power to a massive antenna. Indeed for a time, Scheveningen Radio had caused us an amount of grief, since they shared our working frequency of 421 kHz and their traffic list broadcast coincided with our 0848 utc weather broadcast.
Imagine how we felt when ships complained that our 1 kW signal was being blotted out by PCH, way off the north west coast. Our signal was not behind the door, we did get out well to the west, north and the south Irish sea, yet we were trounced good and proper by our Dutch friends, who, obviously, had access to transmitter power well beyond what we had available.
So we were surprised to find that they had just taken themselves off the air, just like that, 'in an instant'.



This picture shows a combined L match 500 kHz ATU, complete with an antenna current meter, a croc clip selection of shunt capacitors, ranging in value from 1 nF to 14 nf. The inductance is readily varied exactly with the ex Decca Variometer of 260 uH and fixed coils, which are also tapped, of 150 uH and 30 uH. This combination of components should match most wire antennas, fed against a reasonable ground.

EJM

Malin Head Radio, callsign EJM with two 50 metre towers, backup "Tee" antenna for 1.6 - 30 MHz operations.
Wire "Tee" antenna strung between the towers for Navtex on 518 Khz.
The main receive antenna is located on the hill seen beyond the station, 1 km distance and fed to the radio station by 600 ohm open wire feeder.

Picture - Finbar EI0CF

During daylight hours 500 kHz provided solid ground-wave coverage, an excellent system for distress coverage.
The provision of numerous coast radio stations, like Malin Head and Valentia Radio, EJK, plus the many thousands of ships all manned by trained Radio Officers, meant that 500 kHz had many many pairs of ears, all listening for any distress, urgency or help, in return.

On the 31st of December 1999, all requirements for the use of 500 kHz ceased, many coast radio stations closed down completely and ships were no longer required to have a radio officer. Most ships had already been fitted with satellite communications equipment for distress and normal ships business, supplemented by short range VHF and Digital Selective Calling on 2187.5 kHz, plus the Navtex system of broadcasting weather and navigational warnings on 518 kHz and 490 kHz.
However, those of us who had sailed at sea and served ashore in marine radio, mourned the passing of a service on 500 kHz that had proved it's worth and had helped in the saving of many lives since its inception nearly a hundred years before it's eventual closure.

Down in the transmitter room, or High Tension room, as us old timers called it, the big all valve 500 kHz transmitter blowers whined away, masking the gusts of wind beating against the windows. Two banks of Pye 512 kHz 500 kHz and 421 kHz rigs, main and standby, all nicely lined up. A bright warm glow from one cabinet, the common modulator section for all three channels, was visible through a glass panel. The pair of one foot tall, 4212e Triode valves, the output stage of the modulator, produced 500 watts of audio, at a tone of about 800 hz, to fully anode and screen modulate the final stage of the 1 kW transmitters.
The much smaller SSB transmitters, in a row, at the far end of the room, kept silent and waited in respect for their bigger brother's time in history.

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Once again I adjusted the Morse key on the 500 kHz desk, the notepad with the close down message was scanned….. again. The 3 minute Silence Period, the time, twice in an hour, when all stations remained just that, SILENT. A chance to hear weak distress calls, from 15 to 18 and 45 to 48 every hour.
2348 utc, a weak CQ from the Black Sea, Bulgaria on the air, then a rapid stream of Morse from Trieste Radio IQX, belting out his traffic list announcement, followed by Mariehamn Radio OHM, up in a frozen Finland, then a gap.

It was time….

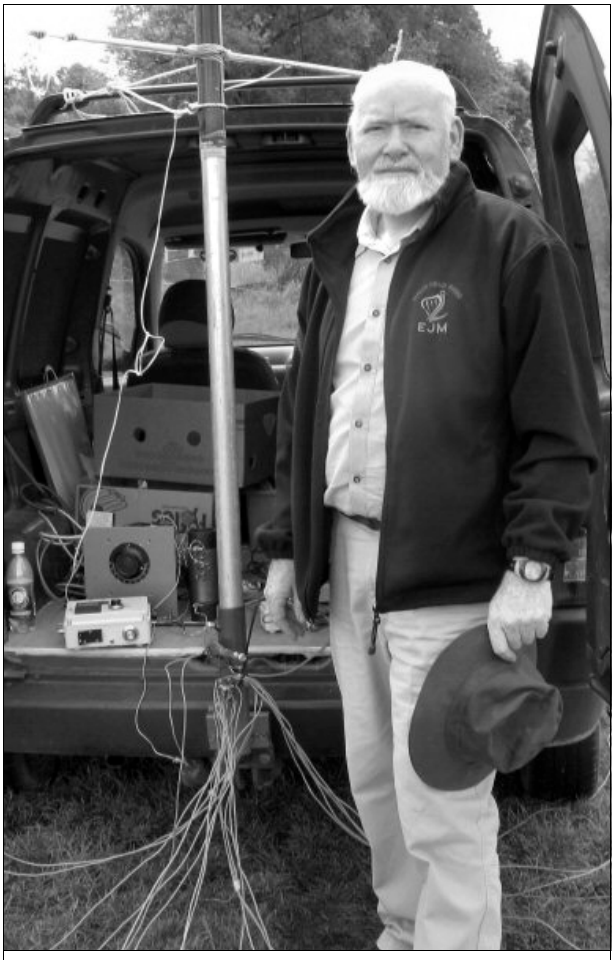
CQ CQ CQ DE EJM EJM EJM ……..

My hand firm on the key, yet inside a mixture of emotions, glad I had been given the chance to send this final transmission, yet very very sad, that we were going off the air on 500 kHz, forever.

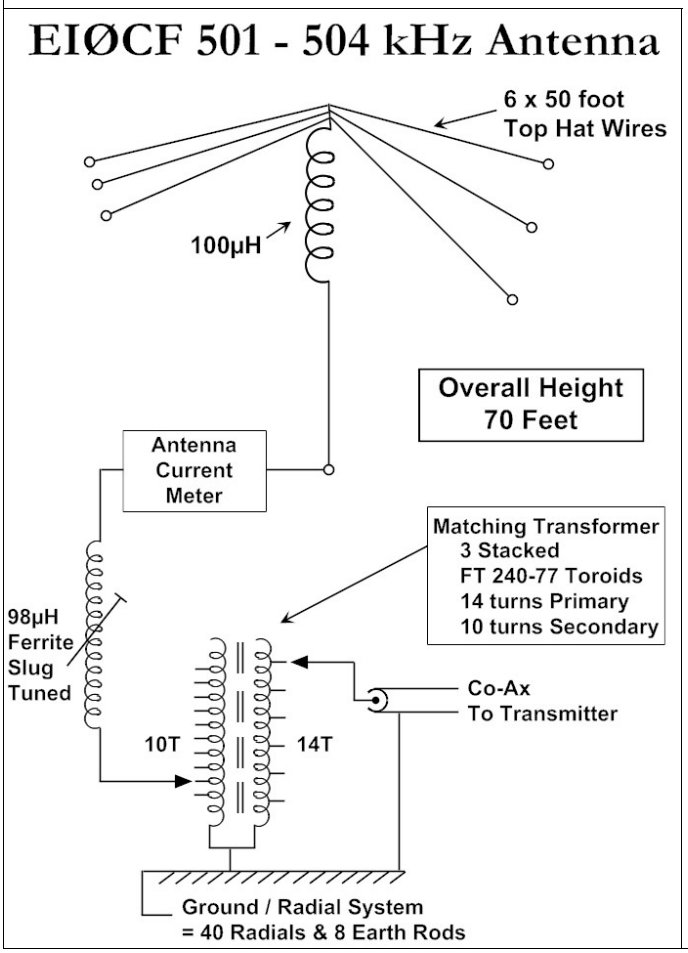
The transmission finished, 500 kHz burst to life, ships and coast radio stations, calling, wishing us good luck, thanks for our service over the years, best wishes for the New Year, one even commenting that their time would also soon be upon them.

Fast forward to 2008 and the IRTS announces their intention to apply for permission for Irish amateurs to operate near 500 kHz, in the 501 - 504 kHz band.

Permission is granted by ComReg and I dash off my application for a licence. Imagine how pleased I am to receive permission to put a signal out on 501 kHz all these years later.
To say that the band has not disappointed is an understatement. It has given me immense pleasure and pride to radiate a signal there, once again. Working across the Atlantic to Canada and the USA, to Sweden, Norway, Denmark, Holland, the UK. Cross band, usually to 80m on 3566 kHz, with France, Germany, Ukraine, Finland etc, has been a terrific experience. Ireland is on the air again on MF CW.



Finbar EI0CF at his portable set-up



I would urge those considering operating on 500 kHz to have a go, it will widen your operating horizons.
Don't imagine that Morse will be sent at a very fast speed. It is a most leisurely rate, sent by people who would just love to welcome you aboard and help you reach your new radio destinations.

If digital and data is more of an interest, WSPR is quite popular, and the WSPR programme and help files are easy to download. My reception of weak signals from the UK, Europe and the USA prove it is a viable means for those with low power, small antenna or minimal ERP.
Set your receiver to 502.4 kHz USB and let the WSPR programme decode the results. You can then upload what you have received to a common site and those experimenting can see how far their signals are radiating and at what time.
Many more countries are joining those already allowed to operate on MF.

Let me take this opportunity to thank the IRTS for their work in making all this possible on 501 - 504 kHz.

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