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Consultation on 450 – 470 MHz Alignment

Currently Liverpool Airport utilises the following UHF frequencies

Callsign	Base Rx Frequency	Base Tx Frequency	Base Unit Type
TOWER	460.9375	455.6375	Motorola MC Compact
FIRE	461.1375	455.8375	Motorola MC Compact
SECURITY	461.0500	455.7500	Motorola MC Compact
APRON	460.7875	455.4875	Motorola MC Compact
RAMP	460.0000	453.5000	Motorola EURO-BASE
SERVICES	459.6125	453.1125	Motorola EURO-BASE
GROUND	461.1000	455.8000	Motorola EURO-BASE

The Re-alignment requires that all Base Transmitter frequencies shall fall within the band 460 – 470 MHz, this affects all of our current frequencies. The Motorola EURO-BASE Base Unit is capable of realignment to new frequencies within the new band. The Motorola MC Compact Base Unit is not capable of realignment to new frequencies within the new band.

The Re-alignment requires that all Base Receiver frequencies shall fall within the band 450 – 460 MHz, this affects all of our current frequencies. The Motorola EURO-BASE Base Unit is capable of realignment to new frequencies within the new band. The Motorola MC Compact Base Unit is not capable of realignment to new frequencies within the new band.

The Motorola MC Compact Base Unit is of older design (10 years plus), the variant utilised at Liverpool is not capable of tuning to frequencies less than 455 MHz (without major modification) and also employs a common frequency synthesizer that provides the transmit frequency. The receiver frequency is derived from the common frequency synthesizer at 5.3 MHz greater than the transmit frequency, the new frequencies are a reverse of this set-up and have a Tx Rx spacing of 10 MHz. It will be necessary to replace the four MC Compacts.

The mobile radios (Motorola GM340, GM360) and the portable radios (Motorola GP340) will be alignable to the new frequencies. Some mobiles are of older design and are not alignable to new frequencies.

A disruption to each channel will occur, whilst each channel is re-aligned. At Liverpool Airport provision will be made to minimise any disruption by moving users to another channel whilst re-alignment of each channel is carried out.

The main impact to Liverpool Airport will be the cost of equipment and alignment,

Replacement of four Motorola MC Compact Repeaters at
£2,150.00 each. £8,600.00

As each channel is aligned to new frequency, a cost will be incurred to retune all radios.

A Base Unit costs approx	£50 per unit,	£ 50.00
Mobile Unit costs approx	£20 per unit, total of twenty units	£ 400.00
Portable Unit costs approx	£5 per unit, total of 200 units	<u>£1,000.00</u>
Total cost to change each frequency		£1,450.00

Six frequencies to change £8,700.00

To carry out the alignment to Liverpool Airport UHF 2
communications will incur a cost of some **£17,300.00**

The cost is quite substantial over probably one budgetary year, as most changes are required to be carried out during STEP 7 of the alignment program.

It is felt that some of these cost should be borne by some sort of UK Government / European funding. Especially as a major reason for alignment is to free up a large part of the band, giving the opportunity for the UK economy to benefit by some £55 million to £82 million per year.



Roger Griffiths
Senior Air Traffic Engineer