

Technical explanation of frequency allocation

Why do we operate a split frequency allocation for our flight lines?

The following hopefully explains the technical reasoning why we operate a split frequency allocation between our two flight lines and how this relates to the transmitter discipline we operate within them.

You won't be surprised to discover that much of what I am going to relate is covered in the BMFA handbook, but hopefully this will help in terms of how what they say relates to what we do, if that makes sense!

Modern radio equipment is very good and as a result we are currently able to operate 36 separate frequencies within the 35MHz band. However, this does mean that each individual frequency is only 10kHz away from its neighbours on either side. This isn't a terribly large separation, which even with everything working perfectly can give rise to problems, under certain conditions.

The most common of these is what is known as co-channel interference which can occur when two transmitters are operating on adjacent channels i.e. 61 & 62 or 62 & 63 etc. throughout the band. What can happen is quite simply that one system interferes with the other causing jittering of the control surfaces, glitching etc and potential loss of control. Thankfully this doesn't occur under normal circumstances when the two systems are being operated with both Tx's roughly the same distance from the aircraft they are controlling. This is why we have a pilot box which helps us to keep all the operating Tx's reasonably close to each other. It is also the reason why we don't take our Tx with us when we go to recover a model, even if it is only just from the circle. What we are trying to avoid is the situation where a Tx on one frequency, is significantly closer to an aircraft that is on an adjacent frequency, than the transmitter for that particular aircraft.

The same problem can arise in the pits if one Tx has its aerial up and another on an adjacent frequency has its aerial down. The BMFA handbook details a method for checking this co-channel interference which involves a similar technique. Whenever you find yourself operating alongside an adjacent frequency you are strongly advised to do the check detailed in the handbook.

Hopefully, the reason for the second circle (commonly, but incorrectly named glider) frequency split is now reasonably obvious. If we have aircraft that are being operated at some distance from the main circle, and if they are on a frequency that is adjacent to another in use at the main circle, then there is a strong possibility that a model on frequency X can be very much closer to a Tx on frequency X + or - 1 than its own i.e. you could easily overfly a Tx on an adjacent frequency.

This is why we have the division of the frequencies with a no use dead-band frequency in between.

For many years this split was a voluntary scheme, but in recent times and particularly with the increased frequency allocation it has been made mandatory. Please follow it, the rule has been made to protect everyone.

The current arrangement is:
Channels 55 to 67 – downfield use only.
Channel 68 – DO NOT USE, 'dead band'
Channel 69 to 90 – Main circle.