

CAP1777 and why we should all respond to protect our current freedoms in Class G airspace. Please respond to the CAA by 25th May 2019

CAP 1777 can be found here

<http://publicapps.caa.co.uk/modalapplication.aspx?catid=1&pagetype=65&appid=11&mode=detail&id=9046>

The CAA has also produced a summary which is available here.

https://publicapps.caa.co.uk/docs/33/CAP1776_EC_In_Focus.pdf

CAP1777 is the latest CAA document in the process towards their goal of mandating Electronic Conspicuity at 1090Mhz in **all** airspace across the UK. As Southampton joins the queue to grab more Class G airspace there is a real danger that sports aviation in the UK is under increasing threat. Some things to consider. (Quotes from CAP1777 are provided in *italics.*)

The CAA intends '**to declare the whole of the U.K as a Mandatory Zone for Electronic Conspicuity**' based on 1090Mhz use by **all** flying machines

This will restrict your freedom, to allow commercial operators to operate in uncontrolled airspace and also make you pay for the privilege.

- If your current freedom to operate in VMC in Class G airspace without further control is to be maintained in the near future, it is important that your voice (evidence) is heard.
- Please read CAP 1777 and respond with your wishes whatever they be.
- CAP 1777 uses misleading words like *Interoperable Electronic Conspicuity for 1090MHz Mandate*, *Co-Ordinating Adoption for a 1090MHz Mandate* and *Location Specific for a Rolling Mandatary 1090Mhz implementation*.
- Whilst Electronic Conspicuity is now and will undoubtedly, play a leading role in aviation safety and future airspace design, the ability for this to be done solely using the proposed 1090MHz bandwidth for all aircraft is questioned by many authorities including EASA.
- The call for evidence requests your views on the CAA strategy and other ways of approaching the issues. CAP1777 is not an easy document to follow but it is imperative that you respond to the CAA open and closed questions.
- A more acceptable approach would be to recognise that an untimely mandate for **any** specific EC technology is an unnecessary and **premature burden for GA aircraft** within uncontrolled airspace and that a mandate of EC specifically using 1090MHz will have unintended consequences for **all** aviation.

- If a solution is to be implemented this should be fit for purpose both now and future proofed for the next 30-40 years, ADSB at 1090MHz using Pulse Position Modulation **is not a futureproofed solution.**
- Whatever your views please respond so that your voice can be heard.

The use of 1090MHz as the primary EC frequency.

In CAP1777 the CAA re-confirms that 1090MHz remains its solely preferred frequency for the EC technology they intend to mandate.

Many technologists, including those based in the FAA and EASA, think that is an unwise decision for use by all aircraft due to the potential for frequency congestion caused by the very inefficient modulation technique used, particularly in busy airspace. The sole modulation technique used on the 1090 MHz aviation band is Pulse Position Modulation (PPM). This was developed and introduced in World War II and has remained fundamentally unchanged since 1945. The CAA understands and fleetingly acknowledges, that 1090MHz using PPM has a potential spectrum congestion problem.

“We think the challenge of delivering interoperable EC solutions will contain a spectrum element whichever route is adopted.” and also

“Existing aviation spectrum (1090MHz) in some cases is already highly utilised, and introducing significant additional users in certain geographical areas has the potential to interfere with existing systems to the detriment of existing surveillance”

For all aircraft over 5.7 t MTOW or faster than 250 kts, EU Regulation No. 1207 of 2011 has an obligation to equip with ADS-B based on Mode S technology. The deadline for retrofitting ends on 7 June 2020. However, an attempt to include all lighter aircraft in this ADS-B equipment commitment retroactively failed in 2017 when EASA found in the final report of Working Group RMT.0679 that an ADS-B Introduction to General Aviation would cause a congestion problem on the Mode S frequencies.

The CAA should therefore accept the burden of responsibility of demonstrating that 1090MHz using PPM, has the bandwidth required to cope with a universal mandate of all flying machines in the UK.

- The CAA goal is for the ***obligatory equipage by all flying machines*** of EC at 1090MHz.
- Primarily, this is for ground to air surveillance and secondarily for air to air EC.
- The FAA sensibly use 2 frequencies in the US, 1 for GA and 1 for Commercial with no universal mandate in uncontrolled airspace.

- EASA has no plans for a universal mandate in uncontrolled airspace, preferring voluntary equipage and interoperability between existing systems until a future proofed solution can be found.
- The CAA driver for a mandate is greater freedom for commercial operations in Class G airspace which will inevitably result in less freedom and greater restriction for GA in the UK.
- The CAA wants to implement a ***‘rolling programme of locations specific mandates to coordinate adoption at a national level, following a lower risk approach’***. Once started there will be no going back.

Responding to CAP1777

When responding to CAP1777, you should consider;

- How you would like the future freedom of GA sports aviation to develop in the UK over the next 25 years?
- How much freedom you are prepared to give up?
- Do you want more (even all) airspace to be controlled?
- Do you want to be forced to adopt specific Electronic Conspicuity at 1090MHz to maintain the freedoms you already have now, or have a choice of what to use?
- Do you think that single frequency (1090MHz) EC will have the bandwidth and duty cycle to meet your specific GA, gliding, foot-launched needs and the future needs of Drones, flying cars and whatever comes next?
- Should the CAA take a longer view of the requirements of EC, take technical advice and then choose an appropriate future proofed technology harmonised with Europe?
- Are you happy to see Air-band Radio also mandated as an unintended consequence of an EC mandate? (Universal ATC can't be effectively done without 2 way communications)
- Do you think that the market should be allowed to operate freely to meet your needs or dictated to by the CAA?
- One position that must be maintained is that in a mixed community the burden of responsibility for avoidance **MUST BE WITH THE (unmanned) UAV (drone) OPERATOR** not the GA pilot when operating in VMC.

Therefore, please respond to CAP 1777. If you don't want to have a more controlled environment, don't want to be ordered to invest in ADSB at 1090MHz as well as your chosen EC, don't want to see class G airspace diminished. Let the CAA know your views

through responding to CAP1777. **Silence will be seen as acceptance.**

If you feel that commercial pressures are forcing a strategy that will have a disproportionate effect on your flying freedom and force you to use an old fashioned inefficient modulation technique thus limiting future development, please provide the evidence of how you feel.

This is a one-way journey with no turning back. Please respond accordingly. Fly safely and keep a good lookout.

Please respond by 25th May 2019