

## Commercial UAV Show London ExCel 15-16 Nov 17

- Drone' was First used to describe an unmanned aerial target in 1946; it is now widely accepted to mean all unmanned air vehicles and the spectre of military killing machines seems to have disappeared! Reaper has been in RAF service since 2007 {House of Commons Briefing Paper No 06493, 8 October 2015}
- Price Waterhouse Coopers estimate the value of current business services and labour that have a high potential for replacement in the very near future by drone powered solutions at over \$127bn. Clarity from above, 9 May 2016 <https://www.pwc.pl/clarityfromabove>
- UAV/UAS/Drone world is extremely diverse - **it is as wrong to see one part of it and then think you understand what is going on in the un-manned world as it would be to look at a tiger Moth and think you understand about manned aviation!**
- In Europe, BAE Systems, Leonardo, Thales and Airbus heavily involved in unmanned development. The commercial opportunities for drones to do survey, dangerous, boring (not drilling) and precision tasks with less manpower (= cheaper) and faster (= cheaper) with less disruption (=cheaper & friendlier) seem almost unlimited.
- People are already operating drones that vary from sub-250 gram to more than 5,000 kg, including beyond visual line of sight (BVLOS); in December I met someone who had been flying a 5,000 kg vehicle BVLOS since 2008! In 2009 I flew a vehicle of >9,000 kg MTOM BVLOS.
- The Show Plenary discussed the FAA approach, using FAA part 101(e) for hobbyist activities and Part 107 for commercial operators. Much of the time was devoted to shoing what had been achieved rather than regulatory issues. One of our NZ-based members led a round table discussion on BVLOS which is reported at <https://skybase.aero/industry-developments/driving-bvlos-technology-forwards-round-table-summary/>
- The un-manned world wants to link regulated and unregulated airspace & operations and is already talking about unmanned traffic management (UTM) in similar terms to how we might discuss ATM today including the types of architecture needed.
- [ICAO](#)<sup>1</sup> and [RAeS](#)<sup>2</sup> are already on the case and considering how a UTM system adopts BVLOS. There is an unspoken challenge here - to ensure ATM and UTM are compatible and complementary.
- EASA and UK CAA now adopt inclusive approaches to drones. To quote Mike Gadd<sup>2</sup> (who should have spoken at the conference but was ill), the CAA business and technical lead for unmanned aircraft systems and cyber,<sup>3</sup> "It is necessary to enable manned and unmanned aircraft - the end game is that if it flies, it needs access to the airspace." He added that the stable, predictable, manned aviation environment needs to be available to all that legitimately need it, together with an appropriate level of safety and security from cyber-attacks. He continued with, "What we don't want is a chaotic scene ... Not all aircraft have the ability to hover and stop where they are."
- Altitude reporting, QNH, height above terrain and height above take off are all being used to vaying degrees, though the main reference is GEO-Ht
- Much of the unmanned world does not appreciate the implications of operating at altitude - larger operators, with aerodynamics experts etc. embedded are fine but smaller operators are not.

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<sup>1</sup> <https://www.icao.int/Meetings/RPAS/RPASSymposiumPresentation/Day%202%20Workshop%203%20ATM%20Integration%20Parimal%20Kopardekar.pdf>

<sup>2</sup> [https://www.aerosociety.com/news/cross-drone-traffic-atm-for-uavs/?utm\\_source=The%20Royal%20Aeronautical%20Society%20e-communications&utm\\_campaign=739ac76719-August\\_2017\\_Newsletter8\\_01\\_2017&utm\\_medium=email&utm\\_term=0\\_01701ea34d-739ac76719-29278656](https://www.aerosociety.com/news/cross-drone-traffic-atm-for-uavs/?utm_source=The%20Royal%20Aeronautical%20Society%20e-communications&utm_campaign=739ac76719-August_2017_Newsletter8_01_2017&utm_medium=email&utm_term=0_01701ea34d-739ac76719-29278656)

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- UK military rep clearly thought they led the world - the other presentaitons indicated they do not.
- In April, a BVLOS methodology should be published by Joint Authorities for Rulemakeing on Unmanned Systems (JARUS) <http://jarus-rpas.org> IFALPA is a member!
- JAROS working on 'equivalence' - with a view that UAVs need no worse than  $1 \times 10^{-6}$ /flying hour probability of causing death to 3rd person. (This may side-step, to some extent, the 'sense and avoid' driver unless mid-air collision is the accident trigger.)
- Several schools now established in UK to train people to UAV-pilot certificate standard accredited by CAA.
- Commercial operators are increasingly adopting practices from manned aviation - flight manuals, organisation operating manuals, risk assessment and safety management systems - using this to prep for each permission application.
- It is likely that our local police force uses drones already - mine does and is rolling-out awareness training courses this January!

DAA