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‘BREXIT’ WORKING GROUP

RECOMMENDATIONS FOR AVIATION FOLLOWING UK DECISION TO LEAVE THE EU

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Edited by
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The Honourable Company of Air Pilots was established as a Guild, modelled on the lines of the City of London Livery Companies, in 1929 to ensure that pilots and navigators were accepted and regarded as professionals. It was formally recognised as a Livery Company in 1956 and was granted a Royal Charter in the name of The Honourable Company of Air Pilots in 2014.

Today the Company’s activities are centred on sponsoring and encouraging actions to ensure that aircraft are piloted and navigated safely by highly competent, self-reliant, dependable and respected individuals. The Company fosters air pilot education and training from the initial training of young pilots to further specialist training through charitable activities, education and training, technical committee work, aircrew aptitude testing, scholarships and sponsorship, advice and recognition of the achievements of fellow aviators world-wide. This, together with the Company’s world-wide membership base, keeps it at the forefront of the aviation world.

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INTRODUCTION

- The aim for UK following Brexit must be focussed on long-term political stability, economic prosperity and the national interest. The airline industry enables the connectivity and communication that is the essential prerequisite to creating investment, growth, and jobs. Similarly, general aviation (GA) provides the bedrock on which the nation's commercial aviation activity is built.
- Despite global events, air travel is resilient. Airbus forecastⁱ that more than 33,000 new aircraft will be required to meet demand over the next 20 years and Boeing's figureⁱⁱ is 38,000. This growth will generate a huge training market. Attracting this business to the UK can provide a distinct economic benefit to UK. The worldwide demand for training personnel to support these new aircraft numbers will be in the order of 535,000 pilots and 603,000 maintenance technicians. That market is a massive new opportunity that UK should exploit.
- Government encourage the airline industry as a critical enabler in the nation's growth and prosperity agenda and support and nurture the right skills and enthusiasm for aviation in UK's young people so that they are able to help fill the demand. Enabling options are included below.

PROFESSIONAL PILOT TRAINING

VAT on Training Fees

- UK should increase its attractiveness to UK and non-UK student pilots, to encourage GA activity and pilot training, by removing VAT from the cost of training courses (or at least reducing it significantly). Training for aircraft engineers and technicians should be treated similarly.
- We note Treasury has resisted this because some courses lead to a 'leisure' licence. However, any training that has the potential to lead to a professional pilot or technician licence should be VAT zero/reduced rated. Many pilots who started training for leisure now fly professionally.
- Pilots who stop at the Private Pilot (non-professional) Licence still provide an income source and economic spur to the UK GA industry; witness the approach to GA on the other side of the Atlantic (or to that point the Channel) where GA is positively encouraged and flourishes.

Pilot Apprenticeships

- No trainee professional pilot should end their course with a debt far in excess of that experienced by other graduates; it is at times an impossible burden and is a punitive financial restriction on many who would otherwise seek a career in aviation. Reducing the cost of training will greatly lessen this burden of debt.
- Government should incentivise UK-based airlines to exploit and expand on the relatively new apprenticeship schemes for flying instructors.
- 'Training bonds,' that are repaid via salary sacrifice would be tax efficient and, coupled with the suggestions already made, would greatly reduce training costs for the individual.
- The reduction, or better still, zero rating VAT on flying training couple with the very tax efficient payback of a training bond through salary sacrifice (the means whereby something is paid for from gross salary rather than net salary) amortised over, say, 7-10 years would reduce training costs at a stroke to those commensurate with other graduate debt; even at the lower tiers of professional pilot salaries, junior First Officers pay tax at the higher rate.

COMMERCIAL AIR TRANSPORT

Legislative basis

- The Air Pilots have always held that regulation of a truly global industry should be truly global.
- Therefore, the UK's CAT activity should continue under EASA regulation or seek an alternative, 'globally recognised', aviation regulator such as FAA. The EASA route is preferable because, even as a non-voting member, UK would retain a degree of influence. CAA has neither the capacity nor expertise to take full CAT regulation back in-house.

Fatigue regulation

- Aviation Space & Environmental Medicineⁱⁱⁱ reported that implementing tighter flight time limitations (FTL) puts up some operating costs but reduces others by a larger amount. Annex A contains an extract from the report.
- Even if remaining with EASA, UK should apply more stringent fatigue regulations to UK-based airlines, thereby reducing UK-based airline operating costs.
- A relatively quick fix would be to revert to CAP 371 coupled with Fatigue Risk Management Systems (FRMS) so that the FRMS methodology, culture and ethos can embed into UK-registered airlines properly, prior to an eventual return to EASA Sub Part Q.
- EASA Sub Part Q relies on both a correctly functioning FRMS to prevent the iterative dangerous build-up of fatigue in an individual crew member and a Just Culture so that crew can declare freely when they are fatigued without the fear that such reporting will be prejudicial to their continued employment. Until both FRMS and Just Culture are established and demonstrated within airline management structures, Sub Part Q schedules are significantly more demanding than anything ever achievable under CAP 371 and immediately compromise CAT safety.
- The Air Pilots have an international working group investigating the science and practical fatigue implications in more detail; its draft recommendations to date are at Annex B.

Air Passenger Duty

- Air Passenger Departure Duty (APD) makes the UK airline industry uncompetitive against its peers and exports traffic abroad to rival airlines.
- Abolishing or setting APD to zero throughout the UK will incentivise airlines to fly into and 'hub' through UK and dissuade UK travellers opting for (currently cheaper to them but more environmentally damaging) Amsterdam/Paris/Madrid transfers.
- Government should address any environmental concerns at abolishing UK APD through seeking a global settlement through ICAO that addresses air transport emissions.
- If APD is to be levied at all, (and if it is, at an absolutely minimal level), it should be hypothecated towards producing the next generation of aviation-minded youth through an aviation youth training scheme to run in parallel with the Air Training Corps system that is now largely designed to serve RAF needs (rightly so when the RAF funds it).

GENERAL AVIATION

Legislative basis

- While there is a clear imperative to retain CAT legislation under a 'global' regulator, the case is less clear for GA:
 - GA operators who have no need to operate outside UK would benefit from a particularly 'light touch' in line with the Red Tape Challenge.
 - GA operators who need full access to Europe – touring, maintenance of EASA aircraft, etc. may prefer to remain under/within EASA regulation
- GA pilots and maintenance operations should be afforded the flexibility to choose the regime under which they operate, based on their own commercial considerations.
- CAA should be challenged to enable strong growth in any GA under its oversight.

Air Displays: When a 3rd Party is no longer 'uninvolved'

- UK needs to establish itself as an attractive place in which businesses can operate.
- The Occupiers' Liability Act 1984 Section 1(6) indicates that where a person knowingly accepts a situation of risk, the creator of that risk no longer has an obligation to stop generating the risk. See also *Ratcliff v McConnell and Harper Adams College* [1997] EWCA Civ 2679 Court of Appeal which judged that "no duty is owed by the occupier to any person who willingly accepts the risk as his own."
- Royal International Air Tattoo and Farnborough International Airshow used the statue and case law to support an approach to uninvolved 3rd party risk; they ensured that anyone entering or remaining within a risk area was fully informed of the situation in which they were placing themselves so that display flying was not necessarily curtailed if people gathered under the display flying area.
- This approach should be supported openly by government and by CAA so that it becomes the norm for by all display organisers.

DRONES

Expanded professional use

- Prior to the referendum, the government had a policy of encouraging expansion in the drone sector. The Air Pilots fully support the use of drones where sensible, such as:
 - In-shore and coastal surveillance
 - Pipeline/pylon inspection
 - Aircraft inspection (Airbus already offer this)
 - Motorway patrol/Accident identification
- Where this requires measured *relaxation* of restrictions on drones, the Air Pilots are ready to assist in devising how to *safely integrate* drones with CAT and GA, if necessary by reviewing the rules applied to manned aviation rather than through demanding that 'drones must operate like and not interfere with manned aviation'.

Leisure use

• A recent prediction^{iv} gives the projected worth of the drone industry by 2020 in the order of \$120bn. With small drone use rising rapidly and the growing number of near misses with commercial aeroplanes, an integrated policy based on assessed risk for drone use would be valuable.

- **Such assessment could include:**

- Collision
- Airprox
- Radar
- Security
- Fire
- Reputation
- Personal Injury

- **With a risk/benefit analysis of:**

- Airspace
- UAV no fly zones
- Housing areas
- Recreational areas
- Approach/ Departure Routes
- Geo-fences
- Industrial/ commercial areas

BROADER POLICY MATTERS

• Now is the time to make a bold decision, and to start the long overdue process that leads to a third runway at London Heathrow. We have been out-competed by our European neighbours for too long.

Laser Regulation – addressing the laser threat to aircraft and other transport

• The Air Pilots fully support the DfT/Home Office/Cabinet Office work to protect UK aviation from laser attack by stringent regulation, import control etc. etc. and the imposition of stronger criminal penalties where necessary.

• Improved safety of airline operation at UK airports will be an enhancing factor for UK when airlines plan their routing and basing options.

DEFERRED TOPICS

• Annex C contains other topics discussed that should be progressed later, rather than distract from the immediate focus of action following Article 50 declaration.

SUMMARY

- UK aviation is at a crossroads.
- If Government neglects the legitimate needs of aviation, both of the airlines and of general aviation, then it will fade away
- If Government takes appropriate action to embrace the challenges facing us, aviation and the industries it supports will contribute, as they have for decades, to the prosperity and development of our country for years to come.

ANNEX A - Fatigue Countermeasures in Aviation - Extract

John A. Caldwell, Melissa M. Mallis, J. Lynn Caldwell, Michel A. Paul, James C. Miller, and David F. Neri for the Aerospace Medical Association Fatigue Countermeasures Subcommittee of the Aerospace Human Factors Committee

- 1) *Fatigue is a physiological problem that cannot be overcome by motivation, training, or willpower;*
- 2) *People cannot reliably self-judge their own level of fatigue-related impairment;*
- 3) *There are wide individual differences in fatigue susceptibility that must be taken into account but which presently cannot be reliably predicted;*
- 4) *There is no one-size-fits-all “magic bullet” (other than adequate sleep) that can counter fatigue for every person in every situation; but*
- 5) *There are valid counter-fatigue strategies that will enhance safety and productivity, but only when they are correctly applied.*

Extract from an article by CAPA - centreforaviation.com

This article deals with an FAA cost benefit analysis of the benefits of having a sound and verifiable system of FTL legislation.

“After decades of attempting to change aviation flight and duty time rules, the [Federal Aviation Administration \(FAA\)](#) released its long-awaited, latest Notice of Proposed Rulemaking based on the Sept-2009 recommendations of an Aviation Rulemaking Committee ([ARC](#)). The committee found the job so complex that it not only produced recommendations but also included separate proposals produced by labour as well as [cargo](#), commercial and charter airlines. Administrator Randy Babbitt said all those involved in the development of the proposed rule came to “near unanimous” consent.

The agency suggests the new rule would [yield](#) between USD6 billion and USD8 billion in benefits balanced against nearly USD2 billion in costs over 10 years. The industry expected to produce different estimates since the FAA is known to low-ball regulatory impacts. On the other hand, industry is known to high-ball estimates meaning the actual costs are somewhere in between. The industry over-compensated for the post-911 [security](#) rules only to do an about face when Congress tried to set fees charged to passengers and airlines to defray the new security costs. The industry managed to bring those fees down before they were implemented”.

“A snapshot reveals increases in both rest and hours free from duty and gives airlines the flexibility to integrate fatigue science into their scheduling practices”.

FAA estimates of costs/benefits of provisions in this rule (Source FAA 2010)

	Nominal Costs (mill)	PV Costs (mill)
Total Costs (over 10 years)	\$1,254.1	\$803.5
Benefits assuming VSL of:	Nominal Benefits (mill)	PV Benefits (mill)
\$6.0 million VSL	\$659.4	\$463.80
\$8.4 million VSL	\$837	\$589

VSL: *In economic terms the Value of a Statistical Life (VSL) is the amount of money a person (or society) is willing to spend to save a life. Since there is no formal market for lives, the only way to*

measure the VSL is through indirect methods (e.g., surveys or observed human behaviour in risky environments).

Understanding the value of life is important for government policies where citizens' lives are at risk or where the goal is to save lives. For example, if pollution abatement measures come at a societal "cost per life saved" does the societal benefit of saving a life exceed this cost? If there are costs and benefits associated with going to war, how does society value the potential loss of life? In fact, the U.S. Environmental Protection Agency and the U.S. Office of Management & Budget have specific guidelines for the VSL.

PV: Present value (PV) is the current worth of a future sum of money or stream of cash flows given a specified rate of return. Future cash flows are discounted at the discount rate, and the higher the discount rate, the lower the present value of the future cash flows.

ANNEX B - Fatigue Working Group DRAFT Recommendations

Our Fatigue Working Group is investigating the science behind and the presentation of real life aviation crew fatigue. This work is ongoing but will lead to a written paper covering findings to date within the next two months or so. In advance of that paper's availability, **draft recommendations** that have emerged to date are as follows:

1. Maximum permissible duty times should be revised to reflect the actual commuting time and fatigue inducing stress that crews experience operating to and from the airport.
2. A review of current EASA FTLs is required urgently; the plan to wait for 3 years is not acceptable. In the meantime, UK should restore the safety bar to at least that provided by CAP 371 with additional measures to combat and deal with fatigue.
3. Fatigue regulations must be made available in a simple "plain language" format so that everyone has the same understanding of what is required to keep an operation safe.
4. Data is required to ensure the regulation of fatigue of those with flexible working arrangements provides adequate safe levels.
5. Work should start on the formulation and implementation of adequate fatigue rules for corporate pilots based on fatigue related science and medicine.
6. Work should be commissioned to help standardize the reporting of fatigue.
7. Use of the Karolinska Sleepiness Scale (KSS)⁶³, the Samn-Perelli Seven Point Fatigue Scale or the Visual Analogue Scale, all of which have been scientifically validated for self-assessment rating, should be implemented within the regulations.
8. The regulator must not allow regulations to be introduced without adequate staffing and preparation.
9. The CAA should require a better balance of facilitative classroom training to CBT than is used at the moment and include guidance for crews on rest, nutrition and exercise for their off duty time so that they can be best prepared for the next duty.
10. A committee should be established, based at a medical university, where experts would be available to review and comment on specific issues relating to fatigue; there is a model for this in Air New Zealand's support to research and ongoing work at the University of Auckland^v
11. The operators and CAA should be reminded of their liability for "duty of care" to third parties in the event of an accident or incident that can, in part, be attributed to fatigue; this could be modelled on the FAA scientific methodology for calculating the Value of a Statistical Life (VSL) used when constructing the current US FTL scheme.
12. The responsibility for "duty of care" to the general public over-riding patient confidentiality already exists in the UK. However, pressure should be applied for this to be the case for all nations operating under ICAO as this ultimately affects the safety of the British public.
13. Regulations need to be put in place to provide protection against fatigue amongst engineers; dispatchers and other airport workers who could make fatigue related errors that could affect the

safety of a flight.

14. Breach of both ICAO guidelines and EASA regulations on fatigue by code share airlines should be addressed, possibly through proper fatigue audits and an expansion of the ramp inspection that would include fatiguing schedules and the Just Culture.

15. The practice of Flagging Out and employment agencies as a means of avoiding effective fatigue management should be taken into consideration when allowing airlines to operate into UK airports (Linked to 12 and 15).

16. Fatigue should be treated and managed by employers entirely separately from sickness absence. Rules within the current (EASA) or proposed, revised CAP 371 should include this instruction.

17. "Chronic Fatigue Syndrome" should be included on the Insurance Underwriters list of medical conditions and in EASA Part Med.

18. Fast track financial penalties and withdrawal of an AOC for non-compliance need to be established to deter the less scrupulous from flouting the regulations.

19. To reverse the delegation of too much authority to industry, which has proved detrimental to flight crew fatigue exposure, the CAA needs to return to a more "hands on" approach to regulation and reinstate its department with oversight of FTLs.

Note: These are ***draft recommendations*** only. They may be modified and additional recommendations may emerge as the working group continues its research.

ANNEX C - Deferred Topics

Integrated Transport Policy

- Airports rely heavily on connections with other modes of travel – where this is not integrated, higher than necessary economic and environmental costs are a disincentive to users and airlines.
- Nonetheless, transport infrastructure decisions appear to be taken in isolation of other modes. - now is the time for UK to plan its transport - air, land, sea - in a holistic way.
- This includes baggage and people handling - and border protections.

Manston Airport- an option for increasing airport capacity in the South East?

- Background: The airport closed two years ago
- New owners Stone Hill Park submitted a **formal planning application** for the redevelopment of the site in May to build homes, two schools, shops, a hotel and leisure facilities and an engineering and hi-tech manufacturing business park that will create 2,000 jobs.
- US investment firm RiverOak wants to re-establish the site as an airport, and has applied for a **Development Consent Order** (DCO) on the basis that the airport is "a project of national significance". It has been holding the first of a series of sessions at Broadstairs Pavilion showing its plans.
- We need to keep a weather eye on this and possibly support an application for Manston's continued use as an airport in the future should the DCO be successful.

ANO Simplification

- Possibly time for an even more radical review?
- Why does Rule 5 require 500 ft from people etc.? Why 1,000 ft over congested areas? etc. These and other rules have been about a long time; do they still make sense of do they impose un-necessary (or unsafe) restrictions?
- BREXIT gives UK the opportunity for a fundamental review of aviation safety needs.

FOOTNOTES

- i Mapping Demand 2016-2035 – John Leahy, Airbus COO
www.airbus.com/company/market/global-market-forecast-2016-2035/
- ii Current Market Outlook 2015-2034 – Boeing.com
www.boeing.com/resources/boeingdotcom/commercial/about-our-market/assets/downloads/Boeing_Current_Market_Outlook_2015.pdf
- iii Fatigue Countermeasures in Aviation, J Caldwell and others, Aviation Space & Environmental Medicine, January 2009 www.asma.org/asma/media/asma/pdf-policy/2009/fatigue-counters.pdf
- iv Clarity from above, PricewaterhouseCoopers LLP, 9 May 2016 www.pwc.pl/clarityfromabove
- v Comparison of In-flight Measures with Predictions of a Bio-Mathematical Fatigue Model, D Powell & others, Aviation, Space & Environmental Medicine, December 2014
www.fmhs.auckland.ac.nz/assets/fmhs/som/psychmed/petrie/docs/2014%20Comparison%20of%20In-flight%20measures%20with%20fatigue%20model.pdf