Written evidence submitted by the Civil Safety and Security Unit, University of Leicester (ASM0016)

Introduction

This short submission examines the issue of the management and modernisation of UK airspace through a systems-thinking lens. Systems-thinking recognises that effective problem-solving requires the development of holistic and inclusive understandings. Modern systems are complexly interactive. Understanding them and the problems they create requires an open mind and panoptic vision. Being a systems analysis, this submission discusses the interlinked and mutually affecting issues of runway capacity and airspace modernisation.

The problem space

According to the celebrated sociologist Professor Ulrich Beck, we Europeans live in an age of heightened environmental awareness: “[W]hile in classical industrial society, the ‘logic’ of wealth production dominates the ‘logic’ of risk production, in the risk society this relationship is reversed ... In the welfare states of the West ... the struggle for one’s ‘daily bread’ has lost its urgency ... Parallel to that the knowledge is spreading that the sources of wealth are ‘polluted’ by growing ‘hazardous side-effects’” (Beck, Risk Society, 1992).

In its exploration of environmental risk awareness, Beck’s seminal 1992 book Risk Society captured the spirit of the age – the post-fall-of-the-Berlin Wall zeitgeist, if you will. With the threat from the East diminished, Europeans had more time to focus on the environment. Europe’s heightened environmental consciousness, expressed in numerous codes, rules and regulations, forms the backcloth to discussions about runway capacity and patterns of use. Along with financial, political and other pressures, environmental pressures are an important element of the problem space.

Confronting potential distortions

While Europe’s heightened environmental consciousness has produced numerous positive outcomes, on occasion it has made it difficult to hold a reasoned debate on runway capacity and airspace modernisation. The reality of the situation is this:

1 In terms of aviation infrastructure investment (especially in regards to runways, air traffic control technologies and modus operandi) the United Kingdom is falling behind other European nations

2 Chronic under-investment incurs significant environmental costs. For example, the lack of runway capacity means that aircraft are required to hold at low altitude. Stacking causes pollution. This situation will worsen

3 Environmental lobbying has created a febrile atmosphere. This atmosphere is not conducive to rational debate. Environmentalists’ simplistic (if not fundamentalist) analyses leave no room for holistic thinking. Runways are framed as a problem rather than part of the solution. The option of reducing environmental disamenity by getting aircraft on the ground as quickly as possible is discounted

4 By adding complexity and acting as a stressor, stacking increases operational risk. It increases the risk of pilot error (due to fatigue and/or stress), fuel exhaustion and collision. In January 1990, Avianca Flight 92 crashed in the vicinity of JFK airport. The Boeing 707 had run out of fuel. Put into three extended
holds, the aircraft was running low on fuel when the pilot-in-control (PIC) performed a go-around due to poor visibility. Before the PIC could line the aircraft up for a second approach, it ran out of fuel. According to Professor Robert Helmreich of the University of Texas Human Factors Research Project, the disaster had both immediate and proximate causes. The former included fuel starvation, poor crew coordination and the crew’s failure to respond to repeated ground proximity alerts. The latter included flight crew fatigue.

5 Because it increases operational risk, stacking should be avoided. Possible remedies include the more efficient management of airspace and the provision of additional runway capacity. I recommend that two new runways be constructed at Heathrow, and one at Gatwick. The current plan to build just one additional runway at Heathrow is already obsolete. Concurrently, the technologies and practices of UK air traffic control should be modernised. Aviation is something this country does well. We should aim to create a gold-standard for the world aviation community.

6 Departing the European Union provides a window of opportunity for the repeal of economically disruptive environmental legislation. In my opinion a more reasonable balance must be struck between protecting the environment and supporting the British economy. Exiting the EU will be traumatic. The government must give as much support to industry as it reasonably can. If it does not, I fear the economy will shrink, and that Britain will experience once again the kinds of social, economic and political dislocations seen in the 1970s and early 1980s. A bleak prospect.

Conclusions

Viewed through a systems-thinking lens, Britain’s airspace problem is multi-dimensional. The primary issue is runway capacity. Getting aircraft on the ground quickly is safer, more economical and more environmentally friendly than leaving them bouncing around in stacks over the south-east of England. It is also more passenger-friendly – an important consideration given that, post-Brexit, we will have to appeal to, and attract money men and women from around the world. These people will expect the best, something we cannot offer at the moment. The day after Britain triggered Article 50, the Chancellor warned that Britain must be “more open to business than at any time in history”. The creation of more capacity must be supported by investment in the best air traffic control technologies, staff and practices the country can afford.

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