
NATMAC 62 – SURVEILLANCE AND SPECTRUM WORKING GROUP REPORT

1 INTRODUCTION

1.1 The last meeting of the Surveillance and Spectrum Working Group (SASWG) was held on 25 July 2007. A synopsis of the main topics discussed, with updates where relevant, is contained below.

2 SURVEILLANCE ISSUES

2.1 **Mode S EHS Mandate.** Mode S Enhanced Surveillance (EHS) had been mandated in notified UK airspace from 31 March 2005. Notified airspace is currently the vertical and lateral bounds of the London TMA. However, NATS have now formally requested that EHS airspace be expanded to include airspace under the responsibilities of both Manchester and London Area Control Centres in 2008. The exact dimensions of this airspace are yet to be defined, although the extant EHS mandate permits notification of major terminal and en route airspace. Although NATS may be in a position to begin using Mode S tools in MACC and LACC airspace in 2008, the CAA will seek to provide as much notice as possible in order to minimise impact.

2.2 **Mode S ELS Proposals.** The CAA proposals for further expansion of the Mode S mandate continue in accordance with the NATMAC Informative issued after NATMAC 61, on 21 May.

2.2.1 **Phase 1.** The Full Regulatory Impact Assessment (RIA) for the introduction of Mode S as the de facto means of technical compliance for current transponder regulations has now been submitted to the Secretary of State for approval. Aircraft with a Mode A/C transponder will be given a 4-year transition period during which to upgrade their equipment. If approved, the necessary regulatory amendments will be incorporated into the January 2008 Air Navigation Order (ANO) update, final drafting of which is now complete.

2.2.2 **Phase 2.** Phase 2 will seek to introduce Mode S for VFR flight within controlled airspace (CAS), powered international flight irrespective of airspace, flights within Transponder Mandatory Zones (TMZ) and will remove existing exemptions from the ANO for gliders. This Phase is subject to further public consultation, which is due to commence in November and last for 16 weeks to account for the festive period. As a precursor to public consultation, the CAA has arranged for up to three stakeholder impact assessment workshops. The first workshop was held at CAA House on 14 September and attended by stakeholders including GASCo, NATS and MOD and user groups representing recreational and sporting aviation, general aviation/air works and airport operators. Unfortunately AOPA and PFA were unable to attend. The objective of the first workshop was to identify issues affecting the proposal and to initiate the necessary investigations. A second workshop is scheduled for 10 October at the PFA HQ at Turweston where the outcome of the investigations will be discussed. Currently, the earliest feasible implementation date for Phase 2 would be 31 March 2009, and it is envisaged that this would have a 3-year transition period that would coincide with the end of the transition period for Phase 1. Flights outside CAS below FL100 will be largely unaffected by Phase 2.

2.3 **LPST.** EUROCONTROL contracted the CAA to draft a LPST Concept of Operations (CONOPS) document to set out the operational policies and procedures for the use of an LPST in European airspace. CAA work on this has now been

completed and the document is with EUROCONTROL for review. The CAA will advise when the document is publicly available. At the end of June, the CAA hosted a EUROCAE stakeholder/industry workshop to discuss the European perspective on development of LPST standards. David Bowen, EUROCAE Technical Secretary and Chairman of the meeting, provided the following initial summary of the event,

“The recent EUROCAE Forum and Workshop on General Aviation Transponders and Standardisation Issues concluded that the LPST Concept of Operations would be a good basis for the development of an LPST technical specification and acknowledging the impact of EASA intentions for regulatory changes for lighter and simpler aircraft.

While there are undoubted technical challenges it is believed that EUROCAE can provide the forum for appropriate stakeholder involvement to ensure that a practical and affordable product is developed to the right specification. GA user groups have the opportunity to be involved in this, together with the manufacturers and regulators, to ensure their concerns are addressed in this development”.

- 2.4 The Health Protection Agency (HPA), successor to the National Radiological Protection Board (NRPB), has now completed its study into the potential effects of non-ionizing radiation from a LPST. The objective of the study was to determine the exposure to electromagnetic fields (EMFs) from a Mode S LPST used near the body. The assessment was made for peak-radiated powers of 30W and 80W. The results of this independent study, the draft of which is entitled ‘Exposure to EMFs from Lightweight Aviation Transponders’ will be published on the HPA website in due course and the CAA will advise when this is available.
- 2.5 **Wind Farms.** The number of pre-planning applications for wind turbine developments received by the CAA continues to increase, in part because of the impending change to the Government funding rules in 2009. The CAA is involved in a number of ongoing consultations, both onshore and offshore, some of which are high profile and have aviation as a key issue. A large number of developers have asked for meetings to discuss potential mitigation techniques and the CAA is content to do this, but only as resources allow. The EUROCONTROL Wind Turbine Task Force (WTF) seeks to formulate European policy and guidance for wind farms and their effect on aviation, including an accurate assessment methodology. The CAA is due to conduct a review on CAP 764, CAA Policy and Guidelines on Wind Turbines, towards the end of 2007 and the NATMAC are invited to provide comments to the SASWG Secretary as appropriate.

3 SPECTRUM ISSUES

- 3.1 **International Update.** The CAA continues to progress work in support of aeronautical related areas of World Radio Conference 2007 (WRC 07), 22 October to 16 November. In particular: a possible extension to the Earth Exploration Satellite service and its impact on radar; expansion of mobile phone spectrum into aviation bands; and future communications systems. It is noted that because it has not been possible to develop clear stakeholder requirements, the UK is now proposing that UAV spectrum requirements be addressed at the 2011 WRC.
- 3.2 **8.33kHz.** The UK Aeronautical Information Publication (AIP), GEN 1-5-3, has been updated to detail European 8.33kHz channel spacing requirements and the handling of non-equipped aircraft above FL195. Further, Schedule 5 of the ANO now specifies

the carriage requirements for 8.33kHz radios above FL195. Moreover, NATS are still planning for up to eight 8.33kHz conversions above FL195 by July 2008.

- 3.3 It is recognized that over the next 15 years the demand for new frequency assignments throughout Europe will greatly exceed that which can be met from existing availability based on 8.33kHz channels above FL195 and 25kHz spaced channels elsewhere. Despite ongoing work to develop and implement a Future Communications System, optimistically this will not be available before 2025. Therefore, it is thought that in the medium term further expansion of 8.33kHz is the only feasible solution. Obviously this has the potential to impact greatly on military and GA, and the UK would like to see an initial phased expansion of 8.33kHz, rather than a 'big-bang' approach. A bilateral meeting, chaired by Eurocontrol and hosted by NATS, took place on 6 September to discuss the preferred options for the phased implementation of 8.33kHz below FL195. Representatives from IAOPA, UK MOD, the GA Alliance, IAA, NATS and the CAA attended. Unfortunately AOA were not present. The meeting was one of a series to be run by EUROCONTROL to help formulate the Business Case, prior to formal submission to the Provisional Council to decide on the way ahead. It is likely that any changes in current 8.33kHz mandates will be consolidated under the Single European Sky (SES) Interoperability Implementing Rules (IRs).
- 3.4 **Spectrum Trading, Liberalization & Public Sector Audit.** Work continues to assess the impact of the recommendations of the audit that relate to aeronautical spectrum under the oversight of the Cabinet Office UK Spectrum Strategy Committee (SSC), which DAP sit on. This work includes studies into increased sharing of aeronautical spectrum with other radio services, Ofcom review of licensing and the introduction of Administrative Incentive Pricing (AIP) into aeronautical bands. Initially, AIP will be considered for the area of the spectrum used by primary radar and its introduction is anticipated to be in the later part of FY08/09 at the earliest. The Ofcom licensing contract with CAA is due to run out in December 2008 and discussions on the way forward are in progress. Ofcom held an 'AIP: Aeronautical Workshop' on 25 June, which was attended by the CAA, NATS, BAA, DfT, EUROCONTROL and IATA; however, it was disappointing that there was not greater representation from GA. Further briefing on this topic will be provided under a separate NATMAC agenda item.
- 3.5 **GPS.** GPS jamming exercises continue to be notified by AIC and NOTAM for all military exercises. The CAA and the MOD both recognized the sensitivities associated with GPS jamming and are doing everything possible to limit the effects of such trials and exercises. However, since GPS is a military system, the MOD can authorise jamming exercises as they see fit for training and operational requirements. Nevertheless, the CAA is working closely with the MOD to determine how this can best be managed in the future.

4 DATA LINKS

- 4.1 **CASCADE.** CASCADE, the Eurocontrol programme to reduce ATM delays, increase safety and increase ATM efficiency by introducing ADS-B applications and advanced Controller Pilot Data Link Communications (CPDLC) services, will use to the maximum extent possible the Mode S and VHF Digital Link Mode 2/Aeronautical Telecommunications Network (VDL2/ATN) infrastructures deployed by the Mode S EHS and LINK 2000+ Programmes respectively.
- 4.2 **SES DLS IR.** On 13 June EUROCONTROL held a stakeholder consultation workshop to discuss the results of the formal consultation on the Data Links Services

(DLS) IR. The aim of the DLS IR is to mandate the proposals of the current Link 2000+ Programme; which is managing the introduction of CPDLC services (using VDLM2/ATN). Much of the discussion at the workshop focussed on the proposed timescales for implementation in both the air and on the ground. Whilst many airlines were keen for early implementation, some of the major ANSPs were more reticent and proposed later ground implementation dates. Whilst no firm conclusions were reached at the workshop, the Commission representative made it clear that any significant slippages to the right of the Core Area date would not be looked upon favourably as it would potentially impinge on SESAR. At least one major airline is concerned that the IR mandates ATN only, even though there are a significant number of aircraft that are Future Air Navigation System (FANS) equipped and would therefore wish to encourage ANSPs to support FANS on the ground as well as ATN.

- 4.3 **ADS-B.** On 11 May the EUROCONTROL's Stakeholder Consultation Group endorsed the 'ADS-B Implementation Policy for Europe'. Of note was that the ADS-B Programme was fully compatible with other ADS-B technology decisions made in the United States, Canada and Australia.

5 NEXT MEETING

- 5.1 The next meeting of the SASWG is scheduled for 1330hrs at CAA House on 27 November 2007, with the GAWG to be held earlier in the day.

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Chairman