



International Civil Aviation Organization

**AUTOMATIC DEPENDENT SURVEILLANCE –
BROADCAST SEMINAR AND TWELFTH MEETING
OF AUTOMATIC DEPENDENT SURVEILLANCE –
BROADCAST (ADS-B) STUDY AND
IMPLEMENTATION TASK FORCE (ADS-B SITF/12)**



Kolkata, India, 15-18 April 2013

Agenda Item 6: Review States' activities and interregional issues on trials and implementation of ADS-B

**THE QUESTION OF THE ENTRY OF NON-ADS-B FITTED AIRCRAFT INTO
MANDATED ADS-B AIRSPACE**

(Presented by Australia)

SUMMARY

This paper presents a discussion on the question of the entry of non-complying aircraft into ADS-B mandated airspace. The approach being considered presently in Australia is presented for the purpose of information and possible discussion by the meeting. Further discussions between the ANSP (Airservices Australia) and the Regulator (CASA) are presently underway which may lead to further development of the information presented in this IP.

1. Introduction

1.1 The first Australian mandate for the carriage of ADS-B by aircraft is for flight at/above FL290 in Australian territorial airspace. The mandate applies to Australian and foreign registered aircraft and commences on 12 December 2013.

1.2 Analysis of aircraft fitment rates indicates that there will be a number of turbojet aircraft on the Australian register that will not meet the compliance date and remain unfitted. The issue of management of non-complying aircraft after the December 2013 date has been the subject of discussion between CASA and the ANSP, Airservices Australia.

1.3 Class A controlled airspace in Australia extends upwards from FL245, so there are several flight levels available for non-ADS-B fitted aircraft to operate, but the penalty is increased fuel burn and less preferential treatment and lower clearance priority by ATC.

2. Discussion on the question of entry of non-fitted aircraft to ADS-B airspace

2.1 Operators have already had more than 4 years notice of the aircraft ADS-B fitment requirement.

2.2 There is a provision included in the Australian ADS-B rules for CASA to give written authorisation to an aircraft operator to operate an aircraft without ADS-B. AIP SUP H96/12 provides more detail (see www.airservicesaustralia.co/aip/current/sup12-96.pdf). The rule requires the applicant to submit a safety impact assessment (termed a 'safety case'), as well as other supporting reasons, in the application for exemption 4 weeks before the intended flight. This provision was made because it was considered there may be circumstances where an aircraft could operate without affecting the safety and efficiency of air traffic management.

2.3 The 'safety case' would have to set out what provisions would apply for safe operation without ADS-B for flight at/above FL290. For radar controlled airspace, there will be minimal safety impact. The remainder of the enroute continental upper airspace at/above FL290 outside radar coverage is subject to ADS-B based separation by ATC.

2.4 AIP SUP H96/12 states that once an exemption or short term approval is obtained, clearance to operate at or above FL290 will be made by Air Traffic Control at the time of the flight and is subject to traffic management considerations. Aircraft equipped with ADS-B will receive priority

2.5 The ANSP has subsequently conducted further safety analysis and as a result has requested CASA that, in the event CASA grants any exemptions, the exemptions should be subject to the following conditional requirements:

- a) Exemption to operate at/above FL290 does not guarantee that an ATC clearance will be available for any particular flight. Final approval to operate at/above FL290 will be made by ATC at the time of each flight subject to prevailing traffic and operational conditions;
- b) Exempted aircraft must plan each flight to operate below FL290 so that if an ATC clearance into ADS-B airspace is denied the aircraft has sufficient fuel to complete the flight;
- c) Exempted flights must include RMK/APV NIL ADSB in field 18 of the flight plan; and
- d) Applications for exemption should include the proposed equipment installation/modification plan and timeframe to bring the aircraft into compliance.

These types of conditions would be legally binding regulatory requirements included in each Exemption issued by CASA. Further discussions are being undertaken on these matters which may be subject to further development.

3. Discussion on flight in ADS-B airspace by aircraft with unserviceable ADS-B equipment

3.1 ICAO Doc 8168 PANS-OPS, Vol. 1, section 1.7 contains the following in relation to procedures for the flight of aircraft with transponder failures:

Extract from ICAO Doc 8168 Vol. 1

1.7 TRANSPONDER FAILURE PROCEDURES WHEN THE CARRIAGE OF A FUNCTIONING TRANSPONDER IS MANDATORY

1.7.1 In case of a transponder failure after departure, ATC units shall attempt to provide for continuation of the flight to the destination aerodrome in accordance with the flight plan. Pilots may, however, expect to comply with specific restrictions.

1.7.2 In the case of a transponder which has failed and cannot be restored before departure, pilots shall:

- (a) inform ATS as soon as possible, preferably before submission of a flight plan;
- (b) insert item 10 of the ICAO flight plan form under SSR the character N for complete unserviceability of the transponder or, in the case of partial transponder failure, insert the character corresponding to the remaining transponder capability;
- (c) comply with any published procedures for requesting an exemption from the requirements to carry a functioning SSR transponder; and
- (d) if required by the appropriate ATS authority, plan to proceed as directly as possible, to the nearest suitable aerodrome where repair can be carried out.

3.2 The Australian ADS-B rule has a provision included to provide for flight if the ADS-B equipment is unserviceable, which takes account of the above PANS-OPS procedure. The rule states that flight is permitted if the following applies:

- a) the flight takes place within 3 days of the discovery of the unserviceability; and
- b) flight with unserviceable equipment has been approved by CASA , in writing, subject to such conditions as CASA specifies; or
- c) The unserviceability is a permissible unserviceability set out in the Minimum Equipment List for the aircraft; and
- d) ATC clears the flight before it commences despite the unserviceability.

4. Action by the Meeting

4.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) discuss any relevant matters as appropriate; and
- c) consider a harmonized approach within the APAC member states.
