

International Civil Aviation Organization



**AUTOMATIC DEPENDENT
SURVEILLANCE – BROADCAST SEMINAR
AND FOURTEENTH MEETING OF
AUTOMATIC DEPENDENT
SURVEILLANCE – BROADCAST (ADS-B)
STUDY AND IMPLEMENTATION TASK
FORCE (ADS-B SITF/14)**



Christchurch, New Zealand, 14 – 17 April 2015

Agenda Item 4: Review States' activities and interregional issues on implementation of ADS-B and multilateralism

ADS-B FLIGHT PLANNING

(Presented by Australia)

SUMMARY

This paper details the status of ADS-B related flight planning in Australia.

1. Introduction

- 1.1 Many flight plans are submitted with incorrect Flight plan indicators in field 10.
- 1.2 Australia has prepared the attached advice for operators in Australia

2. Action by the meeting

- 2.1 The meeting is invited to consider the attached for possible inclusion in the AIGD.

Flight Planning of Aircraft Transponder and ADS-B Capability

Background:

Newer technologies for aircraft surveillance are now available – such as Mode S and ADS-B – which in many aircraft are installed as replacements for older Mode A/C transponders.

Air Traffic Control makes use of these new capabilities, and uses the Flight Plan information as a decision support tool – to allow the Air Traffic Controller to predict the surveillance capability of a particular aircraft before it enters radar or ADS-B coverage.

Current and future mandates for ADS-B and Mode S (refer to CAO 20:18) may mean that if flight planning does not accurately reflect the aircraft capability, services may be withheld (for example if ADS-B is mandatory, but not indicated on the flight plan).

Flight Planning Requirements for Transponder and ADS-B:

The flight planning requirements for aircraft are described in AIP ENR 1.10 and repeated below.

Surveillance Equipment

Circle N for Nil, or

SSR Modes S, C and A:

Enter one SSR code representing the highest level of surveillance available (in order highest is L then E, H, S, I, P, X, C and A is lowest).

L SSR Transponder Mode S, including aircraft identification, pressure altitude, extended squitter (ADS--B) and enhanced surveillance capability.

E SSR Transponder Mode S, including aircraft identification, pressure altitude and extended squitter (ADS--B) capability.

H SSR Transponder Mode S, including aircraft identification, pressure altitude, and enhanced surveillance capability.

S SSR Transponder Mode S, including both pressure altitude and aircraft identification capability.

I SSR Transponder Mode S, including aircraft identification, but no pressure altitude capability.

P SSR Transponder Mode S, including pressure altitude, but no aircraft identification capability.

X SSR Transponder Mode S with neither aircraft identification nor pressure-altitude capability.

C SSR Transponder Mode C

A SSR Transponder Mode A

Note: Enhanced surveillance capability is the ability of the aircraft to down-link aircraft derived data via a Mode S transponder.

ADS--B

Enter up to three ADS--B codes: either ‘B1’ or ‘B2’ and/or either ‘U1’ or ‘U2’ and/or either ‘V1’ or ‘V2’

- B1 ADS--B with dedicated 1090MHZ ADS--B “out” capability
- B2 ADS--B with dedicated 1090MHZ ADS--B “out” and “in” capability
- U1 ADS--B “out” capability using UAT
- U2 ADS--B “out” and “in” capability using UAT
- V1 ADS--B “out” capability using VDL Mode 4
- V2 ADS--B “out” and “in” capability using VDL Mode 4

Additional information:

The capability of your aircraft transponder, and ADS-B capability, will typically be available in the transponder manual, or in the flight manual for the aircraft. For General Aviation aircraft, the most common configurations for filing in the flight plan field 10b will be (listed in order of capability).

EB1 – An ADS-B equipped aircraft would typically file this to indicate the Mode S transponder capability with ADS-B out.

S – The majority of Mode S transponders (without ADS-B) will support pressure altitude information and Flight ID transmission.

C – For aircraft with an older Mode A/C transponder – most of which provide pressure altitude capability.

Less common configurations in General Aviation will include:

H, LB1 or LB2 – Enhanced surveillance capability is more usually associated with higher end aircraft. ADS-B IN (B2) is relatively rare at this time, but may be available for some aircraft.

I, P or X – Most Mode S transponders will support Flight ID and pressure altitude, so these configurations are not common.

A – some low end GA aircraft may not provide pressure altitude information.

Planning designations not to be used in Australia:

U1, U2, V1 or V2 – these ADS-B technologies are not authorised for use in Australia.

Remember:

Always flight plan the correct surveillance capability for your aircraft. If in doubt, consult the transponder manual, aircraft manual, or your LAME.
