Australian Government
Civil Aviation Safety Authority

AIRWORTHINESS BULLETIN

Assigning Transponder Aircraft Address

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1. Applicability

Aircraft fitted with equipment that requires an 24 bit aircraft address (also known as the Mode S address), this includes Air Traffic Control Mode S Transponders and Automatic Dependant Surveillance - Broadcast (ADS-B) stand alone squittering devices.

Note: Some 406 MHz Emergency Locator Transmitters also utilise the Mode S address to identify the aircraft when activated.

2. Purpose

This AWB is intended to be a reminder:

- That persons issuing Certificates of Airworthiness (CofA) need to ensure that the aircraft complies with requirements described in the CASA Certificates of Airworthiness Manual, section 2.2.16, regarding Mode S address; and
- To maintainers that the requirements for testing Mode S addresses are part of the tests mandated in AD/RAD/47 or CAO 100.5 as appropriate. The AD references the United States Federal Aviation Regulation (FAR) 43, Appendix F.
- Provide detail on obtaining an aircraft address for a Remotely Piloted Aircraft (RPA)

3. Background

The introduction of the new generation Mode S Secondary Surveillance Radars into operational use and increasing numbers of aircraft transmitting ADS-B Extended Squitter messages has identified that some aircraft are transmitting incorrect Mode S address. The Mode S address is linked to the aircraft registration mark and is the unique identifier of the aircraft.

4. Requirement

The Certificate of Airworthiness Manual, section 2.2.16, requires that the Mode S address be confirmed as correct prior to the issuing of a Certificate of Airworthiness.

AD/RAD/47, Requirement 1 and clause 14.3 of Appendix 1 of CAO 100.5 states that the transponder is to be tested in accordance with FAR 43 Appendix F. Paragraph (f) of Appendix F requires that the Mode S transponder only respond to interrogations that utilise its assigned address. This assigned address is the one issued by the Aircraft Registrar, or by a recognised Recreational Aviation Administrative Organisation, to the registered operator.

The CASA aircraft registrar has allocated a block of 24 bit aircraft addresses for RPAs which are not linked to any aircraft identification mark. Please contact aircraftregistrar@casa.gov.au for assignment of 24 bit aircraft address. The linking of the 24 bit aircraft address is a pilot/operator function through the transponder configuration and the filing of the CODE / label with the 24 bit aircraft address in field 18 of the Air Services Flight Notification form.

5. Recommendations

When issuing a CofA, the person doing so should ensure that there is a record of the aircraft being configured with the correct 24 bit aircraft address and that the appropriate testing has been carried out.

When performing AD/RAD/47 or CAO 100.5 as appropriate ensure that the Mode S address is correct and confirmed during testing.

Where a modification or maintenance on the transponder system has been carried out, the maintenance organisations need to confirm with the aircraft owner/registered operator what the assigned Mode S address is and compare that to the address contained in the aircraft's relevant equipment. If incorrect, the address must be updated.

A record should be made in the aircraft log book confirming the address that the aircraft has been configured for.

Aircraft transmitting an incorrect Mode S address may suggest that either requirements of the original CofA, AD/RAD/47 or CAO 100.5 was not completed correctly.

6. Enquiries

Enquiries with regard to the content of this Airworthiness Bulletin should be made via the direct link e-mail address:

AirworthinessBulletin@casa.gov.au

or in writing, to:

Airworthiness & Engineering Branch
Civil Aviation Safety Authority
GPO Box 2005, Canberra, ACT, 2601