



**Australian Government**  
**Civil Aviation Safety Authority**

Instrument number CASA 25/20

I, SHANE PATRICK CARMODY, Director of Aviation Safety, on behalf of CASA, make this instrument under subregulations 174A (1) and 209 (1) of the *Civil Aviation Regulations 1988*.

**[Signed S. Carmody]**

Shane Carmody  
Director of Aviation Safety

9 June 2020

**CASA 25/20 — Direction — use of ADS-B in foreign aircraft engaged in private operations Amendment Instrument 2020 (No. 1)**

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**1 Name**

This instrument is *CASA 25/20 — Direction — use of ADS-B in foreign aircraft engaged in private operations Amendment Instrument 2020 (No. 1)*.

**2 Commencement**

- (1) Subject to subsection (2), this instrument commences on the day it is registered.
- (2) However, this instrument does not take effect until the beginning of 16 July 2020.

**3 Amendment of CASA 61/14**

Schedule 1 amends *CASA 61/14 — Direction — use of ADS-B in foreign aircraft engaged in private operations*.

**Schedule 1 Amendments**

**[1] Section 3, Definitions**

*repeal and substitute*

- 3 The definitions in Schedule 1 also apply for Schedules 1A, 2, 3 4 and 5.

**[1] Section 5, Condition, including the Notes**

*repeal and substitute*

- 5 It is a condition for operations under CAR and CASR that a foreign aircraft must conform to the requirements of the applicable Schedules in this instrument.

**[2] Schedule 1, clause 1, the chapeau (for application of Definitions)**

*repeal and substitute*

1 In this Schedule, and in Schedules 1AA, 1A, 2, 3, 4 and 5:

**[3] Schedule 1, clause 1, definition of *approved equipment configuration*, including the Note**

*repeal and substitute*

***approved equipment configuration*** for ADS-B transmitting equipment means an equipment configuration that:

- (a) meets the conditions for approval set out in Schedules 2, 3, 4 or 5, as applicable; or
- (b) is approved in writing by CASA.

**[4] Schedule 1, clause 1, definition of *EASA AMC 20-24***

*repeal and substitute*

***EASA AMC 20-24*** means Annex II to ED Decision 2008/004/R titled *Certification Considerations for the Enhanced ATS in Non-Radar Areas using ADS-B Surveillance (ADS-B-NRA) Application via 1090 MHz Extended Squitter*, dated 2 May 2008, of EASA, or a later version as in force from time to time.

**[5] Schedule 1, clause 1, definition of *NIC***

*repeal and substitute*

***NIC*** means Navigation Integrity Category as specified in paragraph 2.2.3.2.3.3 of RTCA/DO-260B.

**[6] Schedule 1, clause 1, definition of *RTCA/DO-260A***

*repeal*

**[7] Schedule 1, clause 1, definitions**

*insert*

***14 CFR 91.225*** means regulation 91.225 of the United States Title 14 Code of Federal Regulations (CFR) titled *Automatic Dependent Surveillance-Broadcast (ADS-B) Out equipment and use*, as in force from time to time.

***AMSL*** means above mean sea level.

***CASR*** means the *Civil Aviation Safety Regulations 1998*.

***Certain light sport, experimental and other aircraft*** means any of the following:

- (a) a light sport aircraft for which a special certificate of airworthiness has been issued and is in force under regulation 21.186 of CASR;
- (b) a light sport aircraft for which an experimental certificate has been issued and is in force under paragraph 21.191 (j) or (k) of CASR;
- (c) any other aircraft for which an experimental certificate has been issued and is in force under paragraph 21.191 (g) or (h) of CASR;
- (d) an aircraft for which an experimental certificate has been issued and is in force under subregulation 21.190 (1) of CASR;

- (e) an aircraft to which any of the following Civil Aviation Orders (CAOs) applies:  
CAO 95.4, 95.4.1, 95.8, 95.10, 95.12, 95.12.1, 95.32, 95.53, 95.54 or 95.55;
- (f) a Part 103 aircraft within the meaning of regulation 103.005 of CASR.

*Note* Part 103 of CASR commences on 25 March 2021 (see regulation 2 of the *Civil Aviation Legislation Amendment (Parts 103, 105 and 131) Regulations 2019*). Paragraph (f) is permitted by subsection 98 (5D) of the *Civil Aviation Act 1998*.

**Class A TABS** means TABS functionality relating to transponder function, altitude source function, and ADS-B OUT function, in accordance with (E)TSO-C199, as in force from time to time.

**Class B TABS** means TABS functionality relating to position source function, in accordance with (E)TSO-C199, as in force from time to time.

**Class B TABS position source device** means a device with a Class B TABS functionality.

**EASA CS-ACNS** means Annex I to ED Decision 2013/031/R titled *Certification Specifications and Acceptable Means of Compliance for Airborne Communications, Navigation and Surveillance CS-ACNS*, dated 17 December 2013, or a later version as in force from time to time.

**IFR** has the same meaning as I.F.R. and stands for instrument flight rules.

**integrated TABS device** means a device with integrated Class A TABS and Class B TABS functionality.

**NACp** means Navigation Accuracy Category for Position as specified in paragraph 2.2.3.2.7.1.3.8 of RTCA/DO-260B.

**RTCA/DO-260B** means RTCA Inc. document RTCA DO-260B titled *Minimum Operational Performance Standards for 1090 MHz Extended Squitter Automatic Dependent Surveillance – Broadcast (ADS-B) and Traffic Information Services – Broadcast (TIS-B)*, dated 2 December 2009, unless a later version as in force from time to time is expressly referred to.

**SDA** means System Design Assurance as specified in section 2.2.3.2.7.2.4.6 of RTCA/DO-260B.

**SIL** means Source Integrity Level as specified in paragraph 2.2.3.2.7.1.3.10 of RTCA/DO-260B.

**TABS** means traffic awareness beacon system.

**UK CAP 1391** means Civil Aviation Authority of the United Kingdom document number CAP 1391 titled *Electronic conspicuity devices*, 2<sup>nd</sup> edition, dated April 2018, or a later edition as in force from time to time.

**VFR** has the same meaning as V.F.R. and stands for visual flight rules.

**[8] Schedule 1, clauses 3 to 8, inclusive**

*repeal and substitute*

- 3 Subject to clause 12, if an aircraft carries ADS-B transmitting equipment for operational use in Australian territory:
- (a) the equipment must comply with an approved equipment configuration under Schedule 2, 3, 4 or 5 in accordance with the Application provisions of the Schedule; and
  - (b) for Schedule 5, any administrative standard included in the schedule must be complied with.

- 4 When serviceable ADS-B transmitting equipment is operated in Australian territory, the equipment must transmit:
  - (a) the current aircraft address; and
  - (b) a flight identification that:
    - (i) corresponds exactly to the aircraft identification mentioned on the flight notification filed with ATC for the flight; or
    - (ii) if a flight notification is not filed for the flight — is the aircraft's registration mark; or
    - (iii) is directed or approved by ATC.
- 5 If an aircraft in flight carries serviceable ADS-B transmitting equipment, the equipment must be operated:
  - (a) for equipment that complies with an approved equipment configuration set out in Schedule 2 — continuously during the flight in all airspace and at all altitudes, unless the pilot is directed or approved otherwise by ATC; and
  - (b) for equipment that complies with the approved equipment configuration set out in Schedule 3, 4 or 5 — continuously during the flight, within the airspace and within the altitude limits specified for the flight in the applicable Schedule, unless the pilot is directed or approved otherwise by ATC.
- 6 Subject to clause 7, if an aircraft carries ADS-B transmitting equipment which does not comply with an approved equipment configuration, the aircraft must not fly in Australian territory unless the equipment is:
  - (a) deactivated; or
  - (b) set to transmit only a value of zero for the NUCp, NACp, NIC or SIL.

*Note* It is considered equivalent to deactivation if NUCp, NACp, NIC or SIL is set to continually transmit only a value of zero.
- 7 The ADS-B transmitting equipment need not be deactivated for paragraph 6 if the aircraft is undertaking an ADS-B test flight in VMC in airspace below FL290.
- 8 An aircraft that is operated:
  - (a) in an IFR operation; or
  - (b) in any operation at or above FL290;
 must carry serviceable ADS-B transmitting equipment that complies with the approved equipment configuration set out in Schedule 2.
- 9 If an aircraft is operated in a VFR operation below FL290:
  - (a) it may carry serviceable ADS-B transmitting equipment (the *equipment*); and
  - (b) if it carries the equipment — the equipment must comply with the approved equipment configuration set out in Schedule 2, 3, 4 or 5.
- 10 Clause 8 does not apply to an aircraft if:
  - (a) the aircraft owner, operator or pilot has written authorisation from CASA for the operation of the aircraft without the ADS-B transmitting equipment; or

- (b) the equipment is unserviceable for a flight, and each of the following applies:
    - (i) the flight takes place within 3 days of the discovery of the unserviceability;
    - (ii) at least 1 of the following applies for the flight:
      - (A) flight with unserviceable equipment has been approved by CASA, in writing, subject to such conditions as CASA specifies;
      - (B) the unserviceability is a permissible unserviceability set out in the minimum equipment list as approved by the NAA of the State of registration of the aircraft;
    - (iii) before it commences, ATC clears the flight despite the unserviceability.
- 11 Unless otherwise approved in writing by CASA, ADS-B transmitting equipment carried on an aircraft must allow the pilot to activate and deactivate transmission during flight.
- Note* This requirement is met if the ADS-B transmitting equipment has a cockpit control that enables the pilot to turn ADS-B transmissions on and off.
- 12 A requirement under Schedule 2, 3 or 4 that an approved equipment configuration for ADS-B transmitting equipment be authorised in accordance with a specific TSO or ETSO does not apply to the ADS-B transmitting equipment carried on certain light sport, experimental and other aircraft provided that:
- (a) the equipment configuration that is carried provides the pilot, other aircraft and ATC with the same transponder and surveillance capability as would be provided if the equipment were expressly authorised in accordance with the specific TSO or ETSO; and
  - (b) the pilot or the operator has a statement of conformance (however described) from the equipment manufacturer stating the particular standard or standards of the TSO or ETSO with which the equipment conforms.

**[9] After Schedule 1**

*insert*

**Schedule 1AA Instructions — SSR transponder equipment**

- 1 For subregulation 174A (1) of CAR, this clause specifies the SSR transponder equipment that must be carried on certain aircraft before they undertake a VFR flight.
- 2 A serviceable Mode A and Mode C SSR transponder must be carried on an aircraft that:
  - (a) was manufactured before 6 February 2014; and
  - (b) has not been modified by having its transponder installation replaced on or after that date; and
  - (c) operates under the VFR and within ATC radar coverage, in Class A airspace below FL290, in Class B airspace, or in Class C airspace.

*Note* Carriage of a Mode A and Mode C transponder does not remove the requirement to obtain CASA approval to operate in Class A airspace: see subregulation 99AA (3) of CAR.
- 3 Clause 2 does not apply if the aircraft carries serviceable Mode S transponder that meets the standards set out in in Schedule 1A.

- 4 A serviceable Mode A and Mode C SSR transponder must be carried on an aircraft that:
  - (a) was manufactured before 6 February 2014; and
  - (b) has not been modified by having its transponder installation replaced on or after that date; and
  - (c) has an engine-driven electrical system capable of continuously powering a transponder; and
  - (d) operates under the VFR in Class E airspace, or above 10 000 ft AMSL in Class G airspace.
- 5 Clause 4 does not apply if the aircraft carries:
  - (a) a serviceable Mode S transponder that meets the standards set out in in Schedule 1A; or
  - (b) a serviceable integrated TABS device that meets the standards set out in Schedule 4.

*Note* Civil Aviation Order 20.18 Amendment Instrument 2020 (No. 1) repealed instrument CASA 316/98 which contained the previous instructions under subregulation 174A (1) of CAR in relation to carriage of transponders

**[10] Schedule 1A, clause 2, Note 1 and Note 2**

*repeal and substitute*

*Note* CASA Advisory Circular 21-46 provides guidelines on Mode S transponder equipment.

**[11] After Schedule 1A, clause 8**

*insert*

- 9 Subject to clause 10, if Mode S transponder equipment incorporates ADS-B functionality, the equipment must comply with the applicable approved equipment configuration required under Schedule 1 for ADS-B transmitting equipment.
- 10 For clauses 2 and 9, a requirement that the equipment be authorised in accordance with a specific TSO or ETSO does not apply to Mode S transponder equipment carried on certain light sport, experimental and other aircraft provided that:
  - (a) the equipment configuration that is carried provides the pilot, other aircraft and ATC with the same transponder and surveillance capability as would be provided if the equipment were expressly authorised in accordance with the specific TSO or ETSO; and
  - (b) the pilot or the operator has a statement of conformance (however described) from the equipment manufacturer stating the particular standard or standards of the TSO or ETSO with which the equipment conforms.

**[14] Schedule 2, the heading**

*repeal and substitute*

**Schedule 2 — Approved equipment configuration — ADS-B transmitting equipment — IFR and VFR flight**

**[15] Schedule 2, Part A**

*repeal and substitute*

**Part A — ADS-B transmitting equipment — approval and application**

**Approved equipment configuration — IFR and VFR flight**

- 1 Subject to this Part, an equipment configuration for ADS-B transmitting equipment is approved if it complies with the standards specified in Part B or Part C of this Schedule.

**Application**

- 2 ADS-B transmitting equipment carried on an aircraft in an IFR flight has an approved equipment configuration if, and only if, it complies with the standards in Part B or Part C of this Schedule.

*Note* No other Schedule applies to the equipment in an IFR flight.

- 3 ADS-B transmitting equipment carried on an aircraft in any operation at or above FL290 has an approved equipment configuration if, and only if, it complies with the standards in Part B or Part C of this Schedule.

*Note* No other Schedule applies to the equipment in an operation above FL290.

- 4 ADS-B transmitting equipment carried on an aircraft, in a flight that is not an IFR flight or any flight at or above FL290, has an approved equipment configuration if it complies with the standards in Part B or Part C of this Schedule.

*Note* For example, ADS-B transmitting equipment carried on an aircraft in a VFR flight below FL290 would have an approved equipment configuration if it complied with the standards in Part B or Part C of this Schedule. However, another Schedule may apply to the equipment in the VFR flight.

**[16] Schedule 2, clause 6, including the heading and Note**

*repeal*

**[17] Schedule 2, paragraphs 7 (a) and (b)**

*repeal and substitute*

- (a) it has been approved or accepted by:
  - (i) the NAA of a recognised country, as meeting the standards of EASA AMC 20-24 or EASA CS-ACNS; or
  - (ii) the FAA, as meeting the standards of 14 CFR 91.225 for 1090 Megahertz (MHz) Extended Squitter ADS-B; and
- (b) the aircraft flight manual attests to the approval or acceptance; and

**[18] Schedule 2, paragraph 8 (a) and (b)**

*repeal and substitute*

- (a) it has been approved or accepted by:
  - (i) EASA as meeting the standards of EASA AMC 20-24; or

- (ii) the FAA as meeting the standards of 14 CFR 91.225 for 1090 Megahertz (MHz) Extended Squitter ADS-B; and
- (b) the aircraft flight manual attests to the approval or acceptance; and

**[19] After Schedule 2**

*insert*

**Schedule 3 — Approved equipment configuration — Mode S transponder with Class B TABS position source device — VFR flight below FL290 only**

**Part A — ADS-B transmitting equipment — approval and application**

Approved equipment configuration — Mode S transponder with Class B TABS position source device

- 1 Subject to this Part, an equipment configuration for ADS-B transmitting equipment is approved if it is a Mode S transponder with Class B TABS position source device that complies with the standards specified in Part B of this Schedule.

**Application**

- 2 A Mode S transponder with Class B TABS position source device carried on an aircraft has an approved equipment configuration if it complies with:

- (a) the standards in Part B of this Schedule; and
- (b) the conditions set out in clauses 3 and 4.

Note Another Schedule may apply to the equipment in a VFR flight.

- 3 For paragraph 2 (b), a Mode S transponder with Class B TABS position source device may only be operated in VFR flight below FL290.

- 4 For paragraph 2 (b), if a Mode S transponder with Class B TABS position source device transmits a SIL value of less than 2, the aircraft must not enter controlled airspace in which:

- (a) aircraft are required to carry serviceable ADS-B transmitting equipment that complies with an approved equipment configuration in accordance with Schedule 2; or
- (b) VFR aircraft are required to carry ADS-B transmitting equipment.

Note Carriage of a Mode S transponder with Class B TABS position source device does not remove the requirement to obtain ATC clearance to operate in Class B or C airspace. Nor does it remove the requirement to obtain CASA approval to operate in Class A airspace – see subregulation 99AA (3) of CAR.

**Part B — Standards for a Mode S transponder with Class B TABS position source device**

**Mode S transponder — standard**

- 1 The Mode S transponder must be of a type that:
  - (a) is authorised in accordance with (E)TSO-C166B, as in force from time to time; or
  - (b) approved in writing by CASA as meeting the specifications in RTCA/DO-260B, whether dated 2 December 2009, or a later version as in force from time to time; or

- (c) is authorised in writing by CASA as being equivalent to a device mentioned in paragraph (a) or (b).
- 2 When required to be operated, the Mode S transponder must transmit NACp, NIC, SIL and SDA values in accordance with the authorised capability of the GNSS position source.  
GNSS position source equipment
- 3 The geographical position transmitted by the Mode S transponder must be determined by:
  - (a) a Class B TABS position source device that is authorised in accordance with (E)TSO-C199, as in force from time to time; or
  - (b) another source that is authorised in writing by CASA as being equivalent to a source mentioned in paragraph (a).
 Altitude source equipment — standard
- 4 The pressure altitude transmitted by the Mode S transponder must be determined by:
  - (a) a barometric encoder of a type that is authorised in accordance with (E)TSO-C88a, as in force from time to time; or
  - (b) another system that is authorised in writing by CASA as being equivalent to a barometric encoder mentioned in paragraph (a).

#### **Schedule 4 — Approved equipment configuration — Integrated TABS device — VFR flight below FL290 only**

##### **Part A — ADS-B transmitting equipment — approval and application**

###### Approved equipment configuration — integrated TABS device

- 1 Subject to this Part, an equipment configuration for ADS-B transmitting equipment is approved if it is an integrated TABS device that complies with the standards specified in Part B of this Schedule.

###### Application

- 2 An integrated TABS device carried on an aircraft has an approved equipment configuration if it complies with:
  - (a) the standards in Part B of this Schedule; and
  - (b) the conditions set out in clause 3.

*Note* Another Schedule may apply to the equipment in a VFR flight.

- 3 For paragraph 2 (b) an integrated TABS device may only be operated in transmitting mode:
  - (a) in VFR flight below FL290; and
  - (b) in Class D, Class E or Class G airspace.

*Note* An integrated TABS device is not a substitute for mandatory carriage of a transponder in relevant airspace, except in Class E airspace, or in Class G airspace above 10 000 ft: see Schedule 1AA, paragraph 5 (b).

##### **Part B — Standards for an integrated TABS device**

- 1 An integrated TABS device must meet the technical specifications in (E)TSO-C199, as in force from time to time, that are for a device with integrated Class A TABS and Class B TABS functionality.

- 2 An integrated TABS device must transmit a SIL value of 1.
- 3 Subject to clause 4, an integrated TABS device must be authorised by the relevant NAA of the equipment manufacturer as meeting the standards mentioned in clauses 1 and 2.
- 4 Clause 3 does not apply to an integrated TABS device carried on certain light sport, experimental and other aircraft provided that the TABS device that is carried:
  - (a) provides the pilot, other aircraft and ATC with the same transponder and surveillance capability as would be provided if an integrated TABS device were expressly authorised by the relevant NAA; and
  - (b) the pilot has a statement of compliance (or however described) from the equipment manufacturer certifying that the equipment otherwise meets the standards mentioned in clauses 1 and 2.

## **Schedule 5 — Approved equipment configuration — EC device — VFR flight below FL290 only**

### **Part A — ADS-B transmitting equipment — approval and application**

#### Approved equipment configuration — EC device

- 1 Subject to this Part, an equipment configuration for ADS-B transmitting equipment is approved if it is an electronic conspicuity device (an *EC device*) that complies with the standards specified in Part B of this Schedule.

*Note* Only EC devices that meet all of the requirements of this Schedule are EC devices for the purposes of this Schedule.

#### Application

- 2 An EC device carried on an aircraft has an approved equipment configuration if it complies with:
  - (a) the standards in Part B of this Schedule; and
  - (b) the conditions set out in clause 3.
- 3 For paragraph 2 (b), an EC device must not be operated in transmitting mode:
  - (a) in VFR flight at or above FL290; or
  - (b) concurrently with a Mode S transponder that is also transmitting ADS-B.

*Note* An EC device may be operated concurrently with a Mode A/C, or a Mode S transponder (other than one that is transmitting ADS-B) but it is not a substitute for mandatory carriage of a transponder in relevant airspace.

### **Part B — Standards for an EC device**

- 1 Subject to clauses 3 and 4, an EC device must meet the technical specifications in UK CAP 1391.
- 2 An EC device must use a Class B TABS position source that complies with the performance standards specified in (E)TSO-C199, as in force from time to time.
- 3 An EC device must:
  - (a) be capable of transmitting a SIL value of 1, in accordance with the standards in UK CAP 1391 for an EC device that uses a Class B TABS position source; and
  - (b) transmit that SIL value of 1.

- 4 Despite the standards in UK CAP 1391, an EC device must:
    - (a) meet the requirements described in paragraph 2.2.3.2.7.2.4.6 of RTCA/DO-260B for transmitting an SDA of 1; and
    - (b) transmit an SDA value of 1.
  - 5 An EC device must use a barometric encoder for altitude information.
  - 6 An EC device must be mounted in accordance with the manufacturer's instructions.
  - 7 An EC device, when mounted in accordance with the manufacturer's instructions, must not:
    - (a) interfere with aircraft controls; or
    - (b) otherwise affect the safe operation of the aircraft.
  - 8 The following administrative standards for an EC device must be complied with:

*Note* See paragraph 3 (b) in Schedule 1.

    - (a) an EC device must have a statement of compliance (however described) from the EC device manufacturer certifying that the device meets the requirements mentioned in clauses 1 to 5 (***a declaration of capability and conformance to the requirements in clauses 1 to 5*** or ***a declaration***);
    - (b) the pilot in command of an aircraft that uses an EC device must carry the declaration, or a copy of it, on board the aircraft;
    - (c) an EC device model must not be operated in a transmit mode anywhere in Australia unless it is listed on the CASA website as an EC device model for which the manufacturer has made a valid declaration.
-