



**PROCESS & APPLICATION:**  
**PERFORMANCE BASED SURVEILLANCE**

**Purpose**— This advisory circular (AC) provides guidance for the application, processing and approval for an Rwanda operator of an aircraft or fleet of aircraft.

Use of ADS-B is approved for a specific make, model and avionics configuration of aircraft, and the use of it is authorised by the RCAA.

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**SECTION 1 POLICY & GENERAL INFORMATION**

**1.1 STATUS OF THIS AC**

This is original issuance [1]2017 of this AC.

- Advisory Circulars are intended to provide advice and guidance to illustrate a means, but not necessarily the only means, of complying with the Regulations, or to explain certain regulatory requirements by providing informative, interpretative and explanatory material.
- Where an AC is referred to in a 'Note' below the regulation, the AC remains as guidance material,
- ACs should always be read in conjunction with the referenced regulations.

## 1.2 BACKGROUND

- A. ADS-B is a surveillance system that uses GNSS, aircraft avionics, and a ground infrastructure to accurately and quickly transmit flight information between aircraft and ATC.
- B. It is a transponder based 1090 Mhz squitter which transmits position information for surveillance only. The communication is line of sight on frequency 1090 Mhz
- C. ADS-B consists of two functions: ADS-B-out and ADS-B in.
- ADS-B out, defined as the capability necessary to transmit ADS-B messages, is the core of the operational system.
  - The ability to receive and display ADS-B messages and broadcast services, both from the ground and directly from other aircraft is called ADS-B in.
- D. The system is automatic since it functions without intervention from the flight crew as long as the necessary avionics are in place, connected and functioning.
- E. The implementation of ADS-B has significant benefits that include the following—
- 1) Application of 5 nautical miles lateral separation based on a surveillance system in lieu of procedural separation minima;
  - 2) Fuel savings related to the opportunity for more user preferred flight routing; and
  - 3) Enhanced safety in the air through increased areas of surveillance coverage.
- F. ADS-B is not being mandated in Rwanda in the near term. ADS-B technology will supplement the current ground-based radar surveillance system and may eventually replace it to some extent.
- G. Air operators wishing to benefit from the advantages of ADS-B surveillance will be able to do so by meeting specific aircraft ADS-B considerations as presented in this AC.

Unlike the independent primary radar system, ADS-B is dependent because it requires the aircraft to state its position.

The intent of not mandating the ADS-B system is to allow owners and operators to volunteer their participation in a surveillance system will offer ADS-B and to benefit from its advantages.

## 1.3 APPLICABILITY

The requirement for RCAA-approval before conducting operations in areas requiring ADS-B for ATC purposes applies to operators of Rwanda-registered aircraft involved in general aviation, aerial work and commercial air transport.

Rwanda operators without ADS-B approval may not operate aircraft in areas requiring ADS-B for ATC separation.

## 1.4 RELATED REGULATIONS

- RCAR Part 6 includes requirements for instruments and equipment for ADS-B operations.
- RCAR Part 10 includes the requirement for RCAA approval of ADS-B prior to such operations.
- RCAR Part 12 includes the requirements for RCAA approval of AOC ADS-B operations..

## 1.5 RELATED PUBLICATIONS

These ICAO publications are source documents for this advisory circular—

- 1) Rwanda Civil Aviation Authority (RCAA)

- ◆ AC 12-001, AOC Certification
- ◆ AC 06-024, Application & Process: Baro-  
VNAV operations

Copies may be obtained from RCAA Flight Safety Services.

## 2) International Civil Aviation Organization (ICAO)

- ◆ Doc 9613-AN/937 – Performance Based Navigation Manual (PBN)
- ◆ Annex 6, Part 1, International Commercial Air Transport – Aeroplanes
- ◆ Annex 6, Part 3, International Operations – Helicopters

Copies may be obtained from Document Sales Unit, ICAO, 999 University Street, Montreal, Quebec, Canada H3C 5H7.

## 3) United States Federal Aviation Administration (US-FAA)

- ◆ AC 20-131(), Airworthiness Approval of Traffic Alert and Collision Avoidance Systems (TCAS II) and Mode S Transponders
- ◆ AC 20-138(), Airworthiness Approval of Global Navigation Satellite System (GNSS) Equipment
- ◆ AC 20-151(), Airworthiness Approval of Traffic Alert and Collision Avoidance Systems (TCAS II) Version 7.0 & 7.1 and Associated Mode S Transponders
- ◆ AC 21-40(), Guide for Obtaining a Supplemental Type Certificate
- ◆ AC 23.1309-1(), System Safety Analysis and Assessment for Part 23 Airplanes
- ◆ AC 25-1309-1(), System Design and Analysis
- ◆ AC 27-1(), Certification of Normal Category Rotorcraft
- ◆ AC 29-2(), Certification of Transport Category Rotorcraft
- ◆ AC 43-6(), Altitude Reporting Equipment and Transponder System Maintenance and Inspection Practices
- ◆ TSO-C5, Direction Instrument, Non-Magnetic (Gyroscopically Stabilized)
- ◆ TSO-C6, Direction Instrument, Magnetic (Gyroscopically Stabilized)
- ◆ TSO-C8(), Vertical Velocity Instruments A6-105/21/2010 AC 20-165Appendix 6
- ◆ TSO-C10(), Altimeter, Pressure Actuated, Sensitive Type
- ◆ TSO-C66(), Distance Measuring Equipment (DME) Operating Within the Radio Frequency Range of 960-1215 Megahertz
- ◆ TSO-88(), Automatic Pressure Altitude Reporting Code-Generating Equipment
- ◆ TSO-C106(), Air Data Computer
- ◆ TSO-C112(), Air Traffic Control Radar Beacon System/Mode Select (ATCRBS/Mode S) Airborne Equipment
- ◆ TSO-C119(), Traffic Alert and Collision Avoidance System (TCAS) Airborne Equipment
- ◆ TSO-C129(), Airborne Supplemental Navigation Equipment Using the Global Positioning System (GPS)
- ◆ TSO-C145(), Airborne Navigation Sensors Using the Global Positioning System (GPS) Augmented by the Wide Area Augmentation System (WAAS)
- ◆ TSO-C146(), Stand-Alone Airborne Navigation Equipment Using the Global Positioning System (GPS) Augmented by the Wide Area Augmentation System (WAAS)
- ◆ TSO-C154c, Universal Access Transceiver (UAT) Automatic Dependent Surveillance Broadcast (ADS-B) Equipment Operating on the Frequency of 978 MHz

FAA Technical Standard Orders (TSO) are listed on the FAA Internet website at [www.airweb.faa.gov/rgl](http://www.airweb.faa.gov/rgl)

- ◆ TSO-C166b, Extended Squitter Automatic Dependent Surveillance - Broadcast (ADS-B) and Traffic Information Service - Broadcast (TIS-B) Equipment Operating on the Radio Frequency of 1090 Megahertz (MHz)
- ◆ TSO-C196(), Airborne Supplemental Navigation Sensors for Global Positioning System Equipment Using Aircraft-Based Augmentation

4) RTCA, Inc.

- ◆ RTCA/DO-260B, Minimum Operational Performance Standards for 1090 MHz Automatic Dependent Surveillance-Broadcast (ADS-B)
- ◆ RTCA/DO-282B, Minimum Operational Performance Standards for Universal Access Transceiver (UAT) Automatic Dependent Surveillance-Broadcast (ADS-B)
- ◆ RTCA/DO-208, Minimum Operational Performance Standards for Airborne Supplemental Navigation Equipment Using Global Positioning System (GPS)
- ◆ RTCA/DO-229D, Minimum Operational Performance Standards for Global Positioning System/Wide Area Augmentation System Airborne Equipment
- ◆ RTCA/DO-316, Minimum Operational Performance Standards (MOPS) for Global Positioning System/Aircraft Based Augmentation System Airborne Equipment
- ◆ RTCA/DO-178B, Software Considerations in Airborne Systems and Equipment Certification
- ◆ RTCA/DO-254, Design Assurance Guidance for Airborne Electronic Hardware

Copies of RTCA documents can be ordered from RTCA, Inc., 1828 L Street NW, Suite 805, Washington DC 20036, telephone 202-833-9339, website: <http://www.rtca.org>.

5. ARINC, Inc. Documents.

- ◆ ARINC 738A, Air Data and Inertial Reference System (ADRS)
- ◆ ARINC 743A, GNSS Sensor

Order copies of ARINC documents from ARINC Incorporated, 2551 Riva Rd., Annapolis, MD, 21401. Telephone +1 800-633-6882, fax +1 410-956-5465. Copies may also be obtained from their website at [www.arinc.com](http://www.arinc.com).

6. SAE International..

- ◆ SAE ARP 4754, Certification Considerations for Highly-Integrated or Complex Aircraft Systems
- ◆ SAE ARP-4761, Guidelines and Methods for Conducting the Safety Assessment Process on Civil Airborne Systems and Equipment

Order SAE documents from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, telephone (724) 776-4970, fax (724) 776-0790. Copies may also be obtained from their website at [www.sae.com](http://www.sae.com).

## 1.6 DEFINITIONS & ACRONYMS

### 1.6.1 DEFINITIONS

The following definitions are used in this advisory circular and may differ from definitions contained in other references—

- 1) **Automatic Dependent Surveillance Broadcast (ADS-B).** ADS-B is an advanced surveillance technology where ADS-B Out equipped aircraft share position, altitude, velocity, and other information with ATC and other appropriately equipped aircraft.
- 2) **ADS-B-NRA.** Enhanced air traffic services in Non-Radar Areas using ADS-B surveillance.
- 3) **ADS-B In.** Receipt, processing, and display of other aircraft's ADS-B transmissions. ADS-B In is necessary to utilize airborne applications.
- 4) **ADS-B Out.** Transmission of an aircraft's position, altitude, velocity, and other information to other aircraft and ATC ground based surveillance systems.

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- 5) **Automatic Dependent Surveillance - Rebroadcast (ADS-R).** Retransmission of UAT ADS-B messages from aircraft on the 1090ES link and 1090ES messages on the UAT link. ADS-R ensures aircraft equipped with different links can receive messages from one another when equipped with ADS-B In.
  - 6) **Area Navigation (RNAV).** A method of navigation that permits aircraft operation on any desired flight path within the coverage of station-referenced navigation aids or within the limits of the capability of self-contained aids, or a combination of these.
  - 7) **Flight Information System - Broadcast (FIS-B).** FIS-B is a ground broadcast service provided over the UAT data link. The FAA FIS-B system provides pilots and flight crews of properly equipped aircraft with a cockpit display of certain aviation weather and aeronautical information.
  - 8) **Flight Manual.** A generic term used throughout this AC to represent the airplane flight manual, rotorcraft flight manual, AFM supplement, or RFM supplement.
  - 9) **Galileo.** A European satellite-based radio navigation system being developed that will provide a global positioning service.
  - 10) **Global Navigation Satellite System (GNSS).** The generic term for a satellite navigation system, such as the Global Positioning System (GPS), that provides autonomous worldwide geo-spatial positioning and may include local or regional augmentations.
  - 11) **Global Positioning System (GPS).** GPS is a U.S. satellite-based radio navigation system that provides a global positioning service.
    - ◆ The service provided by GPS for civil use is defined in the GPS Standard Positioning System Performance Standard, 4th edition available at <http://pnt.gov/public/docs/2008/spsp2008.pdf>.
  - 12) **GNSS Time of Applicability.** The time that the position output from the GNSS sensor is applicable last GNSS signal used to determine the position arrives at the aircraft GNSS antenna.
  - 13) **Horizontal Figure of Merit (HFOM).** The radius of a circle in the horizontal plane with its center being at the true position, that describes the region assured to contain the indicated horizontal position with at least 95% probability under fault-free conditions at the time of applicability.
  - 14) **Horizontal Protection Level Fault Detection (HPLFD).** The radius of a circle in the horizontal plane, with its center being at the true position, that describes the region assured to contain the indicated horizontal position.
    - ◆ It is a horizontal region where the missed alert and false alert requirements are met for the chosen set of satellites when autonomous fault detection is used.
    - ◆ It is a function of the satellite and user geometry and the expected error characteristics, it is not affected by actual measurements.
    - ◆ Its value is predictable given reasonable assumptions regarding the expected error characteristics.
  - 15) **Horizontal Protection Level Fault Free (HPLFF).** Fault Free horizontal protection level.
    - ◆ See RTCA/DO-229D appendix R.
  - 16) **Position Source.** The on-board avionics equipment that provides the latitude, longitude, geometric altitude, velocity, position and velocity accuracy metrics, and position integrity metric. Additionally the position source may provide the vertical rate parameters.
  - 17) **Receiver Autonomous Integrity Monitoring (RAIM).** Any algorithm that verifies the integrity of the position output using GPS measurements, or GPS measurements and barometric aiding, is considered a RAIM algorithm.
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- ◆ An algorithm that uses additional information (e.g., multi-sensor system with inertial reference system) to verify the integrity of the position output may be acceptable as a RAIM-equivalent.
  - ◆ Within this AC, the term RAIM is a synonym for aircraft-based augmentation system (ABAS) and is used to refer to both RAIM and RAIM-equivalent algorithms.
- 18) **Satellite-Based Augmentation System (SBAS).** A wide coverage augmentation system in which the user receives augmentation information from a satellite-based transmitter.
- 19) **Traffic Information Service - Broadcast (TIS-B).** TIS-B is a ground broadcast service provided from an ADS-B ground system network over the UAT and 1090ES links which provides position, velocity, and other information on traffic which is detected by a secondary surveillance radar, but is not transmitting an ADS-B position.
- 20) **Total Latency.** The total time between when the position is measured by the position source (GNSS Time of Measurement for GNSS systems) and when the position is transmitted from the aircraft (ADS-B Time-of-Transmission).
- 21) **Uncompensated Latency.** Any latency in the ADS-B system which is not compensated through extrapolation. Uncompensated latency can be represented as the difference between the time of applicability of the broadcast position and the actual time-of-transmission.

### 1.6.2 ACRONYMS & ABBREVIATIONS

The following acronyms and abbreviations are used in this advisory circular—

- 1) **AFM** = Aircraft Flight Manual
- 2) **AMC** = Acceptable Means of Compliance
- 3) **ATC** = Air Traffic Control
- 4) **ATCRBS** = Air Traffic Control Radar Beacon System
- 5) **ATS** = Air Traffic Services
- 6) **EASA** = European Aviation Safety Agency
- 7) **EUROCAE** = European Organization for Civil Aviation Equipment
- 8) **FSS** = Flight Standards Services
- 9) **GNSS** = Global Navigation Satellite System
- 10) **GPS** = Global Positioning System
- 11) **RCAA** = Rwanda Civil Aviation Authority
- 12) **RCARs** = Rwanda Civil Aviation Regulations
- 13) **POH** = Pilot's Operating Handbook
- 14) **RVSM** = Reduced Vertical Separation Minima
- 15) **VHF** = Very High Frequency

## SECTION 2 BACKGROUND

## SECTION 3 AIRCRAFT & EQUIPMENT CONFORMITY

- A. An installation approval issued by RCAA will be required if the applicable aircraft equipment to enable ADS-B surveillance needs to be installed.
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- B. There are currently several hundred aircraft types capable of transmitting extended squitter messages from Mode S transponders.
  - C. Many of the installations meet some of the requirements in EASA AMC 20-24.
  - D. Those that meet all of the mandatory requirements may have an approved AFM that contains a statement of compliance to EASA AMC 20-24.
  - E. Aircraft models that do not have the EASA AMC 20-24 compliance statement are not eligible to receive ADS-B services from air navigation service providers in areas of Australia, Canada, Europe and the Atlantic Ocean.
  - F. EASA AMC 20-24 is recognized as the standard for ADS-B performance in non-radar areas. It establishes the interoperability requirements that permit air traffic services to be provided.
  - G. The interoperability requirements of EASA AMC 20-24 specify the format of messages, the information they must contain, and the integrity of the data. EASA AMC 20-24 is more than airworthiness guidance; it is an acceptable means of compliance for interoperability requirements.
  - H. Interoperability is not the same as airworthiness. There are many aircraft broadcasting Mode S extended squitter messages that do not meet the certification considerations of EASA AMC 20-24, and there is no airworthiness concern for any of these certificated installations.
  - I. However, when the signals are used for air traffic services, the safety of the aircraft, and those aircraft in the vicinity can be compromised if the interoperability requirements are not met.
  - J. Signals that do not meet EASA AMC 20-24 can also affect the efficient movement of air traffic.
  - K. When an AFM, complete with a compliance statement is approved by RCAA, this approval will enable the authorized aircraft to be provided air traffic services using ADS-B.
  - L. EASA AMC 20-24 addresses the certification of ADS-B out systems. An ADS-B out system consists of at least a transponder, a GPS, and the transponder controls. There may be other equipment, which connects to these components, such as a data concentrator or a flight management system, and these must also be reviewed as part of the ADS-B out system to determine compliance with EASA AMC 20-24.
  - M. Changes to either the ADS-B out system, or the connected components, can affect interoperability. Even installing approved changes, which meet the airworthiness requirements of the basis of certification can result in non-compliance with the interoperability requirements of EASA AMC 20-24.
  - N. The compliance statement in the AFM does not assure that a particular aircraft will remain in the configuration that complies with EASA AMC 20-24. This situation is most effectively addressed by monitoring ADS-B avionics performance. There is, however, currently no effective monitoring of ADS-B avionics in Canada. As a consequence, this AC places specific requirements on the Instructions for Continued Airworthiness for approval of an AFM that has a statement of compliance to EASA AMC 20-24. The content of the Instruction for Continued Airworthiness is to support conformity inspections of aircraft approved to receive ADS-B services.
  - O. The ADS-B NRA application is intended to support ATS in the en-route and terminal phases of flight in areas where radar surveillance does not exist. The ADS-B NRA application is fully defined in RTCA DO-303, Annex A, and is summarized in RTCA DO-303 section 1.2.1.3.

An important difference between ADS-B messages and the transponder replies that support radar surveillance is the dependence on the aircraft's navigation source such as GNSS.

- P. This AC does more than recognize EASA AMC 20-24 as guidance for TCCA ADS-B approval. It presents new guidance applicable to the airworthiness certification of Mode S transponders capable of extended squitter messages. It also clarifies the obligations of an installation approval holder or an operator of an aircraft in respect of an unsafe condition resulting from a failure to meet interoperability requirements.

### 3.1 AIRWORTHINESS CONSIDERATIONS

- A. Section 8 of EASA AMC 20-24 defines the minimum acceptable performance of the equipment that is intended to support air traffic services in non-radar areas, including ATC surveillance with 5 nautical miles separations.

#### 3.1.1 STATEMENT OF CONFORMITY

- A. The AFM or the POH, whichever is applicable, must contain a statement that the ADS-B System complies with EASA AMC 20-24 and identifies any deviations.

Deviations, including those stated in EASA AMC 20-24 sections 8.3.3, 8.3.5 and 8.8.2, may be either described or referenced in the AFM or POH.

- B. The most appropriate place for such a statement is in the —Kind of OperationII subsection in the Limitations section of the AFM or AFM Supplement. A statement such as the following may be acceptable—"

- **THE INSTALLED ADS-B OUT SYSTEM MEETS SECTION 8 OF EASA AMC 20-24.II EASA AMC 20-24 SECTION 8.4.7 ALLOWS THE USE OF ALTERNATIVE COMPLIANT POSITION DATA SOURCES.**

- C. EASA AMC 20-24 section 11.1 specifies the content of maintenance instructions that become part of the periodic checks of the system.
- A conformity inspection should be included in these instructions when it is more practical than measurement of the signal characteristics such as uncompensated latency.
  - The periodicity of checks, including conformity checks, should not exceed two years. A conformity inspection is a particularly effective way of protecting against inadvertent changes to the ADS-B broadcast data due to software upgrades to the data sources, such as the GPS and transponder or systems, that provide data to the transponder, such as the flight management system or a data concentrator unit. A conformity inspection is required because no *CAR* specifically requires that compliance to EASA AMC 20-24 be considered for future design changes—it is not in the basis of certification, nor is it an AFM limitation. Most of the equipment providing data to the transponder flies on many aircraft models and there are regular software upgrades that are approved to a non-ADS-B TSO, which could mean that the ADS-B characteristics are not always considered for TSO approval.
- D. Documentation of the approved configuration should identify the part number (hardware and software) of data sources that are capable of providing data for transmission. Integrated equipment capable of affecting compliance should also be identified. Provisions for additional data sources that were not evaluated for the approval should be identified, for example, a second GPS not installed. The documentation should be prepared in a form that may be used to conform the installation of a particular aircraft for operational approval and to perform a conformity inspection when such an inspection is recommended by maintenance instructions.
- E. EASA AMC 20-24 section 11.3 refers to EUROCAE ED-26 for the transition points to be used when testing a Gillham code output. The procedure in FAA AC 43-6B e (5), FAA AD 99-23-22 may be used, or the guidance in FAA AC 20-151 section 8.c(7)(i) followed.



- F. All ADS-B broadcast data must be correct at the time of certification. This is based on the intended function, which is to operate where ADS-B messages are used. Incorrect data that are not required for compliance with EASA AMC 20-24 should be either corrected or silenced for approval of the ADS-B installation.

For the purpose of this AC, correct means that the message meets the specific requirements of the current version of any design standard, including those published by ICAO, a civil aviation authority, EUROCAE or RTCA. .

- G. The ADS-B maintenance instructions shall be used to verify the data in the transponder squitter, in conjunction with testing required by CAR Standard 571, Appendix F, —ATC Transponder Performance Tests. All installed transponders shall be verified.

## 3.2 GUIDELINES FOR CONTINUING AIRWORTHINESS

- A. Approval of the AFM, with the required compliance statement, indicates that the design has been found to meet the interoperability considerations specified in EASA AMC 20-24.
- B. While there are no regulations that require a standard for ADS-B NRA operations, any person who obtains an installation approval under Part V of the CARs for this equipment has a requirement to address continued airworthiness obligations under CAR Part V Subpart 21, as appropriate.
- C. The certificate holder of an installation approved under Part V Subpart 21 of the CARs has a responsibility in respect of service difficulty reporting under section 521.353 of the CARs.
- D. In addition, the certificate holder has a responsibility in respect of unsafe conditions to develop corrective action where a mandatory change is required under section 521.356 of the CARs including situations where the aircraft broadcasts information that contributes to an unsafe condition.
- E. The provisions of section 521.401 of the CARs, with respect to service difficulty reporting, shall be applied to the certificate holder of an installation approved in respect of an ADS-B.
- F. The reporting criteria and reporting procedures are addressed in Part V Subpart 21 of the CARs, and AC 591-001 (soon to be replaced by the draft AC 521-009).

## 3.3 GUIDANCE FOR OPERATIONAL APPROVAL

### 3.3.1 DOMESTIC AIR OPERATORS

- A. A domestic air operator must meet the following conditions to obtain operational approval for ADS-B operations. The conditions are as follows:
- 1) Aircraft and Equipment—The equipment and installation must:
    - (i). meet the requirements of Part V of the CARs; and
    - (ii). meet the airworthiness considerations of this AC and the certification considerations of EASA AMC 20-24 —Certification Considerations for the Enhanced ATS in Non-Radar Areas using ADS-B Surveillance (ADS-B-NRA) Application.
  - 2) Company Operations Manual, The air operator must establish procedures in its Company Operations Manual for the guidance of its personnel and any other procedures related to ADS-B that are necessary for safe operations. These procedures must, as a minimum include training—The operator must provide training to each flight crew member involved with ADS-B operations that addresses, as a minimum, the items listed at sections 10.3.2 and 10.4 of EASA document EASA AMC 20-24.
  - 3) Maintenance—The operator must establish a periodicity for the maintenance of ADS-B equipment listed at section 112 of EASA AMC 20-24.

- B. The first requirement for an air operator to obtain operational approval to participate in ADS-B operations is to have an aircraft that is equipped and approved in accordance with this AC. Certification considerations for the ADS-B-NRA application are contained in the EASA AMC 20-24 document. This requirement includes a statement of compliance related to EASA AMC 20-24 in the limitation section of the AFM. All applicable requirements and considerations raised in this AC must also be addressed.
- C. All operational considerations of section 10 of the EASA AMC 20-24 document must be addressed prior to the commencement of ADS-B operations.
- D. The air operator should provide appropriate guidance in its Company Operations Manual regarding equipment selection and its effects on ADS-B input/output and the quality of the data, if applicable to the type of aircraft or installation.
- E. In addition to the training required under Part VII of the CARs, the training referenced in section 10.3.2 and the training related to the content of section 10.4 of the EASA AMC 20-24 document must be provided to each flight crew members prior to the commencement of ADS-B operations. The training should also provide the flight crew with information regarding dependencies of other systems such as GPS and Flight Management System and the consequences of their malfunction or failures on the ADS-B system. Method of compliance with incident reporting and Minimum Equipment List must also be addressed in this training.

### **3.3.2 FOREIGN AIR OPERATORS**

- A. A foreign air operator must meet the conditions of operational specification to obtain operational approval for ADS-B operations.
- B. The conditions are that the aircraft, the equipment and the installation must—
  - 1) Meet the airworthiness requirements of the State of the Foreign Air Operator; and
  - 2) Meet the certification considerations of the European Aviation Safety Agency (EASA) AMC 20-24 —Certification Considerations for the Enhanced ATS in Non-Radar Areas using ADS-B Surveillance (ADS-B-NRA) Application.¶

### **3.4 COMPANY OPERATIONS MANUAL**

- A. The air operator must establish procedures in its Company Operations Manual for the guidance of its personnel and any other procedures related to ADS-B that are necessary for safe operations.
- B. These procedures must include at least a system description, the operational aspects described in document EASA AMC 20-24, operational and contingency procedures, and training elements for use of the ADS-B-NRA application.

### **3.5 TRAINING**

The air operator must provide training to each flight crew member involved with ADS-B operations that address at least the items listed at sections 10.3.2 and 10.4 of EASA document AMC 20-24

*End of Advisory Circular*

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