

NOTICE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Air Traffic Organization Policy

N JO 7110.770

Effective Date:
January 2, 2020

Cancellation Date:
January 30, 2020

SUBJ: Automatic Dependent Surveillance-Broadcast (ADS-B) Related Changes

- 1. Purpose of This Notice.** This notice amends FAA Order JO 7110.65, providing air traffic controllers with new and updated guidance on certain procedures related to ADS-B Out.
- 2. Audience.** This notice applies to the following Air Traffic Organization (ATO) service units: Air Traffic Services, System Operations Services, Safety and Technical Training, and all associated air traffic control facilities.
- 3. Where Can I Find This Notice?** This notice is available on the MyFAA employee website at https://employees.faa.gov/tools_resources/orders_notices/ and on the air traffic publications website at http://www.faa.gov/air_traffic/publications/.
- 4. Cancellation.** This notice cancels upon the publication of FAA Order JO 7110.65Y, Change 1, on January 30, 2020.
- 5. Explanation of Policy Change.** This change adds language that reflects the recent amendment to 14 CFR Section 91.225(f), which allows U.S. Government operators to not broadcast ADS-B during certain sensitive missions, and gives air traffic controllers the authority to direct an aircraft to stop transmitting ADS-B when necessary. This change also adds new guidance concerning FAA-authorized ADS-B Out OFF operations, and deletes controller reporting requirements for Duplicate ICAO Address events. Other minor changes update existing transponder procedures and phraseology to include ADS-B where appropriate.
- 6. Procedures/Responsibilities/Action.** Amend FAA Order JO 7110.65 as follows:

5-1-3. ATC SURVEILLANCE SOURCE USE

Title through a.2.(b) – No change

PHRASEOLOGY–

PRIMARY RADAR UNAVAILABLE (describe location). RADAR SERVICES AVAILABLE ON TRANSPONDER OR ADS-B EQUIPPED AIRCRAFT ONLY.

No further changes to paragraph

5-2-1. ASSIGNMENT CRITERIA

Title thru a.1. – No change

2. Make beacon code assignments to only ADS-B and/or transponder-equipped aircraft.

NOTE–

Aircraft equipped with ADS-B are also still required to have an operable transponder. The ATC-assigned code is one of the required message elements of ADS-B Out.

b. Unless otherwise specified in a directive or a letter of agreement, make code assignments to departing, en route, and arriving aircraft in accordance with the procedures specified in this section for the code environment in which you are providing ATC service. Give first preference to the use of discrete codes.

No further changes to paragraph

5-2-13. STANDBY OPERATION

You may instruct an aircraft operating on an assigned code to change the transponder/ADS-B to “standby” position:

a. When approximately 15 miles from its destination and you no longer desire operation of the transponder/ADS-B; or

b. When necessary to reduce clutter in a multi-target area, provided you instruct the pilot to return the transponder/ADS-B to “normal” position as soon as possible thereafter.

PHRASEOLOGY–

SQUAWK STANDBY,

or

SQUAWK NORMAL.

REFERENCE–

FAA Order JO 7110.65, Para 5-3-3, Beacon Identification Methods.

No further changes to paragraph

5-2-17. FAILED TRANSPONDER OR ADS-B OUT TRANSMITTER

Disapprove a request or withdraw a previously issued approval to operate with a failed transponder or ADS-B Out solely on the basis of traffic conditions or other operational factors.

REFERENCE–

FAA Order JO 7110.65, Para 5-1-3, Radar Use.

FAA Order JO 7110.65, Para 5-3-3, Beacon Identification Methods.

No further changes to paragraph

5-2-23. BEACON/ADS-B OUT TERMINATION

Inform the pilot when you want their aircraft's transponder and ADS-B Out turned off.

PHRASEOLOGY-

STOP SQUAWK.

(For a military aircraft when you do not know if the military service requires that it continue operating on another mode),

STOP SQUAWK (mode in use).

REFERENCE-

FAA Order JO 7110.65, Para 5-3-3, Beacon Identification Methods.

No further changes to paragraph

5-2-25. INOPERATIVE OR MALFUNCTIONING ADS-B TRANSMITTER

a. Except as provided in Paragraph 5-2-27, inform an aircraft when the ADS-B transmitter appears to be inoperative or malfunctioning. Notify the OS/CIC of the aircraft call sign and location of aircraft.

PHRASEOLOGY-

YOUR ADS-B TRANSMITTER APPEARS TO BE INOPERATIVE / MALFUNCTIONING.

b. If a malfunctioning ADS-B transmitter is jeopardizing the safe execution of air traffic control functions, instruct the aircraft to stop ADS-B transmissions, and notify the OS/CIC.

PHRASEOLOGY-

STOP ADS-B TRANSMISSIONS, AND IF ABLE, SQUAWK THREE/ALFA (code).

NOTE-

Not all aircraft have a capability to disengage the ADS-B transmitter independently from the beacon code squawk.

No further changes to paragraph

5-2-26. ADS-B ALERTS

a. Call Sign Mis-Match (CSMM). A CSMM alert will occur when the transmitted ADS-B Flight Identification (FLT ID) does not match the flight plan aircraft identification. Inform the aircraft of the CSMM.

PHRASEOLOGY-

YOUR ADS-B FLIGHT ID DOES NOT MATCH YOUR FLIGHT PLAN AIRCRAFT IDENTIFICATION.

b. Duplicate ICAO Address. If the broadcast ICAO address is shared with one or more flights in the same ADS-B Service Area (regardless of altitude), and radar reinforcement is not available, target resolution may be lost on one or both targets.

NOTE–

Duplicate ICAO Address Alerts appear as “DA” and are associated with the Data Block (DB) on STARS and CARTS systems. Duplicate ICAO Address Alerts appear as “DUP” and are associated with the DB on MEARTS systems. Duplicate ICAO Address Alerts appear as “Duplicate 24-bit Address” at the AT Specialist Workstation on ERAM systems.

c. If a CSMM or Duplicate ICAO address is jeopardizing the safe execution of air traffic control functions, instruct the aircraft to stop ADS-B transmissions, and notify the OS/CIC.

PHRASEOLOGY–

STOP ADS-B TRANSMISSIONS, AND IF ABLE, SQUAWK THREE/ALFA (code).

NOTE–

Not all aircraft are capable of disengaging the ADS-B transmitter independently from the transponder.

No further changes to paragraph

5–2–27. ADS-B OUT OFF OPERATIONS

Operators of aircraft with functional ADS-B Out avionics installed and requesting an exception from the requirement to transmit at all times must obtain authorization from FAA System Operations Security. The OS/CIC should inform you of any ADS-B Out OFF operations in your area of jurisdiction.

a. Do not inform such aircraft that their ADS-B transmitter appears to be inoperative.

b. Do not approve any pilot request for ADS-B Out OFF operations. Notify the OS/CIC of the request, including the aircraft call sign and location.

NOTE–

14 CFR Section 91.225(f) requires, in part, that “each person operating an aircraft equipped with ADS-B Out must operate this equipment in the transmit mode at all times unless otherwise authorized by the FAA when that aircraft is performing a sensitive government mission for national defense, homeland security, intelligence or law enforcement purposes, and transmitting would compromise the operations security of the mission or pose a safety risk to the aircraft, crew, or people and property in the air or on the ground.”

REFERENCE–

*FAA Order JO 7110.65 Para 5–2–25, Inoperative or Malfunctioning ADS-B Transmitter
FAA Order JO 7210.3 Para 5-4-9, ADS-B Out OFF Operations
FAA Order JO 7110.67, Para 11, Responsibilities*

No further changes to paragraph

5–3–2. PRIMARY RADAR IDENTIFICATION METHODS

Identify a primary, radar beacon, or ADS-B target by using one of the following methods:

No further changes to paragraph

5-3-3. BEACON/ADS-B IDENTIFICATION METHODS

When using only Mode 3/A radar beacon or ADS-B to identify a target, use one of the following methods:

a. Request the pilot to activate the “IDENT” feature of the transponder/ADS-B and then observe the identification display.

Notes 1 and 2 – Delete

PHRASEOLOGY–

IDENT.

SQUAWK (code) AND IDENT.

Subparagraph b. – No Change

c. Request the pilot to change their transponder/ADS-B to “standby.” After you observe the target disappear for sufficient scans to assure that loss of target resulted from placing the transponder/ADS-B in “standby” position, request the pilot to return the transponder to normal operation and then observe the reappearance of the target.

PHRASEOLOGY–

SQUAWK STANDBY,

then

SQUAWK NORMAL.

No further changes to paragraph

PILOT/CONTROLLER GLOSSARY

SQUAWK (Mode, Code, Function)– Used by ATC to instruct a pilot to activate the aircraft transponder and ADS-B Out with altitude reporting enabled, or (military) to activate only specific modes, codes, or functions. Examples: “Squawk five seven zero seven;” “Squawk three/alpha, two one zero five.”

(See TRANSPONDER.)

STOP ALTITUDE SQUAWK– Used by ATC to instruct a pilot to turn off the automatic altitude reporting feature of the aircraft transponder and ADS-B Out. It is issued when a verbally reported altitude varies by 300 feet or more from the automatic altitude report.

(See ALTITUDE READOUT.)

(See TRANSPONDER.)

STOP SQUAWK (Mode or Code)– Used by ATC to instruct a pilot to stop transponder and ADS-B transmissions, or to turn off only specified functions of the aircraft transponder (military).

(See STOP ALTITUDE SQUAWK.)

(See TRANSPONDER.)

No further changes to paragraph

7. Distribution. This notice is distributed to the following organizations: Air Traffic Services, Technical Operations, System Operations Services, Safety and Technical Training, Mission Support Services, Air Traffic Safety Oversight Service, William J. Hughes Technical Center, Mike Monroney Aeronautical Center, National Air Traffic Controllers Association, Professional Aviation Safety Specialists, National Association of Government Employees, and interested public aviation entities.

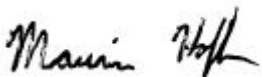
8. Background. Automatic Dependent Surveillance-Broadcast (ADS-B) is a key NextGen technology in the effort to modernize the National Airspace System (NAS). After January 1, 2020, aircraft flying in most U.S. domestic controlled airspace must be equipped with ADS-B Out. However, the next scheduled publication of FAA Order JO 7110.65 will not become effective until January 30, 2020. This Notice consolidates the work of three separate document change proposals.

Most operational procedures and phraseologies applicable to ATC transponders also apply to ADS-B Out, so the relevant paragraphs and phraseologies have been edited to include ADS-B for clarity.

Each aircraft or ground vehicle equipped with ADS-B is expected to transmit a unique 24-bit ICAO address. ATC automation systems alert controllers when a duplicate ICAO address occurs within the same ADS-B service volume. Such events are rare, and field observations have found that controllers are often unable to identify the second aircraft or vehicle. Recent changes to the ADS-B Performance Monitor (APM), which records every ADS-B transmission for quality analysis purposes, will allow for the automatic collection of Duplicate ICAO address events. Controller and facility reporting of Duplicate ICAO Addresses is therefore no longer required.

As originally enacted, 14 CFR § 91.225(f) stated, "Each person operating an aircraft equipped with ADS-B Out must operate this equipment in the transmit mode at all times." This was amended in July 2019 by adding, "unless— (1) Otherwise authorized by the FAA when that aircraft is performing a sensitive government mission for national defense, homeland security, intelligence or law enforcement purposes, and transmitting would compromise the operations security of the mission or pose a safety risk to the aircraft, crew, or people and property in the air or on the ground; or (2) Otherwise directed by ATC when transmitting would jeopardize the safe execution of air traffic control functions." The conditions for either allowing or directing an aircraft to operate without transmitting Automatic Dependent Surveillance-Broadcast (ADS-B) Out are thus very narrow. For the new provision (1), FAA System Operations Security will be solely responsible for approving those authorizations. For provision (2), this change allows controllers to direct aircraft to stop ADS-B transmissions under the same circumstances they do now with transponders, such as malfunctioning avionics or non-lead aircraft participating in a formation flight.

9. Related Publication. FAA Order JO 7210.3, paragraphs 2–1–14, 5–4–2, and 5–4–9.



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12/11/19

Date Signed