

NOTICE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

N7210.628

Cancellation
Date: 05/25/07

SUBJ: REQUIREMENTS FOR THE USE OF AUTOMATIC DEPENDENT SURVEILLANCE BROADCAST (ADS-B) IN THE BETHEL AREA AT ANCHORAGE AIR ROUTE TRAFFIC CONTROL CENTER (ARTCC)

1. **PURPOSE.** This notice establishes requirements to support the operational testing of the use of ADS-B information within the Bethel area at the Anchorage ARTCC.
2. **DISTRIBUTION.** This notice is distributed to select offices in Washington headquarters, the Western En Route and Oceanic Service Area, William J. Hughes Technical Center, Mike Monroney Aeronautical Center, and Anchorage ARTCC.
3. **EFFECTIVE DATE.** This notice is effective May 26, 2006.
4. **CANCELLATION.** Notice N7110.428, ATC Procedures and Phraseology Associated with the Use of ADS-B in the Anchorage FIRs at Anchorage ARTCC, with an effective date of January 1, 2006, is canceled.
5. **DEFINITIONS.**
 - a. Automatic Dependent Surveillance Broadcast (ADS-B). ADS-B is a surveillance system that transmits information, such as Global Positioning System (GPS) position, at specified intervals via a digital broadcast, for utilization by any air and/or ground users requiring it.
 - b. Ground Based ADS-B transmitter/receiver (GBT). The GBT relays information between ADS-B equipped aircraft and ground systems.
6. **BACKGROUND.** On March 24, 2006, in response to information validating the misapplication of ADS-B separation standards, the use of ADS-B for air traffic surveillance at Anchorage ARTCC was terminated. During the week of April 17, a safety assessment team conducted site visits to ZAN and the Capstone Program Office. The assessment team developed recommendations to support a plan for the eventual operational approval for a 5 NM separation standard between an ADS-B target and a radar target. This notice provides guidance for the phased implementation of several of those recommendations.

Direct responsibility for the oversight of the operational use of ADS-B information for air traffic control purposes at Anchorage ARTCC has transitioned to the ATO En Route and Oceanic Safety and Operations Support office (ATO-E SOS) through the Western En Route and Oceanic Service Area (WEOSA). In support of efforts to validate the safety of fully integrated ATC separation standards in the NAS, a baseline consisting of documented and demonstrated local procedures, training, and MicroEARTS configuration and adaptation must be established for a 5 NM separation standard between ADS-B targets and advisory services within airspace areas in which radar coverage is unusable or unavailable. Procedures in support of operations pursuant to this notice shall ensure that 5 NM radar separation shall only be applied between ADS-B targets and not between an ADS-B and a radar target.

Once that baseline has been established and demonstrated as meeting acceptable safety levels, the WEOSA may recommend, with ATO-E SOS concurrence, the implementation of the next phase of ADS-B integration into the NAS. The baselined procedures and phraseology will serve as the basis for the development of national procedures for the use of ADS-B in the NAS.

7. RESPONSIBILITIES.

a. ATO-E SOS:

- (1) Provide national policy, oversight and guidance regarding air traffic control procedures and requirements for the use of ADS-B information.
- (2) Review and take appropriate action on recommendations from WEOSA regarding local procedures, training, and MicroEARTS adaptation in support of the operational use of ADS-B.
- (3) Ensure appropriate coordination with the Flight Standards Service regarding ADS-B separation standards and operational testing guidelines.

b. WEOSA:

- (1) Review, revise as appropriate, and forward local procedures, training program, and MicroEARTS adaptation changes to ATO-E SOS for approval.
- (2) Provide ATO-E SOS with weekly status reports of ADS-B implementation at ZAN to include any significant discrepancies, errors, or other anomalies, and appropriate safety management information.

c. Air Traffic Manager, Anchorage ARTCC:

- (1) Identify Air Traffic operational coverage needs for routes, fixes, holding patterns, and departure and approach/arrival routes for the 5 Bethel-area GBTs and support flight inspection operations against those coverage requirements.
- (2) Ensure that local procedures are developed in accordance with the provisions of this notice and incorporated into a facility SOP.
- (3) Identify Air Traffic requirements for MicroEARTS adaptation that establishes a clearly defined, delineated, and stratified airspace area in and around Bethel within which 5 NM separation between ADS-B targets can be applied. The ADS-B coverage area should include all airspace areas in which no radar coverage exists; radar coverage is determined to be unavailable and unusable; fringe coverage areas where the display of radar targets is inconsistent, unpredictable, or unreliable; or other operationally-determined areas to facilitate transitions to/from the ADS-B coverage area.
- (4) Ensure that the ADS-B coverage area is defined in a facility SOP, and clearly depicted on the controllers' display.

(5) Ensure that controller training is developed and provided in accordance with FAA requirements, to include mandatory briefing item with a verbal briefing to all controllers, and at least one simulation lab problem. Controllers must receive ADS-B procedures and phraseology training prior to conducting ADS-B operations.

(6) Request and obtain approval of local procedures, MicroEARTS adaptation, and ADS-B controller training program from WEOSA prior to the operational use of ADS-B information.

(7) Ensure that ADS-B phraseology is coordinated and disseminated to pilots.

(8) Establish a safety coordinator for the collection and analysis of quality assurance information, such as operational errors, pilot deviations, and automation anomalies, and pilot/avionics issues.

(9) Establish reporting processes in accordance with this notice.

(10) Ensure that appropriate safety risk management documentation for ATC procedures and training has been completed.

(11) Provide WEOSA with weekly reports of ADS-B implementation at ZAN to include any significant discrepancies, errors, or other anomalies, and appropriate safety management information.

8. PROCEDURAL, TRAINING, AND AUTOMATION REQUIREMENTS.

Develop appropriate local procedures, MicroEARTS adaptation, and training, to ensure consistency with the following requirements:

a. Standard radar phraseology and procedures as described in FAA Order 7110.65 may be applied to ADS-B aircraft within the defined ADS-B coverage area. Five NM separation must be applied only between two ADS-B derived targets.

b. Validated Mode C altitude information may be used for separation between an ADS-B aircraft and any other aircraft. When an aircraft data block transitions from ADS-B to radar (or vice versa), ensure that local procedures provide for revalidation of Mode C altitude prior to using the displayed altitude information for separation.

c. Additionally, the following phraseology shall be incorporated into local ADS-B procedures:

(1) To inform an aircraft that its ADS-B transmitter appears to be inoperative or malfunctioning:

*PHRASEOLOGY –
(Identification) ADS-B TRANSMITTER APPEARS TO BE
INOPERATIVE/MALFUNCTIONING.*

- (2) To inform an aircraft, when appropriate, to turn off its ADS-B transmitter.

*PHRASEOLOGY –
(Identification) STOP ADS-B TRANSMIT.*

- (3) To inform an aircraft, when appropriate, to turn off its ADS-B altitude reporting.

*PHRASEOLOGY-
STOP ADS-B ALTITUDE TRANSMIT*

9. REPORTING PROCESSES. Establish requirements in the facility SOP to clarify the processing of safety reports to reflect the following:

a. QA issues (including OEs, ODs, pilot deviations) identified by the controller and forwarded to the supervisor will be routed to the facility safety coordinator. The safety coordinator will track the report and coordinate with the WEOSA.

b. Avionics issues identified by the controller and forwarded to the supervisor will be routed to the safety coordinator. The safety coordinator will be responsible for report tracking, coordination with the ZAN procedures office, coordination with Flight Standards, as necessary, and coordination with WEOSA.

c. Automation/adaptation/procedural issues identified by the controller and forwarded to the supervisor will be routed to the safety coordinator and to the ZAN Procedures Office. The safety coordinator will track, coordinate with AOS as necessary, and coordinate with WEOSA.

10. SAFETY RISK MANAGEMENT. In accordance with a recent safety assessment of ADS-B at Anchorage ARTCC, this notice implements baseline procedures for the use of ADS-B information for a 5 NM separation standard between ADS-B targets and advisory services within airspace areas in which radar coverage is unusable or unavailable. Requirements for the development of appropriate procedures, MicroEARTS automation changes, controller training requirements, and safety reporting processes are being established by this notice.



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