

NOTICE

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

N 8900.298

National Policy

Effective Date:
5/15/15

Cancellation Date:
5/15/16

SUBJ: OpSpec/MSpec/LOA A355, Automatic Dependent Surveillance-Broadcast (ADS-B) IN Operations

1. Purpose of This Notice. This notice provides new guidance for Federal Aviation Administration (FAA) certificate-holding district offices (CHDO) and principal operations inspectors (POI) assigned to operators conducting airplane operations under Title 14 of the Code of Federal Regulations (14 CFR) parts 91 subpart K (91K), 121, 125 (including the Letter of Deviation Authority (LODA) (125M) operators), and 135. This notice establishes the application requirements and approval process for Operations Specification (OpSpec)/Management Specification (MSpec)/Letter of Authorization (LOA) A355, Automatic Dependent Surveillance-Broadcast (ADS-B) IN Operations.

2. Audience. The primary audience for this notice is FAA CHDOs and POIs assigned to operators conducting airplane operations under parts 91K, 121, 125 (including the LODA 125M operators), and 135. The secondary audience includes Flight Standards Service (AFS) divisions and branches in the regions and in headquarters (HQ).

3. Where You Can Find This Notice. You can find this notice on the MyFAA employee Web site at https://employees.faa.gov/tools_resources/orders_notices. Inspectors can access this notice through the Flight Standards Information Management System (FSIMS) at <http://fsims.avs.faa.gov>. Operators can find this notice on the FAA Web site at <http://fsims.faa.gov>. This notice is available to the public at http://www.faa.gov/regulations_policies/orders_notices.

4. Background.

a. Automatic Dependent Surveillance-Broadcast (ADS-B). ADS-B is an enabling Next Generation Air Transportation System (NextGen) surveillance technology in the National Airspace System (NAS) and exists in two different capabilities: ADS-B OUT and ADS-B IN. ADS-B OUT is the automatic broadcast of own-ship's position, velocity, and other information for use by air traffic control (ATC) ground systems, as well as nearby ADS-B IN-equipped aircraft. ADS-B IN is the capability to receive and display ADS-B OUT information from nearby aircraft and uplinked from ground stations. ADS-B IN will enable a number of new cockpit-centric applications and is the subject of this notice.

b. ADS-B IN is Optional. Operators may equip with ADS-B IN at their option to obtain operational benefits offered by new ADS-B IN applications. These new applications, currently under development, will require common certified ADS-B IN equipment and software. It is likely that each newly developed application will be more complex and will build on the capabilities of earlier applications. Operators may wish to obtain authorizations incrementally or to obtain only specific authorizations that suit their operation.

c. ADS-B IN Authorization. OpSpec/MSpec/LOA A355 will be the single authorization for all ADS-B IN applications. Initially, A355 will contain only two authorizations. As new applications are developed, A355 will be expanded to accommodate those as well. The paragraphs will be constructed to permit issuance of one or all of the existing ADS-B IN authorizations.

d. A355 Application Requirements and Process. Because these ADS-B IN applications are new and under continued development, A355 issuance will require HQ approval. The operator and principal inspector (PI) or Flight Standards District Office (FSDO) must use the nonstandard request process described in FAA Order 8900.1, Flight Standards Information Management System (FSIMS), Volume 3, Chapter 18, Section 2.

5. Action. Upon receipt of an application for ADS-B IN authorization, FAA CHDOs and POIs should refer to Order 8900.1, Volume 3, Chapter 18, Section 3, OpSpec A355 for guidance on how to process the application. This notice contains the following sample authorizations:

- Sample OpSpec A355 template in Appendix A, which applies to part 121;
- Sample OpSpec A355 template in Appendix B, which applies to part 125;
- Sample OpSpec A355 template in Appendix C, which applies to part 135;
- Sample OpSpec A355 template in Appendix D, which applies to part 121/135;
- Sample MSpec A355 template in Appendix E, which applies to part 91K; and
- Sample LOA A355 template in Appendix F, which applies to part 125 LODA holders (125M).

6. Disposition. We will incorporate the information in this notice into Order 8900.1 before this notice expires. Direct questions concerning the information in this notice to the Flight Technologies and Procedures Division (AFS-400) at 202-267-8790.



John Barbagallo
Deputy Director, Flight Standards Service

Appendix A. Sample OpSpec A355, Automatic Dependent Surveillance-Broadcast (ADS-B) IN Operations: 14 CFR Part 121

1. Authorization. The certificate holder is authorized to conduct flight operations using ADS-B IN equipment and procedures as specified in this paragraph.
2. Limitations and Provisions.
 - a. Airworthiness Requirements. ADS-B IN operations are approved only for those aircraft with ADS-B equipment installed per type certificate (TC) or Supplemental Type Certificate (STC) as amended. The certificate holder must have an approved maintenance program and verify through routine maintenance inspections that the ADS-B system continues to meet required performance standards.
 - b. ADS-B IN Equipment Requirements. For aircraft authorized to conduct ADS-B IN operations, a Cockpit Display of Traffic Information (CDTI) is required. The ADS-B IN equipment must comply with Technical Standard Order (TSO)-C195b, Avionics Supporting Automatic Dependent Surveillance-Broadcast (ADS-B) Aircraft Surveillance Applications (ASA), or later, or be found acceptable to the Administrator.
 - c. Airplane Flight Manual (AFM). The FAA-approved AFM, and/or Airplane Flight Manual Supplement (AFMS), or FAA-approved company flight manual, as applicable, must incorporate a description and procedures for operation of the approved ADS-B IN systems.
 - d. Required Pilot Training. Participating pilots must complete the certificate holder's approved training program that includes operating procedures, and limitations of the installed ADS-B equipment prior to conducting the ADS-B IN operations in this paragraph. ADS-B IN training must include: ADS-B OUT/IN system overview and operations and limitations, normal procedures, minimum equipment list (MEL) procedures, equipment limitations, use of the CDTI software, non-normal procedures and specific crew coordination procedures.
 - e. Required Training for Persons Authorized to Exercise Operational Control. Participating persons authorized to exercise operational control must complete the certificate holder's approved training program that includes ADS-B OUT/IN system overview and operations and limitations, normal procedures, MEL procedures, non-normal procedures and ADS-B flight planning, including region/country/airport-specific requirements or limitations on use.
3. Authorized Operations.
 - a. Situational Awareness. The certificate holder is authorized to use the ADS-B IN equipment installed on the aircraft listed in Table 1 to supplement the pilot's situational awareness. If at any time the presented information becomes unreliable, inoperative, or a distraction, disregard the display.
 - (1) Operational requirements – ADS-B IN for Situational Awareness–Surface (SA-SURF).
 - (a) If the equipment employs a navigation database, the pilot must ensure it is valid prior to use.
 - (b) While taxiing, the pilot's primary reference will be out-the-window (OTW) scans per current procedures.

(c) The certificate holder will establish procedures clearly stating the duties and responsibilities of each pilot when using the CDTI during ground operations.

(d) The pilot will consider airport markings and signage viewed OTW as the primary location reference.

(2) Operational requirements – ADS-B IN for Situational Awareness–Airborne (SA-AIRB).

(a) The ADS-B navigation database shall be current.

(b) The pilot's primary orientation to nearby traffic will be by conducting OTW scans as per current procedures.

(c) CDTI traffic information does not replace any traffic advisories (TA) and/or Resolution Advisories (RA) provided from the aircraft's Traffic Alert and Collision Avoidance System (TCAS).

(d) The pilot may not maneuver the aircraft with reference to the displayed traffic, except as specifically authorized by subparagraph 3, Authorized Operations.

b. CDTI Assisted Visual Separation (CAVS) on Approach. The certificate holder is authorized to use CAVS on Approach when instructed to maintain visual separation in accordance with the procedures described in the Aeronautical Information Manual (AIM). If the operator has paragraph C077 the requirement to "maintain visual contact with the traffic to be followed" is met by approved training program and installed aircraft equipment specific to CAVS.

(1) CAVS may only be conducted in Visual Meteorological Conditions (VMC); in the event that VMC cannot be maintained the pilots must inform ATC and request further instructions.

(2) The CAVS aircraft must remain clear of clouds.

(3) The CAVS pilots must visually acquire OTW traffic-to-follow (TTF) and correlate it with position displayed on the CDTI.

Note: The pilots must correlate the TTF by matching all relevant ADS-B IN information with the information provided by ATC (e.g., range/distance, relative bearing and identification of the TTF), before it may be used as a substitute for visual separation.

(4) The CDTI and CAVS information may only be used as a substitute for OTW visual separation when the actual distance to TTF is greater than 2.5 nautical miles (NM) as indicated by the ADS-B IN equipment. If closer than 2.5 NM, the flightcrew must have visual contact OTW, or notify ATC that they have lost visual contact and proceed accordingly.

(5) The pilot is responsible for determining and maintaining safe separation from the assigned TTF aircraft in accordance with established visual separation procedures.

(6) The CAVS pilots must comply with applicable TCAS RAs.

(7) The CAVS aircraft and the TTF must be on approach to the same airport runway.

(8) CAVS on Approach may only be conducted at the airports and runways listed in Table 2.

c. In-Trail Procedure (ITP). - RESERVED.

- d. Merging and Spacing (M&S). - RESERVED.
 - e. Interval Management-Spacing (IM-S). - RESERVED.
4. Aircraft Authorization. The certificate holder is authorized to conduct the ADS-B IN operations specified in subparagraph 3 using the approved aircraft in Table 1 in accordance with the limitations and provisions specified for the authorized operation.

Table 1 – Aircraft Approved for ADS-B IN Operations

Aircraft M/M/S	Aircraft Registration #	ADS-B IN Procedure(s)

5. Airport Authorization. The certificate holder is authorized to conduct CAVS at the airports and specified runways listed in Table 2 using the aircraft listed in Table 1 that list CAVS as an approved ADS-B IN procedure.

Table 2 – CAVS Approved Airports

Airport ID	Airport Name	Runway(s)

Appendix B. Sample OpSpec A355, Automatic Dependent Surveillance-Broadcast (ADS-B) IN Operations: 14 CFR Part 125

1. Authorization. The certificate holder is authorized to conduct flight operations using ADS-B IN equipment and procedures as specified in this paragraph.
2. Limitations and Provisions.
 - a. Airworthiness Requirements. ADS-B IN operations are approved only for those aircraft with ADS-B equipment installed per type certificate (TC) or Supplemental Type Certificate (STC) as amended. The certificate holder must have an approved maintenance program and verify through routine maintenance inspections that the ADS-B system continues to meet required performance standards.
 - b. ADS-B IN Equipment Requirements. For aircraft authorized to conduct ADS-B IN operations, a Cockpit Display of Traffic Information (CDTI) is required. The ADS-B IN equipment must comply with Technical Standard Order (TSO)-C195b, Avionics Supporting Automatic Dependent Surveillance-Broadcast (ADS-B) Aircraft Surveillance Applications (ASA), or later, or be found acceptable to the Administrator.
 - c. Airplane Flight Manual (AFM). The FAA-approved AFM, and/or Airplane Flight Manual Supplement (AFMS), or FAA-approved company flight manual, as applicable, must incorporate a description and procedures for operation of the approved ADS-B IN systems.
 - d. Required Pilot Training. Participating pilots must complete the certificate holder's approved training program that includes operating procedures, and limitations of the installed ADS-B equipment prior to conducting the ADS-B IN operations in this paragraph. ADS-B IN training must include: ADS-B OUT/IN system overview and operations and limitations, normal procedures, minimum equipment list (MEL) procedures, equipment limitations, use of the CDTI software, non-normal procedures and specific crew coordination procedures.
 - e. Required Training for Persons Authorized to Exercise Operational Control. Participating persons authorized to exercise operational control must complete the certificate holder's approved training program that includes ADS-B OUT/IN system overview and operations and limitations, normal procedures, MEL procedures, non-normal procedures and ADS-B flight planning, including region/country/airport-specific requirements or limitations on use.
3. Authorized Operations.
 - a. Situational Awareness. The certificate holder is authorized to use the ADS-B IN equipment installed on the aircraft listed in Table 1 to supplement the pilot's situational awareness. If at any time the presented information becomes unreliable, inoperative, or a distraction, disregard the display.
 - (1) Operational requirements – ADS-B IN for Situational Awareness–Surface (SA-SURF).
 - (a) If the equipment employs a navigation database, the pilot must ensure it is valid prior to use.
 - (b) While taxiing, the pilot's primary reference will be out-the-window (OTW) scans per current procedures.

(c) The certificate holder will establish procedures clearly stating the duties and responsibilities of each pilot when using the CDTI during ground operations.

(d) The pilot will consider airport markings and signage viewed OTW as the primary location reference.

(2) Operational requirements – ADS-B IN for Situational Awareness–Airborne (SA-AIRB).

(a) The ADS-B navigation database shall be current.

(b) The pilot's primary orientation to nearby traffic will be by conducting OTW scans as per current procedures.

(c) CDTI traffic information does not replace any traffic advisories (TA) and/or Resolution Advisories (RA) provided from the aircraft's Traffic Collision Alert and Avoidance System (TCAS).

(d) The pilot may not maneuver the aircraft with reference to the displayed traffic, except as specifically authorized by subparagraph 3, Authorized Operations.

b. CDTI Assisted Visual Separation (CAVS) on Approach. The certificate holder is authorized to use CAVS on Approach when instructed to maintain visual separation in accordance with the procedures described in the Aeronautical Information Manual (AIM). If the operator has paragraph C077 the requirement to "maintain visual contact with the traffic to be followed" is met by approved training program and installed aircraft equipment specific to CAVS.

(1) CAVS may only be conducted in Visual Meteorological Conditions (VMC); in the event that VMC cannot be maintained the pilots must inform ATC and request further instructions.

(2) The CAVS aircraft must remain clear of clouds.

(3) The CAVS pilots must visually acquire OTW traffic-to-follow (TTF) and correlate it with position displayed on the CDTI.

Note: The pilots must correlate the TTF by matching all relevant ADS-B IN information with the information provided by ATC (e.g., range/distance, relative bearing and identification of the TTF), before it may be used as a substitute for visual separation.

(4) The CDTI and CAVS information may only be used as a substitute for OTW visual separation when the actual distance to TTF is greater than 2.5 nautical miles (NM) as indicated by the ADS-B IN equipment. If closer than 2.5 NM, the flightcrew must have visual contact OTW, or notify ATC that they have lost visual contact and proceed accordingly.

(5) The pilot is responsible for determining and maintaining safe separation from the assigned TTF aircraft in accordance with established visual separation procedures.

(6) The CAVS pilots must comply with applicable TCAS RAs.

(7) The CAVS aircraft and the TTF must be on approach to the same airport runway.

(8) CAVS on Approach may only be conducted at the airports and runways listed in Table 2.

c. In-Trail Procedure (ITP). - RESERVED.

- d. Merging and Spacing (M&S). - RESERVED.
 - e. Interval Management-Spacing (IM-S). - RESERVED.
4. Aircraft Authorization. The certificate holder is authorized to conduct the ADS-B IN operations specified in subparagraph 3 using the approved aircraft in Table 1 in accordance with the limitations and provisions specified for the authorized operation.

Table 1 – Aircraft Approved for ADS-B IN Operations

Aircraft M/M/S	Aircraft Registration #	ADS-B IN Procedure(s)

5. Airport Authorization. The certificate holder is authorized to conduct CAVS at the airports and specified runways listed in Table 2 using the aircraft listed in Table 1 that list CAVS as an approved ADS-B IN procedure.

Table 2 – CAVS Approved Airports

Airport ID	Airport Name	Runway(s)

Appendix C. Sample OpSpec A355, Automatic Dependent Surveillance-Broadcast (ADS-B) IN Operations: 14 CFR Part 135

1. Authorization. The certificate holder is authorized to conduct flight operations using ADS-B IN equipment and procedures as specified in this paragraph.
2. Limitations and Provisions.
 - a. Airworthiness Requirements. ADS-B IN operations are approved only for those aircraft with ADS-B equipment installed per type certificate (TC) or Supplemental Type Certificate (STC) as amended. The certificate holder must have an approved maintenance program and verify through routine maintenance inspections that the ADS-B system continues to meet required performance standards.
 - b. ADS-B IN Equipment Requirements. For aircraft authorized to conduct ADS-B IN operations, a Cockpit Display of Traffic Information (CDTI) is required. The ADS-B IN equipment must comply with Technical Standard Order (TSO)-C195b, Avionics Supporting Automatic Dependent Surveillance-Broadcast (ADS-B) Aircraft Surveillance Applications (ASA), or later, or be found acceptable to the Administrator.
 - c. Airplane Flight Manual (AFM). The FAA-approved AFM, and/or Airplane Flight Manual Supplement (AFMS), FAA-approved company flight manual, or pilot's operating handbook (POH), as applicable, must incorporate a description and procedures for operation of the approved ADS-B IN systems.
 - d. Required Pilot Training. Participating pilots must complete the certificate holder's approved training program that includes operating procedures, and limitations of the installed ADS-B equipment prior to conducting the ADS-B IN operations in this paragraph. ADS-B IN training must include: ADS-B OUT/IN system overview and operations and limitations, normal procedures, minimum equipment list (MEL) procedures, equipment limitations, use of the CDTI software, non-normal procedures and specific crew coordination procedures.
 - e. Required Training for Persons Authorized to Exercise Operational Control. Participating persons authorized to exercise operational control must complete the certificate holder's approved training program that includes ADS-B OUT/IN system overview and operations and limitations, normal procedures, MEL procedures, non-normal procedures and ADS-B flight planning, including region/country/airport-specific requirements or limitations on use.
3. Authorized Operations.
 - a. Situational Awareness. The certificate holder is authorized to use the ADS-B IN equipment installed on the aircraft listed in Table 1 to supplement the pilot's situational awareness. If at any time the presented information becomes unreliable, inoperative, or a distraction, disregard the display.
 - (1) Operational requirements – ADS-B IN for Situational Awareness–Surface (SA-SURF).
 - (a) If the equipment employs a navigation database, the pilot must ensure it is valid prior to use.
 - (b) While taxiing, the pilot's primary reference will be out-the-window (OTW) scans per current procedures.

(c) The certificate holder will establish procedures clearly stating the duties and responsibilities of each pilot when using the CDTI during ground operations.

(d) The pilot will consider airport markings and signage viewed OTW as the primary location reference.

(2) Operational requirements – ADS-B IN for Situational Awareness–Airborne (SA-AIRB).

(a) The ADS-B navigation database shall be current.

(b) The pilot's primary orientation to nearby traffic will be by conducting OTW scans as per current procedures.

(c) CDTI traffic information does not replace any traffic advisories (TA) and/or Resolution Advisories (RA) provided from the aircraft's Traffic Collision Alert and Avoidance System (TCAS).

(d) The pilot may not maneuver the aircraft with reference to the displayed traffic, except as specifically authorized by subparagraph 3, Authorized Operations.

b. CDTI Assisted Visual Separation (CAVS) on Approach. The certificate holder is authorized to use CAVS on Approach when instructed to maintain visual separation in accordance with the procedures described in the Aeronautical Information Manual (AIM). If the operator has paragraph C077 the requirement to "maintain visual contact with the traffic to be followed" is met by approved training program and installed aircraft equipment specific to CAVS.

(1) CAVS may only be conducted in Visual Meteorological Conditions (VMC); in the event that VMC cannot be maintained the pilots must inform ATC and request further instructions.

(2) The CAVS aircraft must remain clear of clouds.

(3) The CAVS pilots must visually acquire OTW traffic-to-follow (TTF) and correlate it with position displayed on the CDTI.

Note: The pilots must correlate the TTF by matching all relevant ADS-B IN information with the information provided by ATC (e.g., range/distance, relative bearing and identification of the TTF), before it may be used as a substitute for visual separation.

(4) The CDTI and CAVS information may only be used as a substitute for OTW visual separation when the actual distance to TTF is greater than 2.5 nautical miles (NM) as indicated by the ADS-B IN equipment. If closer than 2.5 NM, the flightcrew must have visual contact OTW, or notify ATC that they have lost visual contact and proceed accordingly.

(5) The pilot is responsible for determining and maintaining safe separation from the assigned TTF aircraft in accordance with established visual separation procedures.

(6) The CAVS pilots must comply with applicable TCAS RAs.

(7) The CAVS aircraft and the TTF must be on approach to the same airport runway.

(8) CAVS on Approach may only be conducted at the airports and runways listed in Table 2.

c. In-Trail Procedure (ITP). - RESERVED.

- d. Merging and Spacing (M&S). - RESERVED.
 - e. Interval Management-Spacing (IM-S). - RESERVED.
4. Aircraft Authorization. The certificate holder is authorized to conduct the ADS-B IN operations specified in subparagraph 3 using the approved aircraft in Table 1 in accordance with the limitations and provisions specified for the authorized operation.

Table 1 – Aircraft Approved for ADS-B IN Operations

Aircraft M/M/S	Aircraft Registration #	ADS-B IN Procedure(s)

5. Airport Authorization. The certificate holder is authorized to conduct CAVS at the airports and specified runways listed in Table 2 using the aircraft listed in Table 1 that list CAVS as an approved ADS-B IN procedure.

Table 2 – CAVS Approved Airports

Airport ID	Airport Name	Runway(s)

Appendix D. Sample OpSpec A355, Automatic Dependent Surveillance-Broadcast (ADS-B) IN Operations: 14 CFR Part 121/135

1. Authorization. The certificate holder is authorized to conduct flight operations using ADS-B IN equipment and procedures as specified in this paragraph.
2. Limitations and Provisions.
 - a. Airworthiness Requirements. ADS-B IN operations are approved only for those aircraft with ADS-B equipment installed per type certificate (TC) or Supplemental Type Certificate (STC) as amended. The certificate holder must have an approved maintenance program and verify through routine maintenance inspections that the ADS-B system continues to meet required performance standards.
 - b. ADS-B IN Equipment Requirements. For aircraft authorized to conduct ADS-B IN operations, a Cockpit Display of Traffic Information (CDTI) is required. The ADS-B IN equipment must comply with Technical Standard Order (TSO)-C195b, Avionics Supporting Automatic Dependent Surveillance-Broadcast (ADS-B) Aircraft Surveillance Applications (ASA), or later, or be found acceptable to the Administrator.
 - c. Airplane Flight Manual (AFM). The FAA-approved AFM, and/or Airplane Flight Manual Supplement (AFMS), FAA-approved company flight manual, or pilot's operating handbook (POH), as applicable, must incorporate a description and procedures for operation of the approved ADS-B IN systems.
 - d. Required Pilot Training. Participating pilots must complete the certificate holder's approved training program that includes operating procedures, and limitations of the installed ADS-B equipment prior to conducting the ADS-B IN operations in this paragraph. ADS-B IN training must include: ADS-B OUT/IN system overview and operations and limitations, normal procedures, minimum equipment list (MEL) procedures, equipment limitations, use of the CDTI software, non-normal procedures and specific crew coordination procedures.
 - e. Required Training for Persons Authorized to Exercise Operational Control. Participating persons authorized to exercise operational control must complete the certificate holder's approved training program that includes ADS-B OUT/IN system overview and operations and limitations, normal procedures, MEL procedures, non-normal procedures and ADS-B flight planning, including region/country/airport-specific requirements or limitations on use.
3. Authorized Operations.
 - a. Situational Awareness. The certificate holder is authorized to use the ADS-B IN equipment installed on the aircraft listed in Table 1 to supplement the pilot's situational awareness. If at any time the presented information becomes unreliable, inoperative, or a distraction, disregard the display.
 - (1) Operational requirements – ADS-B IN for Situational Awareness–Surface (SA-SURF).
 - (a) If the equipment employs a navigation database, the pilot must ensure it is valid prior to use.
 - (b) While taxiing, the pilot's primary reference will be out-the-window (OTW) scans per current procedures.

(c) The certificate holder will establish procedures clearly stating the duties and responsibilities of each pilot when using the CDTI during ground operations.

(d) The pilot will consider airport markings and signage viewed OTW as the primary location reference.

(2) Operational requirements – ADS-B IN for Situational Awareness–Airborne (SA-AIRB).

(a) The ADS-B navigation database shall be current.

(b) The pilot's primary orientation to nearby traffic will be by conducting OTW scans as per current procedures.

(c) CDTI traffic information does not replace any traffic advisories (TA) and/or Resolution Advisories (RA) provided from the aircraft's Traffic Collision Alert and Avoidance System (TCAS).

(d) The pilot may not maneuver the aircraft with reference to the displayed traffic, except as specifically authorized by subparagraph 3, Authorized Operations.

b. CDTI Assisted Visual Separation (CAVS) on Approach. The certificate holder is authorized to use CAVS on Approach when instructed to maintain visual separation in accordance with the procedures described in the Aeronautical Information Manual (AIM). If the operator has paragraph C077 the requirement to "maintain visual contact with the traffic to be followed" is met by approved training program and installed aircraft equipment specific to CAVS.

(1) CAVS may only be conducted in Visual Meteorological Conditions (VMC); in the event that VMC cannot be maintained the pilots must inform ATC and request further instructions.

(2) The CAVS aircraft must remain clear of clouds.

(3) The CAVS pilots must visually acquire OTW traffic-to-follow (TTF) and correlate it with position displayed on the CDTI.

Note: The pilots must correlate the TTF by matching all relevant ADS-B IN information with the information provided by ATC (e.g., range/distance, relative bearing and identification of the TTF), before it may be used as a substitute for visual separation.

(4) The CDTI and CAVS information may only be used as a substitute for OTW visual separation when the actual distance to TTF is greater than 2.5 nautical miles (NM) as indicated by the ADS-B IN equipment. If closer than 2.5 NM, the flightcrew must have visual contact OTW, or notify ATC that they have lost visual contact and proceed accordingly.

(5) The pilot is responsible for determining and maintaining safe separation from the assigned TTF aircraft in accordance with established visual separation procedures.

(6) The CAVS pilots must comply with applicable TCAS RAs.

(7) The CAVS aircraft and the TTF must be on approach to the same airport runway.

(8) CAVS on Approach may only be conducted at the airports and runways listed in Table 2.

c. In-Trail Procedure (ITP). - RESERVED.

- d. Merging and Spacing (M&S). - RESERVED.
- e. Interval Management-Spacing (IM-S). - RESERVED.
4. Aircraft Authorization. The certificate holder is authorized to conduct the ADS-B IN operations specified in subparagraph 3 using the approved aircraft in Table 1 in accordance with the limitations and provisions specified for the authorized operation.

Table 1 – Aircraft Approved for ADS-B IN Operations

Aircraft M/M/S	Aircraft Registration #	ADS-B IN Procedure(s)

5. Airport Authorization. The certificate holder is authorized to conduct CAVS at the airports and specified runways listed in Table 2 using the aircraft listed in Table 1 that list CAVS as an approved ADS-B IN procedure.

Table 2 – CAVS Approved Airports

Airport ID	Airport Name	Runway(s)

Appendix E. Sample MSpec A355, Automatic Dependent Surveillance-Broadcast (ADS-B) IN Operations: 14 CFR Part 91K

1. Authorization. The program manager is authorized to conduct flight operations using ADS-B IN equipment and procedures as specified in this paragraph.

2. Limitations and Provisions.

a. Airworthiness Requirements. ADS-B IN operations are approved only for those aircraft with ADS-B equipment installed per type certificate (TC) or Supplemental Type Certificate (STC) as amended. The certificate holder must have an approved maintenance program and verify through routine maintenance inspections that the ADS-B system continues to meet required performance standards.

b. ADS-B IN Equipment Requirements. For aircraft authorized to conduct ADS-B IN operations, a Cockpit Display of Traffic Information (CDTI) is required. The ADS-B IN equipment must comply with Technical Standard Order (TSO)-C195b, Avionics Supporting Automatic Dependent Surveillance-Broadcast (ADS-B) Aircraft Surveillance Applications (ASA), or later, or be found acceptable to the Administrator.

c. Airplane Flight Manual (AFM). The FAA-approved AFM, and/or Airplane Flight Manual Supplement (AFMS), FAA-approved company flight manual, or pilot's operating handbook (POH), as applicable, must incorporate a description and procedures for operation of the approved ADS-B IN systems.

d. Required Pilot Training. Participating pilots must complete the program manager's approved training program that includes operating procedures, and limitations of the installed ADS-B equipment prior to conducting the ADS-B IN operations in this paragraph. ADS-B IN training must include: ADS-B OUT/IN system overview and operations and limitations, normal procedures, minimum equipment list (MEL) procedures, equipment limitations, use of the CDTI software, non-normal procedures and specific crew coordination procedures.

e. Required Training for Persons Authorized to Exercise Operational Control. Participating persons authorized to exercise operational control must complete the program manager's approved training program that includes ADS-B OUT/IN system overview and operations and limitations, normal procedures, MEL procedures, non-normal procedures and ADS-B flight planning, including region/country/airport-specific requirements or limitations on use.

3. Authorized Operations.

a. Situational Awareness. The program manager is authorized to use the ADS-B IN equipment installed on the aircraft listed in Table 1 to supplement the pilot's situational awareness. If at any time the presented information becomes unreliable, inoperative, or a distraction, disregard the display.

(1) Operational requirements – ADS-B IN for Situational Awareness–Surface (SA-SURF).

(a) If the equipment employs a navigation database, the pilot must ensure it is valid prior to use.

(b) While taxiing, the pilot's primary reference will be out-the-window (OTW) scans per current procedures.

(c) The program manager will establish procedures clearly stating the duties and responsibilities of each pilot when using the CDTI during ground operations.

(d) The pilot will consider airport markings and signage viewed OTW as the primary location reference.

(2) Operational requirements – ADS-B IN for Situational Awareness–Airborne (SA-AIRB).

(a) The ADS-B navigation database shall be current.

(b) The pilot's primary orientation to nearby traffic will be by conducting OTW scans as per current procedures.

(c) CDTI traffic information does not replace any traffic advisories (TA) and/or Resolution Advisories (RA) provided from the aircraft's Traffic Collision Alert and Avoidance System (TCAS).

(d) The pilot may not maneuver the aircraft with reference to the displayed traffic, except as specifically authorized by subparagraph 3, Authorized Operations.

b. CDTI Assisted Visual Separation (CAVS) on Approach. The program manager is authorized to use CAVS on Approach when instructed to maintain visual separation in accordance with the procedures described in the Aeronautical Information Manual (AIM).

(1) CAVS may only be conducted in Visual Meteorological Conditions (VMC); in the event that VMC cannot be maintained the pilots must inform ATC and request further instructions.

(2) The CAVS aircraft must remain clear of clouds.

(3) The CAVS pilots must visually acquire OTW traffic-to-follow (TTF) and correlate it with position displayed on the CDTI.

Note: The pilots must correlate the TTF by matching all relevant ADS-B IN information with the information provided by ATC (e.g., range/distance, relative bearing and identification of the TTF), before it may be used as a substitute for visual separation.

(4) The CDTI and CAVS information may only be used as a substitute for OTW visual separation when the actual distance to TTF is greater than 2.5 nautical miles (NM) as indicated by the ADS-B IN equipment. If closer than 2.5 NM, the flightcrew must have visual contact OTW, or notify ATC that they have lost visual contact and proceed accordingly.

(5) The pilot is responsible for determining and maintaining safe separation from the assigned TTF aircraft in accordance with established visual separation procedures.

(6) The CAVS pilots must comply with applicable TCAS RAs.

(7) The CAVS aircraft and the TTF must be on approach to the same airport runway.

(8) CAVS on Approach may only be conducted at the airports and runways listed in Table 2.

c. In-Trail Procedure (ITP). - RESERVED.

- d. Merging and Spacing (M&S). - RESERVED.
 - e. Interval Management-Spacing (IM-S). - RESERVED.
4. Aircraft Authorization. The program manager is authorized to conduct the ADS-B IN operations specified in subparagraph 3 using the approved aircraft in Table 1 in accordance with the limitations and provisions specified for the authorized operation.

Table 1 – Aircraft Approved for ADS-B IN Operations

Aircraft M/M/S	Aircraft Registration #	ADS-B IN Procedure(s)

5. Airport Authorization. The program manager is authorized to conduct CAVS at the airports and specified runways listed in Table 2 using the aircraft listed in Table 1 that list CAVS as an approved ADS-B IN procedure.

Table 2 – CAVS Approved Airports

Airport ID	Airport Name	Runway(s)

Appendix F. Sample LOA A355, Automatic Dependent Surveillance-Broadcast (ADS-B) IN Operations: 14 CFR Part 125 (LODA A125)**Letter of Authorization
ADS-B IN**

1. Authorization. The Operator/Company is authorized to conduct flight operations using ADS-B IN equipment and procedures as specified in this letter of authorization.
2. Limitations and Provisions.
 - a. Airworthiness Requirements. ADS-B IN operations are approved only for those aircraft with ADS-B equipment installed per type certificate (TC) or Supplemental Type Certificate (STC) as amended. The Operator/Company must have an approved maintenance program and verify through routine maintenance inspections that the ADS-B system continues to meet required performance standards.
 - b. ADS-B IN Equipment Requirements. For aircraft authorized to conduct ADS-B IN operations, a Cockpit Display of Traffic Information (CDTI) is required. The ADS-B IN equipment must comply with Technical Standard Order (TSO)-C195b, Avionics Supporting Automatic Dependent Surveillance-Broadcast (ADS-B) Aircraft Surveillance Applications (ASA), or later, or be found acceptable to the Administrator.
 - c. Airplane Flight Manual (AFM). The FAA-approved AFM, and/or Airplane Flight Manual Supplement (AFMS), FAA-approved company flight manual, or pilot's operating handbook (POH), as applicable, must incorporate a description and procedures for operation of the approved ADS-B IN systems.
 - d. Required Pilot Training. Participating pilots must complete an approved training program that includes operating procedures, and limitations of the installed ADS-B equipment prior to conducting the ADS-B IN operations in this paragraph. ADS-B IN training must include: ADS-B OUT/IN system overview and operations and limitations, normal procedures, minimum equipment list (MEL) procedures, equipment limitations, use of the CDTI software, non-normal procedures and specific crew coordination procedures as well as ADS-B flight planning, including region/country/airport-specific requirements or limitations on use.
3. Authorized Operations.
 - a. Situational Awareness. The Operator/Company is authorized to use the ADS-B IN equipment installed on the aircraft listed in Table 1 to supplement the pilot's situational awareness. If at any time the presented information becomes unreliable, inoperative, or a distraction, disregard the display.
 - (1) Operational requirements – ADS-B IN for Situational Awareness–Surface (SA-SURF).
 - (a) If the equipment employs a navigation database, the pilot must ensure it is valid prior to use.
 - (b) While taxiing, the pilot's primary reference will be out-the-window (OTW) scans per current procedures.

(c) The Operator/Company will establish procedures clearly stating the duties and responsibilities of each pilot when using the CDTI during ground operations.

(d) The pilot will consider airport markings and signage viewed OTW as the primary location reference.

(2) Operational requirements – ADS-B IN for Situational Awareness–Airborne (SA-AIRB).

(a) The ADS-B navigation database shall be current.

(b) The pilot's primary orientation to nearby traffic will be by conducting OTW scans as per current procedures.

(c) CDTI traffic information does not replace any traffic advisories (TA) and/or Resolution Advisories (RA) provided from the aircraft's Traffic Collision Alert and Avoidance System (TCAS).

(d) The pilot may not maneuver the aircraft with reference to the displayed traffic, except as specifically authorized by subparagraph 3, Authorized Operations.

b. CDTI Assisted Visual Separation (CAVS) on Approach. The Operator/Company is authorized to use CAVS on Approach when instructed to maintain visual separation in accordance with the procedures described in the Aeronautical Information Manual (AIM).

(1) CAVS may only be conducted in Visual Meteorological Conditions (VMC); in the event that VMC cannot be maintained the pilots must inform ATC and request further instructions.

(2) The CAVS aircraft must remain clear of clouds.

(3) The CAVS pilots must visually acquire OTW traffic-to-follow (TTF) and correlate it with position displayed on the CDTI.

Note: The pilots must correlate the TTF by matching all relevant ADS-B IN information with the information provided by ATC (e.g., range/distance, relative bearing and identification of the TTF), before it may be used as a substitute for visual separation.

(4) The CDTI and CAVS information may only be used as a substitute for OTW visual separation when the actual distance to TTF is greater than 2.5 nautical miles (NM) as indicated by the ADS-B IN equipment. If closer than 2.5 NM, the flightcrew must have visual contact OTW, or notify ATC that they have lost visual contact and proceed accordingly.

(5) The pilot is responsible for determining and maintaining safe separation from the assigned TTF aircraft in accordance with established visual separation procedures.

(6) The CAVS pilots must comply with applicable TCAS RAs.

(7) The CAVS aircraft and the TTF must be on approach to the same airport runway.

(8) CAVS on Approach may only be conducted at the airports and runways listed in Table 2.

c. In-Trail Procedure (ITP). - RESERVED.

- d. Merging and Spacing (M&S). - RESERVED.
 - e. Interval Management-Spacing (IM-S). - RESERVED.
4. Aircraft Authorization. The Operator/Company is authorized to conduct the ADS-B IN operations specified in subparagraph 3 using the approved aircraft in Table 1 in accordance with the limitations and provisions specified for the authorized operation.

Table 1 – Aircraft Approved for ADS-B IN Operations

Aircraft M/M/S	Aircraft Registration #	ADS-B IN Procedure(s)

5. Airport Authorization. The Operator/Company is authorized to conduct CAVS at the airports and specified runways listed in Table 2 using the aircraft listed in Table 1 that list CAVS as an approved ADS-B IN procedure.

Table 2 – CAVS Approved Airports

Airport ID	Airport Name	Runway(s)