NOTICE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

N 8900.150

National Policy

Effective Date:
03/18/11

Cancellation Date:
03/18/12

SUBJ: OpSpec C300, 14 CFR Part 97 NDB, NDB/DME, VOR, and VOR/DME Instrument Approach Procedures Using Substitute Means of Navigation

1. Purpose of This Notice. This notice advises all principal inspectors (PI) and other assigned aviation safety inspectors (ASI) of updated Order 8900.1, Flight Standards Information Management System (FSIMS), guidance for operations specification (OpSpec) C300 to authorize Title 14 of the Code of Federal Regulations (14 CFR) parts 121 and 135 operators under certain limitations and provisions to substitute specific Area Navigation (RNAV) systems for non-directional radio beacon (NDB)/distance measuring equipment (DME), very high frequency (VHF) omni-directional range station (VOR)/DME instrument approaches.

2. Audience. The primary audience for this notice is Flight Standards District Office (FSDO) PIs and ASIs. The secondary audience includes Flight Standards branches and divisions 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 FSIMS at http://fsims.avs.faa.gov. Operators may find this information on the Federal Aviation Administration's (FAA) Web site at http://fsims.faa.gov.

4. Guidance. Operators or PIs may request this nonstandard paragraph by submitting their proposal as specified in the updated guidance for OpSpec C300 found in Order 8900.1, Volume 3, Chapter 18, Section 5, Part C Operations Specification—Airplane Terminal Instrument Procedures and Airport Authorizations and Limitations. See Order 8900.1, Volume 3, Chapter 18, Section 2, Automated Operation Safety System, paragraphs 3-712 to 3-713, for general information on requesting nonstandard authorizations. Appendix A contains a sample of the OpSpec C300 template for part 121. Appendix B contains a sample template of OpSpec C300 for part 135.

5. Action. Principal operations inspectors (POI) should review their operator's OpSpecs and reissue OpSpec C300, if appropriate. The operator will have 120 days from the date of this notice to transition to the revised OpSpec C300.

6. Disposition. We will permanently incorporate the information in this notice in FSIMS before this notice expires. Direct questions or comments concerning this notice to the Performance Based Flight Systems Branch, AFS-470, at 202-385-4623.

for 

John M. Allen
Director, Flight Standards Service

Appendix A. Sample Part 121 OpSpec C300, 14 CFR Part 97 NDB, NDB/DME, VOR, and VOR/DME Instrument Approach Procedures Using Substitute Means of Navigation

C300. 14 CFR Part 97 NDB, NDB/DME, VOR, and VOR/DME Instrument Approach Procedures Using Substitute Means of Navigation **HQ Control: xx/xx/xx** **HQ Revision: Xx**

a. Authorization. The certificate holder is authorized to conduct 14 CFR part 97 NDB, NDB/DME, VOR, and VOR/DME IAPs using RNAV equipment, authorized by AFS-200 and AFS-400, with GPS or wide area augmentation system (WAAS) as an active sensor and shall conduct all such operations in accordance with the provisions of this operations specification.

b. Aircraft and Equipment Authorization. The certificate holder is authorized to conduct part 97 NDB, NDB/DME, VOR, and VOR/DME IAPs using the following aircraft and equipment when operated in accordance with the approved AFM and this operations specification:

Table 1—Aircraft and Equipment Authorization

Aircraft M/M/S	RNAV System(s) and Software			Limitations and Provisions
	Manufacturer	Model	Software Part/Version	
TABL01	TABL02	TABL03	TABL04	TABL05

c. Limitations and Provisions.

(1) The certificate holder is authorized to conduct NDB, NDB/DME, VOR, and VOR/DME IAPs using the procedures described herein. This operations specification applies when the underlying Navigational Aid (NAVAID) (NDB, VOR, or DME) is out of service, and/or compatible aircraft avionics are either not installed (automatic direction finder (ADF) or DME) or not operational (VOR, ADF, or DME).

> **Note:** Operators planning to use their RNAV system as a substitute means of navigation guidance in lieu of an out-of-service NAVAID may need to coordinate with ATC regarding this intent, capability, and operational authorization in order to receive a clearance for certain procedures.

(2) IAPs must be selected by procedure name (e.g., line-selectable) from a current aircraft Navigation Database and conform to the charted procedure. The operator is responsible for ensuring that the procedure as flown complies with the charted procedure.

> **Note:** The Navigation Database must be obtained from a database supplier holding an FAA letter of acceptance in accordance with the current edition of AC 20-153, Acceptance of Aeronautical Data Processes and Associated Databases.

> **Note:** Heading-based legs associated with procedures may be flown using manual technique (based on indicated magnetic heading) or, if available, extracted from the aircraft database.

> **Note:** If the Aeronautical Information Regulation and Control (AIRAC) cycle will change during flight, operators and pilots should establish procedures to ensure the accuracy of navigation data, including suitability of navigation facilities used to define the procedures for flight. Traditionally, this has been accomplished by verifying electronic data against paper products. One acceptable means is to compare aeronautical charts (new and old) to verify navigation fixes prior to dispatch.

If an amended chart affecting navigation data is published for the procedure, the database must not be used to conduct the procedure.

(3) Aircraft operators must ensure one of the following navigation data and flyability validation processes is used and satisfactorily completed prior to conducting operations covered by this operations specification.

(a) Ongoing, system-wide checks of navigation data and flyability.

(b) As-needed, procedure-specific checks of navigation data and flyability.

(4) These processes must ensure navigation data (e.g., waypoint names, waypoint sequence, distance between waypoints, heading/course/track information, and vertical path angles) used in airborne equipment conform to published information. The following methods to check the flyability of procedure(s) are acceptable: suitable desktop analysis, simulator evaluation, or flight (in visual meteorological conditions (VMC)) that is compatible with all aircraft and equipment listed in paragraph b of this operations specification.

Note: If the procedure(s) has previously been flown using compatible aircraft and equipment listed in paragraph b and found satisfactory while monitoring raw data from the underlying NAVAID, additional flyability checks are not required if the lateral path of the procedure(s) has not been modified.

(5) Modification of approach waypoints is prohibited. Waypoints not overflown in compliance with an ATC clearance (e.g., direct-to clearance) may be deleted. This prohibition does not apply to altitude or speed changes that may be required to comply with an ATC clearance.

(6) Operators of aircraft that do not automatically alert the pilot of a loss of GPS must develop procedures to verify correct GPS operation.

(7) Operation on NDB, NDB/DME, VOR, and VOR/DME IAPs authorized under this operations specification requires a navigation system accuracy less than or equal to 1.0 nautical mile (NM) for initial and intermediate approach segments, 0.3 NM for Final Approach Segments (FAS), and 1.0 NM for Missed Approach Segments (MAS).

Note: These operations are not categorized as RNP approaches and do not constitute or require an RNP authorization.

(8) The flightcrew must ensure that the required navigation system accuracy for each flight segment is satisfied. The onboard navigation system performance monitoring and alerting functions of RNP equipment may be used to satisfy this requirement provided this equipment is found suitable for these purposes.

Note: One method to satisfy the requirements of subparagraphs c(6) and c(7) would be the manual setting of minimum RNP (i.e., 0.3 NM) prior to conducting an approach.

(9) Pilots are expected to maintain procedure centerlines, as depicted by onboard lateral deviation indicators (LDI), displays, and/or flight guidance during all operations described in this operations specification unless otherwise authorized to deviate by ATC or in the instance of an emergency condition. For normal operations, cross-track error (XTK)/deviation (the difference between the RNAV equipment computed path and the aircraft position relative to the path) should be limited to +/- one-half the navigation accuracy associated with the procedure segment (i.e., 0.5 NM for the initial and intermediate segments, 0.15 NM for the FAS, and 0.5 NM for the MAS). Brief deviations from this standard (e.g., overshoots or undershoots) during and immediately after turns, up to a maximum of 1 times the navigation accuracy (i.e., 1.0 NM for the initial and intermediate segments), are allowable.

(10) Unless able to remain in VMC and proceed to the runway using the visual references specified in 14 CFR part 91, § 91.175 or 14 CFR part 121, § 121.651, the flightcrew must execute a missed approach in the event that the allowable navigation system accuracy or lateral XTK is exceeded.

(11) These procedures may not be used for planning purposes at an alternate airport unless the operator conducts these operations with RNAV equipment using WAAS as an input.

(12) A prediction of receiver autonomous integrity monitoring (RAIM) availability must be checked and found satisfactory during flight planning and RAIM must be available during these operations. Operators of RNAV equipment using WAAS as an input must check WAAS NOTAM.

d. The certificate holder shall not conduct any operation authorized by this operations specification, unless each pilot flightcrew member satisfactorily completes the certificate holder's approved training and qualification program for the equipment and any special procedures to be used.

TEXT99

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1. Issued by the Federal Aviation Administration.
2. Support information reference:
3. These operations specifications are approved by direction of the Administrator.

4. Date Approval is effective: Amendment Number:
5. I hereby accept and receive the operations specifications in this paragraph.

Date:

Appendix B. Sample Part 135 OpSpec C300, 14 CFR Part 97 NDB, NDB/DME, VOR, and VOR/DME Instrument Approach Procedures Using Substitute Means of Navigation

C300. 14 CFR Part 97 NDB, NDB/DME, VOR, and VOR/DME of Instrument Approach Procedures Using Substitute Means Navigation **HQ Control: xx/xx/xx** **HQ Revision: xx**

a. Authorization. The certificate holder is authorized to conduct 14 CFR part 97 NDB, NDB/DME, VOR, and VOR/DME IAPs using RNAV equipment, authorized by AFS-200 and AFS-400, with GPS or wide area augmentation system (WAAS) as an active sensor and shall conduct all such operations in accordance with the provisions of this operations specification.

b. Aircraft and Equipment Authorization. The certificate holder is authorized to conduct part 97 NDB, NDB/DME, VOR, and VOR/DME IAPs using the following aircraft and equipment when operated in accordance with the approved AFM and this operations specification:

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> **Note:** Operators planning to use their RNAV system as a substitute means of navigation guidance in lieu of an out-of-service NAVAID may need to coordinate with ATC regarding this intent, capability, and operational authorization in order to receive a clearance for certain procedures.

(2) IAPs must be selected by procedure name (e.g., line-selectable) from a current aircraft Navigational Database and conform to the charted procedure. The operator is responsible for ensuring that the procedure as flown complies with the charted procedure.

> **Note:** The Navigational Database must be obtained from a database supplier holding an FAA letter of acceptance in accordance with the current edition of AC 20-153, Acceptance of Aeronautical Data Processes and Associated Databases.

> **Note:** Heading-based legs associated with procedures may be flown using manual technique (based on indicated magnetic heading) or, if available, extracted from the aircraft database.

> **Note:** If the Aeronautical Information Regulation and Control (AIRAC) cycle will change during flight, operators and pilots should establish procedures to ensure the accuracy of navigation data, including suitability of navigation facilities used to define the procedures for flight. Traditionally, this has been accomplished by verifying electronic data against paper products. One acceptable means is to compare aeronautical charts (new and old) to verify navigation fixes prior to dispatch. If an amended chart affecting navigation data is published for the procedure, the database must not be used to conduct the procedure.

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(4) These processes must ensure navigation data (e.g., waypoint names, waypoint sequence, distance between waypoints, heading/course/track information, and vertical path angles) used in airborne equipment conform to published information. The following methods to check the flyability of procedure(s) are acceptable: suitable desktop analysis, simulator evaluation, or flight (in visual meteorological conditions (VMC)) that is compatible with all aircraft and equipment listed in paragraph b of this operations specification.

Note: If the procedure(s) has previously been flown using compatible aircraft and equipment listed in paragraph b and found satisfactory while monitoring raw data from the underlying NAVAID, additional flyability checks are not required if the lateral path of the procedure(s) has not been modified.

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(6) Operators of aircraft that do not automatically alert the pilot of a loss of GPS must develop procedures to verify correct GPS operation.

(7) Operation on NDB, NDB/DME, VOR, and VOR/DME IAPs authorized under this operations specification requires a navigation system accuracy less than or equal to 1.0 nautical mile (NM) for initial and intermediate approach segments, 0.3 NM for Final Approach Segments (FAS), and 1.0 NM for Missed Approach Segments (MAS).

Note: These operations are not categorized as RNP approaches and do not constitute or require an RNP authorization.

(8) The flightcrew must ensure that the required navigation system accuracy for each flight segment is satisfied. The onboard navigation system performance monitoring and alerting functions of RNP equipment may be used to satisfy this requirement provided this equipment is found suitable for these purposes.

Note: One method to satisfy the requirements of subparagraphs c(6) and c(7) would be the manual setting of minimum RNP (i.e., 0.3 NM) prior to conducting an approach.

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(10) Unless able to remain in visual meteorological conditions (VMC) and proceed to the runway using the visual references specified in 14 CFR part 91, § 91.175 or 14 CFR part 135, § 135.225, the flightcrew must execute a missed approach in the event that the allowable navigation system accuracy or lateral XTK is exceeded.

(11) These procedures may not be used for planning purposes at an alternate airport unless the operator conducts these operations with RNAV equipment using WAAS as an input.

(12) A prediction of receiver autonomous integrity monitoring (RAIM) availability must be checked and found satisfactory during flight planning and RAIM must be available during these operations. Operators of RNAV equipment using WAAS as an input must check WAAS NOTAM.

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