**NOTICE**

**U.S. DEPARTMENT OF TRANSPORTATION**
FEDERAL AVIATION ADMINISTRATION

N 8900.266

National Policy

Effective Date:
6/23/14

Cancellation Date:
6/23/15

**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 document provides notification of changes to operations specification (OpSpec) C300 templates for operations under Title 14 of the Code of Federal Regulations (14 CFR) parts 121, 121/135, and 135.

**2. Audience.** The primary audience for this notice is certificate-holding district offices (CHDO), Flight Standards District Offices (FSDO), certificate management offices (CMO), principal inspectors (PI), and aviation safety inspectors (ASI). 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 Federal Aviation Administration's (FAA) Web site at http://fsims.faa.gov. The public can find this notice at http://www.faa.gov/regulations_policies/orders_notices.

**4. Background.** OpSpec C300 gives authorization to conduct 14 CFR part 97 non-directional radio beacon (NDB), NDB/distance measuring equipment (DME), very high frequency (VHF) omni-directional range (VOR), and VOR/DME instrument approaches using Area Navigation (RNAV) as a substitute means of navigation. However, C300 may not be used for planning purposes at an alternate airport using RNAV equipment without a wide area augmentation system (WAAS) input. The WAAS restriction is being removed. Subparagraph c(11) in the template was changed to allow use of C300 for alternate airport planning.

**5. Guidance.** This notice contains the following:

- Sample OpSpec C300 template in Appendix A, which applies to part 121.
- Sample OpSpec C300 template in Appendix B, which applies to part 135.
- Sample OpSpec C300 template in Appendix C, which applies to part 121/135.

**6. Action.** PIs should review their certificate holder's OpSpecs and reissue OpSpec C300 if the certificate holder wishes to use C300 for alternate airport planning. HQ concurrence is not

required for reissuing C300 templates unless Table 1, Aircraft and Equipment Authorization, is amended.

**a. Limitations and Provisions.** Certificate holders must be issued OpSpec/management specification (MSpec) C055, Alternate Airport IFR Weather Minimums, in conjunction with OpSpec C300, and follow all limitations and provisions within C055 to use C300 for planning purposes at alternate airports using specific RNAV equipment.

**b. Applicability and Compliance.** OpSpec C300 is applicable to parts 121, 121/135, and 135. The compliance date will be 90 days from the date of this notice.

**7. Disposition.** We will incorporate the information in this notice into FAA Order 8900.1 before this notice expires. Direct questions or comments concerning this notice to the Performance Based Flight Systems Branch (AFS-470) at 202-267-8838.

John Barbagallo
Acting Deputy Director, Flight Standards Service

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

a. The certificate holder is authorized to conduct 14 CFR part 97 NDB, NDB/DME, VOR, and VOR/DME instrument approach procedures (IAP) using Area Navigation (RNAV) equipment with GPS or a wide area augmentation system (WAAS) as an active sensor. Authorization requires prior written approval from the Air Transportation Division (AFS-200) and the Flight Technologies and Procedures Division (AFS-400).

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 Airplane Flight Manual (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 | |
| | | | | |

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:** A certificate holder planning to use an RNAV system as a substitute means of navigation in lieu of an out-of-service NAVAID may need to coordinate with air traffic control (ATC) in order to receive clearance for a procedure.

(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 certificate holder is responsible for ensuring that the procedure as flown complies with the charted procedure.

(a) The navigational database must be obtained from a database supplier holding an FAA letter of acceptance in accordance with the current edition of Advisory Circular (AC) 20-153, Acceptance of Aeronautical Data Processes and Associate Databases.

(b) 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.

(c) If the Aeronautical Information Regulation and Control (AIRAC) cycle will change during flight, the certificate holder should establish flightcrew procedures to ensure the accuracy of navigation data, to include suitability of navigation facilities used to define the procedures for flight. This can be accomplished by verifying electronic data in the expired database with current paper or electronic charts as applicable. New and old paper/electronic aeronautical charts should be used 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) The certificate holder 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 subparagraph b of this operations specification.

**Note:** If the procedure(s) has previously been flown using compatible aircraft and equipment listed in subparagraph 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) The certificate holder must develop procedures to verify correct GPS operation if operating aircraft that do not automatically alert the flightcrew to a loss of the GPS signal.

(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 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) Flightcrews 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) Flightcrews are expected to maintain procedure centerlines (CL), as depicted by onboard lateral deviation indicators, 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 one times the navigation accuracy (i.e., 1.0 NM for the initial and intermediate segments) are allowable.

(10) Flightcrews must execute a missed approach if the allowable navigation system accuracy and/or lateral XTK is exceeded and unable to remain in VMC while proceeding to the runway using the visual references specified in 14 CFR part 91, § 91.175 or 14 CFR part 121, § 121.651.

(11) The certificate holder may use RNAV substitution for planning purposes at an alternate airport for part 97 NDB, NDB/DME, VOR and VOR/DME IAPs. This includes the authorization to use airports with an unmonitored NAVAID as an alternate. This authorization allows the unmonitored NAVAID to be treated as out of service within the context of this guidance only. The certificate holder must also be authorized operations specification C055, Alternate Airport IFR Weather Minimums, and follow all limitations and provisions within C055 when using RNAV substitution for alternate planning purposes.

> **Note:** When C300 RNAV substitution is used for alternate planning purposes, the substituted approach must be considered a GPS-based IAP when following C055 guidance.

(12) The certificate holder must perform a receiver autonomous integrity monitoring (RAIM) availability prediction during flight planning. RAIM must be predicted to be available during periods of operation. The certificate holder must check WAAS NOTAMs when using RNAV equipment with WAAS as an input.

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

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

a. The certificate holder is authorized to conduct 14 CFR part 97 NDB, NDB/DME, VOR, and VOR/DME instrument approach procedures (IAP) using Area Navigation (RNAV) equipment with GPS or a wide area augmentation system (WAAS) as an active sensor. Authorization requires prior written approval from the Air Transportation Division (AFS-200) and the Flight Technologies and Procedures Division (AFS-400).

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 Airplane Flight Manual (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 | |
| | | | | |

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:** A certificate holder planning to use an RNAV system as a substitute means of navigation in lieu of an out-of-service NAVAID may need to coordinate with air traffic control (ATC) in order to receive clearance for a procedure.

(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 certificate holder is responsible for ensuring that the procedure as flown complies with the charted procedure.

(a) The navigational database must be obtained from a database supplier holding an FAA letter of acceptance in accordance with the current edition of Advisory Circular (AC) 20-153, Acceptance of Aeronautical Data Processes and Associate Databases.

(b) 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.

(c) If the Aeronautical Information Regulation and Control (AIRAC) cycle will change during flight, the certificate holder should establish flightcrew procedures to ensure the accuracy of navigation data, to include suitability of navigation facilities used to define the procedures for flight. This can be accomplished by verifying electronic data in the expired database with current paper or electronic charts as applicable. New and old paper/electronic aeronautical charts should be used 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) The certificate holder 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 subparagraph b of this operations specification.

**Note:** If the procedure(s) has previously been flown using compatible aircraft and equipment listed in subparagraph 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) The certificate holder must develop procedures to verify correct GPS operation if operating aircraft that do not automatically alert the flightcrew to a loss of the GPS signal.

(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 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) Flightcrews 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) Flightcrews are expected to maintain procedure centerlines (CL), as depicted by onboard lateral deviation indicators, 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 one times the navigation accuracy (i.e., 1.0 NM for the initial and intermediate segments), are allowable.

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> **Note:** When C300 RNAV substitution is used for alternate planning purposes, the substituted approach must be considered a GPS-based IAP when following C055 guidance.

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

## Appendix C. Sample OpSpec C300, 14 CFR Part 97 NDB, NDB/DME, VOR, and VOR/DME Instrument Approach Procedures Using Substitute Means of Navigation: 14 CFR Part 121/135

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**Note:** If the procedure(s) has previously been flown using compatible aircraft and equipment listed in subparagraph 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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**Note:** These operations are not categorized as RNP approaches and do not constitute or require an RNP authorization.

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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 one times the navigation accuracy (i.e., 1.0 NM for the initial and intermediate segments), are allowable.

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> **Note:** When C300 RNAV substitution is used for alternate planning purposes, the substituted approach must be considered a GPS-based IAP when following C055 guidance.

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