NOTICE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

N 8900.460

National Policy

Effective Date:
4/9/18

Cancellation Date:
4/9/19

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

1. Purpose of This Notice. This notice announces a nonmandatory revision to operations specification (OpSpec) C300, applicable to Title 14 of the Code of Federal Regulations (14 CFR) parts 121 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), aviation safety inspectors (ASI), and principal inspectors (PI). The secondary audience includes all Flight Standards Service divisions, branches, and offices.

3. Where You Can Find This Notice. You can find this notice on the MyFAA employee website 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) website at http://fsims.faa.gov. This notice is available to the public at http://www.faa.gov/regulations_policies/orders_notices.

4. Background. OpSpec C300 authorizes operators with approved Area Navigation (RNAV) systems to fly conventional approaches with the RNAV system. This revision to OpSpec C300 adds the tactical air navigation system (TACAN) to the list of approaches now acceptable to be flown using a suitable RNAV system. The title of this OpSpec has also been revised to reflect this addition.

5. Guidance. The Flight Technologies and Procedures Division (AFS-400) developed this guidance, in conjunction with the Air Transportation Division (AFS-200). This notice announces a revision to the following OpSpec templates and FAA Order 8900.1 guidance:

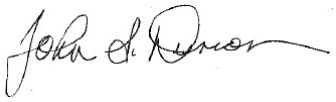
a. OpSpec Templates. This notice contains the following:

- The sample OpSpec C300 template in Appendix A applies to part 121.
- The sample OpSpec C300 template in Appendix B applies to part 135.
- The sample OpSpec C300 template in Appendix C applies to part 121/135.

b. FAA Order 8900.1. The updated guidance in Order 8900.1, Volume 3, Chapter 18, Section 5, Part C Operations Specifications—Airplane Terminal Instrument Procedures and Airport Authorizations and Limitations, adds TACAN to the list of approaches now acceptable to be flown using suitable RNAV system and changes the OpSpec C300 authorization process.

6. Action. This is a nonmandatory template change for certificate holders. PIs should review their certificate holder's OpSpecs and reissue C300, if appropriate. Certificate holders who plan to fly a TACAN approach with their RNAV system must be reissued C300. Reissuance of OpSpec C300 for the purpose of authorizing a TACAN approach with their RNAV system with no other equipment changes may be accomplished without AFS-400 and AFS-200 approval.

7. Disposition. We will incorporate the information in this notice into Order 8900.1 before this notice expires. Direct questions or comments concerning the information in this notice to the Performance-Based Flight Systems Branch (AFS-470) at 202-267-8806.



John S. Duncan
Executive Director, Flight Standards Service

Appendix A. Sample OpSpec C300, 14 CFR Part 97 NDB, NDB/DME, VOR, VOR/DME, and TACAN 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, VOR/DME, and tactical air navigation system (TACAN) 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, VOR/DME, and TACAN 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, VOR/DME, and TACAN IAPs using the procedures described herein. This operations specification applies when the underlying Navigational Aid (NAVAID) (NDB, VOR, DME, or TACAN) is out-of-service and/or compatible aircraft avionics are either not installed (automatic direction finder (ADF), DME, or TACAN) or not operational (VOR, ADF, DME, or TACAN). The certificate holder may need to coordinate with air traffic control (ATC) in order to receive clearance for a procedure when planning to use an RNAV system as a substitute means of navigation in lieu of an out-of-service NAVAID.

(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. Department of Defense (DOD) IAPs are considered equivalent to part 97 unless identified as “Not for Civil Use”.

(a) The navigational database must be obtained from a database supplier holding an FAA letter of acceptance.

(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 must 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 must 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. If a procedure has previously been flown using compatible aircraft and equipment listed in subparagraph b of this operations specification and found satisfactory while monitoring raw data from the underlying NAVAID, the certificate holder is not required to complete additional flyability checks, provided the lateral path of the procedure 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, VOR/DME, and TACAN 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). 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. The certificate holder may use the manual setting of minimum

RNP (e.g., 0.3 NM) prior to conducting an approach as a method to satisfy the requirements of subparagraphs c(6) and c(7).

(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, VOR/DME, and TACAN 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 authorization only. The certificate holder must be authorized Operations Specification C055, Alternate Airport IFR Weather Minimums. When using operations specifications C300 and C055 together for alternate planning purposes, the substituted approach must be considered a GPS-based IAP. The certificate holder must follow all C055 limitations and provisions regarding the use of GPS-based IAPs for alternate planning.

(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 must 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, VOR/DME, and TACAN 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, VOR/DME, and tactical air navigation system (TACAN) 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, VOR/DME, and TACAN 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, VOR/DME, and TACAN IAPs using the procedures described herein. This operations specification applies when the underlying Navigational Aid (NAVAID) (NDB, VOR, DME, or TACAN) is out-of-service and/or compatible aircraft avionics are either not installed (automatic direction finder (ADF), DME, or TACAN) or not operational (VOR, ADF, DME, or TACAN). The certificate holder may need to coordinate with air traffic control (ATC) in order to receive clearance for a procedure when planning to use an RNAV system as a substitute means of navigation in lieu of an out-of-service NAVAID.

(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. Department of Defense (DOD) IAPs are considered equivalent to part 97 unless identified as “Not for Civil Use”.

(a) The navigational database must be obtained from a database supplier holding an FAA letter of acceptance.

(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 must 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 must 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.

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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 subparagraph b of this operations specification. If a procedure has previously been flown using compatible aircraft and equipment listed in subparagraph b of this operations specification and found satisfactory while monitoring raw data from the underlying NAVAID, the certificate holder is not required to complete additional flyability checks, provided the lateral path of the procedure 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, VOR/DME, and TACAN 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). These operations are not categorized as RNP approaches and do not constitute or require an RNP authorization.

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RNP (e.g., 0.3 NM) prior to conducting an approach as a method to satisfy the requirements of subparagraphs c(6) and c(7).

(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 135, § 135.225.

(11) The certificate holder may use RNAV substitution for planning purposes at an alternate airport for part 97 NDB, NDB/DME, VOR, VOR/DME, and TACAN 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 authorization only. The certificate holder must be authorized Operations Specification C055, Alternate Airport IFR Weather Minimums. When using operations specifications C300 and C055 together for alternate planning purposes, the substituted approach must be considered a GPS-based IAP. The certificate holder must follow all C055 limitations and provisions regarding the use of GPS-based IAPs for alternate planning.

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

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(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; 14 CFR part 121, § 121.651; or 14 CFR part 135, § 135.225, as applicable.

(11) The certificate holder may use RNAV substitution for planning purposes at an alternate airport for part 97 NDB, NDB/DME, VOR, VOR/DME, and TACAN 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 authorization only. The certificate holder must be authorized Operations Specification C055, Alternate Airport IFR Weather Minimums. When using operations specifications C300 and C055 together for alternate planning purposes, the substituted approach must be considered a GPS-based IAP. The certificate holder must follow all C055 limitations and provisions regarding the use of GPS-based IAPs for alternate planning.

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