

VOLUME 3 GENERAL TECHNICAL ADMINISTRATION**CHAPTER 18 OPERATIONS SPECIFICATIONS****Section 4 Part B Operations Specifications—En Route Authorizations and Limitations****3-816 PART B OPERATIONS SPECIFICATIONS (OPSPECS).**

NOTE: All 300-series and nonstandard 500-series OpSpecs/management specifications (MSpecs)/training specifications (TSpecs)/Letters of Authorization (LOA) (Parts A, B, C, D, E, and H) require approval by the appropriate Flight Standards policy division. Title 14 of the Code of Federal Regulations (14 CFR) parts 61, 91, 91 subpart K (part 91K), 125 (including part 125 Letter of Deviation Authority (LODA) holders), 133, and 137 operators' nonstandard operational requests must be approved by the General Aviation and Commercial Division (AFS-800). Title 14 CFR parts 121, 135, and 142 nonstandard operational requests must be approved for issuance by the Air Transportation Division (AFS-200). Parts 121, 135, and 14 CFR part 145 repair station and all airworthiness nonstandard requests must be approved by the Aircraft Maintenance Division (AFS-300). Operations relating to instrument procedures must be approved by the Flight Technologies and Procedures Division (AFS-400) and the International Program Division (AFS-50), AFS-200, or AFS-800, as appropriate. Nonstandard authorizations for 14 CFR part 129 foreign operators require approval from the AFS-50 division manager.

NOTE: All text added to an OpSpec/MSpec/TSpec or LOA through the use of nonstandard text entered in the nonstandard text block (sometimes referred to as "Text 99") must also be approved by the appropriate Flight Standards policy division manager. For detailed guidance on the process for obtaining approval for nonstandard authorizations, principal inspectors (PI) must read the guidance contained in Volume 3, Chapter 18, Section 2.

NOTE: Applications for authorization of Next Generation Air Transportation System (NextGen) Special Areas of Operations (SAO) OpSpecs that require Flight Standards concurrence should be recorded and documented in the Operations Approval Portal System (OAPS) at <https://oaps.faa.gov/>. Instructions on the tracker's use, including guides on which OpSpecs require its use, are posted on the tracker.

NOTE: The following TSpecs designated with an asterisk (*) are for the part 142 database only.

***TSPEC B001—CORE CURRICULUMS (and Continuation TSpecs B111, B112, and B113).** TSpec B001 authorizes a training center to conduct training and/or testing required for airman certification or added ratings in accordance with 14 CFR parts 61 and 63. More detailed information can be found in Volume 3, Chapter 54. Training Center Program Managers (TCPM) should refer to the B001 Job Aid contained in the Web-based Operations Safety System (WebOPSS) "Guidance" for proper completion of Table 1, Core Curriculum – Airplane, and

Table 2, Core Curriculums – Rotorcraft. In some cases, a training center may need to store a large amount of information in B001. To accommodate this, B111, B112, and B113 are available as “continuation” TSspecs of B001. These TSspecs must be used in sequential order. Issue the next sequential TSspec at or before reaching the 40-page limit for the preceding TSspec.

***TSPEC B002—SPECIALTY CURRICULUMS (and Continuation TSspecs B121, B122, and B123).** TSspec B002 authorizes a training center to conduct training and/or checking required for airman qualification in accordance with 14 CFR part 61. More detailed information can be found in Volume 3, Chapter 54. Training Center Program Managers (TCPM) should refer to the B002 Job Aid contained in the Web-based Operations Safety System (WebOPSS) “Guidance” for proper completion of Table 1, Specialty Curriculums – Airplane, and Table 2, Specialty Curriculums – Rotorcraft. In some cases, a training center may need to store a large amount of information in B002. To accommodate this, B121, B122, and B123 are available as “continuation” TSspecs of B002. These TSspecs must be used in sequential order. Issue the next sequential TSspec at or before reaching the 40-page limit for the preceding TSspec.

***TSPEC B003—OTHER APPROVED COURSES.** TSspec B003 authorizes a training center to conduct training and/or checking required for crewmembers and personnel other than crewmembers to achieve competency required by the appropriate part of 14 CFR. More detailed information can be found in Volume 3, Chapter 54. Training Center Program Managers (TCPM) should refer to the B003 Job Aid contained in the Web-based Operations Safety System (WebOPSS) “Guidance” for proper completion of Table 1, Other Approved Courses.

OPSPEC B029—DRIFTDOWN OR FUEL DUMPING FOR CFR TERRAIN CLEARANCE REQUIREMENTS.

A. Purpose. OpSpec B029 is used to authorize driftdown or fuel dumping procedures used by the 14 CFR part 121 or 135 certificate holder to demonstrate compliance with 14 CFR terrain clearance requirements. The certificate holder uses the system described or referenced in the OpSpec for its approved driftdown or fuel dumping procedures, limitations, and data.

B. General Guidance. See Volume 4, Chapter 3, Section 5, paragraph 4-593 for more information.

OPSPEC B030—IFR NAVIGATION USING GPS/WAAS RNAV SYSTEMS.

A. Purpose. En route Area Navigation (RNAV) operations in the State of Alaska and its airspace on published air traffic routes using Technical Standard Order (TSO)-145a/C146a navigation systems as the only means of instrument flight rules (IFR) navigation appropriate for the route to be flown.

B. Wide Area Augmentation System (WAAS) Equipment. This OpSpec also authorizes TSO-C145a/C146a WAAS equipment to be used for IFR en route operations at special minimum en route altitudes (MEA) that are outside the operational service volume of ground-based Navigational Aid (NAVAID) if the aircraft operation meets the requirements of sections 3 and 4 of Special Federal Aviation Regulation (SFAR) 97.

C. Global Positioning System (GPS). The recent availability of TSO-C145a/C146a WAAS equipment constitutes a significant improvement in Global Positioning System (GPS) RNAV technology by the incorporation of WAAS, fault detection and exclusion (FDE), along with receiver autonomous integrity monitoring (RAIM). For a complete discussion of the equipment, refer to Volume 4, Chapter 1, Section 1, subparagraph 4-3D, GPS and WAAS Navigation, and Volume 4, Chapter 1, Section 2, paragraph 4-32, FAA Approval of GPS/WAAS.

D. Web-Based Operations Safety System (WebOPSS). Principal operations inspectors (POI) can access OpSpec B030 in the WebOPSS. Required information must be entered to specify the applicable aircraft make, model, and serial number, WAAS manufacturer and model, and the equipment type and class (See Table 3-7, Wide Area Augmentation System Equipment Classes, below).

Table 3-7. Wide Area Augmentation System Equipment Classes

| WAAS EQUIPMENT CLASSES | | | | | |
|--|--|--|--|----------------------|----------------|
| TSO-C145a/C146a | | | | | |
| EQUIPMENT CLASS | Oceanic and Domestic En Route, Terminal Area Operations, Nonprecision Approach | | | LNAV/VNAV Approaches | LPV APPROACHES |
| WAAS Sensor [TSO-C145a] | | | | | |
| Class 1 | yes | | | no | no |
| Class 2 | yes | | | yes | no |
| Class 3 | yes | | | yes | yes |
| WAAS Navigation Equipment [TSO-C146a] (note 1) | | | | | |
| Class 1 | yes | | | no | no |
| Class 2 | yes | | | yes | no |
| Class 3 | yes | | | yes | yes |
| Class 4 (note 2) | no | | | no | yes |

NOTE 1: WAAS sensor: While the Technical Standard Order (TSO)-C145a sensor supports the operations denoted, the integrated navigation system may not support all of these operations. Consult the Airplane Flight Manual (AFM), AFM supplement, pilot's guide, etc., for more information.

NOTE 2: Class 4 equipment will typically also be authorized under TSO-C145a Class 3. In that configuration, the WAAS equipment will support all phases of flight. The integrated navigation system may not support all of these operations (see NOTE 1).

E. Special Navigation Limitations and Provisions. WAAS equipment uses whatever GPS and WAAS satellites are in view and will provide the best available service. If the navigation service does not meet all of the requirements for the phase of flight, the equipment annunciates the “Loss of Integrity” or an RAIM indication. If all GPS guidance is lost, the equipment will revert to dead reckoning and the flightcrew should take appropriate action (e.g., revert to alternate means of navigation, climb into ground NAVAID coverage, request radar services, proceed visually). Special navigation limitations and provisions are included in this OpSpec to ensure that flightcrews have been properly trained, tested, and qualified. Procedures must also be established for flightcrews and aircraft dispatchers (when applicable) to govern operation during periods of degraded navigation capability and/or satellite outages. Additional special conditions included in this paragraph require the certificate holder to use an approved program to predict navigation outages that impact WAAS equipment.

F. Independent Systems. Approval of this paragraph requires the aircraft to be equipped with two independent systems capable of supporting the operation. This may be met with:

- Dual TSO-C146a Class 1, 2 or 3 equipment, installed in accordance with the current edition of Advisory Circular (AC) 20-138, Airworthiness Approval of Positioning and Navigation Systems; or
- At least one flight management system (FMS) that complies with TSO-C115b and dual TSO-C145a Class 1, 2 or 3 receivers (installed in accordance with AC 20-138).

G. Navigation System. The navigation system must be fully operational or operated in accordance with an approved minimum equipment list (MEL). The approved navigation system may only be used to navigate along routes defined by fixes residing in the aircraft navigation system database.

OPSPEC/MSPEC B031—AREAS OF EN ROUTE OPERATION.

A. Operators. OpSpec B031 is issued to all 14 CFR part 91K, 121, 121/135, 135, and 125 operators (fixed-wing and/or rotorcraft).

1) Only the lead-in paragraph is issued to those part 135 operators who operate under visual flight rules (VFR) only. In the Web-based Operations Safety System (WebOPSS), you will be prompted to select the second radio button with the longer text.

2) All instrument flight rules (IFR) operators are issued the lead-in paragraph and subparagraphs a through f as prescribed below. In the WebOPSS, you will be prompted to select the second radio button with the longer text.

3) Select subparagraph g if the certificate holder is authorized to use Global Positioning System (GPS) navigation equipment for IFR Class I Navigation.

B. Specific Authorizations. The delimiting phrases, “if issued” or “if that paragraph is issued” is used in the subparagraphs that refer to other OpSpecs that give the specific authorizations (i.e., IFR in Class G Airspace, Class I Navigation, Class II Navigation). The principal operations inspector (POI) must complete these authorizations and coordinate them with principal maintenance inspectors (PMI).

C. Subparagraph B(3). Subparagraph b(3), “Operate IFR flights including flights to alternate or diversionary airports in Class G Airspace in accordance with the provisions of paragraphs A014, C064, C080, H113, and/or H121, as applicable, of these OpSpecs, if issued” is a provisional statement dependent upon the issuance of the other aforementioned OpSpecs for authorization to operate in Class G Airspace.

D. Subparagraph C. Subparagraph c reads, “Deviations from routings specified in this paragraph are authorized when necessary due to in-flight emergencies or to avoid potentially hazardous meteorological conditions.”

E. Subparagraphs D, E, and F. Subparagraphs d, e, and f are to be selected for issuance only if they apply to the IFR operator.

1) Subparagraph d reads, “For operations within [U.S.] Class A Airspace, the certificate holder is authorized to conduct Class I Navigation under positive radar control with the Area Navigation (RNAV) or long-range navigation systems (LRNS) specified in OpSpec B035 of these OpSpecs if that paragraph is issued,” according to the following guidelines:

a) OpSpec B035 must also be issued to authorize IFR Class I Navigation in U.S. Class A Airspace using RNAV systems, including LRNS.

b) Any one or all of the aircraft to be operated under the certificate must be capable of conducting part 121 or 135 operations in excess of flight level (FL) 180.

c) And the airplane(s) has LRNS installed.

d) OR the aircraft(s) has RNAV systems installed.

e) An air carrier must have an approved method of “off airway navigation” to depart from established airways. When this capability is lost, the carrier must return to the established airway.

2) Subparagraph e reads, “The certificate holder is authorized to conduct Class I Navigation, including en route IFR operations outside positive radar control, with the RNAV systems specified in OpSpec B034 of these OpSpecs, if that paragraph is issued,” and is authorized according to the following guidelines:

a) OpSpec B034 must also be issued to all air carriers conducting Class I Navigation in U.S. and foreign operations who wish to proceed “direct” to a point or destination in or out of controlled airspace.

3) Any one or all of the aircraft to be operated under the certificate must be authorized IFR Class I Navigation using RNAV systems certified in accordance with the current edition of Advisory Circular (AC) 90-45, Approval of Area Navigation Systems for Use in the U.S. National Airspace System.

4) Subparagraph f reads, “The certificate holder is authorized to conduct Class II Navigation in accordance with OpSpecs B032 and B036 of these OpSpecs, if those paragraphs are issued.”

a) Any one or all of the aircraft to be operated under the certificate must be authorized IFR Class II Navigation using approved LRNS (OpSpec B036 issued), in accordance with the current edition of AC 91-70, Oceanic and International Operations.

b) OpSpec B032, IFR En Route Limitations and Provisions, must be issued to all IFR operators; it does not apply if the operator is VFR only.

F. Subparagraph G. For en route authorization to use GPS for Class I IFR Navigation, if the existing aircraft avionics installation does include RNAV capability, subparagraph g would be selected, which reads, “The certificate holder is authorized to use approved GPS navigation equipment as a supplement to International Civil Aviation Organization (ICAO)-standard navigation equipment while conducting Class I Navigation.”

G. OpSpec B050. OpSpec B050, Areas of Operations, must also be issued.

OPSPEC/MSPEC B032—EN ROUTE LIMITATIONS AND PROVISIONS. This paragraph is issued to operators who conduct any instrument flight rules (IFR) operations. The second sentence of the lead-in paragraph prohibits IFR operations outside of controlled airspace unless the operator is authorized to conduct such operations by appropriate OpSpecs. OpSpec B032, paragraph c, permits the operator to navigate outside the operational service volume of airways navigation facilities (Class II Navigation) without long-range navigation systems (LRNS). Some of the criteria that must be met when conducting Class II Navigation without LRNS are as follows:

- Navigation is predicated on International Civil Aviation Organization (ICAO) ground-based Navigational Aids (NAVAID) (Very high frequency Omnidirectional Range (VOR), VOR/distance measuring equipment (DME), and Nondirectional [radio] Beacon (NDB)); and
- Route of flight is a “great circle” route between the two NAVAIDs.

OPSPEC B033. RESERVED.

OPSPEC/MSPEC/LOA B034—IFR CLASS I TERMINAL AND EN ROUTE NAVIGATION USING RNAV SYSTEMS.

NOTE: For Next Generation Air Transportation (NextGen) tracking, applications for approvals for this paragraph must be entered in the Operations Approval Portal System (OAPS) as indicated in Volume 3, Chapter 1, Section 1.

A. Authorization. B034 authorizes an operator to conduct instrument flight rules (IFR) Class I Navigation using an Area Navigation (RNAV) system, as applicable, in the areas authorized in OpSpec/MSpec/LOA B050.

NOTE: Questions regarding the issuance of B034 should be directed to the Flight Technologies and Procedures Division (AFS-400).

1) The RNAV system must meet the en route performance criteria prescribed by the current edition of Advisory Circular (AC) 90-100, U.S. Terminal and En Route Area Navigation (RNAV) Operations. See Volume 4, Chapter 1, Section 2.

2) A Global Positioning System (GPS) navigation system with Technical Standard Order (TSO) TSO-C129 (any revision) or TSO-C145 (any revision)/C146 (any revision) compliant GPS/wide area augmentation system (WAAS) RNAV systems (or later revisions that meet or exceed the performance requirements of this TSO/revision as approved by the Administrator) is authorized as International Civil Aviation Organization (ICAO) navigation equipment while conducting Class I Navigation. Additionally, new equipment certification not augmented by Satellite-based Augmentation System (SBAS) or Ground-Based Augmentation System (GBAS) and compliant with TSO-C196 (any revision) may be authorized as a supplement to ICAO navigation equipment while conducting Class I Navigation.

3) On routes or in areas where the capability exists to revert to conventional dual airborne very high frequency omni-directional range (VOR), VHF omni-directional range station/distance measuring equipment (VOR/DME), and/or Nondirectional [radio] Beacon (NDB) navigation systems, only a single RNAV system needs to be specified. If this capability is not available, dual or redundant (separate and independent) RNAV systems must be specified.

4) B034 permits the use of a fix obtained from a suitable RNAV system (authorized by B034) to substitute for a required ground-based Navigational Aid (NAVAID) fix when that NAVAID is temporarily out of service.

5) Authorization to fly Gulf of Mexico Q routes is via issuance of B034, and guidance for these routes is found in the current edition of Notices to Airmen Domestic/International, Part 3, Section 2, NOTAM RNAV Routes Q100, Q102, and Q105, at http://www.faa.gov/air_traffic/publications/notices.

B. Additional Authorization. B034 also authorizes an operator to conduct IFR operations in designated Basic Area Navigation (B-RNAV)/RNAV 5 and Precision Area Navigation (P-RNAV) airspace.

NOTE: In accordance with the terminology adopted in ICAO Doc. 9613, Performance-based Navigation (PBN) Manual, B-RNAV requirements are termed RNAV 5.

- 1) The route design determines whether the operation is terminal or en route navigation.
- 2) For B-RNAV/RNAV 5 terminal and en route operations, the navigation performance is ± 5 nautical miles (NM) for 95 percent of the flight time.
- 3) For P-RNAV terminal and en route operations, the navigation performance is ± 1 NM for 95 percent of the flight time.
- 4) If the RNAV equipment is certified for P-RNAV, it may be authorized for both P-RNAV and B-RNAV/RNAV 5 terminal and en route operations.

NOTE: Authorization for B-RNAV/RNAV 5 terminal and en route operations does not automatically qualify the certificate holder/program manager/operator for Required Navigation Performance (RNP) 10 oceanic operations (RNAV 10). (Refer to ICAO Doc. 9613, Part B, Implementation Guidance.)

5) The following documentation provides guidance material in regard to onboard RNAV equipment requirements and operational approval for operators of U.S.-registered civil aircraft:

a) The current edition of AC 90-96, Approval of U.S. Operators and Aircraft to Operate Under Instrument Flight Rules (IFR) in European Airspace Designated for Basic Area Navigation (B-RNAV)/RNAV 5 and Precision Area Navigation (P-RNAV).

b) Regional Supplementary Procedures contained within ICAO Doc. 7030/4-EUR, Part 1, Rules of the Air, Air Traffic Service and Search and Rescue, require aircraft operating under IFR in designated European P-RNAV airspace to meet a ± 1 NM 95-percent accuracy criteria. For B-RNAV/RNAV 5, the criteria requirement is ± 5 NM 95-percent accuracy.

c) Functional and performance requirements are contained within ICAO Doc. 9613, and AC 90-96, appendix 1 (B-RNAV/RNAV 5) and appendix 2 (P-RNAV).

6) The following documentation should be evaluated by the principal inspectors (PI) for authorizing B-RNAV/RNAV 5 and/or P-RNAV:

a) Sections of the Airplane Flight Manual (AFM) that document the appropriate approval in accordance with AC 90-96, appendix 1 or appendix 2, as applicable.

b) Training and operations manuals that reflect the operating policies in AC 90-96.

C. Equipment Eligibility. If the operator is unable to determine B-RNAV/RNAV 5 or P-RNAV equipment eligibility from the AFM, the operator will ask the appropriate Flight Standards office (certificate-holding district office (CHDO)/Flight Standards District Office (FSDO)/International Field Office (IFO)) to assess the RNAV equipment for B-RNAV/RNAV 5 or P-RNAV eligibility. The operator should provide the following, as applicable:

Table 3-8. Requirements for B-RNAV or P-RNAV Equipment Eligibility

| | |
|--|--|
| B-RNAV/RNAV 5 (± 5 NM) Navigation Performance | P-RNAV (± 1 NM) Navigation Performance |
| RNAV system make, model and part number | RNAV system make, model and part number |
| Evidence of meeting ± 5 NM accuracy, 95% | Evidence of meeting ± 1 NM accuracy, 95% |
| Proof that the system meets the required functions for B-RNAV/RNAV 5 operations | Proof the system meets the required functions for P-RNAV operations |
| Crew operating procedures, bulletins | Crew operating procedures, bulletins |
| Any other pertinent information | Any other pertinent information |

D. Determining Eligibility. If the office is unable to determine equipment eligibility for B-RNAV/RNAV 5, it should forward the request and supporting data to AFS-400 for review.

E. Aircraft Evaluation Group (AEG). If the office is unable to determine equipment eligibility for P-RNAV, it should forward the request and supporting data to the appropriate AEG.

- 1) The AEG will verify that the aircraft and RNAV system meet the criteria for P-RNAV.
- 2) The AEG will provide written documentation (e.g., amended Flight Standardization Board (FSB) report or other official documentation) to verify the eligibility of that equipment.
- 3) The written documentation will identify any conditions or limitations necessary (e.g., navigation systems or procedures required, routes, areas, or procedures authorized) when conducting P-RNAV operations.

F. Appropriate Authorizations. The principal operations inspector (POI) shall coordinate with the principal avionics inspector (PAI) to obtain the proper nomenclature of the manufacturer and model and to ensure that the RNAV system is installed in accordance with approved data and meets the criteria of AC 90-45 and/or AC 90-96, as applicable. After the PIs determine that the operator is eligible and the navigation equipment is eligible for B-RNAV/RNAV 5 and/or P-RNAV operations based on the documentation provided by the operator, OpSpec/MSpec/LOA B034 may be issued indicating the appropriate authorizations.

1) The aircraft (make/model) and the manufacturer and model of the RNAV systems authorized for this type of navigation must be listed in Table 1 of OpSpec/MSpec/LOA B034.

2) If B-RNAV/RNAV 5 (± 5 NM) and/or P-RNAV (± 1 NM) are authorized, these can be selected for insertion into column 4 of Table 1. If neither is authorized, select N/A.

NOTE: Many POIs put both B-RNAV and P-RNAV on same line. This is unnecessary since listing P-RNAV covers both authorizations.

OPSPEC/MSPEC/LOA B035—CLASS I NAVIGATION IN U.S. CLASS A AIRSPACE USING AREA OR LONG-RANGE NAVIGATION SYSTEMS.

A. Purpose. The OpSpec/MSpec/LOA B035 template is used to authorize an operator to conduct Class I navigation within U.S. Class A airspace using an Area Navigation (RNAV) system or long-range navigation system (LRNS). This authorization is applicable to operators conducting operations under 14 CFR parts 91 subpart K (part 91K), 121, 125 (including part 125 Letter of Deviation Authority (LODA) holders), and 135. (For 14 CFR part 129, see Volume 12, Chapter 2, Section 4.)

B. Determining Eligibility. Operators and pilots should use the guidance in the current edition of Advisory Circular (AC) 90-100, U.S. Terminal and En Route Area Navigation (RNAV) Operations, to determine their eligibility for domestic U.S. RNAV Q-routes (RNAV 2). Additionally, refer to the current edition of AC 90-105, Approval Guidance for RNP Operations and Barometric Vertical Navigation in the U.S. National Airspace System and in Oceanic and Remote Continental Airspace, Appendix E. For the purpose of this authorization, “compliance” means meeting operational and functional performance criteria.

NOTE: Aircraft compliant with the current edition of AC 90-45, Approval of Area Navigation Systems for Use in the U.S. National Airspace System, may not be compliant with the criteria in AC 90-100.

1) Due to gaps in the distance measuring equipment (DME) infrastructure of the National Airspace System (NAS), Q-routes (RNAV 2) not labeled “GNSS REQUIRED” require Inertial Reference Unit (IRU) sensor inputs to augment DME/DME, which is often referred to as DME/DME/IRU.

2) The operator is responsible for providing equipment eligibility documented by the Airplane Flight Manual (AFM). If the operator is unable to determine that the aircraft is eligible, the operator must provide the following:

- a) RNAV system make, model, and part number(s);
- b) Evidence of compliance with AC 90-100 and AC 90-105 requirements;
- c) Crew operating procedures;

- d) Crew training program; and
- e) Any other pertinent information.

3) Manufacturers should evaluate their systems against these criteria in AC 90-100, AC 90-105, and the current edition of AC 20-138, Airworthiness Approval of Positioning and Navigation Systems.

4) If the CHDO is unable to determine equipment eligibility for RNAV routes and Required Navigation Performance 2 (RNP 2) domestic operations, the CHDO should contact the Performance-Based Flight Systems Branch (AFS-470) for guidance.

5) The principal avionics inspector (PAI) determines the proper nomenclature of the manufacturer's make/model/software version and that the RNAV and RNP systems are installed in accordance with approved data and meet the criteria of AC 90-100 and AC 90-105.

6) After the principal inspectors (PI) agree that the operator's navigation equipment, procedures, and flightcrew training are eligible for RNAV route operations, the B035 template may be issued, indicating the appropriate authorizations.

C. Bundling.

1) **Bundling Qualifications.** Every effort should be made to bundle qualifications within the hierarchy of an OpSpec/MSpec/LOA where applicable and also combine other OpSpecs/MSpecs/LOAs as desired by qualified operators (refer to AC 90-105).

2) **Bundling Advanced RNP (A-RNP), RNP 2, and RNAV 2.** If an operator's aircraft are eligible (properly equipped) and its flightcrews are appropriately trained to conduct A-RNP, RNP 2, and RNAV 2, enter the aircraft make, model, and series (M/M/S), navigation equipment, and A-RNP, RNP 2, RNAV 2 in the "Navigation Specification(s)" column. The other bundling options are RNP 2 and RNAV 2 or RNAV 2 only.

Figure 3-221. Sample B035 Table 1 – Airplane(s), RNAV Equipment, Navigation Specification(s)

| Airplane Type (M/M/S) | Navigation Equipment | | | Navigation Specification(s) | Additional Capabilities | Limitations and Conditions |
|--------------------------|--|---|--|--------------------------------|----------------------------|----------------------------------|
| | Manufacturer | Model HW/ Part # | Software Part/ Version/ Revision # | | | |
| B-777-300ER | Honeywell Dual FMC Honeywell ADIRU Rockwell Collins DME Rockwell Collins MMR | 4089350 HG2060 822-0329 822-1152 | | A-RNP/RNP 2/ RNAV 2 | FRT/TOAC | N/A |
| A-321-211 | Thales Dual FMGC Honeywell ADIRU Rockwell Collins Thales MMR | C13043 HG1150 DME 700 TLS755 | | RNP 2/RNAV 2 | TOAC | N/A |
| CL-604-604 | Collins Dual FMC Collins GPS Litton IRU | 6000 4000 101 | | RNAV 2 | | No Lateral Offset |

D. A-RNP Authorization. In OpSpec B035, Table 1 specifies A-RNP capabilities the operator is authorized to conduct under instrument flight rules (IFR). In the Web-based automated Operational Safety System (WebOPSS), the principal operations inspector (POI) will select “Advanced RNP” if applicable. “Advanced RNP” is defined in the United States by the following three operational and functional capabilities: scalability, Radius to Fix (RF), and parallel offset. Additionally, A-RNP operators must be able to meet the continuity requirements of a given operation.

E. Additional Capabilities. Additional capabilities are Fixed Radius Transitions (FRT) and/or Time of Arrival Control (TOAC), which may be selected in Table 1 under Additional Capabilities for those who qualify.

F. ACs. AC 90-105 provides guidance for RNP 2 operations. AC 90-100 provides guidance for terminal and en route RNAV operations.

G. Procedures. Procedures utilized under this approval should be outlined in the appropriate operations manual or outlined in OpSpec/MSpec/LOA A008, as applicable.

- 1) RNAV routes designated as domestic Q-routes are being developed for areas throughout the NAS in accordance with AC 90-100.
- 2) RNP 2 domestic operations are in accordance with AC 90-105 and do not apply to RNP 2 oceanic and remote operations.
- 3) This guidance, OpSpec/MSpec/LOA B035 authorization, and AC 90-100 do not apply to RNAV routes designated as Q-routes in the Gulf of Mexico. (Refer to Notice to Airmen Publication (NTAP) for Gulf of Mexico information.)

H. RNP 2 Within the Continental United States (CONUS). The domestic RNP 2 specification is based upon a single Global Navigation Satellite System (GNSS) LRNS. Positioning data from other types of navigation sensors may be integrated with the GNSS data, provided they do not cause position errors exceeding the total system error (TSE) budget. Otherwise, means should be provided to deselect the other navigation sensor types. During operations in airspace or on routes designated as RNP 2, the lateral total system error must be within ± 2 nautical miles (NM) for at least 95 percent of the total flight time. The along-track error must also be within ± 2 NM for at least 95 percent of the total flight time. To satisfy the accuracy requirement, the 95 percent, Flight Technical Error (FTE) should not exceed 1 NM. The RNP system, or the RNP system and pilot in combination, must provide an alert if the accuracy requirement is not met or if the probability that the lateral TSE exceeds $2 \times$ RNP (4 NM) is greater than 10^{-5} for RNP 2 operations.

I. RNAV Within the CONUS. Q-routes can be flown using a Global Positioning System (GPS) or DME/DME/IRU. In some cases, sufficient ground-based navigation sources are inadequate/unavailable to support DME/DME/IRU operations. When this occurs, the route must be annotated "GNSS REQUIRED." Q-route procedures require that the aircraft's track-keeping accuracy remain bounded by ± 2 NM for 95 percent of the total flight time. Unless the RNAV route specifically requires GPS or GNSS equipment, aircraft on the RNAV route must be within air traffic control (ATC) radar surveillance and communication (except for operations in Alaska).

J. RNAV Aircraft Equipped with Technical Standard Order (TSO)-C129, TSO-C145, or TSO-C146 on Q-Routes in Alaska. For Q-route operations in Alaska, the entire portion of the intended route of flight, using the RNAV systems or LRNS, must be under ATC radar surveillance and communication.

K. Certificate Holders and Program Managers Authorized European Precision Area Navigation (P-RNAV) Operations. The criteria in AC 90-100 required for U.S. RNAV procedures are generally consistent with the criteria for P-RNAV operations in Europe, but there are exceptions.

- 1) P-RNAV terminal and en route operations require a track-keeping accuracy of ± 1 NM for 95 percent of the flight time.
- 2) If an operator has met the requirements for and is authorized to use P-RNAV in OpSpec/MSpec/LOA B034, that operator may also be eligible for RNAV routes without additional verification of equipment eligibility. POIs should still evaluate their operator's procedures and training to ensure compliance with AC 90-100.

3) Appropriate P-RNAV references are current editions of:

- AC 90-96, Approval of U.S. Operators and Aircraft to Operate Under Instrument Flight Rules (IFR) in European Airspace Designated for Basic Area Navigation (B-RNAV) and Precision Area Navigation (P-RNAV).
- Joint Aviation Authority (JAA) TGL-10, Airworthiness and Operational Approval for Precision RNAV Operations in Designated European Airspace.
- Volume 3, Chapter 18, Section 4 (see OpSpec/MSpec/LOA B034).

L. References (current editions):

- Part 91, §§ 91.123, 91.205, and 91.503.
- Part 95.
- Part 121, § 121.349.
- Part 125, § 125.203.
- Part 129, § 129.17.
- Part 135, § 135.165.
- FAA Order JO 7110.65, Air Traffic Control.

OPSPEC/MSPEC/LOA B036—OCEANIC AND REMOTE CONTINENTAL NAVIGATION USING MULTIPLE LONG-RANGE NAVIGATION SYSTEMS (M-LRNS).

NOTE: For Next Generation Air Transportation System (NextGen) tracking, applications for approvals for this paragraph must be entered in the Operations Approval Portal System (OAPS) as indicated in Volume 3, Chapter 1, Section 1.

A. Guidance. General guidance is contained within Volume 4, Chapter 1, Section 4, and the current edition of Advisory Circular (AC) 91-70, Oceanic and Remote Continental Airspace Operations. Any questions in regard to application or interpretation of the guidance relative to OpSpec/MSpec/LOA B036 should be forwarded to the Flight Operations Group (AFS-410). (See guidance in Volume 4, Chapter 12, Section 1.)

B. Requirements. OpSpec/MSpec/LOA B036 is required before issuing the following OpSpecs:

- B037, Operations in Central East Pacific (CEP) Airspace;
- B038, Operations in North Pacific (NOPAC) Airspace;
- B039, Operations in North Atlantic High Level (NAT HLA) Airspace;
- B040, Operations in Areas of Magnetic Unreliability; and
- B041, North Atlantic Operations with Two-Engine Airplanes Under Part 121.

NOTE: Special routes/Blue Spruce routes have been established in limited portions of North Atlantic High Level Airspace (NAT HLA) where aircraft equipped to use International Civil Aviation Organization (ICAO) ground-based Navigational Aids (NAVAID) can operate with a Single Long-Range Navigation System (S-LRNS). Information can be found in the guidance for OpSpec B039.

C. Authorization. OpSpec B036 authorizes Oceanic and Remote Continental navigation when long-range navigation systems (LRNS) are required due to the inability to obtain a reliable fix at least once each hour from ICAO ground-based NAVAIDs. Oceanic and Remote Continental navigation using a Multiple Long-Range Navigation System (M-LRNS) is authorized in accordance with the limitations and provisions of OpSpec/MSpec/LOA B036 and, as applicable, 14 CFR part 91, §§ 91.511, 91.703, and 91.706; part 121, § 121.351; part 125, § 125.203; and part 135, § 135.165.

D. Required LRNS. In certain areas (e.g., High Offshore Airspace and some Caribbean flight information regions (FIR)), LRNS may also be required even though reliable fixes may be obtained more than once each hour. In these areas, traffic density and the navigation accuracy necessary for air traffic control (ATC) may require the use of LRNS.

1) Direction and guidance for authorizing Oceanic and Remote Continental navigation is in Volume 4, Chapter 1, Section 4.

2) When an operator applies for authorization to conduct Oceanic and Remote Continental navigation using LRNS, a validation test is required. (See Volume 3, Chapter 29, Section 8.)

3) OpSpec B036 prohibits Oceanic and Remote Continental navigation within Central East Pacific (CEP) Airspace (OpSpec B037), North Pacific (NOPAC) Airspace (OpSpec B038), operations within NAT HLA (OpSpec B039), and areas of magnetic unreliability (AMU) (OpSpec B040), unless operations in those areas are authorized by issuing the appropriate referenced paragraphs.

4) The aircraft (make, model, and series (M/M/S)) and the LRNS (manufacturer/model) authorized for Oceanic and Remote Continental navigation must be listed in OpSpec B036. Dual or redundant (separate and independent) LRNS must be indicated in the list. All navigation components that make up the M-LRNS must be listed on the OpSpec B036. For example, Inertial Reference Units (IRU), flight management computers (FMC), and Global Navigation Satellite Systems (GNSS) must all be listed in OpSpec B036, as one navigation component does not make for a complete M-LRNS required by this OpSpec. (See Figure 3-222, Sample B036 Table 1 – Authorized Airplane(s), Equipment.)

5) For S-LRNS operations, see the guidance for B054.

E. Determining Aircraft Eligibility. Manufacturers should evaluate their systems against these criteria and document the Required Navigation Performance (RNP) capabilities as per guidance in the current editions of AC 90-105, Approval Guidance for RNP Operations and Barometric Vertical Navigation in the U.S. National Airspace System and in Oceanic and Remote Continental Airspace, and AC 20-138, Airworthiness Approval of Positioning and Navigation Systems.

Figure 3-222. Sample B036 Table 1 – Authorized Airplane(s), Equipment

| Airplane M/M/S | Long-Range Navigation Systems (LRNS) | | | Navigation Specification(s) | Additional Capabilities | Limitations | RNP Time Limits |
|-------------------|---|---|--------------------|--------------------------------|----------------------------|----------------------|---|
| | Manufacturer | Model HW, Part # | SW Part/ Ver. # | | | | |
| B-787-800 | Honeywell Dual FMC Honeywell ADIRU Rockwell Collins DME Rockwell Collins MMR | 4089350 HG2060 822-0329 822-1152 | | A-RNP/RNP 2/ RNP 4/RNP 10 | FRT/TOAC | | N/A |
| B-767-332 | Honeywell Rockwell- Collins Honeywell Rockwell- Collins Honeywell Rockwell- Collins | FMC – 4052506 FCGS – FCS-700 IRU – HG1050 DME – DME-700/ DME-900 DME – DMA-37B MMR(GPS) – GLU-920/ GLU-925 | | RNP 2/RNP 4/ RNP 10 | TOAC | | 12 hours with GPS inoperative |
| A-321-211 | Thales Dual FMGC Honeywell ADIRU Rockwell Collins Thales MMR | C13043 HG1150 DME 700 TLS755 | | RNP 4/RNP 10 | FRT | No Lateral Offset | 6.2 hours with ADIRU only beginning when the ADIRU is selected from ALIGN to NAV. 5.9 hours with DME/DME updating beginning each time a DME update is received. |
| CL-604-604 | Collins Dual FMC Collins GPS Litton IRU | 6000 4000 101 | | RNP 10 | | No Lateral Offset | IRU w/GPS update = Unlimited IRU w/no update = 6.2 hours IRU w/DME update = 5.9 hours IRU w/VOR update = 5.7 hours |

F. Bundling Concept. Every effort should be made to bundle qualifications within the hierarchy of an OpSpec/MSpec/LOA where applicable and also combine other OpSpecs/MSpecs/LOAs as desired by qualified operators. (Refer to AC 90-105.)

1) In B036, Table 1, Authorized Airplane(s), Equipment, under the Navigation Specification(s) column, bundling of Advanced RNP (A-RNP), RNP 2, RNP 4, and RNP 10 may be authorized for equipment that meets the necessary performance requirements for oceanic and remote operations. Lesser bundles are also available: RNP 2, RNP 4, and RNP 10; or RNP 4 and RNP 10; or RNP 10 only. As a minimum for A-RNP, the operator must be qualified for the following advanced capabilities: scalability, Radius to Fix (RF), and parallel offset. Additionally, the operator must have adequate continuity for oceanic and remote operations.

2) Fixed Radius Transitions (FRT) and/or Time of Arrival Control (TOAC) may be selected in Table 1 under Additional Capabilities for those operators who qualify.

G. Operator's Oceanic/Remote Navigation Procedures. The principal operations inspector (POI), in consultation with the appropriate section in AFS-410, should assess the operator's procedures for oceanic/remote navigation such that those procedures reflect the intent of the practices and procedures recommended in AC 91-70. Operators approved for operations using Global Positioning System (GPS) equipage and/or distance measuring equipment (DME)/DME automatic updating may omit the gross error check as noted in AC 91-70 if these systems are confirmed to be functioning normally (no fault indications). For all other aircraft, the aircraft position must be accurately fixed using airways navigation facilities or ATC radar.

1) Operators using RNP 10, RNP 4, or RNP 2 airspace must be authorized in accordance with the requirements set forth in AC 90-105. This document addresses GNSS as primary navigation and the requirement for multisensor systems integrating GNSS with receiver autonomous integrity monitoring (RAIM) and fault detection and exclusion (FDE) availability prediction programs.

2) These procedures must be in the operator's manuals and checklists, as appropriate. Training on the use of long-range navigation (LRN) equipment and procedures must be included in the operator's training curricula. The operator's minimum equipment lists (MEL) and maintenance programs must address the LRN equipment. The POI must coordinate with the principal avionics inspector (PAI) to obtain the proper nomenclature of the manufacturer and model to ensure the LRN equipment is installed and maintained in accordance with approved data. (See Volume 4, Chapter 1, Section 2.)

H. RNP 2.

1) For RNP 2 operations, an aircraft must meet a cross-track keeping accuracy and along-track positioning accuracy of no greater than ± 2 nautical miles (NM) for 95 percent of the flight time. This OpSpec/MSpec/LOA does not address communications or surveillance requirements that may be specified to operate on a particular route or area.

2) Eligibility of aircraft and certification of its navigation equipment for RNP 2 must be determined:

a) The RNP 2 specification is based upon GNSS. Positioning data from other types of navigation sensors may be integrated with the GPS data provided they do not cause position errors exceeding the Total System Error (TSE) budget. Otherwise, means should be provided to deselect the other navigation sensor types.

b) For RNP 2 operations in oceanic or remote airspace, at least two fully serviceable independent GNSS LRNS, with integrity such that the navigation system does not provide misleading information, must be installed in accordance with AC 20-138. These will form part of the basis upon which RNP 2 operational approval is granted.

c) For aircraft incorporating GPS, AC 20-138 (or equivalent documents) provides an acceptable means of complying with installation requirements for aircraft.

d) Flightcrew training and operating procedures for the navigation systems to be used must be identified by the operator.

I. RNP 4.

1) For RNP 4 operations, an aircraft must meet a cross-track keeping accuracy and along-track positioning accuracy of no greater than ± 4 NM for 95 percent of the flight time. This OpSpec/MSpec/LOA does not address communications or surveillance requirements that may be specified to operate on a particular route or area. Navigation sensor and system, airworthiness, and operational requirements are specified in AC 90-105. Some examples of routes that require RNP 4 are:

a) Australian Tasman Sea (detailed guidance is contained in Australian Government, Civil Aviation Safety Authority, AC 91U-3(0), Required Navigation Performance 4 (RNP 4) Operational Authorisation).

b) Eastern Russia, the Magadan Region (requires Future Air Navigation System (FANS) 1/A-equipped aircraft).

c) Western region of China and north of the Himalayas, Route 888 (because of the remoteness of the area, RNP 4, Controller-Pilot Data Link Communication (CPDLC), and Automatic Dependent Surveillance (ADS) are required).

2) Eligibility of aircraft and certification of its navigation equipment for RNP 4 must be determined:

a) For RNP 4 operations in oceanic or remote airspace, at least two fully serviceable independent LRNS, with integrity such that the navigation system does not provide misleading information, must be fitted to the aircraft. These will form part of the basis upon which RNP 4 operational approval is granted.

b) For aircraft incorporating GPS, AC 20-138 (or equivalent documents) provides an acceptable means of complying with installation requirements for aircraft that integrate or do not integrate GNSS output with that of other sensors.

c) Flightcrew training and operating procedures for the navigation systems to be used must be identified by the operator.

3) If applicable, entry options for the RNP Time Limit block (for which the navigation system has been approved) are:

- X Hours. Example: 6.3 hours, 10.0 hours.
- UNL (Unlimited). Example: Primary means GPS, approved multisensor system that incorporates GPS.
- NA (not applicable). Example: aircraft/navigation system not used in RNP operations.

J. RNP 10.

1) **Guidance.** AC 90-105 provides guidance for operation in remote airspace, including oceanic and SAOs, and is intended to support 50 NM lateral and the 50 NM longitudinal distance-based separation minima. This OpSpec/MSpec/LOA does not address communications or surveillance requirements that may be specified to operate on a particular route or in a particular area.

2) **Requests for Deviation.** If an operator requests to deviate from the practices and procedures in AC 90-105, the inspector must forward a request for assistance through AFS-410 to the Flight Technologies and Procedures Division (AFS-400).

3) **Application for Approval.** The steps in this process should be followed when an operator seeks authority to operate an airplane type/LRNS combination in Oceanic and Remote Continental navigation areas where RNP 10 is applied and the operator has not previously received RNP 10 approval for that specific airplane type/LRNS combination. Normally, if an operator has received initial Oceanic and Remote Continental navigation/RNP 10 approval for a specific airplane type/LRNS combination, that operator should not be required to reapply for approval to conduct Oceanic and Remote Continental navigation/RNP 10 operations on additional routes or areas.

4) **Required Application Items.** AC 90-105 provides guidance on the content of an operator's RNP 10 application. The application should include the following:

a) Aircraft/Navigation System Group. Airworthiness documents that establish the proposed aircraft/navigation system group, its RNP 10 approval status, and a list of airframes in that group.

b) Sources of LRNS. Approved or requested RNP 10 time limit for aircraft for which inertial navigation systems (INS) or IRUs are the only source of LRN.

c) RNP 10 Area of Operations. Documentation establishing the RNP 10 area of operations or routes for which the specific aircraft/navigation system is eligible.

d) Operating Practices and Procedures. Documentation that the operator has adopted operating practices and procedures related to RNP 10 operations.

e) Pilot and Aircraft Dispatcher Knowledge. Documentation showing that the pilot and, if applicable, aircraft dispatcher knowledge of RNP 10 operating practices and procedures have been adopted.

f) Airworthiness Practices. Documentation that appropriate maintenance practices and procedures have been adopted.

g) MEL Updates (if applicable).

h) Operating History. Operating history that identifies past problems and incidents, if any, and actions taken to correct the situation.

i) Removal of RNP 10 Operating Authority. Awareness of the necessity to follow up action after navigation error reports, and the potential for removal of RNP 10 operating authority.

5) Aircraft Groups and Eligibility Aircraft Groups (Fleets of Aircraft).

a) Aircraft Groups (Fleets of Aircraft). The operator must show the aircraft/navigation system groups that will be presented for approval of RNP 10 operations and provide a list of airframes that are determined to be in the specific aircraft/navigation system groups to be evaluated.

b) Aircraft Equipped with GPS Approved to Primary Means of Navigation Standards. For aircraft equipped with GPS, where such GPS units are the only systems for LRN, the operator must show that it is approved in accordance with AC 90-105. An RNP 10 time limit is not applicable.

c) Multisensor Systems Integrating GPS (with GPS Integrity Provided by RAIM). For multisensor systems incorporating GPS, the operator must show that systems are approved and operated in accordance with AC 90-105. An RNP 10 time limit is not applicable.

d) GPS Equipage with Other Approved LRNS (e.g., INS or IRU). (Refer to AC 90-105 and AC 20-138.) The operator must show that aircraft equipped with GPS and one or more approved LRNS are installed and operated in accordance with AC 90-105 and AC 20-138. An RNP 10 time limit is not applicable.

e) Equipage Where INS or IRU Provide the Only Means of LRN. The operator must show that INS or IRU installation is approved in accordance with AC 20-138. Unless the operator takes action to extend the approved navigation system time limit and/or plans to update the system en route, a baseline RNP 10 time limit of 6.2 hours, starting at the time the system was placed in navigation mode, is applicable.

f) Aircraft Eligibility through Data Collection (Eligibility Group 3). For navigation systems not approved under existing criteria, the operator may demonstrate RNP 10 eligibility through data collection in accordance with the processes detailed in a booklet, RNP 10 Qualification through Data Collection, obtained from the POI or by contacting AFS-400 and/or downloading a copy from the AFS-410 website, Oceanic and Remote Airspace (Special Areas of Operation).

6) Maintenance Requirements. The certificate holder must provide documentation that appropriate maintenance practices and procedures have been adopted.

7) MEL Requirements. In accordance with AC 90-105, if applicable, the operator must revise the MEL to address any new operating requirements.

8) Operations Program. Operations manuals and checklists in accordance with AC 90-105.

a) Part 121, 125, and 135 certificate holders must provide revisions to manuals and checklists to show the adoption of the RNP 10 operating practices and procedures contained in the reference paragraphs and sections listed in this paragraph.

b) Operations training programs and operating practices and procedures are addressed in AC 90-105.

9) Deviation to RNP 10 Requirements. The Administrator may authorize a certificate holder to deviate from the RNP 10 requirements of OpSpec B036 for a specific flight in designated RNP 10 airspace if the Air Traffic Service Provider (ATSP) determines that the airplane may be provided appropriate separation and the flight will not interfere with or impose a burden on other operators. For operations under such authority, the certificate holder will not take off for flight in designated RNP 10 airspace unless the following requirements of subparagraphs b and d of OpSpec B036 are met:

a) If fuel planning is predicated on en route climb to flight levels where RNP 10 is normally required, an appropriate request must be coordinated with the ATSP in advance of the flight.

b) The appropriate information blocks on the ICAO flight plan filed with the ATSP show that the airplane and/or certificate holder is not approved for RNP 10 as specified in the certificate holder's OpSpec B036.

c) At dispatch, at least one of the navigation system configurations listed below must be installed and operational:

1. At least two independent INS.
2. At least two flight management system (FMS)/navigation sensor combinations (or equivalent).

3. At least two independent approved GPS navigation systems acceptable for primary means of Oceanic and Remote Continental navigation in oceanic and remote areas.

4. At least two approved independent LRNS from the list below:

- INS;
- FMS/navigation sensor combination (or equivalent); and
- GPS navigation system approved for Oceanic and Remote Continental navigation in oceanic and remote areas.

d) Anchorage and Tokyo Oceanic Notices to Airmen (NOTAM), U.S. Government Flight Information Publication (FLIP) Supplement for Alaska. ATSPs have established procedures to accommodate in RNP 10 airspace a limited number of flights by airplanes and/or operators not approved for RNP 10. The operator should show that it has adopted appropriate policies and practices to enable it to operate unapproved airplanes in RNP 10 airspace in situations such as:

- Ferry flights,
- Flights that do not meet RNP 10 MEL requirements, and
- Nonscheduled charter flights using unapproved airplanes.

e) Contacts at Tokyo and Anchorage Oceanic Centers and air traffic policy and procedures for such flights are listed in NOTAMs and/or the FLIP Supplement for Alaska and on the FAA RNP website. Part 121, 125, and 135 certificate holders will be expected to comply with the provisions of OpSpec B038 for deviation from RNP 10 requirements.

10) Flight Plan Filing. The certificate holder or program manager must ensure the appropriate equipment codes in field 10A and performance-based navigation codes in field 18 are filed in the ICAO ATC flight plan. Refer to the Aeronautical Information Manual (AIM), Paragraph 5-1-9, International Flight Plan (FAA Form 7233-4)—IFR Flights (For Domestic or International Flights).

11) MEL. The certificate holder or program manager must review the MEL and provide guidance to its personnel when inoperative equipment will affect the Area Navigation (RNAV) or Performance-based Navigation (PBN) capabilities of the aircraft. The guidance must contain information on flight plan refile procedures to include changes to equipment codes and PBN capabilities.

12) Navigation Errors. The operator should indicate awareness of the provisions of AC 90-105 for operator follow-up action on reported navigation errors and of the potential to remove RNP operating authority.

13) Validation. For guidance on validation tests and validation flights for parts 121 and 135 operators, consult AFS-410 and see Volume 3, Chapter 29, Section 8.

14) OpSpec/MSpec Entries.

a) The Navigation Specification(s) block provides the bundling options for which the specific navigation system has been approved. Entry options for this block are:

- RNP X. Example: RNP 4, RNP 10, etc.
- Per the Airplane Flight Manual (AFM). Example: For B747-400 equipped with FANS-1/A package, AFM establishes RNP Type availability based on GPS satellite availability at dispatch.
- NA (not applicable). Example: Aircraft not used for RNP operations.

b) Entry options for the RNP Time Limits block are:

- X Hours. Example: 6.3 hours, 10.0 hours.
- UNL (Unlimited). Example: Primary means GPS, approved multisensor system that incorporates GPS.
- NA (not applicable). Example: Aircraft/navigation system not used in RNP operations.

OPSPEC/MSPEC/LOA B037—OPERATIONS IN CENTRAL EAST PACIFIC (CEP) AIRSPACE.

A. Guidance. General guidance is contained within Volume 4, Chapter 1, Section 5 and the current edition of Advisory Circular (AC) 91-70, Oceanic and Remote Continental Airspace Operations. Any questions in regard to application or interpretation of this OpSpec/MSpec/LOA should be forwarded to the Flight Technologies and Procedures Division.

B. Requirements. OpSpec/MSpec/LOA B036 is required before issuing the following OpSpecs/MSpecs/LOAs:

- B037, Operations in Central East Pacific (CEP) Airspace.
- B038, North Pacific (NOPAC) Operations.
- B039, Operations in North Atlantic High Level Airspace (NAT HLA).
- B040, Operations in Areas of Magnetic Unreliability.
- B041, North Atlantic Operations with Two-Engine Airplanes Under Part 121.

NOTE: Exception to OpSpec/MSpec/LOA B036: special routes/Blue Spruce routes have been established in limited portions of NAT HLA where aircraft equipped to use International Civil Aviation Organization (ICAO) ground-based Navigational Aids (NAVAID) can operate with a Single Long-Range Navigation System (S-LRNS). This information can be found in the guidance for OpSpec/MSpec/LOA B039.

C. Authorized Area of Operation. The CEP system is the organized route system between Hawaii and the West Coast of the United States. Several Air Traffic Service (ATS) routes and associated transition waypoints are within the CEP. Required Navigation Performance

(RNP) 10 is required for aircraft operating on the CEP routes. Operators are encouraged to pursue RNP 4 authorization to meet future oceanic requirements.

D. Purpose. OpSpec/MSpec/LOA B037 authorizes Class II Navigation in the airspace designated as CEP airspace. The operator must be authorized to conduct Class II Navigation in accordance with OpSpec/MSpec/LOA B036 before B037 can be issued. If the operator is authorized to conduct Class II Navigation in compliance with OpSpec/MSpec/LOA B036, subparagraph a, no additional validation flights need to be accomplished. Inspectors will conduct tabletop exercises for B037 in accordance with Volume 3, Chapter 29, Section 8. Before issuing OpSpec/MSpec/LOA B037, the Principal Operations Inspector (POI) must ensure the operator has a program that includes training of flightcrews on requirements and standards for conduct of flight in CEP airspace.

OPSPEC/MSPEC/LOA B038—NORTH PACIFIC (NOPAC) OPERATIONS.

A. Guidance. General guidance is contained within Volume 4, Chapter 1, Section 5 and the current edition of Advisory Circular (AC) 91-70, Oceanic and Remote Continental Airspace Operations. Any questions in regard to application or interpretation of this OpSpec/MSpec/LOA should be forwarded to the Flight Technologies and Procedures Division.

B. Requirements. OpSpec/MSpec/LOA B036 is required before issuing the following OpSpecs/MSpecs/LOAs:

- B037, Operations in Central East Pacific (CEP) Airspace.
- B038, North Pacific (NOPAC) Operations.
- B039, Operations in North Atlantic High Level Airspace (NAT HLA).
- B040, Operations in Areas of Magnetic Unreliability.
- B041, North Atlantic Operations with Two-Engine Airplanes Under Part 121.

NOTE: Exception to OpSpec/MSpec/LOA B036: special routes/Blue Spruce routes have been established in limited portions of NAT HLA where aircraft equipped to use International Civil Aviation Organization (ICAO) ground-based Navigational Aids (NAVAID) can operate with a Single Long-Range Navigation System (S-LRNS). This information can be found in the guidance for OpSpec/MSpec/LOA B039.

C. Authorized Area of Operation. The NOPAC Area of Operation authorized by this paragraph lies within the Anchorage and Tokyo flight information regions (FIR). The southern lateral boundary of this area is 100 nautical miles (NM) south of the southernmost NOPAC airspace route. The northern lateral boundary is the northern boundaries of the Anchorage and Tokyo FIRs. The vertical boundaries include the airspace between the minimum en route altitude (MEA) and the Maximum Authorized Altitude (MAA).

D. Purpose. OpSpec/MSpec/LOA B038 authorizes Class II Navigation conducted in airspace designated as NOPAC operations airspace. The operator must be authorized to conduct Class II Navigation in compliance with OpSpec/MSpec/LOA B036 before OpSpec/MSpec/LOA B038 can be issued. Validation tests of the operator's ability to operate in

NOPAC airspace are required in accordance with Volume 3, Chapter 29, Section 8. Before issuing OpSpec/MSpec/LOA B038, the Principal Operations Inspector (POI) must ensure the operator has a program that includes training of flightcrews on requirements and standards for conduct of flight in CEP airspace. When validation tests are completed, OpSpec/MSpec/LOA B038 may be issued.

OPSPEC/MSPEC/LOA B039—OPERATIONS IN NORTH ATLANTIC HIGH LEVEL AIRSPACE (NAT HLA).

A. Purpose. OpSpec/MSpec/LOA B039 is issued to authorize aircraft operations within the airspace designated by the International Civil Aviation Organization (ICAO) as NAT HLA.

NOTE: The airspace known as NAT HLA was formerly called NAT Minimum Navigation Performance Specification (NAT/MNPS) airspace.

NOTE: NAT HLA is that volume of airspace (as defined in ICAO Document 7030, Regional Supplementary Procedures, for the North Atlantic (NAT) region) between flight level (FL) 285 and FL 420 within the oceanic control areas of Bodo Oceanic, Gander Oceanic, New York Oceanic East, Reykjavik, Santa Maria, and Shanwick, excluding the Shannon and Brest Ocean Transition Areas.

B. Applicability. FAA authorization is a prerequisite for operations within NAT HLA. B039 applies to operations performed under 14 CFR parts 91, 91K, 121, 125, and 135.

C. Requirements. Operators must have been issued OpSpec/MSpec/LOA B036 or OpSpec/MSpec/LOA B054 in order to be considered for B039. Authorization to conduct oceanic and remote airspace navigation using long-range navigation systems (LRNS) is a prerequisite for operations in NAT HLA. In the case of operators using aircraft equipped with multiple LRNS, B036 will also identify the Required Navigation Performance (RNP) value (e.g., RNP 4 or RNP 10) authorized for the intended operations. As of January 2015, all new authorizations for operations within NAT HLA (i.e., all new requests for B039) must be based on the operator's demonstration of capability to navigate to RNP 10 specifications. All previous authorizations (i.e., those B039 authorizations bearing the Minimum Navigation Performance Specification (MNPS) title) will expire on December 31, 2019.

NOTE: Operators equipped with only a Single Long-Range Navigation System (S-LRNS), and issued B054, are restricted to special routes within NAT HLA specifically designated for aircraft so equipped. The Blue Spruce routes described in NAT Document 007, North Atlantic Operations and Airspace Manual, are examples of the special routes.

NOTE: Aircraft and operator qualification requirements for RNP 10 are prescribed in the current edition of Advisory Circular (AC) 90-105, Approval Guidance for RNP Operations and Barometric Vertical Navigation in the U.S. National Airspace System and in Oceanic and Remote Continental Airspace.

1) Operators must document the training provided to flightcrew members and operational control personnel (dispatchers/flight followers/operational controllers, as applicable) to properly plan and operate flights within NAT HLA. This NAT HLA training is in addition to that provided by the operator on the general requirements for planning and operating flights in oceanic and remote continental airspace. The operator's training and flightcrew procedures must address responses to a partial or complete loss of long-range navigation capability. Training must include NAT-MNPS/HLA-related information contained within the current editions of the following references:

- AC 91-70, Oceanic and Remote Continental Airspace Operations.
- ICAO Doc 4444, Procedures for Air Navigation Services—Air Traffic Management, Paragraph 15.2, Special Procedures for In-Flight Contingencies in Oceanic Airspace.
- ICAO Doc 7030, Regional Supplementary Procedures.
- ICAO NAT OPS Bulletins (and associated Special Emphasis Items).
- NAT Document 007, North Atlantic Operations and Airspace Manual.

2) Inspectors should not add language to the B039 templates specifying communications equipment requirements and/or limitations. The applicable parts of 14 CFR pertaining to extended overwater operations (i.e., 14 CFR part 91, § 91.511; part 121, § 121.351; part 125, § 125.203; and part 135, § 135.165), as well as ICAO Annex 2, Rules of the Air; ICAO Doc 7030; and NAT Doc 007, collectively provide operators with sufficient information to enable them to understand the applicable limitations when their aircraft is equipped with something less than two long-range communications systems (LRCS). In addition, the provisions and limitations of OpSpec/MSpec/LOA B045 may apply. It is also worthwhile to note that § 91.511(d) does permit operations with only a single high frequency (HF) radio in specific circumstances. Regardless of whether a part 91 LOA B039 recipient is governed by the requirements of § 91.511 (applicability defined in § 91.501), the communications requirements specified in ICAO Annex 2 do apply and are clear: the operator must have communications equipment necessary to communicate with air traffic control (ATC) throughout the route of flight.

3) In accordance with Volume 3, Chapter 29, Section 8, validation of the operator's readiness to conduct operations in NAT HLA is required. Inspectors must coordinate with the Flight Technologies and Procedures Division to determine whether validation testing should include validation flights.

D. Additional Information. The NAT HLA is considered a Special Area of Operation (SAO). Additional information relating to authorizing operations in an SAO is provided within Volume 4, Chapter 1. Additionally, Volume 4, Chapter 12 provides information pertinent to issuing a LOA for operations in an SAO. You must contact the Flight Technologies and Procedures Division if you have questions concerning SAOs, particularly regarding requirements for operations within those areas.

OPSPEC/MSPEC/LOA B040—OPERATIONS IN AREAS OF MAGNETIC UNRELIABILITY.

A. Guidance. General guidance is contained within Volume 4, Chapter 1, Section 5 and the current edition of Advisory Circular (AC) 91-70, Oceanic and Remote Continental Airspace Operations. Any questions in regard to application or interpretation of this OpSpec/MSpec/LOA should be forwarded to the Flight Technologies and Procedures Division.

B. Requirements. OpSpec/MSpec/LOA B036 is required before issuing the following OpSpecs/MSpecs/LOAs:

- B037, Operations in Central East Pacific (CEP) Airspace.
- B038, North Pacific (NOPAC) Operations.
- B039, Operations in North Atlantic High Level Airspace (NAT HLA).
- B040, Operations in Areas of Magnetic Unreliability.
- B041, North Atlantic Operations with Two-Engine Airplanes Under Part 121.

NOTE: Exception to OpSpec/MSpec/LOA B036: special routes/Blue Spruce routes have been established in limited portions of NAT HLA where aircraft equipped to use International Civil Aviation Organization (ICAO) ground-based Navigational Aids (NAVAID) can operate with a Single Long-Range Navigation System (S-LRNS). This information can be found in the guidance for OpSpec/MSpec/LOA B039.

C. Authorized Area of Operation. For the northern hemisphere, the Canadian Aeronautical Information Publication and Transport Canada's Designated Airspace Handbook establishes the basic boundaries for the Canadian Northern Control Area (NCA), which includes an area of magnetic unreliability (AMU).

D. Purpose. OpSpec/MSpec/LOA B040 authorizes either Class I or Class II Navigation in AMUs. If flight operations in these areas involve Class II Navigation requiring long-range navigation systems (LRNS), OpSpec/MSpec/LOA B036 must also be issued. Validation tests of the operator's ability to conduct flights in AMUs are required. Except for inertial navigation systems (INS), validation tests of any type of navigational equipment must be non-revenue. When validation tests are successfully completed, OpSpec/MSpec/LOA B040 may be issued. When an operator requests authorization to conduct operations in AMUs, the Principal Operations Inspector (POI) will contact the Flight Technologies and Procedures Division to work with the POI to ensure that operations in AMUs meet the appropriate requirements. For more information on flight operations in AMUs, see Volume 4, Chapter 1, Section 5.

E. Airplane and Navigational Models. The airplane (make, model, and series (M/M/S)), the manufacturer and model of the navigational equipment, and the type of navigation (heading reference) to be used must be listed in OpSpec/MSpec/LOA B040, subparagraph a. When pilot-operated electronic LRNS are authorized, they must be dual or redundant systems. AMU operations using Global Positioning System (GPS) as the sole LRNS are not authorized. Table 3-10 is an example of how this information should be listed.

Table 3-10. Examples of Airplane and Navigational Equipment Information for OpSpec/MSpec/LOA B040

| AIRCRAFT TYPE | NAVIGATION EQUIPMENT | TYPE NAVIGATION | |
|---------------|---|-----------------|----------|
| | | En Route | Approach |
| B-777-223 | Honeywell/FMCF (AIMS) 4075350-902 Honeywell ADIRU HG2060 Rockwell-Collins/DME 822-0329 Rockwell-Collins/MMR (GPS) 822-1152 | True/Mag | True/Mag |
| A-330-323 | Thales FMGEC C12858 Honeywell ADIRU HG2030 Rockwell-Collins DME 900 Thales MMR TLS755 | True/Mag | True/Mag |
| DC-10-30 | Dual Delco Carousel IV INSS | True | True/Mag |

OPSPEC B041—NORTH ATLANTIC OPERATIONS WITH TWO-ENGINE AIRPLANES UNDER PART 121.

A. Guidance. General guidance is contained within Volume 4, Chapter 1, Section 5 and the current edition of Advisory Circular (AC) 91-70, Oceanic and Remote Continental Airspace Operations. Any questions in regard to application or interpretation of this OpSpec should be forwarded to the Flight Technologies and Procedures Division.

B. Requirements. OpSpec/MSpec/LOA B036 is required before issuing the following OpSpecs/MSpecs/LOAs:

- B037, Operations in Central East Pacific (CEP) Airspace.
- B038, North Pacific (NOPAC) Operations.
- B039, Operations in North Atlantic High Level Airspace (NAT HLA).
- B040, Operations in Areas of Magnetic Unreliability.
- B041, North Atlantic Operations with Two-Engine Airplanes Under Part 121.

NOTE: Special routes/Blue Spruce routes have been established in limited portions of NAT HLA where aircraft equipped to use International Civil Aviation Organization (ICAO) ground-based Navigational Aids (NAVAID) can operate with a Single Long-Range Navigation System (S-LRNS). This information can be found in the guidance for OpSpec/MSpec/LOA B039.

C. Purpose. OpSpec B041 is issued to those 14 CFR part 121 operators who demonstrate the capability and competency to safely conduct operations over the North Atlantic (NAT) with two-engine airplanes within the 60-minute constraint of part 121, § 121.161. This

paragraph restricts the authorized Area of Operation to those portions of the NAT which have a maximum diversion time, from any point along the route of flight, to a diversionary airport of 60 minutes or less at the approved one-engine inoperative cruise speed (under standard conditions in still air). Due to the unique nature of these operations, OpSpec B041 will not be issued until review and concurrence is obtained from the Flight Technologies and Procedures Division. It is FAA policy and direction that these operations be evaluated and approved on a case-by-case basis. This evaluation must include consideration of the character of the terrain within the proposed Area of Operation, kind of operation, performance of the airplane to be used, capabilities of the alternate airports en route, and the provisions of OpSpec B041. This evaluation must also include consideration of the routes of flight, and airports and instrument approaches likely to be used during an en route diversion resulting from an in-flight contingency.

D. Other OpSpecs. Since these operations involve Class II Navigation, OpSpec/MSpec/LOA B036 must also be issued. OpSpec/MSpec/LOA B039 must be issued if an operation involves flight in NAT HLA. OpSpec B050 must authorize operation in the NAT and must specify appropriate reference paragraphs, including any restrictions/limitations necessary to accommodate operations of two-engine airplanes in the NAT. Since the operations authorized by OpSpec B041 are restricted by the 60-minute rule, these operations comply with the basic provisions of § 121.161. Therefore, a request for deviation from the basic provisions of this rule is not required for this type of operation.

E. Airplane Model. Each airplane (make, model, and series (M/M/S)) authorized for these operations must be listed in OpSpec B041. Any special equipment or limitations applicable to operations in the North Atlantic Operations (NAT/OPS) area, including any prohibition of the operation of certain series of aircraft, must also be listed in OpSpec B041 for each make and model listed. Table 3-11 is an example of how each authorized airplane should be listed.

Table 3-11. Example Listing of Additional Special Equipment/Limitations by Authorized Airplane

| AIRPLANE TYPE MAKE/MODEL/SERIES | ADDITIONAL SPECIAL EQUIPMENT/LIMITATIONS |
|--|---|
| B-767-224 | Dual Honeywell FMCS/IRS |
| A-330-323 | Dual Thales-Smiths FGEC/Litton ADIRU |

OPSPEC/LOA B043—SPECIAL FUEL RESERVES IN INTERNATIONAL OPERATIONS.

A. Purpose. OpSpec/LOA B043 provides the method for approving operators that conduct operations under 14 CFR part 121 or 125 to use fuel supplies specified in OpSpec/LOA B043 in place of fuel supplies required by part 121, § 121.645 or part 125, § 125.377, as applicable. This authorization, OpSpec B043, is applicable to 14 CFR part 119 certificate holders conducting operations under part 121 or 125. As LOA B043, it is also applicable to those operators that have been issued a deviation from the certificate and OpSpec requirements of part 125 but are still required to conduct operations in accordance with part 125.

1) This authorization grants the operator a deviation from certain requirements of § 121.645(b) or § 125.377(b), as applicable. Therefore, § 121.645(b) or § 125.377(b), as applicable, and OpSpec/LOA B043 must be listed in the operator's OpSpec/LOA A005.

2) Fuel supplies required by OpSpec/LOA B043 are a hybrid between domestic fuel reserves and international fuel reserves.

a) When a portion of the route is conducted in an area(s) where the aircraft's position cannot be reliably fixed at least once each hour in accordance with paragraph B032 of these OpSpecs, additional international reserve fuel supplies must be loaded in accordance with subparagraph b) below.

b) The additional reserve fuel must be equal to the amount of fuel required to fly for a period of 10 percent of the time it takes to fly that portion of the route in Class II Navigation, unless utilizing this deviation in conjunction with OpSpec B343.

B. Rationale. The rationale for the provisions of OpSpec/LOA B043 includes the following:

1) The additional international fuel supply is required only for that portion of a flight in areas where there is a lack of International Civil Aviation Organization (ICAO) ground-based Navigational Aids (NAVAID), reliable very high frequency (VHF) communications, reliability of winds aloft flight planning forecast, and diversionary airports. Examples of areas lacking these facilities and services include transoceanic areas, Northern Canada, the Polar Regions, and certain areas in South America, Africa, the Middle East, and Asia.

2) The additional international reserve fuel supply is not required for flights in areas where there are ICAO ground-based NAVAIDs (Class I Navigation), reliable VHF communications, reliable upper air wind pattern information, and availability of adequate diversionary airports.

3) For example, the additional international reserve fuel supply is not required between inter-European cities or for certain routes between U.S. cities and Central and South American cities. In another example, the additional international reserve fuel supply is not required for certain airways between the United States and Canada, or Alaska, exclusive of the Northern Control Area (NCA) tracks which require long-range navigation systems (LRNS) to adequately navigate to the degree of accuracy required by air traffic control (ATC) Class II Navigation.

C. Reviewing the Proposed Operations. When an operator requests authorization to conduct operations using the special fuel reserves described in OpSpec/LOA B043, the Principal Operations Inspector (POI) will advise the Air Carrier Operations Branch/Commercial Operations Branch and the Flight Technologies and Procedures Division.

D. Operator Procedures. Before issuing OpSpec/LOA B043, the operator must develop procedures, which ensure that flightcrews and aircraft dispatchers (or flight followers) are made specifically aware of fuel supplies to be used for a particular flight.

- 1) The procedures must provide for strict in-flight monitoring of fuel consumption and calculation of fuel remaining at the end of flight.
- 2) These procedures must specifically prohibit use of the provisions of OpSpec B044 (redispach or rerelease) when a flight is conducted in accordance with OpSpec/LOA B043.
- 3) These procedures must require flightcrews report immediately to the aircraft dispatcher or flight follower any time the estimated time of arrival at the destination exceeds 15 minutes beyond the Flight Plan (FPL) estimated time of arrival (ETA), the cruise altitude varies by 4,000 feet or more from the FPL, or the airplane deviates more than 100 nautical miles (NM) from the flight-planned route.
- 4) Procedures must be established for flightcrews, aircraft dispatchers, or flight followers, as applicable, for the reporting of a fuel emergency or any fuel states that result in coordination with ATC or dispatch that then result in ATC providing priority handling of that aircraft.
- 5) These procedures must be included in the operator's manual.
- 6) Flightcrew members and aircraft dispatchers or flight followers, as applicable, must be trained to use these procedures.

E. Reviewing the Proposed Procedures. The POI must ensure the operator's procedures are adequate and that flightcrew members and aircraft dispatchers (or flight followers), as applicable, who will be using the procedures are properly trained. The POI should request the assistance of the Flight Technologies and Procedures Division to review the procedures. OpSpec/LOA B043 authorization may be issued when the response from the Air Carrier Operations Branch/Commercial Operations Branch has concurred that the procedures are adequate. The POI will review the response and comments and resolve any issues and issue OpSpec/LOA B043.

NOTE: OpSpec/LOA A005 must also be amended to list the deviation from § 121.645 or § 125.377, as applicable.

OPSPEC B044—PLANNED REDISPACH OR RERELEASE EN ROUTE.

A. Authorization. OpSpec B044 provides the means for approving certificate holders that conduct operations under 14 CFR part 121 to conduct planned redispach or planned rerelease operations in accordance with part 121, § 121.631. OpSpec B044 provides authorization for a certificate holder to conduct these operations on long-range flights, provided the conditions and limitations of the paragraph are met. The term "redispach" applies to certificate holders conducting flag operations. The term "rerelease" applies to certificate holders who are only authorized to conduct supplemental operations. For the purposes of this section, the term "redispach" will be used when discussing both flag and supplemental operations.

1) **Authorized Areas of Use.** Planned redispach can only be conducted where B044 is referenced within the specific areas of en route operations authorized by OpSpec paragraph B050. In other words, B044 should be authorized in all areas of B050 through which

the aircraft will operate on a planned redispach. A certificate holder cannot conduct planned redispach operations in accordance with B044 in an authorized area of en route operations unless B044 is specifically referenced in that area.

2) Reduction in En Route Reserve Fuel. Planned redispach, as authorized by OpSpec B044, provides for a reduction in the en route reserve fuel required by § 121.645(b)(2) by allowing that fuel to be based partially on the time it would take to get to an intermediate destination, provided the flight can be redispached from a predetermined redispach point, to the desired or “intended” destination.

3) Fuel Supply at the Time of a Redispach/Rerelease. If the fuel reserves required by § 121.645(b)(2) have not been used at the time the aircraft reaches the redispach point, then the flight can be redispached to the intended destination as long as the fuel supply on board the aircraft is enough to allow compliance with §§ 121.645 and 121.647 (when necessary) and the conditions en route and at the intended destination airport will allow the flight to continue with safety.

B. Conditions and Limitations. B044 contains 11 specific conditions and limitations that must be complied with. Principal Operations Inspectors (POI) must ensure that each of the specific conditions and limitations are complied with prior to issuing B044, for the continued approval of B044, and when adding B044 to a new authorized area of en route operations. The 11 conditions and limitations are as follows:

1) Within the specific area of en route operations, the OpSpec paragraph must be listed in OpSpec B050.

2) The dispatch or flight release must contain the following:

a) A release to the initial destination airport.

b) A plan for redispach or rerelease from the planned redispach or rerelease point to the intended destination airport. The planned redispach or rerelease point must be a point that is common to both the route from the origin airport to the intended destination airport and the route from the origin airport to the initial destination airport.

c) Alternate airports for both the initial destination airport and the intended destination airport in accordance with § 121.621 or § 121.623.

d) The fuel required to fly from the origin airport and land at the initial destination airport.

e) The fuel required to fly from the redispach or rerelease point and land at the intended destination airport.

f) The total fuel required to fly from the origin airport and land at the intended destination airport based on the redispach or rerelease. In determining these fuel requirements, the certificate holder must comply with § 121.647.

g) The appropriate weather reports, forecasts, and Notices to Airmen (NOTAM) affecting the route to be flown, and the facilities at all airports specified in the dispatch or flight release.

3) The Flight Plan (FPL) must be prepared prior to departure from the origin airport to the initial destination airport and from the redispach or rerelease point to the intended destination airport. The FPL must contain an operational analysis that includes the following:

a) The total fuel listed in subparagraph b(2)(f) of this OpSpec.

b) Routes to be flown, including the flight levels. The portions of the routes that are common to both the route from the origin airport to the initial destination airport, and the route from the origin airport to the intended destination airport, may be combined in the body of the FPL.

c) Estimated times en route.

d) Alternate airports for both the initial destination airport and the intended destination airport in accordance with § 121.621 or § 121.623.

4) A new operational analysis must be conducted within 2 hours prior to the flight's arrival at the planned redispach or rerelease point. In preparing the new operational analysis, the dispatcher or person designated to exercise operational control (other than the pilot in command (PIC)) must:

a) Conduct an updated fuel analysis based on the current route of flight, wind conditions, and aircraft weight on the route from the planned redispach or rerelease point to the intended destination airport and any required alternate airports; and

b) Inform the PIC of the results of the updated fuel analysis and all current information concerning weather conditions, navigation and ground facilities, known air traffic delays, and services at the intended destination and alternate airports specified in the redispach or rerelease, as required by § 121.601(c) for flag operations or § 121.603(b) for supplemental operations.

5) If the operational analysis required in subparagraph b(4) of this OpSpec indicates there is sufficient fuel on board (FOB) to complete the redispach or rerelease to the intended destination airport, the dispatcher or person designated to exercise operational control (other than the PIC) must issue a dispatch or flight release from the planned redispach or rerelease point to the intended destination airport. That redispach or rerelease must contain:

a) A release from the planned redispach or rerelease point to the intended destination airport;

b) An updated route, if required based on the operational analysis conducted in subparagraph b(4) of this OpSpec;

c) An alternate airport for the intended destination airport, as required by § 121.621 or § 121.623;

d) The fuel required to fly from the planned redispach or rerelease point and land at the intended destination airport. In determining these fuel requirements, the certificate holder must comply with § 121.647;

e) The appropriate weather reports, forecasts, and NOTAMs affecting the route to be flown, and the facilities at all airports specified in the dispatch or flight release; and

f) The name of the dispatcher or person authorized to exercise operational control issuing the redispach or rerelease along with the time of issuance.

6) The PIC's decision on whether or not to accept the redispach or rerelease must be made part of the redispach or rerelease. The redispach or rerelease must be retained in accordance with § 121.695 or § 121.697, as applicable.

7) If while the aircraft is en route the flight cannot continue in accordance with the dispatch or flight release provided in subparagraph b(2) or b(5) of this OpSpec, the certificate holder must comply with the provisions of § 121.631(f) and (g) to amend the release.

8) Loss of communication.

a) If there is a total loss of communication while en route, the PIC must follow the lost communications procedures as outlined in the Aeronautical Information Manual (AIM), or the provisions specified in International Civil Aviation Organization (ICAO) Annex 2, Rules of the Air, as applicable to the airspace in which communication is lost.

b) If there is a total loss of communication while en route, the aircraft dispatcher or person designated to exercise operational control must follow the emergency procedures set forth in § 121.557(b) and (c) for flag operations and § 121.559(b) and (c) for supplemental operations.

9) If the estimated time of arrival (ETA) at the initial destination or intended destination exceeds 15 minutes beyond the FPL, or the cruise altitude varies by 4,000 feet or more from the FPL, or the airplane deviates more than 100 nautical miles (NM) from the route specified in the FPL, the flightcrew must notify the aircraft dispatcher or person designated to exercise operational control as soon as practicable. The aircraft dispatcher or person designated to exercise operational control must then evaluate the FOB and determine if additional action is necessary.

10) The certificate holder must establish policies and procedures for monitoring the actual fuel burn during flight and comparing it to the planned fuel burn. The certificate holder must conduct a real time analysis of any fuel burn en route that exceeds the planned fuel burn, and ensure sufficient fuel remains at the redispach or rerelease point to allow a flight to continue to the intended destination airport. If sufficient fuel for continuation to the intended destination is not on board the aircraft at the time of redispach or rerelease, the certificate holder must have policies and procedures in place to ensure the flight lands at the initial destination or alternate

airport or, if appropriate, amend the dispatch or flight release to include another suitable airport authorized for that type of aircraft.

11) The provisions of this OpSpec must not be used in conjunction with the provisions of OpSpec/LOA B043 or OpSpec B343.

C. Certificate Holder's Policies and Procedures. Prior to issuing B044, POIs must ensure that the certificate holder's manuals for use by flightcrew members and dispatchers (or persons designated to exercise operational control if the certificate holder is only authorized to conduct supplemental operations) contain adequate policies and procedures regarding the authority contained in OpSpec B044 and comply with each of the conditions and limitations contained therein.

NOTE: POIs must ensure that an Aviation Safety Inspector—Aircraft Dispatch (ASI-AD), commonly referred to as a dispatch inspector or dispatch safety inspector (DSI), reviews the certificate holder's procedures and methods of compliance with the conditions and limitations. If there is no ASI-AD resource available in the certificate-holding district office (CHDO), the POI should contact the Flight Technologies and Procedures Division for assistance in locating a DSI. If the Flight Technologies and Procedures Division is unable to locate an ASI-AD resource, then the Flight Technologies and Procedures Division should send a request for assistance to the Air Transportation Division in locating an ASI-AD to provide the necessary subject matter expertise. The guidance and instructions for ensuring compliance with the conditions and limitations of OpSpec B044 should be completed by both the POI and ASI-AD (DSI).

D. Training. The certificate holder applying for OpSpec B044 must provide evidence that their approved training program includes information and instruction for flightcrew members and dispatchers, or persons designated to exercise operational control, on the application of the authorization, and compliance with the conditions and limitations contained in B044. If the approved training program does not contain the necessary information, then the POI must ensure that the certificate holder submits a revised training program for approval that does include this requirement, prior to issuing this OpSpec.

E. Issuing the OpSpec. POIs must refer to the B044 job aid contained in the Web-based Operations Safety System (WebOPSS). The job aid can be found by clicking on the "Guidance" tab applicable to B044 in WebOPSS. POIs must also review the guidance regarding planned redispach and rerelease contained in Volume 3, Chapter 25, Section 4. Once the POI reviews the additional guidance and job aid, and establishes that the certificate holder's policies, procedures, and approved training program adequately incorporate and comply with all of the conditions and limitations contained in OpSpec B044, he or she may issue the OpSpec paragraph.

OPSPEC/MSPEC/LOA B045—EXTENDED OVERWATER OPERATIONS USING A SINGLE LONG-RANGE COMMUNICATION SYSTEM.

A. Purpose. OpSpec/MSpec/LOA B045 authorizes a certificate holder/program manager/operator to operate with a functional Single Long-Range Communication System

(SLRCS) in the specific area of en route operations defined in this OpSpec/MSpec/LOA and then referenced in a certificate holder/program manager/operator's OpSpec/MSpec/LOA B050.

Title 14 CFR part 1, § 1.1 defines a long-range communication system (LRCS) as: "a system that uses satellite relay, data link, high frequency, or another approved communication system which extends beyond line of sight."

B. Requirements. Certificate holders/program managers/operators conducting operations with an SLRCS must conduct those operations in accordance with the communications equipment requirements of 14 CFR part 91, § 91.511(f); part 121, § 121.351(c); part 125, § 125.203(f); or part 135, § 135.165(g), as applicable. To qualify for this OpSpec/MSpec/LOA, an airplane must be equipped with one operating high frequency (HF) voice radio capable of monitoring and communicating with air traffic control (ATC) during the flight segment any time the airplane is operated beyond the range of ground-based very high frequency (VHF) radio communications equipment.

1) At Least a Single HF Radio is Required. At least one HF radio is required for long-range communications, even if a certificate holder has an operational Satellite Voice (SATVOICE) and/or satellite communications (SATCOM) data link system installed.

NOTE: An HF is not required for operations in the Gulf of Mexico Special Provisions Area unless a component of the VHF Extended Range Network (VERN) is inoperative. No allowance is made for operations with a single VHF voice radio in the Gulf of Mexico Special Provisions Area.

2) ATC Requirements. All air navigation service providers (ANSP) currently require HF voice LRCS. In the airspace applicable to OpSpec/MSpec/LOA B045, operators having been authorized OpSpec/MSpec/LOA A056 may utilize Controller-Pilot Data Link Communication (CPDLC) as primary communications, but at least a single HF radio is still required as a backup in case of data link failure. (Refer to the legal interpretation of § 121.99, dated December 6, 2011.)

3) VHF Radio in the Special Provision Area over the Gulf of Mexico. OpSpec/MSpec/LOA B045 authorizes the use of VHF voice communications for certain extended overwater operations in the Gulf of Mexico area above flight level (FL) 180. This area is identified as "The Gulf of Mexico Special Provision Area" and is outlined in subparagraph e of OpSpec/MSpec/LOA B045 (see Figure 3-70, Single Long-Range Communication System Area Map, for a map of the area). Where gaps in VHF radio exist or when VHF communications may be impacted by outages, certificate holders must utilize the SLRCS (HF radio) to maintain communication.

a) **Continuous Communications Capability.** Certificate holders conducting flights in the oceanic airspace outlined in OpSpec/MSpec/LOA B045 must maintain the continuous ability to communicate with ATC. The "VHF gap" time limits outlined in § 91.511 only apply to part 91K operations.

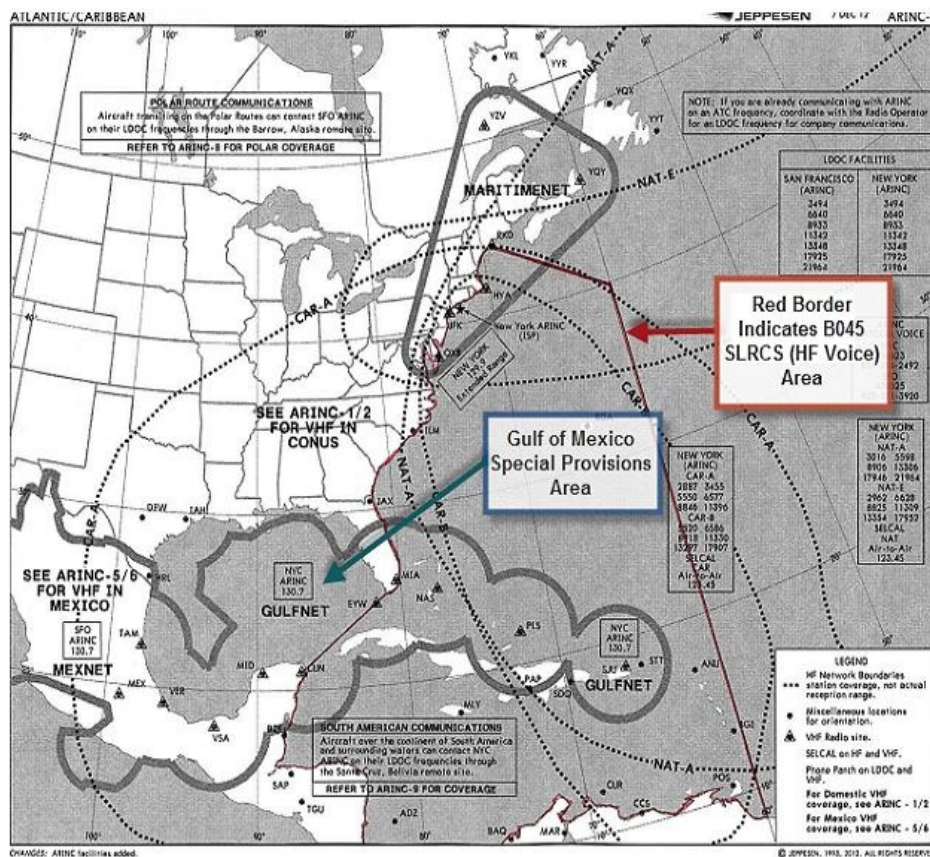
b) **Part 121 Operations.** Flights conducted in accordance with part 121 operations (other than supplemental all-cargo operations in an airplane with more than two engines) must

maintain the continuous ability to communicate with ATC and the certificate holder or the certificate holder’s dispatch/flight following facility, depending on the type of operation (domestic, flag, or supplemental).

C. Communication Service Provider (CSP) in Area of Operation. Use of a single HF radio in the Area of Operation outlined in OpSpec/MSpec/LOA B045 and depicted in Figure 3-70 below will provide communications with ATC and the certificate holder’s dispatch center or air operator office through the use of a CSP. New York ARINC (NY ARINC) is the CSP that provides both communications services in the Area of Operations described in OpSpec/MSpec/LOA B045.

D. SLRCS Area Map. The area map contained in Figure 3-70 depicts where SLRCS can be used in accordance with OpSpec/MSpec/LOA B045. This area excludes North Atlantic High Level Airspace (NAT HLA). The area map generally corresponds to the coordinates listed in the limitations and provisions of OpSpec/MSpec/LOA B045 and should not be used for flight planning purposes. This map is included for visual reference.

Figure 3-70. Single Long-Range Communication System Area Map



E. Limitations and Provisions. OpSpec/MSpec/LOA B045 contains several limitations and provisions. The limitations and provisions common to parts 91K, 121, 125, and 135 operations are listed below in subparagraphs E through H of this OpSpec paragraph. Principal Operations Inspectors (POI) must review the actual OpSpec/MSpec/LOA B045 templates for

part 91K, 121, 125, 125 Letter of Deviation Authority (LODA) holders, or 135 operations, as applicable, in the Web-based Operations Safety System (WebOPSS). A POI may not issue OpSpec/MSpec/LOA B045 unless he or she is able to confirm that the certificate holder is able to comply with all of the conditions and limitations of the OpSpec/MSpec/LOA.

1) The SLRCS used must be a unit that employs HF or other approved communication systems that extend beyond line-of-sight.

2) The SLRCS must be fully functional. If the aircraft is equipped with at least two LRCS, the use of the SLRCS must be in accordance with the certificate holder's approved minimum equipment list (MEL).

3) The Area of Operation permitted is defined by the following description and excludes all the NAT HLA:

- Beginning at 44°47'20" N/67°00'00" W.
- Hence to 38°30'00" N/67°20'00" W.
- Hence to 38°00'00" N/60°00'00" W.
- Hence to 27°00'00" N/60°00'00" W.
- Hence to 27°00'00" N/58°00'00" W.
- Hence to 07°46'00" N/58°00'00" W.
- Then northwestward along the adjacent coastline of South America, the eastern coastline of Central America, north to the CUN VHF omni-directional range (VOR), northeast to the EYW VOR, then north along the eastern coastline of the United States to the beginning point.

4) Except as provided in subparagraph e of this OpSpec:

a) The certificate holder monitors the mechanical reliability of the HF communication system. Within the preceding 30 calendar-days, if the HF radio system (both HF radios if two are installed) has been placed on the MEL more than twice, the operator is restricted from operating that aircraft in oceanic operations except for one flight to return it to an Area of Operation that does not require use of HF communications; or

b) The aircraft has an installed and functional SATVOICE communication system.

1. For aircraft that meet the requirements of the network access switch, the certificate holder must include the appropriate SATVOICE communication system code in item 10A and six-character hexadecimal code in item 18 of the Air Traffic Service (ATS) Flight Plan (FPL).

2. For aircraft that do not meet the requirements of the network access switch, the certificate holder must include the appropriate SATVOICE communication system code in item 10A of the ATS FPL. Additionally, the ANSP must be provided the aircraft-specific phone number for each aircraft.

NOTE: Iridium is currently testing network access switch capability for its customers. When this becomes readily available, the operators will be required to make the necessary software changes to the aircraft and train the appropriate personnel on the new procedures.

3. Direct communication with the controller must be limited to emergency and non-normal conditions. Normal and routine SATVOICE communication must be directed to the ANSP for the Area of Operations (ARINC) in which the aircraft is operating.

4. The flightcrew must have the continued ability to comply with International Civil Aviation Organization (ICAO) Annex 2, Rules of the Air, communication requirements.

5) Prior to entering oceanic airspace, the pilot in command (PIC) must perform a functional check on the SLRCS HF and SATVOICE backup, if operating under the provision of subparagraph 4)b) above, to verify its functionality.

6) No person may allow the flight to enter oceanic airspace unless:

a) Rapid and reliable two-way communication can be maintained with the ATC facility controlling the airspace.

b) For part 121 domestic or flag operations, reliable and rapid two-way voice communication between the aircraft and the appropriate dispatch center can be maintained in accordance with § 121.99.

c) For part 121 supplemental operations, reliable and rapid two-way voice communication between the aircraft and the certificate holder can be maintained in accordance with § 121.122.

7) Part 91K operations only: when used in conjunction with MSpec B054, the Area of Operation with an SLRCS is limited to 30 minutes beyond the range of ATC VHF coverage.

F. Limitations and Provisions Governing the Special Provisions Area over the Gulf of Mexico. Communications with ATC facilities and long-range communications service providers in the Gulf of Mexico are available via VHF voice for operations at and above FL 180.

1) Prior to conducting operations in the Special Provisions Area over the Gulf of Mexico, the aircraft dispatcher (or person designated to exercise operational control for supplemental operations) and the PIC must review the appropriate Notices to Airmen (NOTAM), and verify that there are no reported or anticipated lapses in VHF voice capability for ATS during the period of time in which the flight will be conducted.

2) If at any time during flight two-way VHF voice radio communications cannot be maintained directly with the controlling ATS facility, general purpose communication facilities, such as ARINC, must be used.

3) For part 121 operations, the requirements of §§ 121.99 and 121.122, as applicable, must be met at all times. For the purposes of operational control communication, if a VHF ground station is inoperative, the PIC and aircraft dispatcher must find that communication facilities equal to the inoperative VHF network are available and are in satisfactory operating condition. (Refer to § 121.607(b).)

G. Required Training. Prior to exercising the authority provided by OpSpec/MSpec/LOA B045, the certificate holder/program manager/operator must provide training to its flightcrew members on the application of the authorization contained in OpSpec/MSpec/LOA B045, including all of the limitations, provisions, and special provisions contained therein. For part 121 operations, certificate holders/program managers/operators must also provide this training to aircraft dispatchers or persons designated to exercise operational control.

H. MEL Review. Prior to issuing OpSpec/MSpec/LOA B045, POIs must review the certificate holder/program manager/operator's MEL and ensure that their MEL Operations (O) procedures for the deferral of communications equipment do not conflict with the authorization contained in OpSpec/MSpec/LOA B045.

I. Review by the Flight Technologies and Procedures Division and Aviation Safety Inspector—Aircraft Dispatch (ASI-AD). Prior to issuing OpSpec/MSpec/LOA B045, the certificate holder/program manager/operator's training program and manual procedures related to OpSpec/MSpec/LOA B045, must be reviewed and concurred with by the Flight Technologies and Procedures Division. POIs will coordinate with the Flight Technologies and Procedures Division. In addition, POIs of certificate holders/program managers/operators who conduct part 121 operations and desire the authority provided by OpSpec/MSpec/LOA B045 must have the certificate holder/program manager/operator's training program, MEL procedures, and manual procedures reviewed/approved by an ASI-AD.

OPSPEC/MSPEC/LOA B046—OPERATIONS IN REDUCED VERTICAL SEPARATION MINIMUM (RVSM) AIRSPACE.

A. Purpose. RVSM programs enable 1,000-foot vertical separation applied between aircraft at flight level (FL) 290 through FL 410, inclusive. Title 14 CFR part 91, §§ 91.180 and 91.706 and part 91 appendix G provide RVSM regulatory policy for part 91 operators, part 91K program managers, and 14 CFR parts 121, 125, and 135 certificate holders. The current version of Advisory Circular (AC) 91-85, Authorization of Aircraft and Operators for Flight in Reduced Vertical Separation Minimum (RVSM) Airspace, provides operator guidance for obtaining RVSM authorization under both circumstances:

1) Operators, program managers, and certificate holders may be authorized for RVSM operations when meeting the requirements of part 91 appendix G operating under the provisions of Section 9, Aircraft Equipped with Automatic Dependent Surveillance—Broadcast Out. Operators, program managers, and certificate holders seeking to operate in RVSM designated airspace, operating RVSM-compliant aircraft equipped with qualified Automatic Dependent Surveillance—Broadcast (ADS-B) Out systems, and meeting the provisions of

part 91 appendix G, section 9 need not apply for RVSM authority to the FAA. (See subparagraph E of this OpSpec.)

2) An operator, program manager, or certificate holder must apply for a specific authorization to the FAA for an OpSpec, MSpec, or LOA when seeking RVSM authority under the provisions of Part 91 Appendix G, Section 3, Operator Authorization. Operators, program managers, or certificate holders will still submit an application to the FAA for RVSM authority when:

- a) Their aircraft are not equipped with qualified ADS-B Out systems;
- b) The operator, program manager, or certificate holder does not operate in RVSM airspace where the FAA can successfully monitor the aircraft's height-keeping performance; or
- c) The operator, program manager, or certificate holder intends to conduct RVSM operations in foreign airspace where the State authority requires a specific RVSM operational authorization.

NOTE: International Civil Aviation Organization (ICAO) Annex 6, Operation of Aircraft, until amended, requires that all aircraft operating outside U.S.-controlled airspace require a specific approval for RVSM operations.

NOTE: For guidance on evaluating an operator's program for an OpSpec/MSpec/LOA B046, see Volume 4, Chapter 10, Section 1.

B. RVSM Flight Information Regions (FIR) and FLs. The ICAO applies RVSM in all FIRs. Part 91 appendix G no longer lists individual areas designated for RVSM operations. Operators should expect to comply with RVSM procedures whenever operating between FL 290 and FL 410, inclusive. To find regional differences in RVSM implementation, review the Aeronautical Information Publication (AIP) and Notices to Airmen (NOTAM), published by the responsible Air Traffic Service (ATS) provider. Each RVSM authorized operator is responsible for verifying those FLs before conducting RVSM operations.

C. OpSpec/MSpec/LOA D092. For part 91K program managers, and parts 121, 125, and 135 certificate holders, the program manager or certificate holder should submit the operations program for review. OpSpec/MSpec/LOA D092 must also be issued along with B046, as it lists the aircraft that are authorized for operation in RVSM airspace.

D. OpSpec/MSpec/LOA B050. For part 91K program managers, and parts 121, 125, and 135 certificate holders, OpSpec/MSpec/LOA B046 should be listed in the specific Areas of Operation listed in OpSpec/MSpec/LOA B050 when the program manager or certificate holder is granted authorization to conduct RVSM operations in those areas. If a program manager or certificate holder has RVSM authorization, the Principal Operations Inspector (POI) must ensure that the differences in procedures for a new Area of Operation are addressed before adding OpSpec/MSpec/LOA B046 to the new area in OpSpec/MSpec/LOA B050.

E. Operations in RVSM Airspace With Aircraft Equipped With ADS-B Out.

Part 91 appendix G, section 9 provides provisions for an operator, program manager, or certificate holder to be authorized to conduct flight in airspace in which RVSM is applied for operators of RVSM-compliant aircraft when equipped with a qualified ADS-B Out system. A qualified ADS-B Out system for this purpose is one that meets the requirements of § 91.227. Operators meeting the requirements of part 91 appendix G and seeking to operate under the provisions of section 9 need not apply for authorization to the FAA. Operator guidance is provided in AC 91-85.

F. Aircraft RVSM Compliance. Guidance on evaluating aircraft compliance can be found in Volume 4, Chapter 10, Section 2.

OPSPEC B047. DECOMMISSIONED.**OPSPEC B048—OPERATIONS IN THE VICINITY OF THE HAWAIIAN ISLANDS.**

OpSpec B048 contains specific operational limitations and provisions for granting an operator deviation authority to conduct sightseeing and air tour operations in the state of Hawaii below 1,500 feet above the surface. Special Federal Aviation Regulation (SFAR) 71, Special Operating Rules for Air Tour Operators in the State of Hawaii, prescribes the operating rules for airplane and helicopter operators to conduct visual flight rules (VFR) sightseeing and air tour operations in Hawaii. This authorization cannot be issued to fractional ownership program managers (14 CFR part 91K).

A. SFAR 71 Procedures Document. Each operator must have a FAA-approved SFAR 71 Procedures Document that contains a minimum of the following:

- 1) A description of specific sites, transition segments, and overwater segments.
- 2) The restrictions that apply for operations below 1,000 feet above the surface at specific sites, including height-velocity restrictions and raw terrain descriptions.
- 3) An identification of designated areas at specific sites or transition segments suitable for an emergency landing in the event of an engine failure.
- 4) A description of the planned entry to and egress from the approved specific sites.
- 5) The operator's plan for ensuring that its pilots conducting flights under this authorization will conduct or participate in at least one formal air tour safety meeting each 12 calendar-months, beginning from the commencement of air tour operations, to discuss safety issues and procedures that pilots will follow while conducting operations under SFAR 71. This plan should include:
 - a) Provisions for the documentation of each pilot's attendance at the air tour safety meetings that must be retained for a minimum of one year or until the training is repeated, whichever is later.

b) The operator's plan for notifying the Honolulu Flight Standards District Office (FSDO) at least 10 days prior to these meetings to give the FAA an opportunity to participate.

B. SFAR 71 Training Program. Each operator must have an FAA-approved SFAR 71 training program that covers at least the following:

1) The provisions and limitations of SFAR 71 and the operator's FAA-approved SFAR 71 Procedures Document.

2) Initial training for each pilot, which includes flight instruction by an authorized company instructor over all site-specific locations for operations being conducted under SFAR 71.

3) Each pilot in command (PIC) will have passed a 14 CFR part 135, § 135.299 line check, which includes a representative SFAR 71 transition segment and site-specific area conducted by the Administrator or company check pilot.

4) All other applicable limitations and provisions contained in OpSpec B048.

C. Initial Evaluation. The Administrator will conduct an initial evaluation of each company flight instructor over all site-specific locations before authorizing the instructor to conduct flight instruction for operations being conducted under SFAR 71.

D. Pilot Requirements. Each pilot using the provisions of this authorization who is conducting sightseeing operations under § 135.1(c) will be knowledgeable of SFAR 71 and operate in accordance with the provisions and limitations of OpSpec B048. Initially, and thereafter annually, each pilot must satisfactorily complete both knowledge and flight tests administered by an FAA aviation safety inspector (ASI) qualified to perform this function.

E. Additional Limitations and Provisions. The principal operations inspector (POI) has the option of adding additional limitations and provisions for specific Hawaiian Islands in subparagraph e of OpSpec B048 without going through the nonstandard paragraph processing. If this feature is not required, the POI must not leave the selection blank but enter N/A in place of any additional limitations and provisions.

F. OpSpec B050. OpSpec B050 must refer to OpSpec B048, as applicable.

G. OpSpec A005. Because this OpSpec B048 authorizes a deviation to SFAR 71, it must be listed in OpSpec A005. It should be recorded as "SFAR 71 section 6" with the statement in the remarks column: "Ops below 1,500 feet AGL."

OPSPEC B049—OPERATIONS IN THE GRAND CANYON NATIONAL PARK SPECIAL FLIGHT RULES AREA.

A. Purpose. OpSpec B049 contains specific operational limitations and provisions for granting an air carrier the authority for air tour operations in the Grand Canyon National Park-Special Flight Rules Area (GCNP-SFRA). The current edition of the Grand Canyon

National Park Special Flight Rules Area (GCNP SFRA) Procedures Manual outlines the procedures for how to establish the authorization. This manual may be obtained from the Nevada Flight Standards District Office (FSDO). The Nevada FSDO will also provide the principal operations inspector (POI) with a memorandum outlining the process for authorizing air tour operations in the GCNP-SFRA. This authorization cannot be issued to fractional ownership program managers (14 CFR part 91K).

B. Tours Per Year. In accordance with 14 CFR part 93, § 93.319(a), no operator may conduct a greater number of commercial air tours per calendar-year than the number of allocations appearing on the operator's OpSpec B049, unless excepted by regulation or by the Quiet Technology (QT) seasonal relief incentive delineated in subparagraph 4 below. If an exemption is granted, this number should be altered accordingly in OpSpec B049 and the exemption listed in OpSpec A005. Each commercial air tour operator operating in the GCNP-SFRA is permitted to operate a certain fixed number of air tours per calendar-year.

1) No operator will receive a greater number of allocations than the number of commercial air tours conducted by the operator in the GCNP-SFRA and reported to the FAA during the period beginning May 1, 1997, and ending April 30, 1998 (as per § 93.319(b)).

2) Allocations will only be assigned to operators who reported air tours in the GCNP-SFRA.

3) An operator must use one allocation for each flight that is a commercial air tour, unless excepted by regulation or by the QT seasonal relief incentive for the Dragon and/or Zuni Point Corridors delineated in subparagraph 4).

4) Operators who reported commercial air tours in the Dragon and/or Zuni Point Corridors receive specific allocations for these corridors. These Dragon and/or Zuni Point Corridor allocations are included as a part of the total allocations designated for each operator, if appropriate. The maximum authorized commercial air tours conducted in the Dragon and/or Zuni Point Corridors may be increased by an amount not to exceed the number of flights conducted with authorized QT aircraft within the QT incentive period shown on OpSpec B049.

5) An operator may use allocations designated for the Dragon and/or Zuni Point Corridors outside of those areas, but may not use allocations not specifically designated for the Dragon and/or Zuni Point Corridors within the Dragon and/or Zuni Point Corridors.

6) An operator who meets the requirements for commercial Special Flight Rules Area (SFRA) operations and operates in conformance with its GCNP-SFRA OpSpecs is not required to use a commercial air tour allocation for each commercial air tour flight in the GCNP-SFRA if all the following conditions are met:

a) The operator has a written contract with the Hualapai Indian Nation granting the operator a trespass permit and specifying the maximum number of flights to be permitted to land at Grand Canyon West Airport and at other sites located in the vicinity of that airport.

b) The operator operates in compliance with that contract.

c) The operator has a valid OpSpec B049 that authorizes the operator to conduct the operations specified in the contract with the Hualapai Indian Nation and specifically approves the number of operations that may transit the GCNP-SFRA under this exception.

7) Operators who have previously conducted commercial air tours in the GCNP-SFRA may continue to do so without an initial allocation if they did not receive an initial allocation in 1999 or 2000 for one of the following reasons:

a) The operator conducted commercial air tours at or above 14,500 feet mean sea level (MSL), but below 18,000 feet MSL, and was not required to report during the base year. The operator does not require an allocation to continue to conduct air tours at those altitudes.

b) The operator conducted commercial air tours in the area affected by the eastward shift of the SFRA boundaries and was not required to report during the base year. The operator does not require an allocation to continue operating on its specified routes in the area bounded by 111°42" W. longitude and 111°36" W. longitude.

c) This exception does not include operation in the Zuni Point Corridor.

C. Commercial Air Tour Operator Flight Reporting Requirements. In accordance with § 93.325, each operator conducting commercial air tours within the GCNP-SFRA will submit in writing, within 30 days of the close of each calendar-quarter, the total number of commercial air tours conducted within the GCNP-SFRA during that quarter.

1) All air tour operators operating within the GCNP-SFRA must use the approved reporting template (Office of Management and Budget (OMB) Control Number 2120-0653).

2) The quarterly reports must be filed with the Nevada FSDO via email at GrandCanyonAirData@faa.gov. The operator should forward a copy of this report to their assigned Grand Canyon inspector.

a) The reporting template contains information on completing the form with examples of what is expected.

b) The reporting template can be obtained by contacting the Western-Pacific Region Special Programs Office (AWP-1SP) via email at GrandCanyonAirData@faa.gov.

c) The template contains the following information required by § 93.325(a) and (b):

- Make and model of aircraft;
- Identification number (registration number) for each aircraft;
- Departure airport for each segment flown;
- Departure date;
- Departure time using universal coordinated time (UTC), as applicable for each segment flown;

- Type of operation; and
- Route(s) flown.

d) The Nevada FSDO will communicate any change in the current operational status or operating allocations of any Grand Canyon operator to AWP-1SP.

e) The Nevada FSDO will notify AWP-1SP of any new entrants in the GCNP-SFRA and will provide the following information for each:

- Operator name.
- Designator.
- Primary point of contact (POC):
 1. Phone number.
 2. Email address.

D. Maximum Number of Allocations. The maximum number of allocations for the Dragon and/or Zuni Point Corridors and the maximum number of total allocations for the GCNP-SFRA must be listed in OpSpec B049 subparagraph b(2).

1) If the certificate holder is authorized to conduct the operations specified in a contract with the Hualapai Indian Nation for a specific number of operations that may transit the GCNP-SFRA under the exception of § 93.319(f), the number of operations must be indicated in OpSpec B049 subparagraph b(3).

2) Refer to the OpSpecs job aid in the Web-based Operations Safety System (WebOPSS) in association with OpSpec B049 for examples.

E. Curfew Limitations. As appropriate, the operator must comply with the curfew limitations of § 93.317, which reads, “Unless otherwise authorized by the Flight Standards District Office, no person may conduct a commercial Special Flight Rules Area operation in the Dragon and Zuni Point corridors during the following flight-free periods:

- a) Summer season (May 1-September 30)-6 p.m. to 8 a.m. daily; and
- b) Winter season (October 1-April 30)-5 p.m. to 9 a.m. daily.”

F. OpSpec B050. OpSpec B049 must be referenced in OpSpec B050, as applicable.

OPSPEC/MSPEC/LOA B050—AUTHORIZED AREAS OF EN ROUTE OPERATIONS, LIMITATIONS, AND PROVISIONS. This paragraph provides operators and principal operations inspectors (POI) with detailed information on the Web-based Operations Safety System (WebOPSS) functionality with regard to the issuance of B050:

- Subparagraph A: Provides general overview.
- Subparagraph B: Describes process steps for the development of B050.
- Subparagraph C: Includes a list and definitions of the standard authorized areas as displayed in WebOPSS.

- Subparagraph D: Describes the Extended Operations (ETOPS) areas of operation/B050 interface.
- Subparagraph E: Provides guidance for adding areas with limited FAA oversight.
- Subparagraph F: Provides guidance for operations in areas outside the United States where U.S. civil aviation operations are prohibited by Special Federal Aviation Regulation (SFAR) or Notice to Airmen (NOTAM).

A. Purpose. B050 must specify only the areas of en route operation (or individual routes that have specific limitations or procedures associated with the route) for which the operator is authorized to conduct under 14 CFR parts 91K, 121, 121/135, 125 (including part 125 Letter of Deviation Authority (LODA) holders), and 135 operations. B050 must include all areas of en route operation where the operator conducts scheduled and nonscheduled operations. B050 prohibits operations in areas not listed. It is important to consider those areas where the operator may conduct nonscheduled operations. When amending B050, the POI should review the guidance for OpSpec/MSpec/LOA B450 to determine if B450 needs to be updated as well.

B. B050 Process Steps. To prepare B050 for issuance, the POI or operator must accomplish the following:

1) Coordinate with the operator to prepare the “Authorized Areas of En Route Operation.” The POI should work directly with the operator when preparing the list. This is particularly important when extensive international operations are involved. Operators requesting approval for special areas of operation (e.g., North Atlantic High Level Airspace (NAT HLA), areas of magnetic unreliability (AMU), polar area authorization, or initial oceanic and remote continental airspace navigation authorization) shall coordinate through the Special Areas of Operation (SAO) specialist at the Flight Technologies and Procedures Division (AFS-400), as required by policy in this order.

2) Obtain the authorized areas of en route operation. WebOPSS guidance contains detailed information on geographical areas.

3) Select the individual areas of en route operation for authorization. Subparagraph C contains the areas listing. In most cases, all selected areas must be contiguous. For example, if “USA–The 48 Contiguous United States and the District of Columbia” and “USA–The State of Hawaii” are selected and operations will be authorized between those areas, make an appropriate selection for the Pacific Ocean. The WebOPSS application approves all of the selected countries and/or territories within the authorized area by default. WebOPSS allows countries within the selected authorized area to be included, excluded, or overflown.

Explanations of these selections are below:

a) “None” (Default) is the preferred method of selection. This selection allows selection of the entire prescribed authorized area of en route operations. In some cases, the Air Transportation Division (AFS-200) unilaterally restricts some countries for the None (Default) selection. An example is “Asia—Excluding Portions of North Korea as Stipulated by Either a Prohibitory NOTAM or per SFAR 79 (§ 91.1615).” In this example, portions of North Korea are restricted from the selections of Include, Exclude, or Overflight. In the case where an SFAR is applicable, the POI must inform the carrier. AFS-200 will remove the SFAR country from its

current authorized area and develop a new selectable authorized area of en route operation that addresses the SFAR. AFS-200 will issue a notice announcing the change.

b) “Include” is used in the rare case when the operator selects an authorized geographic area, but only one or two countries are approved for flight operations over or within those countries in the authorized area. For part 121 scheduled operators, OpSpec C070 must list the authorized airports. Use Include to authorize a geographic area where the operator has completed validation tests for the specific country, but not the entire authorized area of en route operations. This allows the operator who has limited exposure to a complicated navigation area to operate into a specific country in which it has demonstrated competency by validation testing. For example, an operator is authorized operations into Hong Kong, Macao, or Taiwan, but not mainland China. Both altitude measurement standards and Reduced Vertical Separation Minimum (RVSM) procedures are different in these locations from the rest of China.

c) “Exclude” is used when an otherwise authorized geographic area includes a country or territory where a prohibitory NOTAM exists or a flight prohibition is contained in part 91 subpart M.

d) “Overflight” is used when selected countries are only authorized for overflight operations. Similar to Exclude, use Overflight when an operator has authorization to overfly a geographic area where a NOTAM regarding potentially hazardous conditions exists. An SFAR might also exist in part 91 subpart M which may restrict flights to remain above a certain altitude while flying over a certain country or area. In those cases, selecting overflights for that particular country or area in WebOPSS would be appropriate.

4) The operator or POI should use B050 Table 2 for any special operational considerations (see Table 3-15, Example of Special Requirements Annotations for a Part 121 Operator). Each limitation, provision, or special requirement number must be associated with the applicable authorized area of B050 Table 1 in the Note Reference # column. The following are examples of limitations, provisions, and special requirements:

a) Limitation: Specific route approval required to maintain compliance with OpSpec A013. Specific route approval would avoid operations beyond 162 nautical miles (NM) from shoreline in the Gulf of Mexico and the Caribbean.

b) Provision: Authorization to land at Guantanamo Bay Naval Air Station (NAS).

c) Special requirement: If an operator has multiple engine/airframe combinations approved for ETOPS, and not all engine/airframe combinations are authorized in all areas listed in B050, the operator should list the specific engine/airframe combination as a note reference.

5) WebOPSS will autofill required paragraphs in B050 Table 1, Reference Paragraphs column, for each area of en route operation by CFR part. For example, for parts 121 and 135, WebOPSS will autofill B031 and B032. In part 135, B032 does not apply to visual flight rules (VFR)-only operations; therefore, it must be manually deleted for those types of operations.

6) In certain areas of en route operation, reference paragraphs are mandatory (Central East Pacific (CEP), B037; North Pacific (NOPAC), B038; NAT HLA, B039; and AMUs, B040). These required paragraphs have been preloaded as reference paragraphs in B050. The POI must not manually delete these mandatory reference paragraphs when the operator is authorized to operate in these areas. The certificate holder must meet the requirements of those authorizations, and B050 must include references to those authorizations.

7) The operator or POI will select the mandatory paragraphs referenced in each area that is applicable to the CFR part. The guidance for these paragraphs is below. Evaluate and select optional paragraphs that apply to the operation in that area of operation. It is important to note that initial authorization for optional paragraphs must be coordinated with a specialist, as indicated. Upon receiving initial approval, the POI, in coordination with an AFS-400 SAO specialist and/or ETOPS specialist, is responsible to determine whether further validation is necessary when authorizing additional areas.

a) For example: An operator completes successful validations and obtains SAO and ETOPS authority for a B767 operation from Canada to Europe through the North Atlantic. The operator will add B039 and B342 in the reference paragraph in NAT HLA. The operator then requests to fly the same aircraft, B767, from the West Coast to Hawaii. This requires the operator to validate this operation before placing B037 and B342 in the Central and South Pacific airspace in the reference paragraphs. The POI should consult the AFS-400 SAO specialist and the AFS-200 ETOPS specialist when determining whether to include these reference paragraphs.

b) Manually add other applicable optional reference paragraphs to a specific area of en route operation. These other reference paragraphs either specify a requirement such as long-range navigation (LRN) equipment or grant a specific authorization such as use of Area Navigation (RNAV) equipment for Class I navigation. The POI must determine which reference paragraphs are pertinent to each area of en route operation. These other reference paragraphs may include, but are not limited to, the following:

- B031—Areas of En Route Operation.
- B032—En Route Limitations and Provisions.
- B034—IFR Class I and En Route Navigation Using Area Navigation Systems.
- B035—Class I Navigation in the U.S. Class A Airspace Using Area or Long-Range Navigation Systems.
- B036—Oceanic and Remote Continental Navigation Using Multiple Long-Range Navigation Systems (M-LRNS).
- B037—Operations in Central East Pacific (CEP) Airspace.
- B038—Operations in North Pacific (NOPAC) Airspace.
- B039—Operations in North Atlantic High Level Airspace (NAT HLA).
- B040—Operations in Areas of Magnetic Unreliability.
- B041—North Atlantic Operations (NAT/OPS) With Two-Engine Airplanes Under Part 121.
- B043—Special Fuel Reserves in International Operations.

- B044—Planned Redispatch or Rerelease En Route.
- B045—Extended Overwater Operations Using a Single Long-Range Communication System.
- B046—Operations in Reduced Vertical Separation Minimum (RVSM) Airspace.
- B054—Oceanic and Remote Airspace Navigation Using a Single Long-Range Navigation System.
- B055—North Polar Operations.
- B059—Canadian MNPS Airspace. (B059 is only issued to part 135 operators.)
- B342—Extended Operations (ETOPS) with Two-Engine Airplanes Under Part 121 or 135.
- B343—Performance-Based Contingency Fuel Requirements for Flag Operations.
- B344—Extended Operations in Passenger-Carrying Airplanes With More Than Two Engines, Under Part 121 or 135.

8) After the reference paragraphs are either deleted or added, any special requirement pertinent to an area of en route operation or to a particular aircraft operating within the area must be prepared and added to B050. The recommended method for accomplishing this is the use of B050 Table 2. In the Note Reference # column, notes should be consecutively and uniquely numbered. After each unique number in the Note Reference # column, the applicable limitations, provisions, or special requirements must be described in the Limitations, Provisions, and Special Requirements column. The note reference number must also be entered in the Note Reference # column in B050 Table 1 adjacent to each area of en route operation to which the note applies. Table 3-15 is an example of how special requirements can be annotated. For the purpose of illustration, the example presumes an operator is authorized to conduct operations under part 121.

Table 3-15. Example of Special Requirements Annotations for a Part 121 Operator

| Authorized Areas of En Route Operation | Reference Paragraphs | Note Reference # |
|--|--|-------------------------|
| Atlantic Ocean—WATRS: The North Atlantic Ocean west of the western boundary of NAT HLA to include the San Juan CTA/FIR and the Atlantic portion of the Miami Oceanic CTA | A056, B031, B032, B034, B036, B045, B046, B054, B342 | 3, 7 |

| Note Reference # | Limitations, Provisions, and Special Requirements |
|-------------------------|---|
| 3 | B777—CPDLC Operations for New York Oceanic, Gander, and Shanwick FIRs only. (Automatic Dependent Surveillance-Broadcast (ADS-B) OpSpec A153 may be required in certain geographic areas.) |
| 7 | ETOPS—B757-212 P/W 2037 engines only |

C. Listing and Explanation of Authorized Areas of En Route Operation.

The authorized areas of en route operations below are the standard selections from WebOPSS. The composition of each authorized area of operations is contained in the Authorized Areas Countries Listing Worldwide document located in the WebOPSS guidance area associated with B050. The optional paragraphs below may not include all paragraphs. The POI must consult with AFS-200 for applicability of nonstandard paragraphs in B050. The list below does not include certain Part A OpSpecs. The POI is responsible to ensure that any Part A paragraphs that reference B050 are listed in the Reference Paragraphs column of the applicable area of operation. Certain optional paragraphs will require consultation with one or more of the following: AFS-400 SAO specialist, dispatch inspector, or ETOPS specialist. The optional reference paragraphs that require consultation with a specialist will be identified by an asterisk (*). Examples include B044 (redispatch); B043 (special fuel reserves); B036 or B054 (initial oceanic and remote continental airspace navigation); B055 (North Polar operations); and B342 (ETOPS). Each area listed below contains a short explanation of the geographic area followed by a standard list of considerations for each area selected. The inspector should ensure that the required paragraphs are issued to the operator. The operator may require optional paragraphs depending on its complexity and type of operation.

1) Africa—Excluding Portions of Libya and Somalia as Stipulated by Either a Prohibitory NOTAM(s) or per SFAR 112 (Part 91, § 91.1603) and SFAR 107 (§ 91.1613), Respectively. Select this area of operation when an operator plans operations within the territory or airspace of the geographic area of Africa, except the Tripoli flight information region (FIR) and the territory and airspace of Somalia at altitudes below flight level (FL) 260.

- a) AFS-200 Approval: No.
- b) AFS-400 SAO Specialist Coordination: No.

c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.

d) Required Paragraphs: B031, B032 (required for parts 121, 125, and 135), and B450.

e) Optional Paragraphs: B032, B034, B043*, B044*, B046, B342*, and B343*.

NOTE: B036 is not required for all operations within Africa but, due to the unavailability of International Civil Aviation Organization (ICAO) standard Navigational Aids (NAVAID), could require special navigation approval. B342 and B343 require AFS-200 approval.

2) Africa—Including Portions of Libya as Stipulated by Either a Prohibitory NOTAM or per SFAR 112 (§ 91.1603). Select this area of operation when an operator plans operations within the Tripoli FIR. Operators must comply with either the applicable prohibitory NOTAM or SFAR 112.

a) AFS-200 Approval: Yes.

b) AFS-400 SAO Specialist Coordination: No.

c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.

d) Required Paragraphs: B031, B032 (required for parts 121, 125, and 135), and B450.

e) Optional Paragraphs: B032, B034, B043*, B044*, B046, and B343*.

NOTE: B036 is not required for operations within Libya. B343 requires AFS-200 approval.

3) Africa—Including the Territory and Airspace of Somalia as Stipulated by Either a Prohibitory NOTAM or per SFAR 107 (§ 91.1613). Select this area of operation when an operator plans operations within the territory or airspace of Somalia below FL 260. Operators must comply with either the applicable prohibitory NOTAM or SFAR 107.

a) AFS-200 Approval: Yes.

b) AFS-400 SAO Specialist Coordination: No.

c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.

d) Required Paragraphs: B031, B032 (required for parts 121, 125, and 135), and B450.

e) Optional Paragraphs: B032, B034, B043*, B044*, B046, and B343*.

NOTE: B036 is not required for operations within Somalia. B343 requires AFS-200 approval.

4) Asia—Excluding Portions of North Korea as Stipulated by Either a Prohibitory NOTAM or per SFAR 79 (§ 91.1615). Select this area of operation when an operator plans operations within the territory or airspace of the geographic area of Asia, except within the Pyongyang FIR.

- a) AFS-200 Approval: No.
- b) AFS-400 SAO Specialist Coordination: No.
- c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.
- d) Required Paragraphs: B031, B032 (required for parts 121, 125, and 135), and B450.
- e) Optional Paragraphs: B032, B034, B043*, B044*, B046, B342*, and B343*.

NOTE: RVSM in China (Metric) differs from ICAO standards. B342 and B343 require AFS-200 approval.

5) Asia—Including Portions of North Korea as Stipulated by Either a Prohibitory NOTAM or per SFAR 79 (§ 91.1615). Select this area of operation when an operator plans operations within the Pyongyang FIR. Operators must comply with either the applicable prohibitory NOTAM or SFAR 79.

- a) AFS-200 Approval: Yes.
- b) AFS-400 SAO Specialist Coordination: No.
- c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.
- d) Required Paragraphs: B031, B032 (required for parts 121, 125, and 135), and B450.
- e) Optional Paragraphs: B032, B034, B043*, B044*, B046, and B343*.

NOTE: B343 requires AFS-200 approval.

6) Atlantic Ocean—The Atlantic Ocean Islands/Nations. Select this area of operation when an operator plans operations within the territory or airspace of the islands and nations in the Atlantic Ocean bound in the north by 78° North latitude and to the south by 67° South latitude.

- a) AFS-200 Approval: No.
- b) AFS-400 SAO Specialist Coordination: No. (See the NOTE below.)
- c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.
- d) Required Paragraphs: B031, B032 (required for parts 121, 125, and 135), and B450.
- e) Optional Paragraphs: B032, B034, B039*, B043*, B044*, B046, and B343*.

NOTE: Selection of this area will require authorization of at least an additional Atlantic Ocean navigational area. The additional navigational area may require coordination with an AFS-400 SAO specialist. OpSpec B343 requires AFS-200 approval.

7) Atlantic Ocean—The North Atlantic Ocean Specified as “Blue Spruce Routes” in the Current Edition of ICAO NAT Doc 007, North Atlantic Operations and Airspace Manual. Select this area of operation when an operator plans operations within the airspace of the Blue Spruce Routes defined in ICAO NAT Doc 007.

- a) AFS-200 Approval: No.
- b) AFS-400 SAO Specialist Coordination: Yes.
- c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.
- d) Required Paragraphs: B031 and B032 (required for parts 121, 125, and 135).
- e) Optional Paragraphs: B032, B034, B036*, B039*, B041*, B043*, B044*, B046, B054*, B342*, and B343*.

NOTE: B039 is required unless the operator intends to operate at altitudes above or below NAT HLA. B342 and B343 require AFS-200 approval.

8) Atlantic Ocean—Atlantic Ocean at Flight Levels Above and Below NAT HLA Boundaries. Select this area of operation when an operator plans operations within the airspace of the Atlantic Ocean when the operator is not approved to operate in the exclusionary NAT HLA.

- a) AFS-200 Approval: No.
- b) AFS-400 SAO Specialist Coordination: Yes.
- c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.

d) Required Paragraphs: B031, B032 (required for parts 121, 125, and 135), and B036*.

e) Optional Paragraphs: B032, B034, B041*, B043*, B044*, B046, B342*, and B343*.

NOTE: B342 and B343 require AFS-200 approval.

9) Atlantic Ocean—Atlantic Ocean NAT HLA. Select this area of operation when an operator plans operations within the exclusionary NAT HLA.

a) AFS-200 Approval: No.

b) AFS-400 SAO Specialist Coordination: Yes.

c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.

d) Required Paragraphs: B031, B032 (required for parts 121, 125, and 135), B036*, B039*, and B046.

e) Optional Paragraphs: B034, B041, B043*, B044*, B342*, and B343*.

NOTE: B342 and B343 require AFS-200 approval.

10) Atlantic Ocean—Atlantic Ocean South of New York and Santa Maria Oceanic FIRs. Select this area of operation when an operator plans operations within the airspace south of the NAT HLA to the South Polar region (67° South).

a) AFS-200 Approval: No.

b) AFS-400 SAO Specialist Coordination: Yes.

c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.

d) Required Paragraphs: B031, B032 (required for parts 121, 125, and 135), and B036*.

e) Optional Paragraphs: B034, B041, B043*, B046, B342*, and B343*.

NOTE: B342 and B343 require AFS-200 approval.

11) Atlantic Ocean—WATRS: The North Atlantic Ocean West of the Western Boundary of the NAT HLA to Include the San Juan Control Area (CTA)/FIR and the Atlantic Portion of the Miami Oceanic CTA. Select this area of operation when an operator plans operations within the airspace as defined.

- a) AFS-200 Approval: No.
- b) AFS-400 SAO Specialist Coordination: Yes.
- c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.
- d) Required Paragraphs: B031 and B032 (required for parts 121, 125, and 135).
- e) Optional Paragraphs: B032, B034, B036, B043*, B044*, B045*, B046, B054*, B342*, and B343*.

NOTE: B342 and B343 require AFS-200 approval.

12) Australia and New Zealand. Select this area of operation when an operator plans operations within the territory or airspace of the geographic area of Australia and New Zealand.

- a) AFS-200 Approval: No.
- b) AFS-400 SAO Specialist Coordination: Yes. (See the NOTE below.)
- c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.
- d) Required Paragraphs: B031, B032 (required for parts 121, 125, and 135), and B450.
- e) Optional Paragraphs: B032, B034, B036*, B043*, B044*, B046, B342*, and B343*.

NOTE: For operations between Australia and New Zealand, the operator must select “Pacific Ocean—The Central and South Pacific Ocean.” The possibility of remote or oceanic operations in this area may require B036; therefore, AFS-400 SAO specialist coordination is required. B342 and B343 require AFS-200 approval.

13) Canada—Canadian Minimum Navigation Performance Specification Airspace (MNPS). Select this area of operation when an operator plans operations within the Canadian MNPS as defined in the Canadian Aeronautical Information Publication (AIP).

- a) AFS-200 Approval: No.
- b) AFS-400 SAO Specialist Coordination: Yes.
- c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.

d) Required Paragraphs: B031, B032 (required for parts 121, 125, and 135), B036*, and B059* (required for part 135).

e) Optional Paragraphs: A153, A354, A355, B032, B034, B040*, B043*, B044*, B046, B055*, B342*, B343*, and B344*.

NOTE: Operations north of 78° North latitude require selection of the “Polar Areas—North Polar Area North of 78° North Latitude to the North Pole” area. Operations north of 68° North latitude may require AMU authorization. B342, B343, and B344 require AFS-200 approval.

14) Canada—Excluding Canadian MNPS. Select this area of operation when an operator plans operations within the territory or airspace of the geographic area defined in the Canadian AIP as the Southern Domestic Airspace.

a) AFS-200 Approval: No.

b) AFS-400 SAO Specialist Coordination: No.

c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.

d) Required Paragraphs: B031 and B032 (required for parts 121, 125, and 135).

e) Optional Paragraphs: B032, B034, B036*, B043*, B044*, B046, B342*, and B343*.

NOTE: B342 and B343 require AFS-200 approval.

15) Caribbean Sea—Including the Islands/Nations and Including the Havana FIR. Select this area of operation when an operator plans operations within the territory or airspace of the islands and nations in the Caribbean Sea and the Havana FIR.

a) AFS-200 Approval: No.

b) AFS-400 SAO Specialist Coordination: No. (See the NOTE below.)

c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.

d) Required Paragraphs: B031, B032 (required for parts 121, 125, and 135), and B450.

e) Optional Paragraphs: B032, B034, B036*, B043*, B044*, B046, and B054*.

NOTE: Initial oceanic and remote continental airspace navigation (B036 or B054) requests require coordination with an AFS-400 SAO specialist.

16) Caribbean Sea—Including the Islands/Nations, but Excluding the Havana FIR. Select this area of operation when an operator plans operations within the territory or airspace of the islands and nations in the Caribbean Sea, excluding approval for operations within the territory or airspace of Cuba and the Havana FIR.

- a) AFS-200 Approval: No.
- b) AFS-400 SAO Specialist Coordination: No. (See the NOTE below.)
- c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.
- d) Required Paragraphs: B031, B032 (required for parts 121, 125, and 135), and B450.
- e) Optional Paragraphs: B032, B034, B036*, B043*, B044*, B046, and B054*.

NOTE: Initial oceanic and remote continental airspace navigation (B036 or B054) requests require coordination with an AFS-400 SAO specialist.

17) Central America. Select this area of operation when an operator plans operations within the territory or airspace of the geographic area of Central America.

- a) AFS-200 Approval: No.
- b) AFS-400 SAO Specialist Coordination: No.
- c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.
- d) Required Paragraphs: B031, B032 (required for parts 121, 125, and 135), and B450.
- e) Optional Paragraphs: B032, B034, B043*, B044*, B046, and B343*.

NOTE: B343 requires AFS-200 approval.

18) China. Select this area of operation when an operator plans operations within the territory or airspace of the geographic area of the People's Republic of China, Hong Kong, Macau, and Taiwan.

- a) AFS-200 Approval: No.
- b) AFS-400 SAO Specialist Coordination: Yes.
- c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.

d) Required Paragraphs: B031, B032 (required for parts 121, 125, and 135), and B450.

e) Optional Paragraphs: B032, B034, B036*, B043*, B044*, B046, and B343*.

NOTE: RVSM (B046) for the People's Republic of China authorization requires coordination with an AFS-400 SAO specialist. B343 requires AFS-200 approval.

19) Europe and the Mediterranean—Excluding Portions of Ukraine as Stipulated by Either a Prohibitory NOTAM or per SFAR 113 (§ 91.1607). Select this area of operation when an operator plans operations within the territory or airspace of the geographic area of Europe and the Mediterranean Sea excluding the Simferopol FIR and the Dnipropetrovsk FIR.

a) AFS-200 Approval: No.

b) AFS-400 SAO Specialist Coordination: No.

c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.

d) Required Paragraphs: B031, B032 (required for parts 121, 125, and 135), B036*, and B450.

e) Optional Paragraphs: B034, B043*, B044*, B046, and B343*.

NOTE: B343 requires AFS-200 approval.

20) Europe and the Mediterranean—Including Portions of Ukraine as Stipulated by Either a Prohibitory NOTAM or per SFAR 113 (§ 91.1607). Select this area of operation when an operator plans operations within the territory or airspace of the geographic area of Europe and the Mediterranean Sea including the Simferopol FIR and the Dnipropetrovsk FIR. Operators must comply with either the applicable prohibitory NOTAM or SFAR 113.

a) AFS-200 Approval: Yes.

b) AFS-400 SAO Specialist Coordination: No.

c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.

d) Required Paragraphs: B031, B032 (required for parts 121, 125, and 135), B036*, and B450.

e) Optional Paragraphs: B034, B043*, B044*, B046, and B343*.

NOTE: B343 requires AFS-200 approval.

21) Gulf of Mexico. Select this area of operation when an operator plans operations within the airspace of the Gulf of Mexico.

- a) AFS-200 Approval: No.
- b) AFS-400 SAO Specialist Coordination: No. (See the NOTE below.)
- c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.
- d) Required Paragraphs: B031 and B032 (required for parts 121, 125, and 135).
- e) Optional Paragraphs: B032, B034, B036*, B043*, B044*, B046, B054*, and B343*.

NOTE: B036 or B054 may be required based on operator's complexity. Consult an AFS-400 SAO specialist for initial oceanic and remote continental airspace navigation authorization. B343 requires AFS-200 approval.

22) Indian Ocean—Including the Islands/Nations. Select this area of operation when an operator plans operations within the territory or airspace of the islands and nations in the Indian Ocean to 67° South latitude, including the Bay of Bengal and the Arabian Sea.

- a) AFS-200 Approval: No.
- b) AFS-400 SAO Specialist Coordination: No.
- c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.
- d) Required Paragraphs: B031, B032 (required for parts 121, 125, and 135), B036*, and B450.
- e) Optional Paragraphs: B034, B043*, B044*, B046, B342*, and B343*.

NOTE: B342 and B343 require AFS-200 approval.

23) Mexico. Select this area of operation when an operator plans operations within the territory or airspace of the geographic area of Mexico.

- a) AFS-200 Approval: No.
- b) AFS-400 SAO Specialist Coordination: No.
- c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.

d) Required Paragraphs: B031, B032 (required for parts 121, 125, and 135), and B450.

e) Optional Paragraphs: B032, B034, B043*, B044*, B046, and B343*.

NOTE: B343 requires AFS-200 approval.

24) Middle East—Excluding Portions of Iraq, Syria, and Yemen as Stipulated by Either a Prohibitory NOTAM or per SFAR 77 (§ 91.1605), SFAR 114 (§ 91.1609), and SFAR 115 (§ 91.1611), Respectively. Select this area of operation when an operator plans operations within the territory or airspace of the geographic area of the Middle East, except for the Baghdad FIR, the Damascus FIR, and a select area of the Sanaa FIR.

a) AFS-200 Approval: No.

b) AFS-400 SAO Specialist Coordination: Yes. (See the NOTE below.)

c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.

d) Required Paragraphs: B031, B032 (required for parts 121, 125, and 135), and B450.

e) Optional Paragraphs: B032, B034, B036*, B043*, B044*, B046, and B343*.

NOTE: B036 is required for operations over Afghanistan. B343 requires AFS-200 approval.

25) Middle East—Including Portions of Iraq as Stipulated by Either a Prohibitory NOTAM or per SFAR 77 (§ 91.1605). Select this area of operation when an operator plans operations within the Baghdad FIR. Operators must comply with either the applicable prohibitory NOTAM or SFAR 77.

a) AFS-200 Approval: Yes.

b) AFS-400 SAO Specialist Coordination: No.

c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.

d) Required Paragraphs: B031, B032 (required for parts 121, 125, and 135), and B450.

e) Optional Paragraphs: B032, B034, B036*, B043*, B044*, B046, and B343*.

NOTE: B343 requires AFS-200 approval.

26) Middle East—Including Portions of Syria as Stipulated by Either a Prohibitory NOTAM or per SFAR 114 (§ 91.1609). Select this area of operation when an operator plans operations within the Damascus FIR. Operators must comply with either the applicable prohibitory NOTAM or SFAR 114.

- a) AFS-200 Approval: Yes.
- b) AFS-400 SAO Specialist Coordination: No.
- c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.
- d) Required Paragraphs: B031, B032 (required for parts 121, 125, and 135), and B450.
- e) Optional Paragraphs: B032, B034, B036*, B043*, B044*, B046, and B343*.

NOTE: B343 requires AFS-200 approval.

27) Middle East—Including Portions of Yemen as Stipulated by Either a Prohibitory NOTAM or per SFAR 115 (§ 91.1611). Select this area of operation when an operator plans operations within a select area of the Sanaa FIR as defined in SFAR 115. Operators must comply with either the applicable prohibitory NOTAM or SFAR 115.

- a) AFS-200 Approval: Yes.
- b) AFS-400 SAO Specialist Coordination: No.
- c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.
- d) Required Paragraphs: B031, B032 (required for parts 121, 125, and 135), and B450.
- e) Optional Paragraphs: B032, B034, B036*, B043*, B044*, B046, and B343*.

NOTE: B343 requires AFS-200 approval.

28) Pacific Ocean—The North Pacific Ocean. Select this area of operation when an operator plans operations within the airspace north of 40° North latitude, bound in the west by Japan's Fukuoka FIR (inclusive), bound in the east by the North American coastline to include the Anchorage Arctic CTA/FIR, and the NOPAC Air Traffic Services (ATS) routes and the Pacific Organized Track System (PACOTS).

- a) AFS-200 Approval: No.
- b) AFS-400 SAO Specialist Coordination: Yes. (See the NOTE below.)

c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.

d) Required Paragraphs: B031, B032 (required for parts 121, 125, and 135), B036*, B038*, and B450.

e) Optional Paragraphs: B032, B034, B043*, B044*, B046, B342*, B343*, and B344*.

NOTE: Oceanic and remote continental airspace approval requires consultation with an AFS-400 SAO specialist. B342, B343, and B344 require AFS-200 approval.

29) Pacific Ocean—The Central and South Pacific Ocean. Select this area of operation when an operator plans operations within the airspace of the Central and South Pacific Ocean south of 40° North latitude to 67° South latitude, excluding the Fukuoka FIR (Japan's FIR).

a) AFS-200 Approval: No.

b) AFS-400 SAO Specialist Coordination: Yes. (See the NOTE below.)

c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.

d) Required Paragraphs: B031, B032 (required for parts 121, 125, and 135), B036*, and B037*.

e) Optional Paragraphs: B032, B034, B043*, B044*, B046, B342*, B343*, and B344*.

NOTE: Oceanic and remote continental airspace approval requires consultation with an AFS-400 SAO specialist. B342, B343, and B344 require AFS-200 approval.

30) Pacific Ocean—The Pacific Ocean Islands/Nations. Select this area of operation when an operator plans operations within the territory or airspace of the islands and nations in the Pacific Ocean.

a) AFS-200 Approval: No.

b) AFS-400 SAO Specialist Coordination: No. (See the NOTE below.)

c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.

d) Required Paragraphs: B031, B032 (required for parts 121, 125, and 135), and B450.

e) Optional Paragraphs: B032, B034, B043*, B044*, B046, B342*, and B343*.

NOTE: Selection of this area will require either the “Pacific Ocean—The North Pacific Ocean” or the “Pacific Ocean—The Central and South Pacific Ocean” navigational area authorization. An oceanic and remote continental airspace navigational area requires coordination with an AFS-400 SAO specialist. State of Hawaii operations are a separate area of authorization. B343 requires AFS-200 approval.

31) Polar Areas—South Polar Area 67° South Latitude to the South Pole Inclusive. Select this area of operation when an operator plans operations within the airspace of the South Polar area 67° South latitude to the South Pole.

a) AFS-200 Approval: Yes. (See the NOTE below.)

b) AFS-400 SAO Specialist Coordination: Yes.

c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.

d) Required Paragraphs: B031, B032 (required for parts 121, 125, and 135), B036*, B040*, and B450.

e) Optional Paragraphs: B034, B044*, B342*, and B344*.

NOTE: Operators requesting South Polar area approval must give 90-day advanced notification to AFS-200 and require coordination with the AFS-400 SAO specialist. B342 and B344 require AFS-200 approval.

32) Polar Areas—North Polar Area North of 78° North Latitude to the North Pole. Select this area of operation when an operator is planning operations within the airspace above 78° North latitude to the North Pole.

a) AFS-200 Approval: No.

b) AFS-400 SAO Specialist Coordination: Yes.

c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.

d) Required Paragraphs: B031, B032 (required for parts 121, 125, and 135), B036*, B040*, B055*, and B450.

e) Optional Paragraphs: B032, B034, B039, B043*, B044*, B046, B342*, B343*, and B344*.

NOTE: Approval for operations in the Canadian MNPS may also be required. B342, B343, and B344 require AFS-200 approval.

33) Russia, Mongolia, and the Commonwealth of Independent States (CIS) Nations. Select this area of operation when an operator is planning operations within the territory or airspace of the geographic area of Russia, Mongolia, and the other CIS nations, including the ocean areas north of the Russian coastline defined as south of 78° North latitude bound in the east by the intersection of the Arctic Circle and the international date line (IDL) (approximately 170°/180° meridian), and bound in the west by 30° E longitude.

- a) AFS-200 Approval: No.
- b) AFS-400 SAO Specialist Coordination: No. (See second NOTE below.)
- c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.
- d) Required Paragraphs: B031, B032 (required for parts 121, 125, and 135), and B450.
- e) Optional Paragraphs: B032, B034, B036*, B043*, B044*, B046, B342*, B343*, and B344*.

NOTE: B342, B343, and B344 require AFS-200 approval.

NOTE: Per Table 3-15B, ETOPS Validation Areas and Corresponding B050 Authorized Areas, validation flights are required.

34) South America. Select this area of operation when planning operations within the territory or airspace of the geographic area of South America.

- a) AFS-200 Approval: No.
- b) AFS-400 SAO Specialist Coordination: No.
- c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.
- d) Required Paragraphs: B031, B032 (required for part 121, 125, and 135), and B450.
- e) Optional Paragraphs: B032, B034, B036*, B043*, B044*, B046, B342*, and B343*.

NOTE: B342 and B343 require AFS-200 approval.

35) USA—The 48 Contiguous United States and the District of Columbia. Select this area of operation when an operator is planning operations within the territory or airspace of the 48 contiguous United States and the District of Columbia.

- a) AFS-200 Approval: No.
- b) AFS-400 SAO Specialist Coordination: No.
- c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.
- d) Required Paragraphs: B031 and B032 (required for parts 121, 125, and 135).
- e) Optional Paragraphs: B032, B034, B035, and B046.

36) USA—The State of Alaska. Select this area of operation when an operator is planning operations within the territory or airspace of the State of Alaska.

- a) AFS-200 Approval: No.
- b) AFS-400 SAO Specialist Coordination: No.
- c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.
- d) Required Paragraphs: B031 and B032 (required for parts 121, 125, and 135).
- e) Optional Paragraphs: B032, B034, B035, B036, B046, B342, B343, and B344.

NOTE: B342, B343, and B344 require AFS-200 approval.

37) USA—The State of Hawaii. Select this area of operation when an operator is planning operations within the territory or airspace of the State of Hawaii.

- a) AFS-200 Approval: No.
- b) AFS-400 SAO Specialist Coordination: No.
- c) Applicable 14 CFR Parts: 91K, 121, 121/135, 125 (including part 125 LODA holders), and 135.
- d) Required Paragraphs: B031 and B032 (required for parts 121, 125, and 135).
- e) Optional Paragraphs: B032, B034, B035, B036*, and B046.

D. ETOPS Areas of Operation/B050 Interface. Certain geographic areas require ETOPS authority based on the availability of adequate airports. Most ETOPS authorizations require validation testing. For ETOPS validation requirements, see Volume 3, Chapter 29, Section 8 and Volume 4, Chapter 6, Section 2. Table 3-15B lists the ETOPS areas of operations and correlates them to the authorized areas in B050. Use the table below to determine ETOPS validation requirements for a specific ETOPS area of operation with respect to an OpSpec B050 authorized area of en route operations.

Table 3-15B. ETOPS Validation Areas and Corresponding B050 Authorized Areas

| ETOPS Area of Operations | B050 Authorized Area(s) | Validation Flights Required | Comments |
|---------------------------------|---|------------------------------------|--|
| North Polar | Polar Areas—North Polar Area north of 78° North latitude to the North Pole | Yes | None |
| South Polar | Polar Areas—South Polar Area 67° South latitude to the South Pole inclusive | Yes | None |
| North Atlantic | Atlantic Ocean—The North Atlantic Ocean specified as “Special Contingency Routings” in the current edition of ICAO NAT Doc 007. Atlantic Ocean—Atlantic Ocean at flight levels above and below NAT HLA boundaries Atlantic Ocean—Atlantic Ocean NAT HLA | Yes | None |
| WATRS | Atlantic Ocean—WATRS: The North Atlantic Ocean west of the western boundary of the NAT HLA to include the San Juan CTA/FIR and the Atlantic portion of the Miami Oceanic CTA | Yes | Required for operators whose ETOPS approval is limited to 75-minute ETOPS authority. |
| South Atlantic | Atlantic Ocean—Atlantic Ocean south of New York and Santa Maria Oceanic FIRs | Yes | None |
| North Pacific | Pacific Ocean—The North Pacific Ocean north of 40° North latitude bound in the east by the North American coastline to include the Anchorage Arctic CTA/FIR, and the NOPAC ATS routes and the PACOTS | Yes | None |
| Central and South Pacific | Pacific Ocean—The Central and South Pacific Ocean excluding the Fukuoka FIR (Japan’s FIR) | Yes | None |
| Indian Ocean | Indian Ocean—Including the islands/nations | Yes | None |
| Russia, Far East | Russia, Mongolia, and the CIS Nations | Yes | None |
| South China Sea | Asia—Excluding portions of North Korea | Yes | None |

| ETOPS Area of Operations | B050 Authorized Area(s) | Validation Flights Required | Comments |
|---------------------------------|--|------------------------------------|--|
| Africa | Africa—Excluding portions of Libya and Somalia | May be required | Based upon routing and airspace requirements. Consult AFS-200. |
| Alaska | USA—The State of Alaska | May be required | Based upon routing and airspace requirements. Consult AFS-200. |
| Australia | Australia and New Zealand | May be required | Based upon routing and airspace requirements. Consult AFS-200. |
| Northern Canada | Canada—Excluding Canadian MNPS Canada—Canadian MNPS | May be required | Based upon routing and airspace requirements. Consult AFS-200. |
| South America | South America | May be required | Based upon routing and airspace requirements. Consult AFS-200. |

E. Adding Areas With Limited FAA Oversight. When a certificate holder submits a request to add a location to OpSpec B050 where limited FAA surveillance and oversight will be possible, principal inspectors (PI) evaluate the systems the certificate holder uses to produce and manage aviation products and services that ensure safety and regulatory compliance before adding the new location. This evaluation should include a comparison of those systems to the basic characteristics of all effective safety systems. These characteristics are embodied in the following attributes:

- Well-defined and well-documented procedures;
- Established risk controls over key procedural steps;
- Process measures to permit effective management;
- Well-defined interfaces; and
- Clear responsibility and authority.

1) Operational control systems vary with the kinds of operations the operator is authorized to conduct; the complexity of the operations; the means of communication; and the people who are involved in preparing for and conducting flights under the operator's system. These functions form the basis for an operational control system that includes the functions of aircraft release, flight locating, and flight following, as applicable. Those functions alone will not satisfy the overall goal of establishing and maintaining an operational control system. PIs must evaluate the operator's operational control system to ensure that the operator complies with the applicable U.S. and foreign regulations. The system must be effective and provide for an adequate level of safety in the actual operations.

2) Each PI will ensure that it is possible to complete work program items at the local or remotely located base of operations, or use the steps to deviate from the work program (refer to the current edition of FAA Order 1800.56, National Flight Standards Work Program Guidelines, Appendix A, Work Program Activities). Deviation may include coordination with the operator to relocate aircraft to a suitable location for specific oversight and inspections if operations are authorized and conducted in a location that is not safe for the inspector to travel. This may also include a provision for the operator to establish an adequate level of safety oversight to ensure continued compliance with the regulations and company procedures, etc. If the certificate-holding district office (CHDO) cannot perform onsite surveillance or establish a method to determine an adequate level of safety oversight, then the CHDO should coordinate with AFS-200 to explore additional options.

NOTE: Only the certificate holder is responsible to comply with 14 CFR and establish and maintain processes, procedures, and management oversight adequate to ensure regulatory compliance and ultimately safe operations.

3) Certain conditions may preclude the CHDO from exercising an adequate level of oversight and will require the CHDO, through coordination with AFS-200, to develop and include special conditions delineated in the OpSpec. Any nonstandard OpSpec language must be approved by AFS-200 before issuance. Following the special conditions, a statement will be included that directs that these special conditions must continue to be met for the authorization to remain in effect. These special conditions would then be clearly communicated to the operator before signing the OpSpec.

F. Operations in Areas Outside the United States Where U.S. Civil Aviation Operations Are Prohibited by SFAR or NOTAM. The FAA prohibits U.S. air carriers; U.S. commercial operators; persons exercising the privileges of an Airman Certificate issued by the FAA, except when such persons are operating U.S.-registered aircraft for a foreign air carrier; and operators of U.S.-registered civil aircraft, except where the operator of such aircraft is a foreign air carrier, from operating in certain areas of airspace outside the United States that are managed by other countries. When determined necessary by the Administrator, these flight prohibitions are issued to U.S. civil aviation operating in airspace managed by other countries to address hazards such as situations of conflict, geopolitical tensions, or militant/extremist activity.

1) The airspace in which U.S. civil aviation is prohibited from operating may be described in terms of all or a portion of the territory and airspace of a foreign country, or all or a portion of one or more FIR(s). When U.S. civil aviation is prohibited from operating in only a specific portion of the territory and airspace of a foreign country or FIR, lines of latitude or longitude or specific waypoints and their geographic coordinates may be used to describe the boundaries of the flight prohibition. In some cases, depending upon the nature of the hazard, a flight prohibition may allow overflights at or above a certain flight level.

2) FAA flight prohibition NOTAMs for U.S. civil aviation operations in airspace managed by other countries can be found in the NOTAM system by searching for “KICZ” NOTAM identifiers. FAA flight prohibition SFARs for U.S. civil aviation operations in airspace managed by other countries can be found in part 91 subpart M. The NOTAM system, the CFR, and the Federal Register (FR) are the official sources. For convenience, shortly after their official

publication, flight prohibition SFARs and prohibitory NOTAMs can also be found on the FAA's Prohibitions, Restrictions, and Notices web page at https://www.faa.gov/air_traffic/publications/us_restrictions/.

NOTE: The link provided is an unofficial source meant for ease of use but might not be up to date at any particular moment in time. Thus, affected parties and FAA personnel should cross-reference official sources to ensure compliance with the most current flight prohibitions.

3) The FAA may authorize U.S. civil aviation operations that would otherwise be prohibited by a flight prohibition NOTAM or SFAR by granting either a *request for approval* or a *petition for exemption*. In either case, the requirements cited for operations conducted in areas of limited FAA oversight (see subparagraph E) apply, in addition to requirements of the approval or exemption process.

a) The Associate Administrator for Aviation Safety (AVS-1) grants or denies requests for approval. An approval may only be requested directly by a U.S. Federal Government department, agency, or instrumentality on behalf of an operator or airmen that will be conducting civil flight operations under a contract, grant, or cooperative agreement with that U.S. Federal Government entity (or those under a subcontract with that U.S. Government (USG) entity's prime contractor). Such requests may involve passenger and/or cargo transportation and/or other operations in areas to which a flight prohibition SFAR or NOTAM applies.

1. For all FAA flight prohibition SFARs, the process for requesting approval to operate under a particular SFAR is found in the preamble of the FR Notice containing that particular SFAR or in a subsequent FR Notice amending or extending that SFAR. The general outline of the approval process is very similar for all SFARs. The process for applying for an approval to allow operations in areas under a prohibitory NOTAM follows the same guidelines as that which is used for SFARs.

2. Generally, the process for requesting an approval requires that a "senior official" (as described in the preamble of the rule) who represents the requesting USG entity and meets the criteria described in the relevant FR Notice send a letter to AVS-1 with the entity's request. Electronic submissions are acceptable, and the submitter should contact AFS-200 at 202-267-8166 to obtain the appropriate email address. All requests for approvals to FAA flight prohibition NOTAMs and SFARs are processed by AFS-200 in coordination with other offices in and outside of the Flight Standards Service (FS). If classified or highly sensitive information will be submitted as part of the request for approval, AFS-200 should be contacted for instructions regarding a secure means of transmission.

3. Approval requests received from anyone other than the appropriate senior official, requesting on behalf of a USG entity, will neither be accepted nor processed.

4. Unless otherwise specified in the relevant FR Notice, the USG entity's request letter must include, to the extent known:

- The proposed operation, including the nature of the mission being supported;
- The service to be provided by the persons covered by the prohibitory NOTAM or SFAR;
- To the extent known, the specific location(s) in the area covered by the prohibitory NOTAM or SFAR in which the proposed flight(s) would be conducted, including, but not limited to, the flightpath and altitude of the aircraft while it is operating in the area covered by the SFAR, and the airports, airfields, and/or landing zones at which the aircraft will take off and land; and
- The method by which the department, agency, or instrumentality will provide, or how the operator will otherwise obtain, current threat information along with an explanation of how the operator will integrate this information into all phases of the proposed operations (e.g., the pre-mission planning and briefing, in-flight, and postflight phases).

5. If the request for approval is granted, AVS-1 will send an approval letter to the requesting USG entity to inform it of the approval and of any associated conditions. AFS-200 will coordinate with the operator's POI to obtain a copy of a Waiver of Claims and Agreement to Indemnify and Hold Harmless the United States of America, which must be signed by the operator and returned to AFS-200 before the POI will be authorized to issue the appropriate OpSpec/MSpec/LOA.

NOTE: Depending upon the conditions of the particular approval, there may be additional steps that the operator will need to complete before the POI will be authorized to issue the appropriate OpSpec/MSpec/LOA.

6. Lastly, AFS-200 will advise the operator's POI to amend its OpSpec/MSpec/LOA B050 to add the authorized area and, if necessary, to issue an OpSpec/MSpec/LOA specific to the operation(s) covered by the approval. No flights may operate under the approval until the appropriate OpSpec/MSpec/LOA has been issued and any other steps required in the approval are satisfactorily completed.

b) The Executive Director, Flight Standards Service (AFX-1) grants or denies petitions for exemption, deviations, and other flight authorizations for operations otherwise prohibited under flight prohibition SFARs or NOTAMs. Petitions for exemption are made by the operators themselves and must comply with 14 CFR part 11. A petition for exemption must be submitted by the operator to the Federal Docket using one of the methods described in part 11, § 11.63(a). All petitions for exemption from FAA flight prohibition NOTAMs and SFARs are processed by AFS-200 in coordination with other offices in and outside of the FS. It is sometimes necessary for an operator to submit sensitive (including proprietary) information to the FAA in support of its petition for exemption. Petitioners should be advised not to submit sensitive and/or proprietary information to the public docket. AFS-200 can provide alternative means of submitting such information to the FAA so an operator can openly and securely describe their plans so their exemption petition can be fully understood.

1. The granting of an exemption requires exceptional circumstances beyond those stated in the approval process described above. In addition to the information required by § 11.81, the requesting operator must include (at a minimum):

- The proposed operation, including the nature of the operation;
- The service to be provided by the persons covered by the prohibitory NOTAM or SFAR;
- The specific location(s) in the area covered by the prohibitory NOTAM or SFAR where the proposed operation(s) will be conducted, including, but not limited to, the flightpath and altitude of the aircraft while it is operating in the area covered by the prohibitory NOTAM or SFAR and the airports, airfields, and/or landing zones at which the aircraft will take off and land;
- The method by which the operator will obtain current threat information, and an explanation of how the operator will integrate this information into all phases of its proposed operations (e.g., the pre-mission planning and briefing, in-flight, and postflight phases); and
- The plans and procedures that the operator will use to minimize the risks, identified in the Background section of the relevant SFAR, to the proposed operations, so that granting the exemption would not adversely affect safety or would provide a level of safety at least equal to that provided by the relevant SFAR. The FAA has found comprehensive, organized plans and procedures of this nature to be helpful in facilitating the agency's safety evaluation of petitions for exemption from flight prohibition SFARs.

2. A petition for exemption should also include information that helps the FAA fully understand the scope and nature of the proposed operation(s). Examples of potentially helpful information include:

- The person/office within the organization that has the authority to allow, postpone, or cancel specific flights;
- The specific aircraft which would be used for the operations along with any unique capabilities (e.g., communications equipment available or flight endurance);
- How flights would be tracked while operating in the area subject to FAA flight prohibition NOTAM or SFAR (i.e., flight following);
- The number of and functions/rationale for carriage of persons that would be aboard an aircraft during each flight;
- The frequency and means in which flightcrews will be briefed regarding threats to their security prior to and during each flight operation flown under the exemption;
- Any special training to be afforded to flightcrews participating in the proposed operations;

- How flightcrews will report safety and security incidents that occur during and/or after a mission; and
- Search and rescue and/or other emergency contingency plans.

3. The FAA will publish the grant (or denial) of the exemption in the Federal Docket in which it will describe the petition, how the petitioner supported its request, the FAA's analysis, and, if the exemption is granted, any conditions and limitations to which the operator must adhere when operating under the exemption, and the date on which the exemption will expire, unless sooner superseded or rescinded. No sensitive and/or proprietary information will be included in the grant or denial of exemption.

4. AFS-200 will send the operator a Waiver of Claims and Agreement to Indemnify and Hold Harmless the United States of America, which must be signed by the operator and returned to AFS-200 before the POI will be authorized to issue or amend OpSpec/MSpec/LOA A005 adding the grant of exemption. (This OpSpec does not apply to part 91 operators.) Also, depending upon the conditions of the particular exemption, there may be additional steps that the operator will need to complete before the POI will be authorized to include the grant of exemption in an operator's OpSpec/MSpec/LOA A005.

5. Lastly, AFS-200 will advise the operator's POI to amend its OpSpec/MSpec/LOA B050 to add the authorized area. No flights may operate under the grant of exemption until OpSpec/MSpec/LOA A005 has been issued or amended to include the grant of exemption, OpSpec/MSpec/LOA B050 has been amended to add the authorized area, and any other steps required per the specific grant of exemption are satisfactorily completed. The POI should ensure that the exemption number is included in the reference notes on the list of authorized areas.

4) Questions about the approval or exemption process for FAA flight prohibitions in airspace managed by other countries should be addressed to AFS-200, which can be reached by phone at 202-267-8166.

OPSPEC B051—PART 121 VISUAL FLIGHT RULES LIMITATIONS AND PROVISIONS. (TBD).

OPSPEC B052. TBD.

OPSPEC B053. TBD.

OPSPEC/MSPEC/LOA B054—OCEANIC AND REMOTE AIRSPACE NAVIGATION USING A SINGLE LONG-RANGE NAVIGATION SYSTEM.

A. Purpose. OpSpec/MSpec/LOA B054 is issued to authorize oceanic and remote airspace navigation (hereafter referred to as "oceanic and remote" navigation), as well as Required Navigation Performance (RNP) 10, in airplanes equipped with only a single long-range navigation system (LRNS). RNP 10 operations under B054 are limited to oceanic airspace where any gaps in air traffic control (ATC) surveillance of, and direct communications with, aircraft are acceptably small. The term "Class II" navigation has been replaced with "oceanic and remote airspace navigation," but the parameters which defined "Class II" remain unchanged. The single

LRNS associated with the B054 authorization is expected to meet the equipment requirements related to the RNP 10 navigation specification (NavSpec). An operator may still be eligible for B054 in the event that their LRNS is not RNP 10-compliant. Inspectors should follow the procedures in Volume 3, Chapter 18, Section 2, paragraph 3-713, Procedures for Requesting Nonstandard OpSpec/MSpec/LOA/TSpec Authorizations and Nonstandard Text, to request concurrence from the Flight Technologies and Procedures Division (AFS-400), with an appropriate recommendation from the Regional NextGen Branch (AXX-220) Special Areas of Operations (SAO) specialist, or the International Field Office Management Branch (AFS-54) as applicable, for nonstandard issuance of B054.

B. Authority.

1) Authority for extended overwater operations in airplanes with less than two LRNSs is provided, for applicable operators, in 14 CFR part 91, § 91.511, part 121, § 121.351, part 125, § 125.203, and part 135, § 135.165.

2) Section 91.511 (applicable to subpart 91F: large airplanes, turbo-jet powered multiengine airplanes, and fractional ownership operations, subpart K) establishes the general limitations on overwater operations with fewer than two LRNSs and establishes an exception from those limitations for operations in the West Atlantic, Caribbean, and Gulf of Mexico. No further exceptions are provided for in § 91.511; hence, operations elsewhere are constrained by the operator's capability to comply with the limitations in § 91.511. Therefore, both the B054 LOA and MSpec do not list geographic coordinates of applicability but rather make reference to the § 91.511 limitations.

3) Based upon the authority granted to the Administrator in §§ 121.351, 125.203, and 135.165 to approve operations with a single LRNS "in certain geographic areas," B054 provides the dimensions of the airspace applicable to operations performed under parts 121, 125, and 135.

C. Applicability. OpSpec/MSpec/LOA B054 applies to operations performed under parts 91, 91K, 121, 125, and 135. Part 91 operators do not require authorization to fly in oceanic and remote airspace (though they do need authorization to fly in North Atlantic High Level Airspace (NAT HLA), via LOA B039). Accordingly, they receive LOA B054 only to authorize RNP 10 operations when equipped with a single LRNS.

D. Requirements.

1) Operators must have installed an LRNS that is approved for use in instrument flight rules (IFR) as a primary means of navigation. The operator's Airplane Flight Manual (AFM) should include a statement indicating the airplane's navigation system meets this criteria. The operator's airplane and operating procedures must also meet the requirements for RNP 10 established in the current edition of Advisory Circular (AC) 90-105, Approval Guidance for RNP Operations and Barometric Vertical Navigation in the U.S. National Airspace System and in Oceanic and Remote Continental Airspace. Qualification for RNP 10 on the basis of a single LRNS requires the airplane be equipped with an LRNS which determines airplane position either by Global Positioning System (GPS) or inertial navigation.

2) Operators performing RNP 10 operations in airplanes whereby oceanic and remote position is determined solely by GPS must use a fault detection and exclusion (FDE) prediction program. This prediction program is used during flight planning to determine if any gaps in FDE coverage apply to the planned route and expected duration of the flight. The maximum allowable predicted gap in FDE coverage for operations requiring RNP 10 is 34 minutes. AC 90-105 provides further information.

3) Operators must document the operating procedures put into place, as well as the training provided to flightcrew members and those personnel authorized to exercise operational control (i.e., dispatchers, flight followers, and management personnel) to properly plan for and operate flights within the airspace, and observe the limitations prescribed in B054. The operating procedures and training must address responses to a loss of long-range navigation capability. The operator's oceanic and remote operating procedures and training should take into consideration the guidance and recommended practices provided in the current edition of AC 91-70, Oceanic and Remote Airspace Operations. This AC provides extensive cross-references to information important for proper planning and execution of flights in oceanic and remote airspace, in particular practices to prevent or otherwise detect and mitigate navigation errors due to operational mistakes or equipment malfunction. The oceanic checklists contained in that AC are derived from International Civil Aviation Organization (ICAO) guidance which represents internationally accepted best practices for oceanic operations. The procedures used by the operator applying for B054 should be scrutinized against the procedures and practices presented in AC 91-70. In addition, AC 90-105 provides a list of RNP-related topics with which pilots planning RNP operations are expected to be familiar.

4) B054 identifies specific, limited areas of operation where operators may indicate RNP 10 capability in their ATC flight plan. Those areas are a subset of that airspace authorized for oceanic and remote operations with a single LRNS. Informing ATC of RNP 10 capability is generally done in accordance with guidance in the Aeronautical Information Manual (AIM), via capability descriptor "A1" under the "PBN" heading in Item 18 of the ATC flight plan. If planning to operate completely outside the limited areas identified in B054, or if the initial oceanic segment of the flight is outside those areas, the operator must not indicate RNP 10 capability on the flight plan. In the latter scenario, the flightcrew may inform oceanic ATC via voice of the aircraft's RNP 10 capability when approaching airspace for which B054 has authorized indication of RNP 10 in the flight plan. Conversely, if the flightcrew declares RNP 10 capability on their ATC flight plan and subsequently transits into oceanic airspace where indication of RNP 10 capability is not authorized by B054, they must inform ATC via voice that they are no longer RNP 10-capable. These procedures are designed to enable ATC to apply more conservative separation standards appropriate for single LRNS operations in areas less tolerant of navigation system failures.

5) Inspectors will note that the B054 templates include specific authorization to fly on and indicate RNP 10 capability for operations on the North Atlantic (NAT) special routes (i.e., Blue Spruce routes). Operators flying under part 91K, and those part 91 operators flying large or turbojet-powered multiengine airplanes, are also governed by § 91.511, which generally limits flight over water with less than 2 LRNSs to no more than 30 minutes flying time or 100 nautical miles (NM) from the nearest shore. Accordingly, MSpec/LOA B054 reflect this limitation as it relates to the NAT special routes. If the part 91K or applicable part 91 operator

can meet the § 91.511 limitations, they can fly the NAT special routes and indicate RNP 10 capability on their flight plans for such operations. (See subparagraph D7).)

6) Operations in oceanic and remote airspace require accurate navigation. Operator procedures should direct crews to confirm proper LRNS performance prior to entering oceanic and remote airspace. Similarly, recording navigation system performance upon exiting oceanic and remote airspace, or at least after landing, is important to monitoring the accuracy of the LRNS. The B054 template provides amplifying guidance.

7) In order to operate on the NAT special routes between flight levels (FL) 285 and 420 described in the applicable B054 template, those operators must also hold OpSpec/MSpec/LOA B039. The special routes described in B054 lie within NAT HLA (formerly known as minimum navigation performance specification (MNPS) airspace) at those altitudes. Operators intending to operate in NAT HLA should be familiar with ICAO NAT Doc 007, North Atlantic Operations and Airspace Manual.

E. Authorized RNP 10-Capable Airplanes, Equipment, and Associated RNP 10 Time Limitations.

1) Table 1 of B054 is used to identify the airplane and associated single LRNS to be used for oceanic and remote operations. The airplane should be identified by make, model, and series (M/M/S). The LRNS should be identified by the major components (e.g., flight management computer (FMC), GPS, and inertial navigation system (INS)) that constitute the navigation system, along with associated make and model information for each. It is important that Table 1 adequately describe what must be operational prior to departure in order to operate under the terms of B054. There should be no doubt what constitutes the major components of the LRNS for the particular aircraft.

2) Table 1 should also specify the RNP 10 time limit for the airplane/LRNS combination, if applicable. Time limits do not apply to GPS-based LRNS. AC 90-105 provides detailed guidance on determining RNP 10 time limits for INSs. As per AC 90-105, inertial systems approved in accordance with part 121 appendix G are considered to meet RNP 10 requirements for up to 6.2 hours of flight time.

F. Validation and Testing. In accordance with Volume 3, Chapter 29, Section 8, validation of all but part 91 operators' readiness for oceanic and remote airspace navigation is required. Inspectors must coordinate with the Regional NextGen Branch (AXX-220) SAO specialist to determine whether validation testing or a validation flight is appropriate. For part 91 operations, inspectors should contact the regional SAO specialist, or AFS-54 as applicable, if there are any questions regarding an applicant's readiness for RNP 10 oceanic operations with a single LRNS.

G. Additional Information. In addition to AC 91-70, general information relating to authorizing operations in oceanic and remote airspace can be found within Volume 4, Chapter 1. Inspectors should contact the regional SAO specialist if there are questions concerning requirements and the evaluation of operators' requests for authorization for operations within oceanic and remote airspace.

OPSPEC/MSPEC B055—NORTH POLAR OPERATIONS.

A. Guidance. General guidance is contained within Volume 4, Chapter 1, Section 5 and the current editions of Advisory Circulars (AC) 91-70, Oceanic and Remote Continental Airspace Operations; AC 120-42, Extended Operations (ETOPS and Polar Operations); and AC 135-42, Extended Operations (ETOPS) and Operations in the North Polar Area. Initial approval for area of magnetic unreliability (AMU) and North Polar operations requires validation testing including tabletops and flights. Principal operations inspectors (POI) must consult with the Air Transportation Division (AFS-200) and Next Generation (NextGen) Flight Technologies and Procedures Division (AFS-400) for validation requirements prior to issuance. Validation guidance is found in Volume 3, Chapter 29, Section 8.

B. OpSpec/MSpec B055 Provision for North Polar Operations Authorization. The North Polar Area of Operations is defined as that area that lies north of latitude 78° 00' N (see OpSpec/MSpec A002). Operators are required to gain specific approval to conduct North Polar operations (refer to 14 CFR part 135, § 135.98). Operators must also receive FAA approval for flight in the AMU (OpSpec/MSpec B040) at the same time. Part 135 operators may also require FAA approval for flight in the Canadian minimum navigation performance specification (CMNPS) airspace (OpSpec/MSpec B059) depending on their planned routings while in the North Polar Area. When receiving authorization for North Polar operations, OpSpec/MSpec B050 must also be revised to list the North Polar Area as an authorized area of en route operations. Additionally, OpSpec B342 or B344 (ETOPS), as appropriate, may need to be issued. MSpec MB055 is also available for 14 CFR part 91K authorization. The fractional ownership program manager must meet the same requirements as the 14 CFR part 121 certificate holder for the North Polar authorization.

C. Fuel-Freeze Strategy and Monitoring Requirements for North Polar Operations. Certificate holders must develop a fuel freeze strategy and procedures for monitoring fuel freezing for operations in the North Polar Area. A fuel freeze analysis program in lieu of using the standard minimum fuel freeze temperatures for specific types of fuel may be used. In such cases, the certificate holder's fuel freeze analysis and monitoring program for the airplane fuel load must be acceptable to the FAA Administrator. The certificate holder should have procedures for determining the fuel freeze temperature of the actual fuel load on board the airplane. The operator should have procedures established that require coordination between maintenance, dispatch (part 121), flight locators (part 135), and assigned flightcrew of the determined fuel freeze temperature of the actual fuel load on board the airplane. Prior to granting authorization for North Polar operations, the POI and principal maintenance inspector (PMI) must insure that operators clearly describe these coordination procedures within their company manual system.

D. Communication Capability. When conducting operations under part 121, the certificate holder must have effective communications capability with dispatch and with air traffic control (ATC) for all portions of the flight route in accordance with part 121, § 121.99. The certificate holder must show the FAA the communications medium(s) that it intends to use to fulfill these requirements in the North Polar Area.

1) For operations conducted under parts 91K, 121, and 135, the communications medium used must meet FAA regulatory requirements and fulfill policy/procedures established

by each Air Traffic Service (ATS) unit providing control on the route of flight. Anchorage Center publishes this information in the U.S. Government Flight Information Publication Supplement for Alaska. Other countries publish ATS policies and procedures in their State Aeronautical Information Publications.

2) High Frequency (HF) Voice has been considered the primary communications medium in the North Polar Area; however, other mediums may be used in accordance with the applicable policy. For example, although HF Voice remains primary for communications with Anchorage Center, in areas where there is satellite coverage, satellite communication (SATCOM) voice may be used as a back-up to communicate with Aeronautical Radio Inc. (ARINC) Radio and in nonroutine situations to establish direct pilot-controller voice communications.

3) In areas of satellite coverage, Controller-Pilot Data Link Communications (CPDLC) may be used for ATC communications provided the ATS unit has an approved capability.

4) It is recognized that SATCOM may not be available for short periods during flight over the North Pole, particularly when operating on designated polar routes 1 and 2 (see Volume 4, Chapter 1, Section 5). Communication capability with HF radios may also be affected during periods of solar flare activity. The operator must take into consideration, for each dispatched polar flight, the predicted solar flare activity and its effect on communication capability.

E. Minimum Equipment Lists (MEL). The operator will amend their MEL for the items that must be operational for North Polar operations. For part 121 ETOPS flights, all MEL restrictions for 180-minute operations will be applicable. For part 135 ETOPS flights, all MEL restrictions for 240-minute operations will be applicable. Prior to receiving FAA authority to conduct North Polar operations, the operator will be required to amend its MEL for the following systems and/or equipment to indicate that these items are required for North Polar operations dispatch (part 121), flight release, or operations:

- Fuel quantity indicator system (FQIS) (to include fuel tank temperature indicating system).
- Auxiliary power unit (APU) for two-engine airplanes (including electrical and pneumatic supply to its designed capability).
- Autothrottle system.
- Autopilot.
- Communication system(s) relied on by the flightcrew to satisfy the requirement for effective communication capability.

F. Training. The following requirements must be addressed in the approved training program (although 14 CFR part 125 certificate holders are not required to have an approved training program, they must be able to satisfactorily demonstrate all procedures to the validation team):

1) Atmospheric pressure at aerodrome elevation (QFE) and/or barometric pressure for local altimeter setting (QNH) (airport altitude settings) (refer to AC 91-70) and meter/feet issues are required for flightcrew and aircraft dispatcher training. Refer to the current edition of AC 120-29, Criteria for Approval of Category I and Category II Weather Minima for Approach, for information in regards to cold temperature effects on altimeters.

2) Training requirements for fuel freeze strategy and monitoring requirements. Maintenance, dispatch (part 121), and flightcrew training (special curriculum segments).

3) General route-specific training on weather patterns and aircraft system limitations.

4) For diversion decision making, the roles and responsibilities must be addressed for providing airplane systems capability information to dispatch and flightcrew in order to aid the pilot in command (PIC).

5) Flightcrew training in the use of the cold weather anti-exposure suit.

6) Adverse polar weather and atmospheric phenomenon and their potential effects on communications and navigation.

7) Radiation exposure (refer to the current edition of AC 120-61, In-Flight Radiation Exposure).

G. Long-Range Flightcrew Requirements. The following long-range flightcrew issues need to be addressed by the operator:

1) Rest plan submitted to the POI for review and approval.

2) Multicrew flight proficiency issues that need to be addressed in the training program.

3) The progression of the delegated PIC authority as designated by the operator. This does not mean that there can be more than one PIC on a flight who is responsible for the safe operation of the flight under part 91, § 91.1031; § 121.535; § 121.537; or § 135.109, and International Civil Aviation Organization (ICAO) Annex 6, Part 1, Chapter 1, Definitions, and Chapter 4, Flight Operations, paragraph 4.5.1.

H. Dispatch and Crewmember Considerations During Solar Flare Activity. The operator must be aware of the content of AC 120-61. Additionally, operators should refer to the National Oceanic and Atmospheric Administration (NOAA)/National Weather Service (NWS) Space Weather Prediction Center (SWPC) at <http://www.swpc.noaa.gov/> for information related to forecast space weather conditions which may affect their operations.

I. Additional Required Equipment for North Polar Operations.

1) Except for all cargo operations, an expanded medical kit to include Automated External Defibrillators (AED) (refer to the current edition of AC 91.21-1, Use of Portable Electronic Devices Aboard Aircraft).

2) A minimum of two complete cold weather anti-exposure suits will be required to be on board the aircraft so that outside coordination at a diversion airport with extreme climatic conditions can be accomplished safely.

NOTE: Operators should establish procedures to ensure all required equipment is inventoried prior to conducting polar operations.

J. En Route Polar Diversion Alternate Airport Requirements. Operators are expected to have a sufficient set of alternate airports for polar diversions, such that one or more can be reasonably expected to be available in varying weather conditions. (AC 120-42 and AC 135-42 provide additional guidance for two-engine airplanes.) The flight must be able to make a safe landing, and the airplane maneuvered off the runway at the selected diversion airport. In the event of a disabled airplane following landing, the capability to move the disabled airplane must exist so as not to block the operation of any recovery airplane. In addition, those airports designated for use must be capable of protecting the safety of all personnel by being able to:

1) Offload the passengers and flightcrew in a safe manner during possible adverse weather conditions,

2) Provide for the physiological needs of the passengers and flightcrew for the duration until safe evacuation, and

3) Be able to safely extract passengers and flightcrew as soon as possible (execution and completion of the recovery is expected within 12 to 48 hours following diversion).

K. Recovery Plan for Passengers at Polar Diversion Alternate Airports. All operators conducting polar operations must submit to the FAA a recovery plan that will be initiated in the event of an unplanned diversion. The recovery plan should address the care and safety of passengers and flightcrew at the approved emergency airport, and include the plan of operation to extract the passengers and flightcrew from that airport.

1) The operator should be able to demonstrate its ability to launch and conduct the recovery plan on its initial application for North Polar route approval.

2) The operator must maintain the accuracy and completeness of its recovery plan and diversion airport database at least annually.

NOTE: On OpSpec/MSpec B055, the text box for subparagraph c(1), Polar Operations Recovery Plan, should designate the specific location in the operator's manual system where the details of the Polar Operations Recovery Plan are outlined.

L. Validation Requirements for Area Approval for North Polar Operations. The operator will be required to conduct an FAA-observed validation flight in order to receive authorization to conduct polar operations. As part of the validation, the operator will be required to exercise its reaction and recovery plan in the event of a diversion to one of its designated en route alternate airports. Coordination within the FAA for the conduct of the validation flights

must be accomplished in a timely manner so as to have the necessary time to arrange for an FAA inspector to be in place at the selected emergency airport should the FAA elect to do so.

1) The aviation safety inspector (ASI) will observe the effectiveness and adequacy of:

- Communications,
- Coordination,
- Facilities,
- Accuracy of Notices to Airmen (NOTAM) and weather information,
- Space weather information, and
- Operability of ground equipment during the simulated diversion.

2) The exercise of the operator's reaction and recovery plan may be completed prior to the validation flight.

3) AFS-200 will give favorable consideration to a request by the certificate holder, through the POI, to conduct the validation flight in a passenger revenue status only if the operator's reaction and recovery plan has been previously demonstrated to the satisfaction of the FAA. For part 91K operators, the General Aviation and Commercial Division (AFS-800) will process all validation flight requests.

4) If the operator elects to demonstrate its reaction and recovery plan as part of and during the validation flight, the flight cannot be conducted in a passenger revenue status. The carriage of cargo revenue is permissible in this case, and is encouraged, for airplane Weight and Balance (W&B) purposes.

M. Special Equipment and Procedures. When drafting B055 for issuance to the operator, the Table 1, Aircraft Equipment Authorized for North Polar Operations, "Special Equipment and Procedures" column is used for any input the ASI, in consultation with NextGen AFS-400, deems appropriate.

N. Reporting Systems. Upon completion, make appropriate record entries as follows:

1) **Program Tracking and Reporting Subsystem (PTRS).** Use the following PTRS activity codes:

- Observe Aircraft Proving: 1313 (for part 91K or 135).
- Observe Route Proving: 1314 (for part 121).
- MSpec Original: 1324 (for part 91K).
- MSpec Revision: 1325 (for part 91K).
- OpSpec Initial: 1326 (for part 121, 125, or 135).
- OpSpec Revision: 1327 (for part 121, 125, or 135).

2) **Safety Assurance System (SAS).** For parts 121 and 135, use SAS Performance Assessment 2.1.1 (OP) Training of Flight Crewmembers and 3.2.3 (OP) Special Navigation Areas of Operation.

OPSPEC/LOA B057—NATIONAL PARKS AIR TOUR MANAGEMENT OPERATIONS UNDER TITLE 14 CFR PART 136.

A. Purpose. OpSpec/LOA B057 serves multiple functions. This OpSpec/LOA provides interim operating authority (IOA) to 14 CFR part 121 or 14 CFR part 135 certificate holders and 14 CFR part 91 air tour operators to conduct commercial air tour operations over the identified national park units and abutting tribal lands listed in the OpSpec paragraph tables. The IOA continues in force until either an Air Tour Management Plan (ATMP) or a Voluntary Agreement (VA) is approved. The IOA may continue to be utilized for up to 180 days after an ATMP has been authorized or up to 90 days after a VA has been authorized. On the effective date of the ATMP or VA, this OpSpec authorizes the air tour operators to conduct air tour operations over the applicable national park unit or abutting tribal lands as outlined in the applicable ATMP or VA. The effective date and termination dates of a given ATMP or VA will be noted in the OpSpec. The IOA will be maintained as a historical reference should an ATMP or VA be rescinded for a particular park or operator. If any party to a VA (FAA, National Park Service (NPS), or the air tour operator) withdraws their participation in the VA or if an ATMP has been terminated, the operator may elect to return to the provisions, terms, and conditions of the previously authorized IOA contained in this OpSpec, unless such IOA has been otherwise revoked. The Flight Standards District Office (FSDO)/certificate holding district office (CHDO) will list the expiration date of the VA or ATMP in the OpSpec, and the operator will be authorized to conduct air tour operations over the applicable national park unit under the IOA upon expiration of the ATMP or VA. Because the OpSpec maintains the history of the operator's IOA, ATMP, and VA, the OpSpec must be reissued each time there is a change to either the air tour operator's authority or the applicable ATMP or VA.

B. Commercial Air Tour Operations. These operations are conducted as commercial air tour operations in accordance with part 136, the applicable operating part, and the limitations and provisions of OpSpec B057.

OPSPEC/MSPEC B059—CANADIAN MNPS (C-MNPS).

A. Purpose. OpSpec/MSpec B059 is issued to 14 CFR part 135 certificate holders. Canadian minimum navigation performance specification (C-MNPS) airspace approvals may be granted by issuance of OpSpec/MSpec B059 only and adding that area of en route operations to OpSpec/MSpec B050. OpSpec/MSpec B059 must be referenced appropriately in OpSpec/MSpec B050. If OpSpec/MSpec B039, North Atlantic High Level Airspace, authorization is applicable, the Operator must obtain OpSpec/MSpec B036 before OpSpec/MSpec B039 will be issued.

B. General Guidance. See Volume 4, Chapter 1, Section 5 for details to authorize operations in Canadian MNPS, Canadian Domestic Airspace (CDA) Designated Airspace Handbook, and the current edition of Advisory Circular (AC) 91-70, Oceanic and International Operations. Any questions in regard to application or interpretation of this OpSpec should be forwarded to your regional NextGen Special Areas of Operation (SAO) specialist (AXX-220), formerly known as navigation specialist.

C. Title 14 CFR Parts 91K, 121, and 125. B059, C-MNPS, is only issued to 14 CFR part 135 certificate holders. Part 91K, 121, and 125 operators will have OpSpec/MSpec B050 amended if they request this authorization and meet the requirements of C-MNPS airspace. Operators that have been issued OpSpec/MSpec B039 unrestricted operations for North Atlantic High Level Airspace (NAT HLA) meet the requirements for C-MNPS authorization B059. See Volume 4, Chapter 1, Section 5 for more information. Operators must consult the Canadian AIP and Transport Canada's Designated Airspace Handbook for further information on this airspace. Direct questions regarding issuance of B039 to your regional NextGen (AXX-220) SAO specialist.

TSPEC/LOA B300—AUTHORITY FOR AN INSTITUTION OF HIGHER EDUCATION TO CERTIFY ITS GRADUATES FOR AN AIRLINE TRANSPORT PILOT CERTIFICATE WITH REDUCED AERONAUTICAL EXPERIENCE.

A. Purpose. LOA B300, issued by the General Aviation and Commercial Division (AFS-800), grants an institution of higher education authority to add a certifying statement to a student's transcript or other document deemed acceptable by the Administrator, which is required for a person applying for an Airline Transport Pilot (ATP) Certificate with restricted privileges in accordance with 14 CFR part 61, § 61.160(b), (c), or (d).

B. Process to Obtain Authorization. The current edition of Advisory Circular (AC) 61-139, Institution of Higher Education's Application for Authority to Certify Its Graduates for an Airline Transport Pilot Certificate with Reduced Aeronautical Experience, provides instructions for institutions of higher education on how to obtain the authority to certify students who graduate from an institution's degree program with an aviation major.

C. Issuing LOA B300. LOA B300 may only be issued by AFS-800.

1) Based on the information provided in AC 61-139, complete the information required in Tables 1 through 4.

2) Table 1 must list each authorized degree program.

3) Prior to issuing the LOA, the inspector must verify the accuracy and currency of all data entered within the tables. This includes the 14 CFR part 141 Pilot School Certificate and number for both ground and flight training, the institution of higher education's degree program(s) and the accrediting agency. This includes verifying the status and designator for the part 141 flight and ground training providers for the college or university. At a minimum, the college or university will hold its own part 141 ground school certificate, and may also have an Air Agency Certificate for both flight and ground training. If a college or university holds only a part 141 pilot ground school certificate, then it must have a training agreement with at least one part 141 pilot school that is authorized for flight training for the instrument rating and Commercial Pilot Certificate.

D. AFS-800 Website Update. Once an LOA is issued to an institution of higher education, AFS-800 will update its FAA website page containing the list of the schools with an authorization to certify their graduates for an ATP Certificate with reduced aeronautical experience.

OPSPEC B342—EXTENDED OPERATIONS (ETOPS) WITH TWO-ENGINE

AIRPLANES UNDER PART 121 OR 135. The FAA issues OpSpec B342 to operators who are approved to conduct Extended Operations (ETOPS) with two-engine airplanes in accordance with the limitations and provisions of this OpSpec and 14 CFR part 121, § 121.161, or 14 CFR part 135, § 135.364.

A. General Guidance. Evaluate and approve all ETOPS in accordance with the current edition of Advisory Circular (AC) 120-42, Extended Operations (ETOPS and Polar Operations), or AC 135-42, Extended Operations (ETOPS) and Operations in the North Polar Area, and any additional criteria Order 8900.1 specifies. At a minimum, operators must meet the following conditions:

- 1) The proposed airplane/engine combination must be type-design approved for the proposed extended-range operation.
- 2) The ETOPS maintenance and the flight operation programs must meet or exceed AC 120-42 or AC 135-42 criteria.
- 3) Higher headquarters (HQ) (region and Air Transportation Division (AFS-200)) must concur with the proposed operation.
- 4) Successful completion of validation flights.

B. Validation Flights. In order to be authorized for ETOPS in accordance with B342, operators must satisfactorily complete validation flights as part of the ETOPS approval process. (See Volume 3, Chapter 29, and Volume 4, Chapter 6.)

1) Before conducting the validation flights, the certificate-holding district office (CHDO) will request authorization from AFS-200 via its regional office to issue the appropriate temporary OpSpec.

2) The CHDO's request should include any specific recommendations the principal maintenance inspector (PMI), principal avionics inspector (PAI), or principal operations inspector (POI) made. Following review and concurrence by AFS-200, schedule the validation flights in accordance with any additional guidance or recommendations specified in AFS-200's concurrence.

3) Once AFS-200 authorizes the validation test, the POI will select paragraph a in the B342 template that limits operations to only ETOPS validation flights and issue the temporary OpSpec.

4) Following the successful completion of the validation flights, the CHDO will send a memo through its regional office and AFS-200 to the Director of Flight Standards (AFS-1), advising that the certificate holder has successfully validated their ETOPS processes and recommending that AFS-1 authorize the CHDO to issue the appropriate OpSpecs for ETOPS.

C. Limitations and Provisions. This subparagraph defines the limitations and provisions under which the operator may conduct ETOPS.

1) Use OpSpec B342 Table 1 to document the airplanes authorized to conduct these operations. The table lists the aircraft by make, model, and series (M/M/S), registration number, aircraft engine, and maximum diversion times. In the case where all M/M/S have the same maximum diversion time, the term “All” can substitute for the actual registration numbers. Use the following Figure 3-117, Sample B342 Table 1 – Authorized ETOPS Airplanes With Two Engines and Maximum Diversion Times, as an example.

2) AFS-200 approves airplanes for ETOPS based on the airplane M/M/S and the aircraft engine, which together make up the Airplane Engine Combination (AEC). Once AFS-200 approves the POI to grant initial ETOPS authority based on a particular AEC and specific airplanes listed by registration number in B342, adding or removing an airplane by registration number in Table 1 does not require further coordination with, or approval by, AFS-200. If the AEC has not yet been approved for ETOPS, coordination and approval by AFS-200 is required. All airplanes approved for ETOPS with two-engine airplanes must be listed in the certificate holder’s OpSpec D086, Maintenance Program Authorization for Two-Engine Airplanes Used in Extended Range Operation.

Figure 3-117. Sample B342 Table 1 – Authorized ETOPS Airplanes With Two Engines and Maximum Diversion Times

| AIRPLANE TYPE (MAKE/MODEL/ SERIES) | REGISTRATION NUMBERS | AIRCRAFT ENGINE | MAXIMUM DIVERSION TIME IN MINUTES |
|---|---------------------------------|---------------------------------|--|
| Boeing 737-400 | All | CFM International CFM56-3 | 120 |
| Boeing 757-200 | All | Rolls Royce RB211-535E4 | 180 |
| Boeing 777-200 | N602PA | General Electric GE90-110B | 207 |
| Airbus A330 | N630PA | Pratt And Whitney PW4000-100 | 180 |

3) Use OpSpec B342 Table 2 to document the approved ETOPS en route alternate airports (see Figure 3-118, Sample B342 Table 2 – ETOPS Alternates, below). These airports are in addition to a flight’s departure, destination, and destination alternate airports.

4) After AFS-200 approves the POI to grant ETOPS authority by issuing B342, adding or removing an ETOPS alternate airport from Table 2 does not require additional approval by AFS-200. All other changes to B342 require coordination and prior approval by AFS-200, unless otherwise specified in this section.

Figure 3-118. Sample B342 Table 2 – ETOPS Alternates

| AIRPORT (IDENT) | SPECIAL CONDITIONS/LIMITATIONS |
|--------------------|--------------------------------|
| KEFLAVIK (BIKF) | None |
| SONDERSTROM (BIRK) | None |
| GANDER (CYQX) | None |
| LAJES (LPLA) | None |
| SHANNON (EINN) | None |
| REYKJAVIK (BIRK) | B737 ONLY |

D. Part 121 ETOPS With Diversion Times of 75 Minutes or Less. Evaluate and approve on a case-by-case basis part 121 ETOPS with maximum diversion times of 75 minutes or less. Although type-design approval is not necessary for ETOPS of 75 minutes or less, review the airplane's design to identify any special equipment or requirements necessary to safely conduct these operations. Except for ETOPS in the Western Atlantic and Caribbean Sea, ETOPS maintenance and flight operations programs for these operations must meet the criteria in AC 120-42. The FAA, on a case-by-case basis, approves operations in the Western Atlantic Ocean and Caribbean Sea considering the reliability of the propulsion system, the character of the terrain, kind of operation, performance of the airplane to be used, capabilities of the alternate airports en route, and the special provisions for this area in B342. All ETOPS with diversion times of 75 minutes or less require the respective regional office and AFS-200 review and concurrence before issuing OpSpecs approval for these operations.

E. Authorizations. As appropriate, the FAA can use B342 to issue a general ETOPS authorization, a special authorization for the Western Atlantic and Caribbean Sea, or both, only under part 121.

F. B342 With Two-Engine Airplane Under Part 121 Only. Special provision for Western Atlantic Ocean and Caribbean Sea is a specific authorization and the FAA issues it if the operator has authorization to conduct any special ETOPS in the Western Atlantic Ocean and Caribbean Sea using a maximum diversion time of 75 minutes or less. Use OpSpec B342 Table 3 to document the airplanes approved for these operations. The table lists the airplane M/M/S and any special equipment or limitations required to ensure the airplane is airworthy for these operations. If appropriate, use the special equipment/limitations columns to limit the operation to a specific aircraft series. See Figure 3-119, Sample B342 Table 3 – Special Provision for Western Atlantic and Caribbean Sea ETOPS, below.

Figure 3-119. Sample B342 Table 3 – Special Provision for Western Atlantic and Caribbean Sea ETOPS

| AIRPLANE TYPE (MAKE/MODEL/SERIES) | SPECIAL EQUIPMENT/LIMITATIONS |
|--|--|
| Airbus 300-B4200 | Series A300B4203 Only |
| Boeing 737-200 | APU Generator Operating |
| Boeing 767-300 | None |
| McDonnell Douglas MD-81 | MAX TOGW 140,000 |

G. Additional OpSpecs. In addition to the ETOPS OpSpecs, operations may require additional OpSpecs, such as: B036 for Class II navigation; B037 if the operation involves Central East Pacific (CEP) airspace; B038 if the operation involves North Pacific (NOPAC) airspace; B039 if the operation involves North Atlantic High Level Airspace (NAT HLA); and B040 if the operation involves areas of magnetic unreliability. If the operation involves transatlantic flight in the NAT, the FAA can authorize these operations under B041 if the capabilities of the aircraft permit NAT Operation (NAT/OPS) under the 60-minute rule.

NOTE: This is not a complete list of additional OpSpecs. It has been included in this section to provide examples only.

H. Experienced ETOPS Operator. Once a certificate holder has authorization to conduct ETOPS, procedures and systems should be in place to support any additional ETOPS authority. The application package for an experienced ETOPS operator requesting a new aircraft/engine combination, a change to the existing authorization (e.g., 120 minutes to 180 minutes), or a new geographic area of operation, may not be as complex as a new entrant operator. The CHDO will make this determination, along with the concurrence of the regional office and HQ.

NOTE: Additional information is available in AC 120-42 and AC 135-42, depending on the type of operation requested. Additional guidance regarding the approval and continued assessment of the ETOPS process can be found in Volume 4, Chapter 6.

OPSPEC B343—PERFORMANCE-BASED CONTINGENCY FUEL REQUIREMENTS FOR FLAG OPERATIONS.

A. Background.

1) International Civil Aviation Organization (ICAO) Annex 6, Part I, was amended in November 2012, creating an allowance for Member States to develop a performance-based, in lieu of prescriptive-based, fuel-planning program. Prescriptive-based fuel planning has been the standard for years; however, with advances in technology, the FAA has identified the need to provide air carriers relief from certain fuel provisions of 14 CFR part 121. Advancements in aircraft navigation accuracy, communication, and weather forecasting have greatly improved the flight planning accuracy.

2) For international flight operations, the current prescriptive approach requires that the air carriers add a fuel reserve equal to 10 percent of the flight time from departure to destination for unplanned contingencies. Prior to the release of this OpSpec, the en route contingency fuel requirements could be reduced with OpSpec B044, Planned Redispach or Rerelease En Route, or B043, Special Fuel Reserves in International Operations. The Performance-Based Contingency Fuel (PBCF) process described in this OpSpec allows air carriers to utilize their considerable investment in aircraft equipment, automation, and process to determine the appropriate amount of fuel required to account for unforeseen contingencies. These investments allow air carriers to identify fuel issues earlier in flight, allow for greater communication of options, and allow for earlier contingency plan development to avoid low-fuel events.

3) The PBCF program allows participating air carriers to set an unplanned contingency fuel requirement based upon their demonstrated fuel-planning performance. This value will be specific to airplane make and model, city pair route (direction dependent is assumed when the city pair route is referenced), and arrival time window at the destination airport. For each combination of airplane make and model/city pair route/arrival time window, the air carrier must demonstrate, based upon past fuel-planning performance, that the probability of burning all contingency fuel meets the following requirement:

a) For air carriers with an approved minimum landing fuel program, the probability of burning all unplanned contingency fuel is no greater than 1 in 10 in forecasted non-convective conditions at the destination airport, or 1 in 100 when thunderstorms are forecasted or can reasonably be expected in the vicinity of the destination airport.

b) For air carriers without an approved minimum landing fuel program, the probability of burning all PBCF is no greater than 1 in 70 in forecasted non-convective conditions at the destination. When thunderstorms are forecasted or can reasonably be expected in the vicinity of the destination airport, the unplanned contingency fuel value shall be no less than 10 percent of the total time required to fly from departure to the intended destination airport.

4) This authorization grants the air carrier a deviation from certain requirements of part 121, § 121.645(b)(2), and, therefore, must be listed in OpSpec A005.

NOTE: The performance-based fuel criteria and the unplanned contingency fuel levels derived from that criteria reflect normal day-to-day variations, to include: weather, air traffic, winds aloft forecasting, and terminal area traffic patterns. It does not cover deviations due to closed runways; minimum equipment list (MEL)/Configuration Deviation List (CDL) items; significant en route issues such as volcanic ash concerns; airspace restrictions; turbulence; icing; and convective activity, which may affect the normal planned route and altitude profile. The air carrier and dispatchers must account for the additional known contingency fuel requirements from events such as these in accordance with § 121.647.

NOTE: B343 is a nonstandard OpSpec, and the procedures for requesting a nonstandard OpSpec apply. See Volume 3, Chapter 18, Section 2, paragraph 3-712, for guidance in requesting a nonstandard OpSpec. Changes to

the specific airplane make and model/city pair/arrival time window combinations authorized in Table 1 of this OpSpec do not require headquarters (HQ) review and approval after initial issuance of this OpSpec.

B. Conditions for Approval.

1) The certificate holder is authorized, under a deviation as provided in § 121.645, to conduct certain 14 CFR flag air carrier operations using the fuel supplies specified below in accordance with the special limitations and provisions of this OpSpec.

NOTE: The certificate-holding district office (CHDO) will ensure that the FAA team evaluating the air carrier's PBCF program includes an Operations Research Analyst (ORA) and an Aviation Safety Inspector—Aircraft Dispatcher (ASI-AD). If the CHDO does not have the resources, the office will request assistance through their regional Flight Standards District Office (FSDO). If the region does not have an ORA or ASI-AD assigned, they can request assistance through the Air Transportation Division (AFS-200).

2) The local CHDO must review the operator's PBCF program policies and procedures prior to AFS-200 review. These policies and procedures must cover duties and responsibilities for not only the flightcrew and dispatchers, but also the analysts and auditors of the program. Flightcrew members, dispatchers, and those personnel who are responsible for the oversight and reporting of the PBCF program must be trained in the use of these procedures.

C. Performance Fuel Calculation Requirements. Required fuel supply: Each airplane dispatched under the authority of OpSpec B343 shall have enough fuel on board, considering the requirements of § 121.647, to:

- 1) Fly to and land at the airport to which it is dispatched.
- 2) After that, unplanned contingency fuel (i.e., PBCF) to fly for a period of time, restricted to no less than 5 minutes of unplanned contingency fuel (calculated at 1,500 feet holding speed), based on the statistical burn deviation specific to each airplane make and model/city pair/arrival time window combination authorized in the reference document in Table 1. When no PBCF value is available, the unplanned contingency fuel value shall not be less than 10 percent of en route time, or, for operators with an approved minimum landing fuel program, it shall be not less than 5 percent of the en route time. The PBCF fuel must meet the following requirements:

a) Option 1. For air carriers that have an approved minimum landing fuel program: the probability of burning all PBCF is no greater than 1 in 10 in forecasted non-convective conditions at the destination airport, or 1 in 100 when thunderstorms are forecasted or can reasonably be expected in the vicinity of the destination airport.

b) Option 2. For air carriers that do not have an approved minimum landing fuel program: the probability of burning all PBCF is no greater than 1 in 70 in forecasted non-convective conditions at the destination. When thunderstorms are forecasted or can reasonably be expected in the vicinity of the destination airport, the unplanned contingency fuel

value shall be no less than 10 percent of the total time required to fly from departure to the intended destination airport.

3) Where a destination alternate airport is required, the amount of fuel required to enable the airplane to:

- a) Perform a missed approach at the destination airport;
- b) Climb to the expected cruising altitude;
- c) Fly the expected routing;
- d) Descend to the point where the expected approach is initiated; and
- e) Conduct the approach and landing at the destination alternate airport.

4) When no alternate is required:

a) The certificate holder must carry additional fuel to account for a possible missed approach and return to land at the destination airport.

b) The fuel planned when no alternate airport is required must include a minimum arrival fuel to divert to an airport with a runway that meets the requirements of § 121.197 and has an operable instrument approach. Planned arrival fuel at the intended destination must allow the flight to divert and land with not less than the minimum arrival fuel specified in § 121.645(b)(4). (This is for planning purposes only.)

5) After that, to fly for 30 minutes at holding speed at 1,500 feet above the alternate airport (or the destination airport if no alternate is required) under actual or forecasted temperatures and conditions.

6) The fuel required accounting for known delays (planned contingency fuel), PBCF (unplanned contingency fuel), and missed approach fuel (if no alternate is required) or alternate fuel and final reserve fuel must be included in the minimum fuel calculation.

D. Approved Airplanes and Areas. The certificate holder is authorized to conduct these operations using the approved airplane make and model/city pair/arrival time window combination(s) as listed in the approved document referenced in Table 1 and with provisions of this OpSpec.

Figure 3-197. Sample Table 1 – Approved Document and Revision

| Document Name and Location | Revision Status |
|---|-----------------|
| Airline Performance-Based Tracking Tool/ Flight Operations Manual Appendix 1 | Original |

- 1) Minimum data requirements for performance-based fuel:
 - a) Quantity. The minimum data points for each airplane make and model/city pair/arrival time window combination shall be:
 1. For PBCF, 1 in 10, a minimum of 60 data points; and
 2. For PBCF, 1 in 70 or 1 in 100, a minimum of 120 data points.
 - b) Seasonality. Data gathered must be over a period of time that reflects the seasonality of the proposed operation. The data should reflect the variability for two seasons; for example, if the arrival city experiences both winter and summer weather variabilities, those operations must be evaluated prior to operation.
 - c) Recency. The required data must include data gathered during the equivalent seasonal period in the previous 12 months (e.g., data for April through August 2015 would be applicable to operations during the same monthly period in 2016).
- 2) City pair is directional in nature (e.g., for 1 in 10 performance threshold, Chicago O'Hare International Airport (ORD) to London Heathrow Airport (LHR) would require 60 data points and LHR to ORD would require an additional 60 data points).
- 3) Arrival time window should not be greater than 2 hours total unless the air carrier has established statistical data to substantiate a larger arrival time window. For arrival time windows greater than 2 hours, any 120-minute period within that arrival time window must contain the minimum number of data points required in subparagraph D1)a) above. Changes to arrival time window calculations must be approved by AFS-200.

NOTE: For operators that do not have the required number of data elements, they may petition to AFS-200 to substitute other company aircraft data to meet the minimum data requirements.
- 4) Operators must have procedures to alert the dispatcher when a departure delay would cause the flight to arrive outside the original planned arrival time window.
- 5) In cases where planned delays would push the arrival into a timeframe beyond the original planned arrival time window, the operator must establish procedures and controls to have the dispatcher and pilot in command (PIC) review the § 121.647 conditions, to include reanalyzing the en route burn for fuel planning.
- 6) When no PBCF value is available, the unplanned contingency fuel value shall not be less than 10 percent of en route time, or, for operators with an approved minimum landing fuel program, it shall be not less than 5 percent of the en route time.
- 7) The PBCF values (airplane make and model/city pair/arrival time window) must be accessible by the flightcrews and dispatchers, even if automation populates the required field in the flight planning system.

8) The supporting data and final PBCF values must be accessible to the Administrator on request.

9) A recalculation of the PBCF data must be made a minimum of once a month.

10) For a new airplane make and model/city pair/arrival time window combination that the air carrier has not previously flown, PBCF values will not be used until the data requirements of subparagraph D1)a) through c) are met either via automated calculations and controls or by approval of the CHDO.

NOTE: Additions/deletions of airplane make and model/city pair/arrival time window combinations do not require HQ review and concurrence after initial issue. These changes to the data are coordinated between the CHDO and air carrier and amendment to Table 1 may be required. Any changes to the PBCF statistical methodology, alerting, or reporting system must be evaluated by the CHDO and HQ.

NOTE: Program Tracking and Reporting Subsystem (PTRS) code 1328 will be used to document the air carrier's initial request and annual fuel meetings with the CHDO. The principal operations inspector (POI) will insert "B343" in the "National Use" field (without quotations).

E. Special Limitations and Provisions. The certificate holder shall conduct operations that use the fuel supplies authorized by this OpSpec in accordance with all of the following conditions:

1) As applicable, the flight shall be dispatched in accordance with § 121.621, Alternate Airport for Destination: Flag Operations. Additionally, if the destination airport has only one usable runway, an alternate airport must be listed on the dispatch release.

2) The provisions of this OpSpec may not be used in conjunction with the provisions of OpSpec A012, B043, or B044.

3) The certificate holder must have a fuel consumption bias program to maintain a hull-specific performance monitoring system that continuously monitors, analyzes, and compares the fuel performance calculations to the actual performance for each individual airplane used under this deviation.

4) Accurate meteorological data, including upper wind information equal to or more accurate than 1.25 degrees (1.25 degrees of latitude by 1.25 degrees of longitude grid over the globe) gridded model winds must be utilized for the entire flight plan route.

5) All flight deck fuel quantity indicators must be operational at dispatch. Any en route failure of these indicators must be reported as soon as practical to the aircraft dispatcher.

6) Fuel requirements of this authorization must not be lower than the requirements of § 121.193(c) or the Extended Operations (ETOPS) critical fuel requirements of § 121.646, as applicable.

7) The certificate holder must have approved policies and procedures to maintain a flight monitoring system that generates alerts and requires the flightcrew to alert the dispatcher of any significant deviations from the flight planned route, altitude, and speed and any shortfalls in fuel on board compared to flight-planned fuel. If the flight reports any significant deviation or shortfall of fuel while en route, the PIC and aircraft dispatcher must agree upon a course of action and document the decision. Significant deviations from the plan are defined as:

- a) If actual estimated time of arrival (ETA) will exceed planned ETA by more than 15 minutes;
- b) Fuel on board shortfall compared to flight planned fuel over a flight plan fix (or abeam fix as appropriate) exceeds 15 minutes of endurance;
- c) When no alternate is required and the total contingency fuel(s) (for the purpose of this requirement, total contingency fuel includes planned and unplanned) is less than 15 minutes, the PIC will alert the dispatcher when the ETA is planned to exceed the contingency value in minutes;
- d) Cruising altitude varies by more than 4,000 feet from the flight plan;
- e) Current route exceeds 100 nautical miles from the flight plan route; or
- f) Cruise speed deviates by greater than .02 Mach.

8) The air carrier must have a primary and secondary method of communication between the flightcrew and the dispatch department. These systems must be available for the entire route of flight.

9) The air carrier shall establish performance measures and process controls to ensure the equivalent level of safety to § 121.645 is maintained. Performance measures must include measures of complete PBCF fuel burns, both expected and actual, for each airplane make and model/city pair/arrival time window and in aggregate.

10) The air carrier may operate a supplemental charter operation in accordance with OpSpec A030 to a destination where PBCF program data is available.

11) The provisions of this OpSpec may not be used when any system outage would affect the monitoring or alerting of the fuel.

12) If the flight reports any significant deviation or shortfall of fuel while en route, the PIC and dispatcher must agree upon a course of action and document the decision.

F. Reports Required by This OpSpec. The air carrier must provide the flight data specified below to the CHDO. The data supplied must be in a format acceptable to the Administrator.

1) The air carrier must record and identify the root cause for any flight that consumes all of the contingency fuel required by this OpSpec and arrives with less than

60 minutes of fuel remaining (calculated at 1,500 feet holding speed). For the purpose of determining PBCF burn-in, the following is the defined fuel hierarchy:

- a) Taxi fuel;
- b) En route burn;
- c) MEL fuel penalty (does not include unusable fuel (e.g., fuel pump inoperative; 3,500 pounds must be carried in tank));
- d) Planned contingency fuel for known delays or holding;
- e) Section 121.193(c) or the ETOPS critical fuel requirements of § 121.646;
- f) PBCF;
- g) Minimum landing fuel or other additional fuel (e.g., captain- and dispatcher-added fuel);
- h) Alternate fuel if required; and
- i) Thirty-minute final reserve fuel (refer to § 121.645).

2) The following information will be provided in a quarterly report to the CHDO:

- a) Summary of the air carrier's performance measures related to this process, including measures of complete PBCF burns, both expected and actual, for each airplane make and model/city pair/arrival time window and in aggregate;
- b) A table summarizing the PBCF values on the last day of the quarter for each airplane make and model/city pair/arrival time window combination in effect on that day; and
- c) The quarterly report shall list all flights excluded from PBCF calculations during the quarter, including the reasons for exclusion.

3) All data necessary to generate/duplicate the PBCF values will be made available to the Administrator for the purpose of an audit of a sampling of airplane make and model/city pair/arrival time window combinations. This audit shall be conducted no less than annually and shall cover no less than five unique airplane make and model/city pair/arrival time window combinations.

4) The air carrier must report to the POI within 24 hours, whenever any flight makes a declaration of minimum or emergency fuel to the air navigation service provider.

5) Additionally, the certificate holder will report any occurrence of a low (minimum fuel) fuel state, which results in actions being taken by air traffic control and/or dispatch in order to provide priority handling, even if no emergency or minimum fuel state is declared. This will be included as a part of the quarterly reporting.

G. Calculating PBCF Values.

1) The PBCF program allows air carriers to carry an appropriate unplanned contingency fuel based upon their demonstrated fuel-planning accuracy. The FAA has established performance thresholds (see subparagraph C2)). Approved air carriers will set their level of unplanned contingency fuel to meet the performance threshold for each specific airplane make and model/city pair/arrival time window combination based upon their historical fuel-planning accuracy for that specific combination.

2) A method for calculating the necessary PBCF is presented below. The method presented uses a rank order percentile calculation of actual versus planned fuel burns. The air carrier is not limited to this method but must obtain CHDO and HQ approval for any deviation from this method. Air carriers may apply seasonal weighting factors to their PBCF data to better match the seasonal operating environment.

3) PBCF calculation method. To calculate the required unplanned contingency fuel required for a specific airplane make and model/city pair/arrival time window combination using a rank order percentile method, one must first rank each flight in the data sample in order, from least to greatest, of actual fuel burn as a percentage of planned fuel burn. We then calculate the percentile ranks of each of those values according to:

$$P_n = (n - \frac{1}{2}) / N$$

Where

N is the flights included in sample

n represents the n^{th} item in the ordered data sample

In this example, $P_n = (n - \frac{1}{2}) / 347$

NOTE: The formula for calculating percentiles must be $P_n = (n - \frac{1}{2}) / N$.

Table 3-14. Ordered Ranking Subset

| n | Value (V _n) | Percent Rank (P _n) |
|-----|-------------------------|--------------------------------|
| 1 | 0.9003939 | 0.001441 |
| 2 | 0.911910 | 0.004323 |
| 3 | 0.9162371 | 0.007205 |
| ... | ... | ... |
| 342 | 1.041393 | 0.984150 |
| 343 | 1.043561 | 0.987032 |
| 344 | 1.047506 | 0.989914 |
| ... | ... | ... |

a) Once the values have been put in order from least to greatest, the unplanned contingency fuel required can be found by locating the integer n for which:

$$p_n < P < p_{n+1}$$

Where P is the cumulative probability of burning less than all PBCF, in accordance with the fuel hierarchy defined in subparagraph F1).

b) For an air carrier with no minimum landing fuel program, dispatching a flight where non-convective conditions are expected at or near the destination airport, the cumulative probability of burning less than all of PBCF is:

$$P(x) = 1 - (1/70) = 0.98571$$

c) In this example, P(x) falls between the percentile values associated with the 342nd and 343rd items in the sorted list.

d) The value associated with the 342nd and 343rd items in the list are:

$$v_{342} = 1.041393 \text{ and } v_{343} = 1.043561$$

e) Percentiles associated with the 342nd and 343rd items in the list are:

$$p_{342} = .98415 \text{ and } p_{343} = .98703$$

f) We then interpolate between these values to find the value V where:

$$\begin{aligned} V &= v_k + ((P - p_k) / (p_{k+1} - p_k)) * (v_{k+1} - v_k) \\ &= 1.041393 + ((0.98571 - .98415) / (.98703 - .98415)) * (1.043561 - 1.041393) \\ &= 1.043 \end{aligned}$$

g) For this airplane make and model/city pair/arrival time window combination with non-convective conditions expected, the air carrier would need to carry a PBCF of no less than 4.3 percent of their planned en route fuel to meet the 1 in 70 criteria.

H. Additional Requirements.

1) The certificate holder must retain the information used to generate PBCF values and the PBCF values used for a minimum of 1 year or longer if the air carrier's system is based on a longer period of time.

2) Any change in airframe or engine condition, or configuration that may affect the performance of the airplane make and model, requires a reassessment of the fuel consumption biases used in the calculations of PBCF.

I. Oversight Monitoring Program. The certificate holder must establish an internal oversight program to monitor this deviation acceptable to the Administrator. This oversight program must at a minimum evaluate the number of complete PBCF burns quarterly, both expected (based upon performance threshold applicable to each flight) and actual. These measures must be generated for each airplane make and model/city pair/arrival time window combination and in aggregate. For those airplane make and model/city pair/arrival time window combinations where actual complete PBCF burns exceed the expected value by a significant amount, the operator must consider mitigating action, which may include one or more of the following:

- 1) Adding additional unplanned contingency fuel to each flight;
- 2) Reassessing whether the model used to calculate PBCF is appropriate;
- 3) Excluding route(s) from B343;
- 4) Reevaluation of B343's performance thresholds; and/or
- 5) Closer monitoring of specific route(s).

OPSPEC B344—EXTENDED OPERATIONS IN PASSENGER-CARRYING AIRPLANES WITH MORE THAN TWO ENGINES, UNDER PARTS 121 OR 135. The FAA issues OpSpec B344 to operators who are approved to conduct Extended Operations (ETOPS) with airplanes with more than two engines in accordance with the limitations and provisions of this OpSpec, and 14 CFR part 121, § 121.161, or 14 CFR part 135, § 135.364.

A. General Guidance. Evaluate and approve all ETOPS in accordance with the current edition of Advisory Circular (AC) 120-42, Extended Operations (ETOPS and Polar Operations), or AC 135-42, Extended Operations (ETOPS) and Operations in the North Polar Area and any additional criteria Order 8900.1 specifies. As a minimum, operators must meet the following conditions:

1) The proposed airplane/engine combination must be type-design approved for the extended range operation proposed for aircraft manufactured after February 17, 2015, for part 121, or February 15, 2005, for part 135.

2) The ETOPS maintenance and the flight operation programs must meet or exceed the criteria in AC 120-42 or AC 135-42.

3) Higher headquarters (HQ) (region and Air Transportation Division, AFS-200) must concur with the proposed operation.

4) Successful completion of validation flights.

B. Validation Flights. In order to issue OpSpec B344, operators must accomplish validation flights (as described in Volume 3, Chapter 29 and Volume 4, Chapter 6) as part of the ETOPS approval process.

1) Before conducting the validation flights, the certificate-holding district office (CHDO) will request authorization from AFS-200 via its regional office to issue the appropriate temporary OpSpec. Once AFS-200 authorizes the validation test, the principal operations inspector (POI) will select paragraph a in the B344 template that limits operations only to ETOPS validation flights, and issue the temporary OpSpec.

2) The CHDO's request should include any specific recommendations the principal maintenance inspector (PMI), principal avionics inspector (PAI), or POI, made. Following review and concurrence by AFS-200, schedule the validation flights in accordance with any additional guidance or recommendations specified in AFS-200's concurrence.

3) Following the successful completion of the validation flights, the CHDO will send a memo through their regional office and AFS-200 to the Director of Flight Standards (AFS-1), advising that the certificate holder has successfully validated their ETOPS processes, and recommending that AFS-1 authorize the CHDO to issue the appropriate OpSpecs for ETOPS.

C. Limitations and Provisions. This subparagraph defines the limitations and provisions under which the operator may conduct ETOPS.

1) Use OpSpec B342 Table 1 to document the airplanes authorized to conduct these operations. This table lists aircraft by make, model, and series (M/M/S), registration number, aircraft engine, and maximum diversion times. In the case where all M/M/S have the same maximum diversion time, the term "All" may substitute for the actual registration numbers. Use Figure 3-117 in OpSpec B342 as an example.

2) Use OpSpec B344 Table 2 to document the approved ETOPS en route alternate airports. These airports are in addition to a flight's departure, destination, and destination alternate airports.

NOTE: After initial approval of ETOPS has been granted, subsequent changes to Table 2, such as the addition of a new en route alternate, do not have to be forwarded for approval to AFS-200 via the regional office. This only applies to

Table 2. Coordinate all other changes to this OpSpec through the regional office to AFS-200.

Figure 3-120. Example Completed Table 2, Authorized ETOPS Alternate Airports

| AIRPORT (IDENT) | SPECIAL CONDITIONS/LIMITATIONS |
|---------------------|--------------------------------|
| HONOLULU (PHNL) | None |
| MIDWAY ATOLL (PMDY) | None |
| TAHITI (NTAA) | None |

D. Additional OpSpecs. In addition to the ETOPS OpSpecs, operations may require additional OpSpecs, such as: B036 for Class II navigation; B037 if the operation involves Central East Pacific airspace; B038 if the operation involves North Pacific airspace; B039 if the operation involves North Atlantic High Level Airspace (NAT HLA); B040 if the operation involves areas of magnetic unreliability. If the operation involves transatlantic flight in the North Atlantic, the FAA can authorize these operations under B041 if the capabilities of the aircraft permit NAT/OPS under the 60-minute rule.

NOTE: This is not a complete list of additional OpSpecs. It has been included in this section to provide examples only.

E. Experienced ETOPS Operator. Once a certificate holder has authorization to conduct ETOPS, procedures and systems should be in place to support any additional ETOPS authority. The application package for an experienced ETOPS operator requesting a new aircraft/engine combination, a change to the existing authorization (120 minutes to 180 minutes), or a new geographic area of operation, may not be as complex as a new entrant operator. The CHDO will make this determination, along with the concurrence of the regional office and headquarters (HQ).

NOTE: Additional information is available in AC 120-42 and AC 135-42, depending on the type of operation requested. Volume 4, Chapter 6 contains additional guidance regarding the approval and continued assessment of the ETOPS process.

OPSPEC/MSPEC/LOA B450—SENSITIVE INTERNATIONAL AREAS.

A. Background. The FAA needs to communicate vital and time sensitive safety information regarding overflights and/or flights into foreign areas where potentially hostile situations exist. OpSpec/MSpec/LOA B450 is not an authorization, but is a data collection template that tracks what sensitive countries an operator operates into or overflies. The B450 is applicable to 14 CFR parts 121, 125 (including part 125 Letter of Deviation Authority (LODA) holders), 135, and 91 subpart K (part 91K). B450 is mandatory for the areas of operation identified as sensitive international areas authorized in the operator's B050 (see B050 guidance in this section). B450 is not mandatory for operators who do not have these affected areas of operation authorized in OpSpec B050 authorized.

B. Procedure. Any time a part 91K, 121, 125, (including part 125 LODA holders) or part 135 operator requests to add an area of operation in OpSpec B050, the principal operations inspector (POI) must determine if the added areas of operation is required to be listed on B450. The following steps will assist the POI in determining whether to issue or amend a B450:

1) Identify the B050 authorized area containing the country of proposed operation. Refer to the “Authorized Areas Country Listing” in the Web-based Operations Safety System (WebOPSS) guidance for help in locating a country within an authorized area.

2) Determine if the B050 authorized area is required to be listed on B450. Refer to the paragraph titled “Listing and Explanation of Authorized Areas of En Route Operations” located under OpSpec B050 guidance in this chapter and section. Find the authorized area and locate the Required Paragraphs listing. If B450 is a required paragraph for the authorized area, it will be listed. If the B450 is not listed do not issue or amend B450.

3) If B450 is required, identify whether the operator either overflies or operates into/out of any of the countries listed on the U.S. Prohibitions, Restrictions and Notices list of countries at the following Internet Web address:
http://www.faa.gov/air_traffic/publications/ifim/us_restrictions/.

a) If the operator does not operate into/out of, or overfly a country listed on the Web site listed in paragraph B3 above (Excluding the United States, Bahamas, Canada, and Cuba):

1. Enter “N/A” in column 1, and do not fill in any other column in Table 1 of B450.
2. Complete Table 2.

b) If the operator does operate into/out of, or overfly a country listed on the Web site (Excluding the United States, Bahamas, Canada, and Cuba):

1. List in B450 the appropriate country in column 1 of Table 1.
2. Choose the flight operation (overflight, or into/out of) in column 2.
3. Choose the International Civil Aviation Organization (ICAO) code of the airport(s) if the operator operates into/out of that country. If multiple airports apply, enter the ICAO code for each airport separated by a comma. If the operator only overflies the country, leave the column blank.
4. Choose the frequency (daily, weekly, monthly, or on-demand).

5. Choose the type of operations (passenger, cargo, U.S. Government operations, or a combination) for the listed countries.

6. Choose the responsible persons (either management or operational control person(s) or operational control organization) and list the persons or organization in Table 2 of the template. This contact must be available 24 hours a day, 7 days a week.

4) If the B450 was previously issued or must now be issued because the operator has chosen to operate into an identified sensitive country on the Web list, the operator should amend B450 before operating that flight. In the case of a short notice charter, the operator may operate into or overfly the country before amending/issuing the B450 provided that the appropriate B450 action is completed within 72 hours after accepting the charter flight.

5) Operators and program managers should review the list of countries every 3 months for any changes and be cognizant of any Notices to Airmen (NOTAM) that may add a country to the list, and amend or issue OpSpec/MSpec/LOA B450 as appropriate.

NOTE: The U.S. Prohibitions, Restrictions, and Notices list Web site referenced in paragraph B3 above will be modified to allow operators to sign up for email notification of changes using a subscription email service. When the subscription email service is activated, the operator will be expected to monitor email updates for changes affecting their operations into sensitive international areas and update B450 accordingly. If a subscription email service is utilized, this process replaces the 3-month review requirement.

RESERVED. Paragraphs 3-817 through 3-870.