

VOLUME 4 AIRCRAFT EQUIPMENT AND OPERATIONAL AUTHORIZATIONS**CHAPTER 12 LETTER OF AUTHORIZATION FOR OPERATIONS IN SPECIAL AREAS OF OPERATION (SAO)****Section 1 Issue a Letter of Authorization****4-1286 PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODES.**

A. North Atlantic (NAT): 1406.

B. Other: 1402, 1404, and 1408.

C. PTRS Data Sheet. Complete the appropriate sections of the electronic PTRS Data Sheet (this is the Direct Entry Form in Enhanced Flight Standards Automation System (eFSAS)).

1) Enter Title 14 of the Code of Federal Regulations (14 CFR) part 91 reference and activity number 1402 (Required Navigation Performance (RNP)), 1404 (Basic Area Navigation (B-RNAV)/Precision Area Navigation (P-RNAV)), 1406 (5433 for avionics; 3433 for maintenance) for NAT operations. Enter activity number 1408 (5434 for avionics; 3434 for maintenance) for other areas. PTRS codes for Reduced Vertical Separation Minimum (RVSM) are found in Volume 4, Chapter 10, Section 1, Evaluate an Operator's Application to Conduct Flight in Reduced Vertical Separation Minimum Airspace.

NOTE: Certificate Holders under 14 CFR part 125 will have operations specifications (OpSpecs) issued and A125 Letter of Deviation Authority (LODA) holders will be issued a letter of authorization (LOA).

2) Enter any comments as appropriate by clicking on the Add New Comment bar.

3) Select B (General Aviation Operations (GAOP)) or G (General Aviation Airworthiness (GAAW)) from the Primary Area dropdown menu.

4) Select code 643 (Waivers/Authorizations) in the Keyword dropdown menu.

5) Enter Opinion Code I (Information) and comments as appropriate.

6) Enter applicable Special Areas of Operation (SAO) under the Miscellaneous item in Section I (e.g., North Atlantic High Level Airspace (NAT HLA), RVSM, RNP 4, or RNP 10). Make the following entries in Section IV:

a) In the Comment Text field, enter the name, address, and telephone number of the responsible person for operations as stated on the LOA.

b) Enter Opinion code I.

7) At conclusion of an LOA project, PTRS codes from operations, avionics and airworthiness should be entered.

FAA POI

4-1287 OBJECTIVE. The objective of this task is to verify crew qualifications, and aircraft eligibility and issue an LOA to a part 91 General Aviation (GA) operator planning a flight in an SAO. Guidance to inspectors issuing OpSpecs to air carriers and part 125 operators planning flights in an SAO is contained in Volume 4, Chapter 1, Section 5, Special Navigation Areas of Operation.

4-1288 BACKGROUND. SAOs are international airspace where Communication, Navigation, and Surveillance (CNS) performance standards are governed by international agreements, separation minimums are reduced, and the standards of CNS performance are strictly enforced. In this chapter, particular emphasis is on NAT HLA in the NAT region. Inspectors should be familiar with the information in this chapter, Volume 4, Chapter 1, Section 5, and NAT Doc. 007, North Atlantic Operations and Airspace Manual, before processing an LOA for operations in NAT HLA. Figure 4-70, Regulations Applicable to International Operations 14 CFR Parts 45, 47, and 91, at the end of this section, contains regulations that are applicable to SAO operations. If any questions should arise regarding the issuance of an LOA, inspectors should request guidance from a regional Next Generation Air Transportation System (NextGen) (AXX-220) SAO specialist, formerly known as navigation specialist.

4-1289 GENERAL REQUIREMENTS FOR OCEANIC OPERATIONS. Inspectors should be aware of the requirements imposed on operators for flights in an SAO. Operator, as used in this chapter, is defined as one who exerts operational control as defined in 14 CFR part 1, § 1.1. General guidance is contained within Volume 4, Chapter 1, Section 5. Flights across oceanic airspace into other states' airspace is complex and often requires multiple LOAs, therefore any questions regarding application or interpretation of this guidance must be addressed to your regional NextGen (AXX-220) SAO specialist, formerly known as a navigation specialist. Excellent resources available to inspectors and operators are the FAA's North Atlantic and Pacific Resource Guides for U.S. Operators, which incorporate FAA and international guidance specific to those regions. There is an ongoing change to apply RNP standards in airspace within many states that subscribe to ICAO standards. Inspectors and operators MUST refer to the state Aeronautical Information Publication (AIP) for each state's airspace they will be flying into, fly over, or use as an alternate.

- **LOA B034, IFR Class I Terminal and En Route Navigation Using RNAV Systems,** is required for operation in Europe, for Q-routes (high), for domestic T-Routes (low), or Y-Routes between Florida and Puerto Rico.
- **LOA B036, Class II Navigation Using Multiple Long-Range Navigation System (M-LRNS),** is required for U.S.-registered aircraft operating within RNP airspace for another state and is required before issuing LOA B039. LOA B036 can be used to authorize RNP 4 or RNP 10 for part 91 navigation in West Atlantic Route System (WATRS) or for navigation in the Pacific.
- **LOA B039, Operations in North Atlantic High Level Airspace,** is required for flights within the NAT HLA.
- **LOA B046, Operations in Reduced Vertical Separation Minimum (RVSM) Airspace** is required for U.S.-registered aircraft transiting the NAT HLA at RVSM altitudes. Refer to part 91, § 91.706 and appendix G.
- **LOA B050, Authorized Areas of En Route Operation, Limitations, and Provisions,** is issued for Special Federal Aviation Regulations (SFAR) approval.

NOTE: Inspectors needing access to ICAO documents should contact their regional NextGen (AXX-220) SAO specialist, formerly known as navigation specialist. Consultations regarding SAO applications should be documented using specific tracking tools as outlined in Volume 3, Chapter 1, Section 1, subparagraph 3-4D, Online Posting of Application.

A. International Operations Procedures. A journey logbook required by International Civil Aviation Organization (ICAO) Annex 6, Operation of Aircraft, Part II, International General Aviation – Aeroplanes, for any aircraft engaged in international navigation and is regulatory for U.S.-registered aircraft under § 91.703. A sample log page should be submitted to the approving office. Operators are strongly encouraged to prepare an International Operations Procedures Manual inclusive of CNS procedures used while operating in an SAO. The International Operations Procedures Manual should be accessible to the flightcrew where they can reference specific procedures and contingencies that they may encounter for the route flown. The manual should include:

- Specific preflight, in-flight, and post-flight procedures;
- Flight planning;
- Designation of crewmember(s) responsible for inserting waypoints) and verification of waypoint insertions in the long-range navigation systems (LRNS);
- Procedures for logging equipment accuracy;
- Sample log depiction in the manual and submit sample log page to approving office;
- Plotting chart procedures, oceanic checklist and a completed sample chart, (incorporate an LRNS checklist with the regular aircraft checklists, and include procedures in case of LRNS equipment failure); and
- AIP for every state for which flight is intended over, or to airports in that state or an alternate in the state.

B. Communication Equipment Required. ICAO standards Annex 2, Rules of the Air, paragraph 3.6.5.1 state that an aircraft operated on a flight plan shall maintain continuous listening watch on the appropriate radio frequency and establish two-way communication, as necessary, with the appropriate air traffic control (ATC) facility, except as prescribed by the ATC authority in regard to an aircraft forming part of the air traffic pattern at a controlled airport. Refer to § 91.511, Communication and navigation equipment for overwater operations.

1) To maintain communication capability, high frequency (HF) communications equipment is normally required for each aircraft crossing the Atlantic, Pacific, WATRS, Caribbean, and Gulf of Mexico oceanic airspace. In the oceanic control areas (OCA) and flight information regions (FIR), very high frequency (VHF) coverage is not sufficient to ensure continuous two-way communications with ground stations.

2) VHF equipment shall include 121.5 MHz capability. Inspectors should verify that the operator has policy and procedures in place for the pilot(s) to maintain a listening watch on 121.5 MHz unless communication on another frequency prevents this. Frequency 121.5 MHz is not authorized for routine use; 123.45 MHz should be used for air-to-air communications.

C. Navigation Equipment and Procedures. Approved navigation equipment must be installed in accordance with a Supplemental Type Certificate (STC) original type certificate (TC), or a field approval. In either case, the operations inspector should coordinate with the principal avionics inspector (PAI) and the regional NextGen (AXX-220) SAO specialist (formerly known as navigation specialist) to ensure that the equipment installation is acceptable. Navigation equipment requirements for an LRNS are addressed in the guidance located in Volume 3, Chapter 18, Section 4, Part B Operations Specifications – En Route Authorizations and Limitations, which addresses many of the issues specific to LOAs in special areas of navigation.

D. Surveillance Equipment and Procedures. ICAO Doc. 4444, Procedures for Air Navigation Services, states that “a procedural environment exists in those areas where surveillance coordination procedures are not available because at least one of the coordinating ATS units does not have a surveillance capability or the surveillance capabilities differ.” Surveillance in oceanic and remote areas is often achieved with voice position reports. Some ATS units incorporate Automatic Dependent Surveillance-Broadcast (ADS-B), Automatic Dependent Surveillance-Contract (ADS-C) and, Controller-Pilot Data Link Communications (CPDLC), or voice position reports.

E. Crew Qualification Requirements. ICAO Annex 6, Part II, International General Aviation – Aeroplanes, and Part III, International Operations – Helicopters, establishes standards that the signature states agree to. ICAO signature states have regulations/rule that allows for enforceable regulatory action. The FAA uses § 91.703(A)(1)(2). Unless an exception is established by a state which is published in their AIP, the following stipulations are applicable for flights outside the jurisdiction of member states:

1) An operator shall ensure that all employees, when abroad, know that they must comply with the laws, regulations, and procedures of those states where they conduct operations, and also comply with the relevant laws, regulations, and procedures of their State of Registry.

2) An operator shall ensure that all pilots are familiar with the laws, regulations, and procedures pertinent to the performance of their duties that are prescribed for the areas to be traversed, the airports to be used, and the related air navigation facilities. The operator shall ensure that other members of the flightcrew are familiar with those laws, regulations, and procedures that are pertinent to the performance of their duties.

3) Operators shall ensure that all pilots in command (PIC) understand that if a deviation in an emergency situation violates local regulations or procedures, the PIC shall notify the appropriate local authorities without delay. If required by the state where the incident occurs, the PIC shall submit a report on any such violation to the appropriate authority of that state.

4) An operator shall not use a pilot as PIC of an aircraft on a route or route segment for which that pilot is not currently qualified until that pilot has satisfied the knowledge requirements of the following:

- The route to be flown and the airports to be used;
- The terrain and minimum safe altitudes;

- The seasonal meteorological conditions;
- The meteorological, communication, and air traffic facilities, services, and procedures;
- Search and rescue procedures; and
- The navigational facilities and procedures, including any long-range navigation (LRN) procedures associated with the planned route.

F. Pilot Qualification. The minimum pilot qualification for any oceanic flight is a private pilot certificate. An instrument rating is required if operating at or above 5,500 feet pressure altitude in the NAT region. Some states (for example, Canada) require pilots to hold an instrument rating for operating at any altitude in the NAT region under their jurisdiction; therefore, it is imperative that pilots are acquainted with states' varying legislative requirements, which are found in each state's AIP. Pilots must comply with the regulations imposed by the State of Registry of the aircraft they are flying and with the regulations of countries in which they land or overfly. Irrespective of the mandatory requirements, inspectors should strongly recommend that all pilots hold a valid instrument rating. In addition to cross-country flight time, the demanding nature of the oceanic operational environment requires that the PIC meet the recency-of-experience requirements stipulated by the State of Registry, have adequate recent flight experience in the use of long-range CNS equipment, and training in dead reckoning navigation techniques.

G. Training Curriculum Content. Experience has clearly demonstrated that the presence of sophisticated navigational equipment on board an aircraft does not, by itself, ensure that the flightcrew will achieve a high level of safety performance. The rapid growth in traffic density and the complexity of CNS requirements in the SAOs makes it essential that operators provide adequate training for the personnel operating or maintaining the equipment. Inspectors must be proficient in using test equipment when returning navigation equipment back to operable service. Operating drills and procedures by flightcrew should also be included as required by ICAO Doc. 7030, Regional Supplementary Procedures. **Questions concerning the acceptability of training should be referred to the regional NextGen (AXX-220) SAO specialist, formerly known as navigation specialist.** Inspectors should strongly recommend that the crew qualifications include, at a minimum, the subjects listed below:

- ICAO operational standards, state regulations and differences found in the state AIP;
- General knowledge of airspace CNS requirements to include reduced separation standards;
- Oceanic error risk mitigations;
- Complete understanding of Strategic Lateral Offset Procedures (SLOP);
- ICAO measurement standards;
- Use of oceanic flight planning charts;
- Use of oceanic checklist;
- Sources and content of international flight publications;
- Itinerary planning;
- Preparation of ICAO flight plans, plotting charts, and flight logs to include equal time point (ETP) calculations;

- Route planning within the special areas of operation where flights are to be conducted;
- En route and terminal procedures (different from U.S. procedures);
- Use of CNS equipment, procedures, and related contingencies;
- Structure of the SAO where the flights are to be conducted;
- Air traffic clearances;
- International meteorology, including significant weather charts, prognostic weather charts, tropopause prognostic charts, and terminal aerodrome forecasts (TAF), contingency procedures for weather diversions;
- Emergency procedures, including required emergency equipment, Search and Rescue (SAR) techniques, and navigation and communications equipment failure techniques; and
- If operations are to be conducted in areas of magnetic unreliability (AMU), specialized training must be given.

4-1290 SPECIAL AREAS OF OPERATION REQUIREMENTS.

A. When Authorization is Required. There is no requirement for a GA operator to obtain authorization for oceanic operations outside of a designated SAO. However, GA operators may call their inspector to obtain information on oceanic operations. Operators and inspectors should consult their regional NextGen (AXX-220) SAO specialist, formerly known as navigation specialist in this regard.

B. ICAO Requirements. When conducting oceanic flights, pilots of U.S.-registered aircraft must adhere to the U.S. regulations, ICAO Standards and Recommended Practices (SARP), and state regulations for the countries they overfly or where they land. Section 91.703 specifically addresses ICAO Annex 2, which ensures that ICAO standards are regulatory to operators of U.S.-registered aircraft operating in oceanic airspace. The Convention on International Civil Aviation, commonly known as the Chicago Convention, is the basis for this requirement. Pilots should also review Annex 6, Part II, International General Aviation – Aeroplane and Part III, International Operations – Helicopter.

4-1291 NAT REGION OCEANIC OPERATIONS.

A. NAT Region. Flights conducted over the NAT region shall be conducted in accordance with the instrument flight rules (IFR) when operated at or above flight level (FL) 60 or 600 m (2,000 ft) above ground, whichever is higher (refer to ICAO Doc. 7030, Regional Supplementary Procedures). Within the NAT region, two types of SAOs have been structured. The first of these is NAT HLA, which has been operational for many years. The second SAOs is RVSM airspace, § 91.706. RVSM airspace is any airspace or route where aircraft are separated by 1,000 feet vertically between FL 290 and FL 410 (inclusive). Requirements for operation in this airspace are contained in Advisory Circular (AC) 91-85, Authorization of Aircraft and Operators for Flight in Reduced Vertical Separation Minimum Airspace, as regulated by § 91.706 and Part 91 Appendix G, Operations in Reduced Vertical Separation Minimum (RVSM) Airspace.

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B. NAT HLA Dimensions. NAT HLA is that volume of airspace between 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.

C. NAT HLA Approval Process. All aircraft operating in NAT HLA are required to have a specified minimum navigation performance capability that has been approved by the State of Registry for GA/corporate aircraft and State of the Operator for commercial operators. The approval process includes all aspects of the required navigation accuracy, navigation equipment required, installation and maintenance procedures, and crew training. It is implicit in the concept of NAT HLA and essential to the application of the lateral separation minimums that all operations in NAT HLA achieve the highest standards of navigation performance accuracy. The approval process includes all aspects of the required navigation accuracy, navigation equipment required, installation and maintenance procedures. The following summarizes the obligations of the operator and crew operating under part 91 for flight in NAT HLA:

- 1) The operator must have an LOA from the State of Registry for that aircraft. U.S.-registered aircraft must have LOA B036 before being issued LOA B039 or B059, Canadian MNPS (C-MNPS);
- 2) The approved aircraft Multiple Long-Range Navigation System (M-LRNS) must be operational and checked for accuracy while airborne by the flightcrew, before entry into NAT HLA;
- 3) Operators must follow approved operating procedures while in NAT HLA, and must not deviate from their assigned clearance without prior ATC approval, except for emergency or weather contingencies;
- 4) Operators must advise ATC in the event of CNS equipment failure or navigation uncertainty;
- 5) There must be a high standard of supervision, monitoring, and cross-checking of data inserted into automatic navigation systems;
- 6) Operators must maintain coordination with ATC to ensure that misunderstandings over the route to be flown do not occur; and
- 7) RVSM authorization should be noted in the LOA for operators wishing to operate in RVSM airspace. RVSM authorization for U.S.-registered aircraft is LOA B046.
 - a) Additionally, for part 125 operators, approval to operate in RVSM airspace is indicated in Volume 3, Chapter 18, Section 4.

NOTE: Part 125 is NOT an ICAO-recognized operation. The operator, when filing their international flight plan, should identify whether they are a commercial or private operation. States will handle the flight according with a ramp check based on this identification code.

b) Operators operating in RVSM airspace are required to participate in a monitoring program according to ICAO Annex 6, Part II, International General Aviation, Chapter 2.5. An RVSM approval is valid globally on the understanding that any operating procedures specific to a given region will be stated in the operations manual or appropriate crew guidance. ICAO Annex 6, Part II, Paragraph 2.5.2.7 states, “The State of Registry that has issued an RVSM approval to an owner/operator shall establish a requirement which ensures that a minimum of two aeroplanes of each aircraft type grouping of the owner/operator have their height-keeping performance monitored, at least once every two years or within intervals of 1,000 flight hours per aeroplane, whichever period is longer. If an owner/operator aircraft type grouping consists of a single aeroplane, monitoring of that aeroplane shall be accomplished within the specified period.” ICAO Doc. 9574, Manual on Implementation of a 300 m (1,000 ft) Vertical Separation Minimum Between FL 290 and FL 410 Inclusive, also provides guidance in this area.

c) The operator can currently participate in the program by overflying a fixed-location Aircraft Geometric Height Measurement Element (AGHME). These elements in the United States are located near Atlantic City, NJ; Wichita, KS; Cleveland, OH; Phoenix, AZ; and Portland, OR. Elements in Canada are located in Ottawa, Ontario and Lethbridge, Alberta. European units are called a height monitoring unit (HMU). HMUs are located at Strumble, United Kingdom; Linz, Austria; Nattenheim, Germany; and Geneva, Switzerland. Operators also have the option to carry a portable GPS-based Monitoring Unit (GMU) to fulfill the RVSM monitoring requirement. They can do this by contacting either of the two FAA contract providers, which are Aeronautical Radio, Inc. (ARINC) RVSM and Cabin Safety Subject Index (CSSI) RVSM.

D. Navigation Performance Requirements. For approval of unrestricted operation in NAT HLA, an aircraft must be equipped with two fully serviceable and independent LRNSs. Acceptable LRNSs include an inertial navigation system (INS), a Technical Standard Order (TSO) FAA–approved Global Positioning System (GPS), and flight management computer systems (FMCS) with inputs from inertial reference systems (IRS), or approved GPS sensors. Each LRNS must be capable of providing a continuous indication of the aircraft’s position relative to track. When coupled with an FMCS for automatic flight guidance, INS-IRS have demonstrated a capability to meet NAT HLA requirements. Some aircraft may carry two IRSs, but only one FMCS. Such an arrangement may meet track-keeping parameters, but does not provide the required redundancy (in terms of continuous indication of position relative to track or of automatic steering guidance) should the FMCS fail. In this case, dual FMCS is required to obtain unrestricted NAT HLA certification.

E. Routes for Aircraft with Only One LRNS. A number of special routes exist for aircraft equipped with only one LRNS or aircraft suffering a partial loss of navigation capability. These routes are within NAT HLA and require an LOA. Aircraft that are equipped with normal short-range navigation equipment (VHF omnidirectional radio range (VOR)/distance measuring equipment (DME), Automatic Direction Finding (ADF)) and at least one fully operational LRNS are capable of meeting the requirements of NAT HLA while operating along the special routes/Blue Spruce routes. Continuous VHF coverage exists on these routes at FL 310 and above, except as depicted on current aeronautical charts. Inspectors issuing LOA B039 for routes

approved for aircraft with only one LRNS must note this under paragraph 3, Table 2. The special routes, known as Blue Spruce routes, are found in:

- Iceland AIP. Source document for special routes/Blue Spruce routes and detailed information about route definitions and operating procedures, which enables flight along other special routes within NAT HLA.
- NAT Doc. 007, North Atlantic Operations and Airspace Manual.
- Atlantic Orientation Charts.
- Transport Canada Aeronautical Information Manual (TC AIM), Section RAC 11.20.4 Special Routes for Aircraft Fitted with a Single Long-Range Navigation System.

F. Routes for Aircraft with Short-Range Navigational Equipment. Special routes of short stage lengths flown by aircraft with short-range navigation equipment (VOR/DME, ADF), require LOA B039 for operation within NAT HLA. Inspectors issuing B039 LOA for routes approved for aircraft with short-range navigational equipment must note this equipment under paragraph 4, Table 3, Airplanes with Only Short-Range Navigation Equipment, VOR, DME, and ADF Authorized to Use Special Routes of Short Stage Lengths Only in NAT HLA Airspace. The special routes of short stage lengths can be found in:

- Iceland AIP, Section ENR 1.8.
- NAT Doc. 007.
- Atlantic Orientation Charts.
- TC AIM, Section RAC 11.20.4.
- Consult with your regional NextGen (AXX-220) SAO specialist (formerly known as navigation specialist) to determine if aircraft equipped with only short-range navigation equipment meet the legal requirements for operation in the NAT HLA.

G. Special Provisions for Aircraft Not Equipped for Operation in NAT HLA to Climb or Descend Through NAT HLA. Some aircraft, particularly higher performance international general aviation (IGA) aircraft, operate at FLs above the upper limit of NAT HLA (above FL 420). Depending on their point of departure, such aircraft often require a comparatively brief penetration of NAT HLA. In order that these aircraft are not unduly penalized by excluding them from operating at their most economic cruising level, the NAT Systems Planning Group (NAT SPG) makes provisions for climb and descent through NAT HLA. The NAT SPG agreed to the following provisions on the understanding that the states concerned would publish them in the relevant AIP, stating the VOR/DMEs they will use and indicating those parts of the NAT HLA that may be affected by this procedure. The responsible ATC unit that directs an aircraft to climb or descend through NAT HLA may clear aircraft not equipped for operation in NAT HLA provided the following circumstances exist:

- The climb or descent can be completed within the usable coverage of selected VOR/DMEs and/or within the radar coverage of the ATC unit issuing such clearance;
- The aircraft is able to maintain direct pilot-controller communications on VHF; and

- The application of this procedure does not penalize NAT HLA-authorized aircraft operating in that part of the NAT HLA affected by such climb or descent.

4-1292 USE OF GPS EQUIPMENT. The FAA Satellite Navigation Team provides satellite (GPS)-based Positioning, Navigation, and Timing (PNT) services in the United States to enable performance-based (RNP/Area Navigation (RNAV)) operations for all phases of flight from en route, terminal, approach, and surface navigation. The Web site located at: http://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/techops/navservices/gnss/ provides GPS, Ground Based Augmentation System (GBAS) and Satellite-based Augmentation System (SBAS) information. Guidance for Air Navigation, Communications and Surveillance is found in Volume 4, Chapter 1, Sections 1 through 6.

4-1293 FAA DOCUMENTATION AND EVALUATION OF GPS EQUIPMENT.

A. Avionics. Documentation must be provided that validates approval of the installed GPS airborne receiver in accordance with the current editions of FAA Order 8110.48, How to Establish the Certification Basis for Changed Aeronautical Products, and AC 20-138, Airworthiness Approval of Positioning and Navigation Systems, as appropriate, or other applicable airworthiness criteria established for GPS installations.

B. Initial Installations and Continued Airworthiness. The operator must assure that the equipment is properly installed and maintained. No special requirements, other than the standard practices currently applicable to navigation or landing systems, have been identified that are unique to GPS (e.g., Airworthiness Directives (AD) or Service Bulletins (SB)).

C. Action. Aviation safety inspectors (ASI) must evaluate installation, crew capabilities, and operational responsibilities relative to GPS oceanic operations prior to issuing an LOA for operation in NAT HLA. An avionics inspector should evaluate the avionics installation and must confirm that the aircraft is properly configured prior to the issuance of an LOA to operate in NAT HLA. Specific items to check are as follows:

1) Navigation systems. Check AC 20-138 for use as a visual flight rules (VFR) and IFR supplemental navigation system. This AC addresses the following avionics:

- GPS equipment including those using GPS augmentations.
- RNAV equipment integrating data from multiple navigation sensors.
- RNAV equipment intended for RNP operations.
- Barometric vertical navigation (baro-VNAV) equipment.

2) Receiver autonomous integrity monitoring (RAIM) or an equivalent method must provide the basic integrity for these operations.

3) The GPS operation must be conducted in accordance with the FAA-approved flight manual or flight manual supplement, if required.

4) Procedures must be established for use in the event that significant GPS navigation outages are predicted to occur. In situations where pilots encounter this, the flight

must rely on other approved equipment that meets navigation performance standards for the duration of the flight, or delay the departure, or cancel the flight.

5) Aircraft navigating by GPS are considered to be RNAV aircraft. Therefore, the appropriate equipment suffix must be included in the ATC flight plan.

4-1294 FLIGHT INFORMATION. Operators must supply and ensure that the information necessary to plan, conduct, and control operations is available to operational control and flightcrew personnel. You can obtain most of this data through subscriptions to a government service or to a commercial aeronautical information and charting service. Operators should expect to supplement these services if necessary and, in all cases, are responsible for ensuring that the information used is accurate and complete. **This data includes Notices to Airmen (NOTAM), track messages, and airport obstruction data, when applicable.** A 24-hour voice GPS constellation status is available by calling (703) 313-5907 and GPS RAIM prediction is available at <http://sapt.faa.gov>.

A. Airport and Facilities. The Airport/Facility Directory (A/FD) contains information on airports and facilities that flightcrew members and operational control personnel need. **Operators should obtain this information from the AIPs of the country for operations outside the United States.** In addition, inspectors should ensure that operators understand their requirement to make the A/FD information available to their personnel.

B. NOTAMs. **Guidance for NOTAMs is found in Volume 3, Chapter 26, Section 6,** Notices to Airmen. Domestic and ICAO NOTAMs can be found on the Internet at <https://pilotweb.nas.faa.gov/PilotWeb>. This site is sponsored by the FAA Aeronautical Information Management Office and provides access to current NOTAM information from the United States NOTAM System. Operators are reminded that flight planning services purchased from vendors are not at this time subject to FAA oversight, and the quality, accuracy, and completeness of such services is the sole responsibility of the pilot in command (PIC). These services include but are not limited to: computerized flight plans, flight plan filing, NOTAMs, weather information, and AIPs. Particular attention should be given to § 91.703 and the requirements therein.

NOTE: **International and Airspace NOTAMs** are published in the Notices to Airmen Publication (NTAP), Part 3, International Notices to Airmen. Operators should ensure that this **information is made available to the PIC and operations personnel (dispatchers)** for any international flight.

C. Track Messages. Messages containing the coordinates of routes operators will follow on flexible track systems, such as the NAT-Organized Track System (OTS), are transmitted approximately every 12 hours. The North Atlantic Tracks issued by Shanwick Center (EGXX) and Gander Center (CZQX) can be found at www.notams.faa.gov/common/nat.html. Western Pacific and Northern Pacific Track NOTAMs are available as international NOTAMs under the location identifiers of the respective air route traffic control center; examples are Oakland Center (KZOA), Oakland OCA/FIR (KZAK) or Anchorage Center (PAZA) which can be found at <https://pilotweb.nas.faa.gov/PilotWeb/>. **Flightcrews operating over these routes are required to have the current track message available in the cockpit to verify flight plan coordinates, should**

an in-flight rerouting become necessary. Inspectors must ensure that an operator's operational control personnel have this information for flight planning and flight monitoring purposes.

NOTE: ICAO procedures routinely require operators flying in or above a track system to have a current track message onboard. This also applies to operators flying a random route in the SAO. Operators should consult ICAO Doc. 7030 for area specific requirements for track messages.

4-1295 PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of FAA policies, pertinent ICAO standards, and other applicable regulations and qualification as an ASI (Operations, Avionics, and Airworthiness). Enforcement authority falls under § 91.703(A)(1)(2).

B. Coordination Requirements. This task requires coordination with the regional NextGen (AXX-220) SAO specialist (formerly known as navigation specialist), and may require assistance from FAA headquarters (HQ) airworthiness unit, and the avionics unit.

4-1296 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- Title 14 CFR Parts 61 and 91.
- TSO C-145, Airborne Navigation Sensors Using the Global Positioning System Augmented by the Satellite Based Augmentation System.
- TSO C-146, Stand-Alone Airborne Navigation Equipment Using the Global Positioning System Augmented by the Satellite Based Augmentation System.
- ICAO Annex 2, Rules of the Air.
- ICAO Annex 6, Part I – International Commercial Air Transport – Aeroplane.
- ICAO Annex 6, Part II – International General Aviation – Aeroplane.
- ICAO Annex 6, Part III – International Operations – Helicopter.

B. Forms. FAA Form 8000-36, Program Tracking and Reporting Subsystem Data Sheet.

C. Job Aids. Format for LOA B039 to operate in the NAT HLA can be found on Web-based Operations Safety System (WebOPSS).

4-1297 THE APPROVAL PROCESS. The approval process for oceanic operations is used to ensure that those operations meet regulatory standards and provide for safe operating practices. The inspector must ensure the operator has a clear understanding of the minimum requirements that constitute an acceptable submission. Ensure the operator has a clear understanding of the minimum requirements that constitute an acceptable submission. The process consists of five phases that result in approving or not approving an applicant's proposal. The inspector must:

- Accurately assess the character and scope of the proposal;
- Determine if a demonstration is required;
- Determine the need for any coordination requirements; and
- Determine the date the operator intends to implement the proposal.

4-1298 NAT HLA OPERATIONAL APPROVAL. In the United States, operational approval to fly in NAT HLA for part 91 operators is obtained by the issuance of LOA B039. LOA B046 must be issued if the operator will fly at altitudes from FL 290 to FL 410 in NAT HLA. During initial inquiries, it is important for the FAA and the operator to become familiar with the subject matter in phase 1. The operator and FAA inspector should contact their regional NextGen (AXX-220) SAO specialist, formerly known as navigation specialist. Authorization for operations in NAT HLA requires FAA approval of crew qualifications as described in Volume 3, Chapter 18, Section 4, the current edition of AC 91-70, Oceanic and International Operations, approval of equipment installation and maintenance procedures, and verification that the ICAO Annex 6 requirements for navigation equipment redundancy are satisfied. PTRS entries will ensure that a database of all FAA approvals for operation in SAOs is maintained and available. Additionally, reports of oceanic operations deviations will be available from Oceanic Evens Review Committee (OERC) PTRS entries. These databases will ensure that the United States meets two specific obligations as an ICAO member state. These obligations are that the states should maintain detailed records of all current IGA approvals and that the responsibility for enforcement of flight rules that apply over the high seas rests with the aircraft's State of Registry for GA/Corporate operators and the States of the Operators for commercial operations.

4-1299 PHASE ONE. Phase one is initiated when an applicant inquires about the need for an LOA.

A. Purpose of the LOA. Operators of U.S.-registered aircraft must be authorized by the Administrator to conduct operations in NAT HLA. All LOAs will have a PTRS tracking number. If new equipment has been installed or a different person is responsible for international crew qualifications, a new application for a LOA is required to replace the previous LOA. LOAs must be carried on the aircraft at all times when operating in NAT HLA. The LOA will specify the type of operation authorized. These include unrestricted NAT HLA authorization, restricted authorization for routes requiring one LRNS, routes for aircraft with short-range navigation equipment, and restricted authorization for routes not requiring HF radios.

B. Applicant-FAA Communication. The inspector must ensure that the operator clearly understands the requirements that must be met for the FAA to approve the proposal. Excellent resources for ICAO and FAA guidance are found in the FAA North Atlantic and Pacific Guides for U.S. Operators located at: http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/afs/afs400/afs470/media/NAT.pdf and http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/afs/afs400/afs470/media/PAC.pdf. It is essential for the operator to understand that, although the inspector may provide advice and guidance, the proposal submitted to the FAA for approval is solely the operator's responsibility. The inspector must inform the operator of the benefits of submitting required documents as early as possible. The operator must also be aware of the responsibility to advise the FAA, in a timely manner, of any significant changes in the proposal.

C. Authorization Criteria for Issuance of LOAs. A listing of regulations pertinent to international operations is located in Figure 4-70. Before receiving approval for operations in oceanic airspace, the operator must meet the following requirements:

- The required CNS equipment must be inspected and approved;
- The aircraft must be properly registered and certificated as Airworthy; and
- The operator must develop a journey logbook in accordance with ICAO Annex 6, Part I – International Commercial Air Transport – Aeroplanes, Chapter 11, paragraph 11.11.4. Operation of Aircraft, Part II, International General Aviation – Aeroplane, Chapter 23.8, paragraph 2.8.1, and Annex 6, Part III - International Operations – Helicopter, Chapter 9, paragraph 9.9.4. The annexes state, in part, there shall be maintained in respect to every aircraft engaged in international navigation, a journey logbook in which shall enter particulars of the aircraft, its crew, and of each journey.

NOTE: The term journey logbook in this context includes, but is not limited to, a navigation log, Electronic Flight Bag (EFB) computer flight plan, and/or plotting chart that may be kept in the form of electronic data. This record should be maintained for 6 months following the flight.

D. International Operations Qualifications. The crew(s) must have international operations qualifications as certified by an individual U.S. citizen who must accept responsibility for the crew's operation in international airspace. Crews must meet the applicable requirements stated in subparagraph 4-1289E, Crew Qualification Requirements. Inspectors should conduct a review of the operator's training and procedures and conduct a tabletop exercise for the SAO requested, in coordination with the SAO specialist, formerly known as navigation specialist. Prior to validation testing, the inspector will examine aircrew training requirements by approved/authorized instructors and accompanying documentation for the SAO requested. If the inspector determines the crew's qualifications to be inadequate, an LOA will not be issued. Qualifications for the issuance of an LOA may be satisfied by one of the following:

- Completing an operator's oceanic operations training and testing program.
- Completing a commercial oceanic operations training and testing program.
- Submitting military training records indicating prior oceanic operations experience.
- Written, training, or oral exam results that assure the inspector and the operator that the crew can safely conduct oceanic operations.

1) ASIs are encouraged to coordinate with a regional NextGen (AXX-220) SAO Specialist, formerly known as navigation specialist to conduct a review of the operator's training and procedures and conduct a tabletop exercise for the SAO requested.

2) Neither the regulations nor Annex 2 to the ICAO Rules of the Air requires specific training. Inspectors should make critical observations in determining crew qualifications. For a crew to be considered qualified for oceanic operations, crew members must be knowledgeable in the following subject areas:

- ICAO Standards and Recommended Practices (SARP);
- Use of oceanic flight planning charts;
- Systematic navigation cross-checks;
- Sources and content of international flight publications;
- Itinerary planning;
- FAA international flight plan, ICAO flight plan, and flight log preparation;
- Route planning within the SAO where flights are to be conducted;
- ICAO and state en route and terminal procedure differences from those in the United States;
- Long-range, air-to-ground communication procedures;
- Structure of the SAO where the flights are to be conducted;
- CNS requirements particular to the aircraft flown and the flight profile within the SAO;
- Air traffic clearances;
- International meteorology, including significant weather charts, prognostic weather charts, tropopause prognostic charts, and TAFs;
- Specific en route navigation procedures for each type of navigation equipment required for use in the SAO;
- Emergency procedures, including required emergency equipment, search and rescue techniques, navigation equipment failure techniques, and communication equipment failure techniques.
- Weather deviations, route offsets for engine out and strategic lateral offset procedure (SLOP), etc.; and
- Emergency procedures including required emergency equipment, SAR techniques, navigation, and communication equipment failure techniques. Each state's AIP has specific differences written in regard to emergency, lost communication and search and rescue procedures. This information must be checked for each state the flight intends to fly into, fly over, or use as an alternate.

4-1300 PHASE TWO. Phase two begins when the operator formally submits a proposal for FAA evaluation. The FAA makes initial examination of the documents for completeness with respect to requirements established in phase one. As a result of phase two, the proposal is accepted or returned with an explanation of deficiencies. NextGen Field Program Branch (AFS-408) SharePoint sites SAO Tracker 2010 and/or regional NextGen Application Trackers should be used to submit applications.

A. Initial Action. In phase two, the inspector's initial action is to review the operator's submission to ensure that the operator has clearly defined the proposal and provided the documents specified in phase one. The required information must be complete and detailed enough to permit a thorough evaluation of the operator's ability and competence to fully satisfy the applicable regulations, national policy, and safe operating practices in oceanic operations. The inspector also queries the Safety Performance Analysis Systems (SPAS) database to obtain the flightcrew's accident, incident, and pilot violation history to determine eligibility, and to ascertain whether the aircraft registration and operator citizenship satisfy the requirements of part 47. Phase two does not include a detailed operational and technical evaluation or analysis of

the submitted information (see phase three). However, in phase two, the inspector must examine the proposal and determine whether all requested and required information has been submitted.

B. Unsatisfactory Submission. If the operator's submission is not complete, or the quality is obviously unacceptable, the inspector must return it immediately before any further review and evaluation is conducted.

- 1) Normally, an inspector returns an unacceptable submission with a written explanation of the reasons for its return.
- 2) In complex cases, a meeting with the operator's key personnel and SAO specialist may be necessary to resolve issues and agree on a mutually acceptable solution.
- 3) If the inspector and the operator cannot reach a mutual agreement, the inspector must terminate the meeting, inform the operator that the submission is unacceptable, and return the submission. If all parties are able to reach agreement on measures to correct omissions or deficiencies, and the inspectors (Operations, Maintenance, and Avionics, if applicable) determine that the submission is acceptable, the operator is informed, and phase three begins.

C. Status Reports. It is important for the inspector involved to keep the operator advised of the status of the proposal. If the inspector takes no other action, or if the submission is deficient and not returned in a timely manner, the operator may assume that the FAA has tacitly accepted the submission and is continuing with the process. Timeliness of action depends on the situation and on the inspector's judgment. The Regional NextGen Branch (AXX-220) Operational Approval Coordination SharePoint site is designed to increase the speed and efficiency of the application process by utilizing online capabilities. See Volume 3, Chapter 1, Section 1, subparagraph 3-4D for further guidance. This subparagraph lists the various application trackers and their Web addresses. SAO applications for LOA are posted using this tool.

4-1301 PHASE THREE. During phase three, the FAA evaluates the operator's formal proposal for compliance with the regulations, compliance with the direction provided in Order 8900.1, and compliance with other safety-related documents and safe operating practices. Evaluation of documents requires coordination with SAO specialist and may require regional airworthiness/avionics review. If the results of the evaluation are unsatisfactory, the proposal is returned to the operator for correction and/or termination of the phase. Planning of phase four (if required) may begin during phase three. When the results of the evaluation are satisfactory, proceed with phase four (if a demonstration is required) and grant conditional approval or acceptance, if appropriate. Proceed to phase five if a demonstration is not required.

A. Detailed Analysis. Phase three is the FAA's detailed analysis, review, and evaluation of the operator's proposal. In phase three, the FAA evaluation is focused on the form, content, and technical quality of the submitted proposal.

B. Evaluation Criteria. The inspector must ensure that the documents adequately establish the operator's ability and competence to conduct operations safely in accordance with the submitted proposal. Operating procedures must be evaluated in coordination with the SAO specialist, formerly known as the navigation specialist. Operators may be required to present

their aircraft at a location convenient to the operator and the inspectors. A representative minimum flightcrew may be required to accompany the aircraft to the inspection site for evaluation of the crew's qualifications to operate CNS equipment in accordance with operator procedures. Additional crews do not need to be present during this inspection, but a representative of the operator will be required to certify, by the signing of the LOA, that all crews operating aircraft in SAOs meet the same qualifications as the representative crew. An Avionics inspector may inspect CNS equipment or review airplane certification documentation (i.e., FAA-approved TC, STC, SB, or Service Letter (SL)) to ensure that the installation was done in a manner the Administrator approved, and to verify that the aircraft has the required CNS equipment for operations in NAT HLA.

C. Equipment Manuals. Operations supplementary manuals are required for all CNS equipment. These manuals must contain the material required to define all operational limitations associated with the system's performance. For example, the manual would include details in regard to a GPS, which would reference RAIM technology, and fault detection and exclusion (FDE).

D. Addressing Deficiencies. During phase three, the inspector must address any deficiencies in the submitted material in a timely manner before proceeding to subsequent phases. Discussion with the operator may be sufficient to resolve certain discrepancies or questions or to obtain additional information. It may be necessary to return certain portions of the submission to the operator for specific changes. However, when an inspector determines that, for specific reasons, the material is unacceptable, the inspector must return the proposal to the operator with an explanation and immediately terminate the process and close the PTRS file. If the results of the evaluation are acceptable and a demonstration is necessary, the inspector may need to grant conditional, initial, or provisional approval of the proposal, pending the results of the demonstration, before continuing with the process.

E. Phase Four Planning. An important aspect of phase three is for inspectors to begin planning the conduct of phase four. Although validation flights are not required under part 91, validation testing is conducted to demonstrate the operator's ability to perform the operations for which they are applying. While evaluating the operator's formal proposal, inspectors should begin to formulate plans to observe and evaluate the operator's ability to perform, if necessary. These plans must be completed before beginning the actual demonstrations. Inspectors should be aware that situations may arise when a crew that has been conducting oceanic operations under part 91 requests approval to operate under 14 CFR part 135. In this case the inspector may consult with their regional NextGen (AXX-220) SAO specialist, formerly known as the navigation specialist.

4-1302 PHASE FOUR. During phase four, the FAA observes the validation test, and the operator demonstrates ability. Although validation flights are not required under part 91, validation testing is conducted to demonstrate the operator's ability to perform the operations being applied for and requires coordination with the regional NextGen (AXX-220) SAO specialist, formerly known as the navigation specialist. As a result of phase four, the validation test is either satisfactory or unsatisfactory.

A. Observation and Evaluation of Demonstration. Phase four is an operational evaluation of the operator's ability to function in accordance with the proposal evaluated in phase three. This evaluation may be completed in phase three unless the inspector determines that a validation test is required. If a validation test is required, it will be necessary to complete this phase in accordance with the guidance contained in Volume 3, Chapter 29, Proving and Validations Tests.

B. Evaluation Criteria. Criteria for evaluating an operator's eligibility for an LOA in SAO are described in paragraph 4-1289.

C. Handling Discrepancies. The inspector must plan for the conduct and observation of the validation test, including such items as participants, evaluation criteria, and sequence of events. During these tests, it is normal for minor discrepancies to occur. Discrepancies can often be resolved during the tests by obtaining commitments from responsible company officials. Inspectors may also request the assistance of the regional NextGen (AXX-220) SAO specialist, formerly known as navigation specialist. If any questions should arise with regards to the issuance of an LOA, inspectors should request guidance from a regional NextGen (AXX-220) SAO specialist.

1) The inspector responsible for overseeing a demonstration must evaluate each discrepancy in terms of its overall impact on the operator's ability and competence to conduct the proposed operation.

2) The inspector must stop the demonstration in phase four when deficiencies or unacceptable levels of competency are observed. The inspector must identify the phase of the general process to which the applicant must return or decide to terminate the process entirely. If the demonstration is unacceptable because crewmembers were unable to perform their assigned duties, it may be appropriate to advise the operator that the process is terminated and a new proposal should be submitted.

D. Acceptable Demonstrations. If the FAA evaluation of the operator's demonstrated ability is acceptable, the process continues. An operator will not, under any circumstances, be authorized or otherwise approved to conduct any particular operation until all airworthiness and operations requirements are met and the operator is clearly capable of conducting a safe operation in compliance with FAA regulations and safe operating practices.

4-1303 PHASE FIVE. During phase five, the FAA approves or accepts a proposal.

A. Indicating Approval. Upon satisfactory completion of the aircraft and crew inspection, the inspector will use WebOPSS to generate a part 91 designator and issue requested LOAs.

1) LOA B036 has requirements for authorized airplanes, crew training, responsible person, and deviations to RNP requirements. The aircraft (make, model, and series (M/M/S)) and the LRNS (manufacturer/model) authorized for Class II Navigation must be listed in LOA B036. The inspector must list dual or redundant (separate and independent) LRNS in the LOA. All navigation components that make up the Multiple Long-Range Navigation System (M-LRNS)

must be listed on LOA B036 such as Inertial Reference Units (IRU), FMC, and GNSS. One navigation component does not make for a complete M-LRNS required by this LOA.

2) Inspectors issuing LOA B039, Operations in North Atlantic High Level Airspace, for routes approved for aircraft with short-range navigational equipment must note this limitation on the LOA. This limitation is specified in LOA B039 template in WebOPSS as follows.

3) Airplanes authorized with only short-range navigation equipment: VOR, DME, ADF. The operator is authorized to use the airplanes equipped with only short-range navigation equipment such as VOR, DME, and ADF listed in Table 3 below to operate within NAT HLA over special routes of short stage lengths. Detailed information about these special routes is published in NAT Doc. 007 and the Icelandic AIP. The equipment must be operational and maintained in accordance with the airplane or equipment manufacturer's recommendations. (If only multiple LRN and/or single LRN equipped aircraft are authorized, enter N/A in each of the cells for Table 3).

Table 3. Airplanes with Only Short-Range Navigation Equipment, VOR, DME, and ADF Authorized to Use Special Routes of Short Stage Lengths Only in NAT HLA

A/C Serial Number	Registration Number	Airplane M/M/S	Short-Range Navigation Systems M/M	Communications Equipment M/M

B. Acceptances. Other proposals, submissions, or requests not requiring specific FAA approval but required to be submitted to the FAA, are items that are presented for acceptance. Acceptance of an operator's proposal by various means includes a letter, verbal acceptance, or by taking no action, which indicates there is no FAA objection to the proposal.

4-1304 DENIAL OF A REQUEST FOR AN LOA. If an operator is unable to satisfy all requirements for issuance of an LOA, the inspector shall deny the request, notify the operator by letter (Figure 4-69, Letter Informing Operator That a Request for an LOA Has Been Denied), and return all submitted documents to the operator.

4-1305 TASK OUTCOMES. Completion of this task results in:

A. Issuance. Issuance of an LOA authorizing operations in SAO.

B. Denial. Denial of application for an LOA.

4-1306 FUTURE ACTIVITIES.

A. Investigate. The inspector investigates a reported navigational error, altitude deviation, erosion of longitudinal separation, or to confirm operator possession of an SAO authorization.

B. Verify. The inspector verifies an LOA.

C. Cancel. The inspector may cancel an LOA, due to change in responsible person, an oceanic error, or a change in equipment status of the aircraft.

Figure 4-69. Letter Informing Operator That a Request for an LOA Has Been Denied

FROM: Federal Aviation Administration
Flight Standards District Office
[street address]
[city, state, ZIP code]

TO: [person or department requesting LOA]
[company name (if applicable)]
[street address (P.O. Box not acceptable)]
[city, state, ZIP code]

Dear [name],

Your request for a letter of authorization (LOA) to operate in [name of Special Area of Operation] airspace has been denied for the following reasons:

You may reapply for an LOA upon correction of the discrepancies listed above. You may contact this office at [telephone number] if you have any questions.

Sincerely,

[inspector's signature who reviewed application]

[inspector's name]

[title]

Figure 4-70. Regulations Applicable to International Operations 14 CFR Parts 45, 47, and 91

The tables below are a compilation of Federal regulations that have particular importance in international operations. Crews are advised to reference these regulations prior to planning an oceanic or international flight. This listing of regulations is for guidance only, and does not eliminate or provide relief from other regulations that are not listed.

As per Title 14 of the Code of Regulations (14 CFR) part 91, § 91.703, Operations of Civil Aircraft of U.S. Registry Outside of the United States, (a)(2), each person operating a civil aircraft outside the United States within a foreign country must comply with the regulations relating to the flight and maneuver of aircraft there in force. State regulations for a foreign country can be found in their Aeronautical Information Publication (AIP). Pilots must refer to each state's Aeronautical Information Publication (AIP) in order to comply with § 91.703. Pilots transporting aircraft internationally should also be aware of the contents of Chapter III, Nationality for Aircraft, in the Agreements of the Chicago Convention, 7 December 1944, and the following International Civil Aviation Organization (ICAO) Annexes: Annex 2, Rules of the Air, Annex 6, International General Aviation – Aeroplanes, Part I, Operation of Aircraft, Part II, International General Aviation – Aeroplane, and Part III, International Operations – Helicopter, with part 91.

14 CFR Part 45 Identification and Registration Marking

SUBJECT	14 CFR
Nationality and Registration Marks - General	45.21
Display of Registration Marks - General	45.23
Size of Registration Marks	45.29
Marking of Export Aircraft	45.31

14 CFR Part 47 Aircraft Registration

SUBJECT	14 CFR
Registration Required	47.3
Applicants for Aircraft Registration	47.5
Certification of U.S. Citizenship	47.7
Voting Trust	47.8
Corporation not U.S. Citizen	47.9
Evidence of Ownership	47.11
Effective Date of Aircraft Registration	47.39
Invalid Registration	47.43
Cancellation of Certificate	47.47

14 CFR Part 91 General Operation and Flight Rules

SUBJECT	14 CFR
Survival Equipment for Overwater Operations	91.509
Radio Equipment for Overwater Operations	91.511
Operation of Civil Aircraft of U.S. Registry Outside of the United States	91.703
Reduced Vertical Separation Minimum Airspace	91.706
Flights Between Mexico or Canada and the United States	91.707
Operations to Cuba	91.709

RESERVED. Paragraphs 4-1307 through 4-1325.