



# The North Atlantic

## NAT Resource Guide



# NAT

### *for United States Operators*

#### *Flight Technologies and Procedures Division*

The links within this resource guide are provided as a service to help you easily find pertinent information. The validity of the links is re-checked quarterly. Documents and other information may change between updates. Information provided by non-FAA sites should be considered strictly "for information only." You should confirm the accuracy of all such non-FAA information against official FAA documentation.

***[Email Comments to: 9-AWA-AVS-AFS-400-Flight-Technologies-Procedures@faa.gov](mailto:9-AWA-AVS-AFS-400-Flight-Technologies-Procedures@faa.gov)***



1st Quarter 2026  
Updated Quarterly

[Contacts](#)  
[Acronyms](#)

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- [Oceanic Errors](#)
- [SLOP](#)
- [Contingency References](#)
- [GPS/GNSS Interference](#)
- [Volcanic Ash and Solar Storms](#)
- [Aviation Weather](#)
- [Flight Planning Information](#)
- [ARINC 424 Shorthand System](#)

# **Emphasis Items**



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# Emphasis Items, Page 1

## Current Focus

- [SAFO 24002](#), Jamming and Spoofing
- [OPS Bul 2025 001](#), NAT GNSS Interference Procedures
- [Notice 8900.678](#) and [InFO 23008](#) OpSpec/MSpec/LOA A056, Data Link Communications
- [NAT OPS Bul 2023 001 Rev 5, Removal of NAT Oceanic Clearances.](#)
- [NAT Doc 007, paragraphs 1.4](#) Aircraft not meeting HLA Requirements, Iceland-Greenland and Bodo Surveillance Corridors.
- [FAA Site to lookup Prohibitions, Restrictions and Notices](#)
- [NAT OPS Bulletin 2017-002 Rev 08](#) Oceanic Errors
- [NAT OPS Bulletin 2018 003 Rev 1](#) Waypoint Insertion/Verification Special Emphasis Items [FAA Order 7110.65, Chapter 8](#)
- [AIP ENR 7.3](#) Special Procedures for In-Flight Contingencies in Oceanic Airspace
- [NAT Doc 007, Paragraph 10.6](#)  
TCAS 7.1: From January 1st, 2017, TCAS 7.1 is required throughout the entire NAT region.
- [See NAT Doc 007 , paragraph 6.1.5](#) Gross Nav Error: defined as 10nm or more (used to be 25nm)
- [NAT Doc 007, Chapter 12](#) Contingency Procedure: Procedures in the Event of Navigation System Degradation or Failure.

- [North Atlantic Operations](#), (SKYbrary)

## TCAS/ACAS in HLA

- [ICAO Doc 7030](#) Regional Supplementary Procedures ([link to purchase](#))
- [Annex 6 Part I, Chapter 6](#) and [Part II, Paragraph 3.6](#). ([link to purchase](#)) Global TCAS/ACAS requirements

## International Oceanic Airspace

- [International Notices](#)

## Application Guides

- [Oceanic and High Remote Continental Application Guides](#)
- [Polar and Areas of Magnetic Unreliability](#)

## Cold Weather Operations

- [Cold Temperature Operation, AIM Altimeter Setting Procedures](#)
- [Updates to the Cold Temperature Airports Program, InFO 22002](#)

## PBCS Operations

Performance-Based Communication and Surveillance (PBCS) began on March 29, 2018. See the following documents:

- [NAT OPS Bulletin 2024-001](#) PBCS Tracks
- [ENR 7.5](#) Operational Policy Performance-Based Navigation (PBN) and Performance-Based Communication and Surveillance (PBCS)
- [PBCS Operational Authorization Guide \(ICAO\)](#)
- [AC 90-117](#), Data Link Communications
- [Oceanic and Remote Continental Application Guides](#) (B036, B037, B038, B039, and B054)
- [ICAO Doc 4444](#) ([link to purchase](#))
- [Data Link Communication Application Guide](#)

## NAT OPS

- [NAT OPS Bulletins](#)
- [NAT Systems Planning Group](#)
- [EUR/NAT Meetings](#)
- [EUR/NAT Documents](#)
- [EUR/NAT Events Schedule](#)



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# Emphasis Items, Page 2



## Fuel

- [Annex 6 Part 1 and Part 2](#) (link to purchase) ICAO Fuel Standards,
- [SKYbrary: Fuel-In-Flight Management \(Normal Operations\)](#)
- [SKYbrary: Fuel - Regulations](#)
- [14 CFR Part 91, §91.167](#)
- [14 CFR Part 121, §§ 121.639, 121.641, 121.643, 121.645](#)
- [14 CFR Part 135, §135.223](#)
- [AC 91-70D](#), Oceanic and Remote Continental Airspace Operations

## Dynamic Regulatory System (DRS)

The Dynamic Regulatory System (DRS) is a comprehensive Knowledge Center of Regulatory and Guidance material from the Office of Aviation Safety and other services and offices. DRS is cloud based and can be accessed by any device that has Internet capability. Some document types within DRS are restricted to only FAA employees and contractors.

- [Main FAA Page for DRS](#)
- [Help and Training for DRS](#)

## Iceland-Greenland Surveillance Corridor

The Blue Spruce Routes are no longer available as of March, 2025. Aircraft with a single long range navigation system and ADS-B may cross the NAT using the Iceland-Greenland Surveillance Corridor. See the following links

- [OPS Group: NAT Changes 2025: No More Blue Spruce Routes](#)
- [NAT Doc 007](#), (See Paragraphs 1.4, Diagram on 1.7.5)

## Streamlined Part 91 Process

The Streamlined Part 91 Operational Approval is an innovative process for obtaining or amending up to ten commonly requested Part 91 Letters of Authorization (LOAs) when purchasing a new aircraft directly from the aircraft manufacturer. Aircraft manufacturers, training providers, manual vendors, and FAA policy experts collaborate to streamline the operational approval process for the operator and inspector.



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# OCEANIC ERRORS



Gross Navigation Errors (GNE)  
Large Height Deviations (LHD)  
Erosion of Longitudinal Spacing

## Oceanic Errors

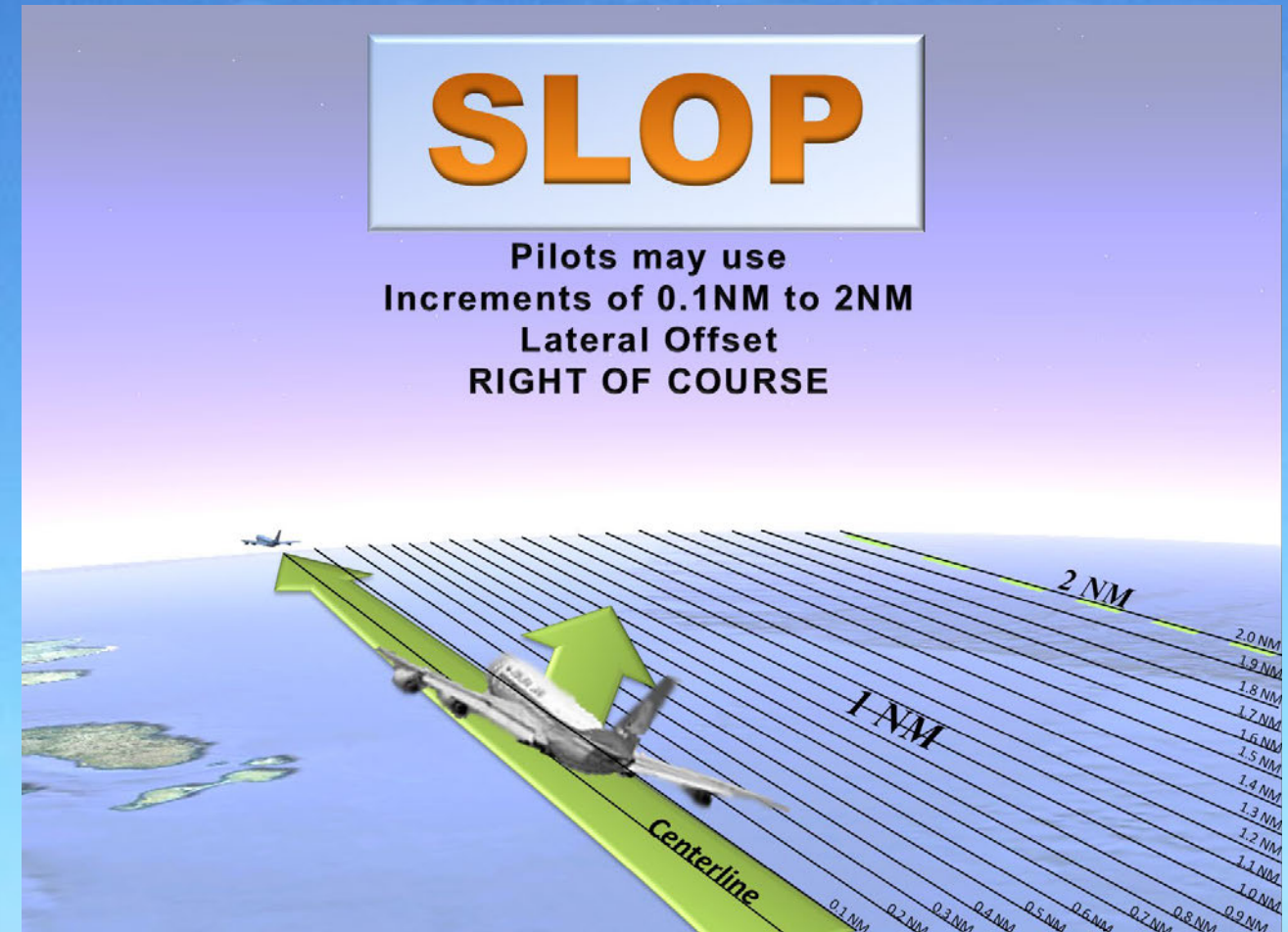
- [NAT Doc 007](#) *Monitoring of Aircraft Systems and Flight Crew Performance* Chapter 13)
- [NAT OPS Bulletin 2017-002 Rev08](#),  
*Oceanic Errors-Revision 8*
- [NAT Systems Planning Group](#)
- [PARMO Documentation](#)
- [FAA Order 8900.1, Volume 7 Investigation Chapter 3 Investigating Oceanic Errors Incidents](#).
- Incidents, [FAA Order 8020.11](#) and [FAA Order 2150.3](#)



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## Strategic Lateral Offset Procedures (SLOP)

- [ICAO Doc 4444, Air Traffic Management](#) (Link to Purchase) See chapter 15
- [NAT Doc 007](#), North Atlantic Operations and Airspace Manual (Paragraphs, 6.2.50-6.2.51, 6.4.3-6.4.4)
- [AIP ENR 7.3](#) Special Procedures for In-Flight Contingencies in Oceanic Airspace
- [Advisory Circular \(AC\) 91-70](#)
- [SLOP Video](#)



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# Contingency References

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## Contingency Procedures

- [United States Aeronautical Information Publication \(AIP\), See ENR 7.3, Special Procedures for In-Flight Contingencies in Oceanic Airspace](#)
- [NAT DOC 007 North Atlantic Operations and Airspace Manual \(Free\)](#)  
*Chapter 5: Communication and Position Reporting Procedures*  
*Chapter 9: Procedures in the Event of Navigation System Degradation or Failure*  
*Chapter 10: Special Procedures for In-flight Contingencies*  
*Chapter 13: Monitoring of Aircraft Systems and Flight Crew Performance*
- [ICAO DOC 4444 PANS-ATM \(Link to Purchase\)](#)  
*Chapter 15: Procedures Related To Emergencies, Communication Failure And Contingencies*
- [ICAO Annex 2 \(Link to Purchase\)](#)  
*Chapter 3: General Rules*
- [SKYbrary: North Atlantic Operations-Contingency](#)

- [SKYbrary: Emergency Decent: Guidance for Flight Crews](#)
- [Airborne Weather Radar Limitations](#)
- [AC 91-70, Appendix F, Special Procedures For In-Flight Contingencies In Oceanic Airspace](#)
- [AOPA: Safety Advisor Emergency Procedures](#)
- [NOTAMs, See most current publication](#)
- [NOTAM Search](#)
- [ICAO Doc 4444 PANS ATM \(Link to Purchase\):](#)
  - 1) *Special Procedures for In-Flight Contingencies in Oceanic Airspace-Ch.15 Para 15.2( this covers the new guidance for divers and weather deviations)*
  - 2) *SLOP-Ch. 16 Para 16.5*
  - 3) *Wake Turbulence-Ch. 4 Para 4.9*
- [Order JO 7110.65 Emergency Assistance Guidance from Air Traffic Control Special Procedures for In-Flight Contingencies in Oceanic Airspace](#)
- [ICAO Doc 7030 \(Link to Purchase\) Regional Supplementary Procedures, PAC 9.3 Air-Ground Communication Failure](#)
- [SAFO 16014 Accuracy of Time Estimates in Oceanic Control Areas \(CTA\) Position Reports](#)
- [SAFO 24002, Jamming and Spoofing](#)



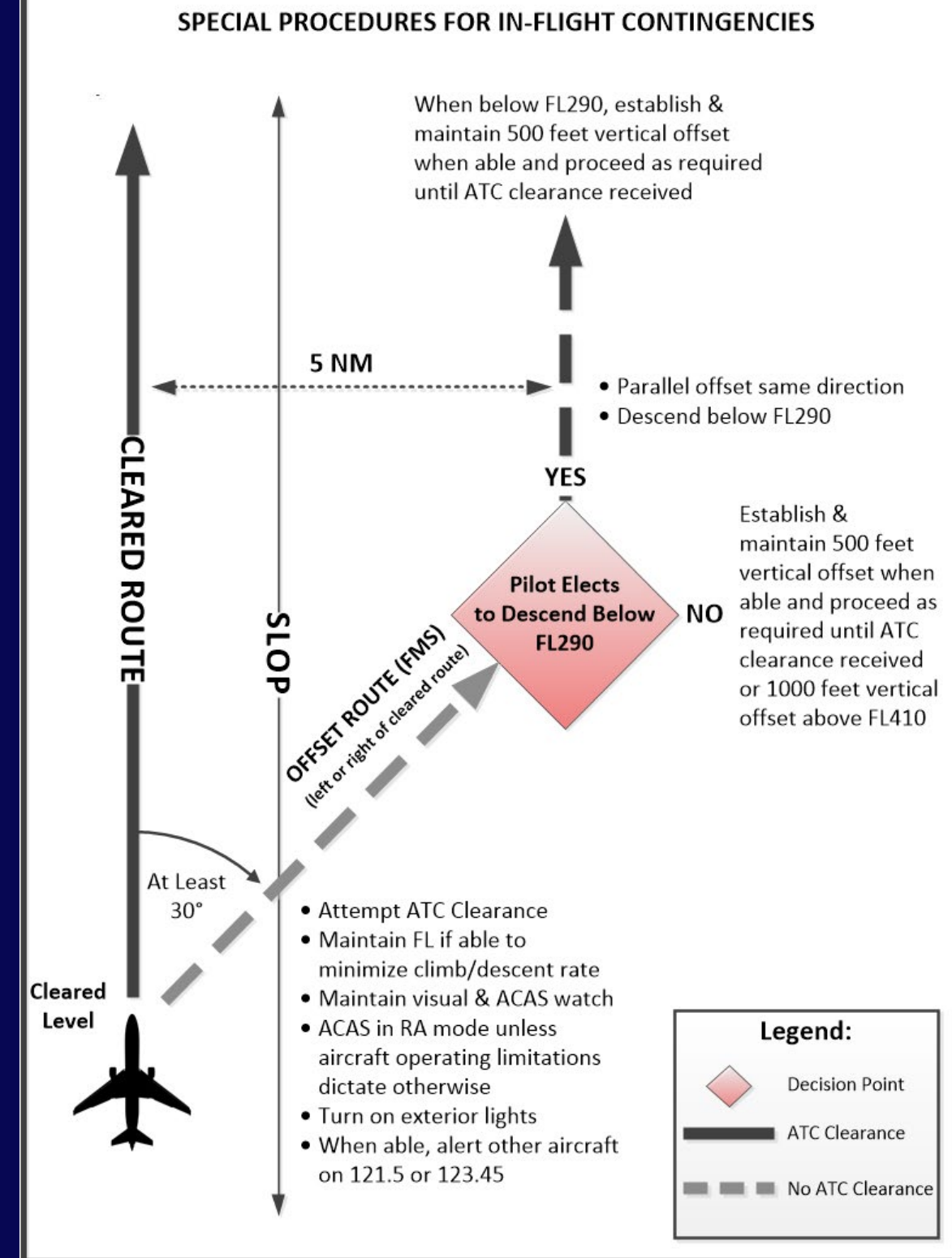
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# Contingency References

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*For details, see:*

AIP ENR 7.3 Special Procedures For In-Flight Contingencies in Oceanic Airspace (Fig ENR 7.3-1)



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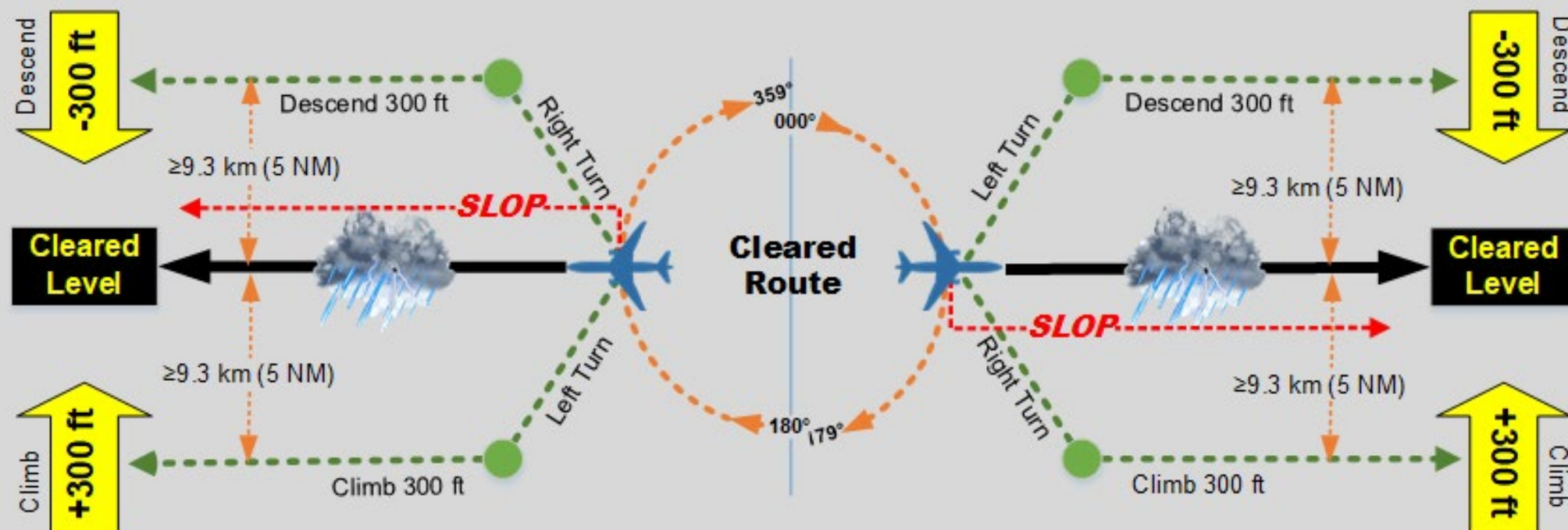
# Contingency References

**Page 3 of 3**

**For more information refer to ICAO doc 4444, 15.2.4**

## SPECIAL PROCEDURES FOR IN-FLIGHT WEATHER CONTINGENCIES

*(If UNABLE to obtain revised ATC clearance, advise ATC of intentions and alert nearby aircraft)*



**Note:** When CLEARED to deviate by ATC, comply with CLEARED level.



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# GPS/GNSS Interference



## Documents

- [SAFO \(24002\)](#) (Sometime it is necessary to click the refresh button in DRS)
- [AIM](#) .....(Click Button to Expand References).....▶
- [AIP](#) .....(Click Button to Expand References).....▶
- [EASA - Information on Conflict Zones](#)
- [EASA Safety Information Bulletin \(SIB\)](#)
- [NAT Ops Bulletin 2025-001](#)
- [ICAO Strategic Guidance 14ANC Working Paper 063](#)

## Videos

- [Boeing - 737 GPS Interference](#)
- [GPS Jamming \(& spoofing\) explained](#) (Flightradar 24 Video)

## Tools/Trackers

- [GPSJAM.org](#)
- [Live GPS Spoofing and Jamming Tracker Map](#) (SKAI Data Services/GPSwise)
- [Flightradar24: GPS jamming map](#)
- [FAA: Prohibitions, Restrictions, and Notices](#)
- [EASA - Conflict Zone Information Bulletins \(CZIBs\)](#)
- [EUROCONTROL GNSS Threat Assessment Tool](#)
- [FAA: Public Notices](#) (Government GPS Interference Testing, Training and Evaluation)

## Websites/Articles

- [Airbus Safety First 2024. GNSS Interference](#)
- [Flightradar24 article: GPS Jamming](#)
- [IATA SIRM Insights](#) (Lists Indications and Useful Links)
- [SKYBRARY: GNSS Jamming and Spoofing](#)
- [SKYBRARY: Interference to GNSS Signals](#)
- [OPS Group Report](#)



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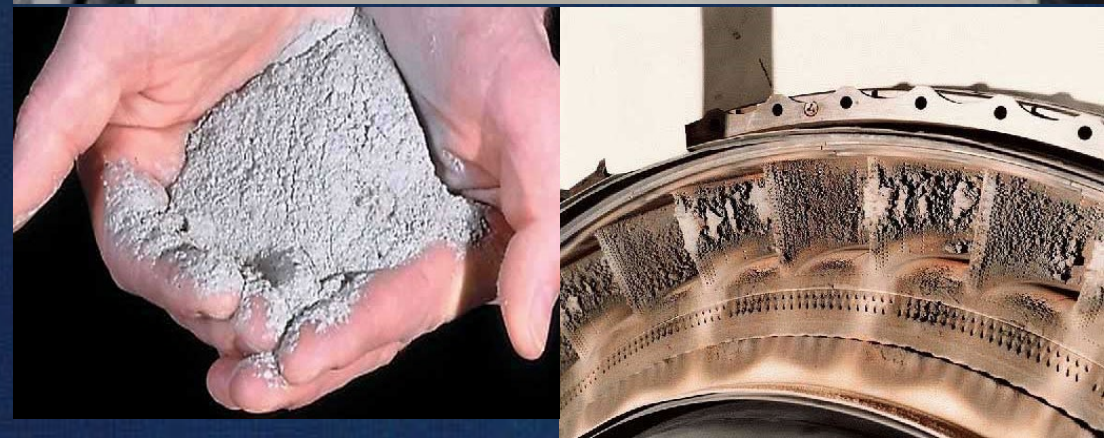
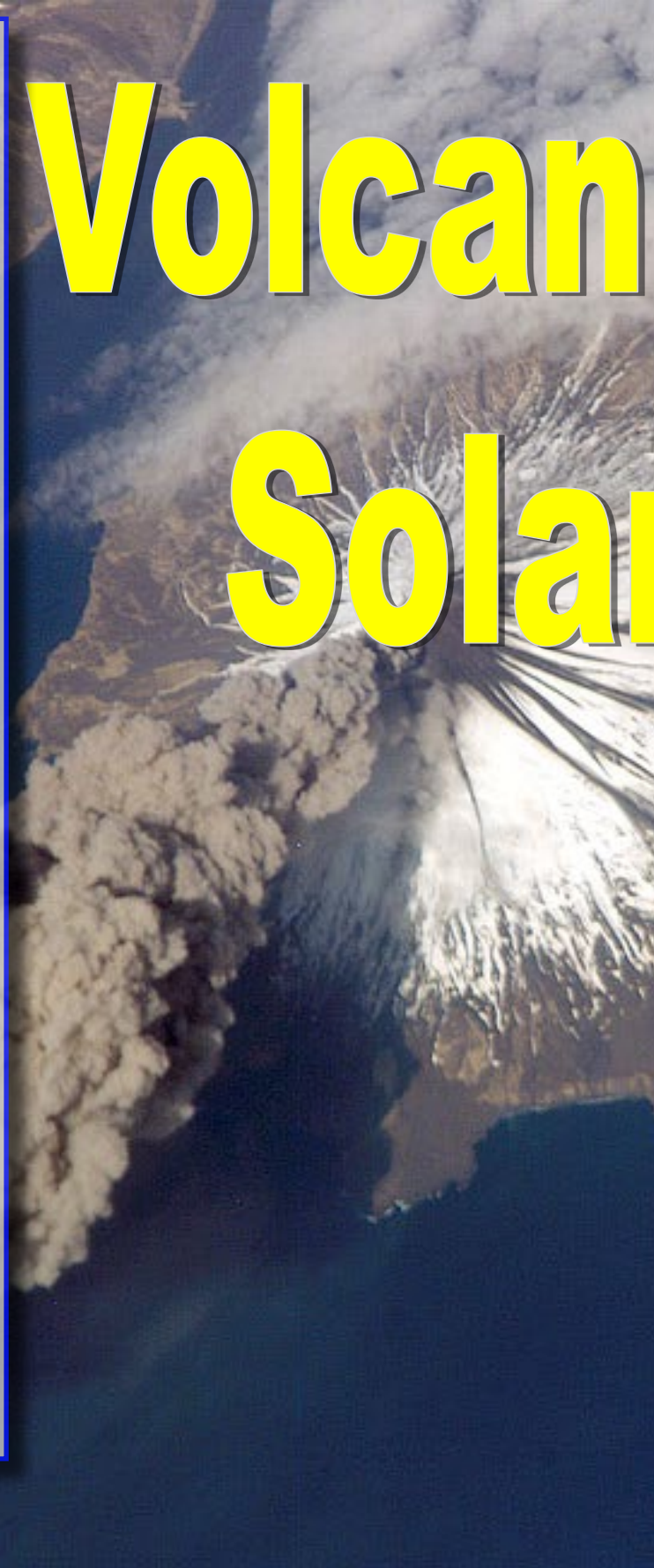
## Volcanic Links

- [World VAAC Map](#)
- [SKYbrary](#)
- [Washington DC Volcanic Ash Advisory Center](#)
  1. [Current Volcanic Ash Advisories](#)
  2. [Volcanic Ash Advisory Archive](#)
- [Montreal Volcanic Ash Advisory Centre](#)
- [Wellington Ash Advisories](#)
- [VAAC Buenos Aires](#)
- [Toulouse VAAC](#)
- [Anchorage Volcanic Ash Advisory Center](#)
- [Current Space Weather Conditions, Alerts, Watches, and Warnings](#)
- [London Volcanic Ash Advisory Centre](#)
  1. [Volcanic Ash Advisories and Graphics](#)
  2. [Volcanic Ash Concentration](#)
- [CAA Volcanic Ash](#)
- [ICAO: Doc 9974 ANB/487](#)
- [Volcanic Ash Reporting Form in the AIM](#)

## Solar and Space Weather

- [Space Weather](#)
- [Solar Wind Prediction](#)
- [Current Space Weather Conditions, Alerts, Watches, and Warnings](#)

# Volcanic Ash and Solar Storms



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# Aviation Weather

[Weather Abbreviations \(FltPlan.com\)](#)

## Aviation Weather

- [GOES Image View](#)
- [Aviation Weather Center \(NOAA\)](#)
- [Surface Weather Observation Stations ASOS/AWOS](#)
- [AIM: Thunderstorm Flying \(See 7-1-27\)](#)
- [Aviation Weather Handbook designated FAA-H-8083-28](#)
- [RVR Status Monitor](#)
- [Weather Glossary](#)
- [Table of Commonly Used Acronyms and Abbreviations](#)
- [FAA WeatherCams \(Does not work on IE\)](#)
- [NAV Canada Weather Cameras](#)
- [NAV Canada Aviation Weather](#)
- [Geoengineering Monitor Map](#)



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# Flight Planning Information

[G-AIRMETS](#)

[SIGMETS](#)

[FAA Website](#)

[FAA Form 7233-4](#)

[ICAO Doc 7030 \(Link to Purchase\)](#)

## Flight Planning Links

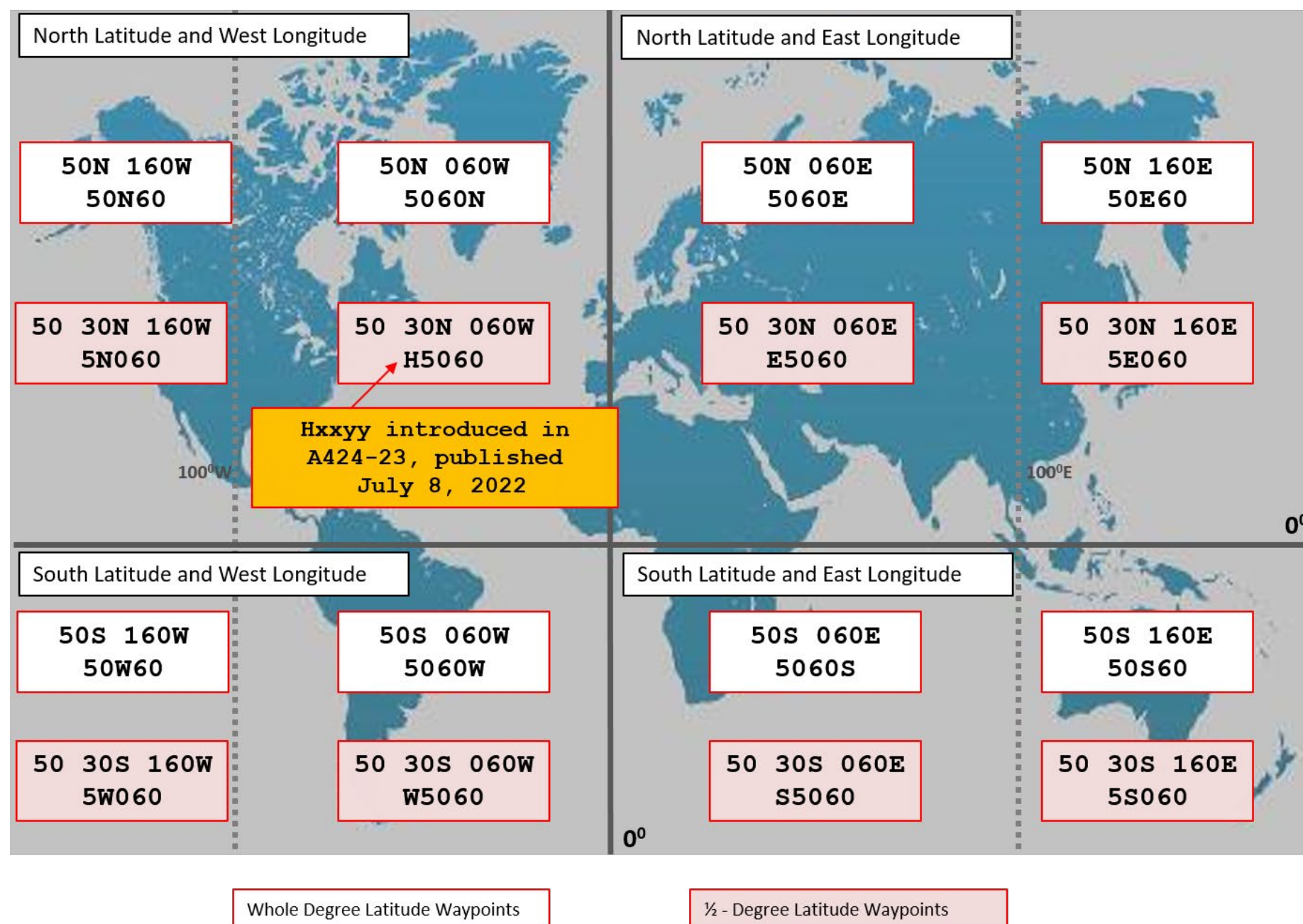
- [FAA Flight Planning Information](#)
- [Aeronautical Information Manual \(AIM\)](#) (See Appendix 4 and 5)
- [Flight Plan Completion \(SKYbrary\)](#)
- [North Atlantic Operations - Flight Planning \(SKYbrary\)](#)
- [North Atlantic Airspace \(SKYbrary\)](#)
- [Filing for Data Link Operations \(See AC 90-117\)](#)
- [Flight Planning for Oceanic and Remote Continental Airspace \(See AC 91-70\)](#)
- [Fuel Planning Requirements, Annex 6, Part 1 and Part 2 \(Link to Purchase\)](#)
- [Distance From To \(use Google Chrome\)](#)
- [Sunrise, Sunset, Solar Noon, and Solar Position](#)
- [SkyVector Aeronautical Charts](#)



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# Oceanic Waypoints ARINC 424 Shorthand System

(in accordance with ARINC 424 paragraph 7.2.5, Reporting Positions Defined by Coordinates)



## ARINC 424 Shorthand System

- [NAT Doc 007](#), (North Atlantic Operations and Airspace Manual), chapter 3 "Prevention of Lateral Deviations from Track to "...review the 3.2, "The Solution"
- [NAT OPS Bulletin 2018 003,Rev01](#) Waypoint Insertion/Verification Special Emphasis Items
- [AERONAUTICAL INFORMATION CIRCULAR P 059/2015 UNITED KINGDOM](#)
- [FAA Power Point Presentation](#)



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## ***CLICK TO VIEW ITEMS***

- [Current and Planned Implementations](#)
- [North Atlantic](#)
- [Oceanic Routings](#)
- [RVSM](#)

# **Airspace**



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# Current and Planned Implementations

Reference [Flight Prohibitions and International Oceanic Airspace Notices](#)

## Performance Based Communication and Surveillance (PBCS)

### NAT OPS Bulletin

→ [NAT OPS Bulletin 2017 004 Rev02](#) *Data Link Special Emphasis Items*

### A056 Data Link Communications:

- [AC 90-117](#) *Data Link Communications*
- [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*
- [Data Link Communication Application Guide](#)



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# The North Atlantic

## NAT DOC 007

### North Atlantic Operations and Airspace Manual

The North Atlantic is the busiest oceanic airspace in the world!

#### North Atlantic Links

- [NAT Doc 007](#) Chapter 7, RVSM in NAT HLA
- [ISAVIA \(Reykjavik\)](#)
- [AIP ENR 7.5](#) Operational Policy Performance-Based Navigation (PBN) and Performance-Based Communication and Surveillance (PBCS)
- [SKYbrary](#) North Atlantic Operations - Flight Planning
- [AC 20-150](#) Airworthiness Approval of Satellite Voice (SATVOICE) Equipment Supporting Air Traffic Service (ATS) Communication

See ICAO Annex 6 (Purchase)



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# Oceanic Routings



## Organized Track System

- [NAT Tracks - OTS](#)
- [North Atlantic Operation OTS, SKYbrary](#)
- [NAT DOC 007](#) Chapter 2, The Organized Track System (OTS)

## Shanwick Preferred Routing

- [Daily West-bound Route Message \(Logon/Register\)](#)

*Daily at approximately 8:30am London time, Shanwick posts preferred routing. Operators not filing the preferred routing are more likely to receive an amended oceanic route clearance.*

## Charts

- [FAA North Atlantic Charts](#)

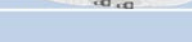


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# Reduced Vertical Separation Minimum

## RVSM

- [FAA RVSM Page](#)
- [NAARMO RVSM Approvals and Monitoring Status Results](#)
- [NAARMO RVSM Monitoring Methods](#)
- [AC 91-85](#) Authorization of Aircraft and Operators for Flight in Reduced Vertical Separation Minimum (RVSM) Airspace
- [14 CFR Part 91, Appendix G](#)
- [RVSM Approvals and AGHME Monitoring Status Results](#)
- [SKYbrary](#) Reduced Vertical Separation Minima (RVSM)
- [RVSM Documentation ADS-B Out RVSM Monitoring](#)
- [NAARMO FAQ](#)

|     |                                                                                       |
|-----|---------------------------------------------------------------------------------------|
| 410 |    |
| 400 |    |
| 390 |    |
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| 300 |  |
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## ***CLICK TO VIEW ITEMS***

- [Flight Standards](#)
- [FAA Application Guides](#)
- [Operations Specifications](#)
- [14 CFR Part 91](#)
- [14 CFR Parts 117 and 121](#)
- [14 CFR Part 135](#)
- [Advisory Circulars \(AC\)](#)
- [Technical Standard Orders \(TSO\)](#)
- [FAA Orders](#)
- [ICAO Documents](#)
- [International Web Sources](#)
- [Pilot Resources](#)

# References



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## Flight Standards: Certification and Application

- [Dynamic Regulatory System](#)
- [Examiner and Inspector Handbooks and Manuals](#)
- [Online Resources: Resources for Mechanics](#)
- [Oceanic and Remote Continental Application Guides](#) (B036, B037, B038 and B039)
- [Safety Assurance System \(SAS\) External Portal](#)

## Flight Standards: Satellite and Performance Based Navigation

- [Satellite Navigation - GPS/WAAS Approaches](#)
- [Performance Based Navigation \(PBN\) Implementation and Usage](#)
- [Flight Technologies and Procedures Division: Flight Operations Group](#)
  1. [Performance Based Navigation \(PBN\) Guidance & Approval](#)
  2. [Satellite Based Navigation \(SatNav\)](#)
  3. [Data Communications \(DataComm\)](#)
  4. [Oceanic and Remote Airspace \(Special Areas of Operation\)](#)

# FLIGHT STANDARDS



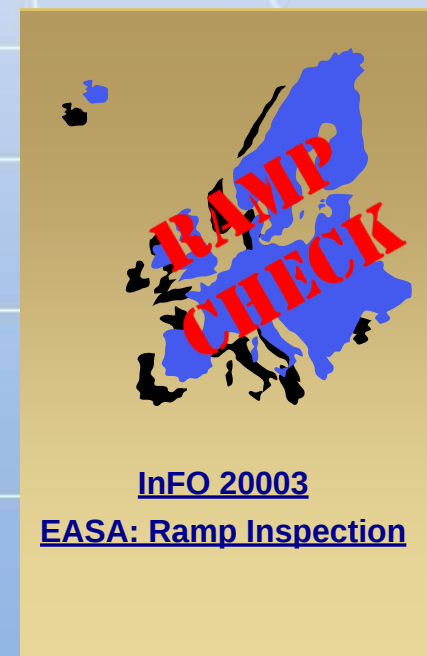
## FAA Inspector Guidance FAA Order 8900.1

### [8900.1 Contents](#)

Air Operator and Air Agency Certification and Application Process for 14 CFR 91K, 121, and 135

| Phase | 91 K                 | 121                  | 135                  |
|-------|----------------------|----------------------|----------------------|
| 1     | <a href="#">Link</a> | <a href="#">Link</a> | <a href="#">Link</a> |
| 2     | <a href="#">Link</a> | <a href="#">Link</a> | <a href="#">Link</a> |
| 3     | <a href="#">Link</a> | <a href="#">Link</a> | <a href="#">Link</a> |
| 4     | <a href="#">Link</a> | <a href="#">Link</a> | <a href="#">Link</a> |
| 5     | <a href="#">Link</a> | <a href="#">Link</a> | <a href="#">Link</a> |

- [Conduct Certification of a 14 CFR Part 125 Operator](#)
- [Evaluate an Application for Deviation Authority Under Part 125](#)
- [Evaluation/Certification of a Part 125 Applicant/Operator's Maintenance Capabilities](#)

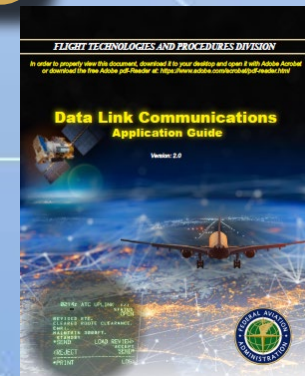
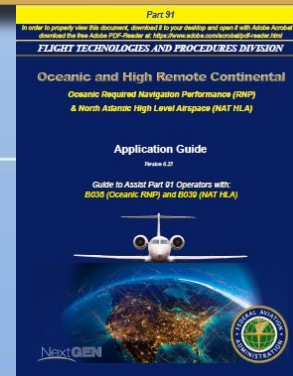
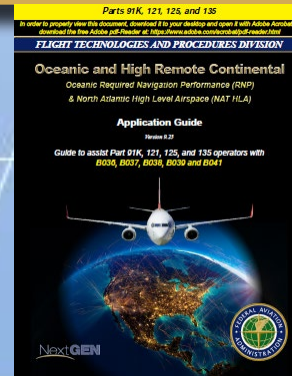
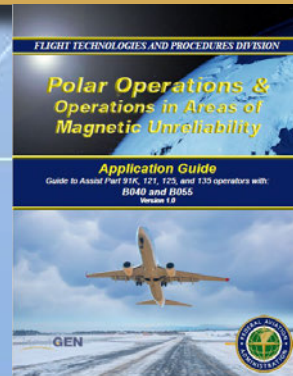
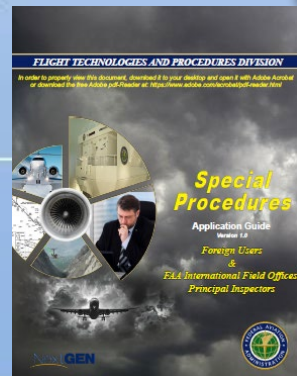
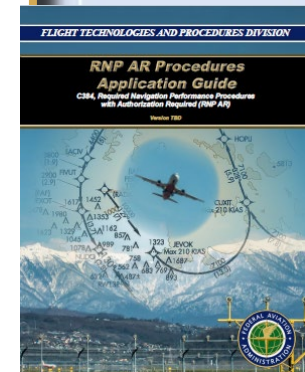


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# FAA Application Guides

Apply for:  
Operations Specifications (OpSpec),  
Management Specifications (MSpec), and  
Letters of Authorizations (LOA)

- **Oceanic and Remote Continental Operations, Oceanic Required Navigation Performance**  
For Part 91K, 121, 125, and 135 operators applying for B036, B037, B038, B039 and B041.
- **Oceanic and Remote Continental Operations, Oceanic Required Navigation Performance**  
For Part 91 operators applying for B036 and B039.
- **Polar Operations & Operations in Areas of Magnetic Unreliability**  
For Part 91K, 121, 125 and 135 operators applying for B040 and B055.
- **LOA Streamlined Operational Approval**  
For Part 91 operators applying for A056, B036, B039, B046, C048, C052, C063, C073 and D195.
- **Data Link Communications**  
For Part 91, 91K, 121, 125, and 135 operators applying for A056.
- **RNP AR Procedures**  
For Part 91, 91K, 121, 125, and 135 operators applying for C384.
- **Special Procedures Domestic**  
For Part 91, 91K, 121, 125, and 135 operators applying for C081, H122 and P122. This guide is also for training centers applying for Training Specification (TSpec) B003 for the authorization to train the special procedure(s)
- **Special Procedures Foreign**  
For Part 129, foreign carrier operators applying for C081 or Part 375, foreign general aviation operators applying for C381.



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# Operation Specifications

## Volume 3, Chapter 18

| Section                   | Para        | Title                                                                                   |
|---------------------------|-------------|-----------------------------------------------------------------------------------------|
| <a href="#">Section 3</a> | <b>A056</b> | Data Link Communications (CPDLC ADS-C)                                                  |
|                           | <b>A061</b> | Use of Electronic Flight Bag                                                            |
| <a href="#">Section 4</a> | <b>B029</b> | Drift-down or Fuel Dumping                                                              |
|                           | <b>B030</b> | IFR Navigation Using GPS/WAAS RNAV Systems                                              |
|                           | <b>B034</b> | IFR Class I Terminal and En Route Navigation using Area Navigation Systems              |
|                           | <b>B034</b> | Class I Navigation in U.S. Class A Airspace using Area or Long-Range Navigation Systems |
|                           | <b>B036</b> | Oceanic and Remote Continental Navigation Using Multiple Long-Range Navigation (M-LRNS) |
|                           | <b>B039</b> | NAT HLA                                                                                 |
|                           | <b>B040</b> | Areas of Magnetic Unreliability                                                         |
|                           | <b>B041</b> | North Atlantic Operations With Two-Engine Airplanes Under Part 121                      |
|                           | <b>B043</b> | Special Fuel Reserves                                                                   |
|                           | <b>B044</b> | Planned Re-dispatch/Re-release                                                          |
|                           | <b>B045</b> | Extended Overwater Operation Using a Single Long-Range Communication System             |
|                           | <b>B046</b> | RVSM                                                                                    |
|                           | <b>B050</b> | Authorized Areas of En Route Operations, Limitations, and Provisions                    |
|                           | <b>B054</b> | Oceanic and Remote Airspace Navigation Using a Single Long-Range Navigation System      |
|                           | <b>B055</b> | North Polar Operations                                                                  |
|                           | <b>B342</b> | ETOPS (Two Engines), Parts 121 and 135                                                  |
|                           | <b>B344</b> | ETOPS (More than Two Engines), Parts 121 and 135                                        |
| <a href="#">Section 5</a> | <b>C055</b> | Alternate Airport IFR Weather Minimums (ETOPS)                                          |
|                           | <b>C070</b> | Airports Authorized for Scheduled Operations (ETOPS) Part 121                           |
|                           | <b>C384</b> | Required Navigation Performance Procedures with Authorization Required                  |
| <a href="#">Section 7</a> | <b>H123</b> | Rotorcraft RNP 0.3 En Route and Terminal Operations                                     |





# 14 CFR Part 91

| 14 CFR Part 91 Inclusive but not limited to: |                                                                            |
|----------------------------------------------|----------------------------------------------------------------------------|
| <a href="#"><u>91.3</u></a>                  | Responsibility and Authority of the PIC                                    |
| <a href="#"><u>91.117</u></a>                | Aircraft Speed                                                             |
| <a href="#"><u>91.123</u></a>                | Compliance with ATC Clearances and Instructions                            |
| <a href="#"><u>91.127</u></a>                | Operating on or in the vicinity of an airport in Class E airspace          |
| <a href="#"><u>91.129</u></a>                | Operations in Class D airspace                                             |
| <a href="#"><u>91.131</u></a>                | Operations in Class B airspace                                             |
| <a href="#"><u>91.181</u></a>                | Course to be Flown                                                         |
| <a href="#"><u>91. 211</u></a>               | Supplemental Oxygen                                                        |
| <a href="#"><u>91.213</u></a>                | Inoperative instruments and equipment                                      |
| <a href="#"><u>91.511</u></a>                | Communication and navigation equipment for overwater operations            |
| <a href="#"><u>91.703</u></a>                | Operations of civil aircraft of U.S. registry outside of the United States |
| <a href="#"><u>91.1019</u></a>               | Conducting tests and inspections                                           |
| <a href="#"><u>91.1041</u></a>               | Aircraft proving and validation tests                                      |
| <a href="#"><u>Appendix G</u></a>            | Operations in Reduced Vertical Separation Minimum (RVSM) Airspace          |





## 14 CFR Part 121

| 14 CFR Part 121 Inclusive but not limited to: |                                                                                                                 |
|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <a href="#"><u>121.11</u></a>                 | Rules applicable to operations in a foreign country                                                             |
| <a href="#"><u>121.93</u></a>                 | Route requirements: General                                                                                     |
| <a href="#"><u>121.99</u></a>                 | Communications facilities – domestic and flag operations                                                        |
| <a href="#"><u>121.113</u></a>                | Area and route requirements: General                                                                            |
| <a href="#"><u>121.122</u></a>                | Communications facilities-supplemental operations                                                               |
| <a href="#"><u>121.161</u></a>                | Airplane limitations: Type of Route                                                                             |
| <a href="#"><u>121.333</u></a>                | Supplemental oxygen for emergency descent and for first aid; turbine engine powered airplanes with pres. cabins |
| <a href="#"><u>121.351</u></a>                | Communication and navigation equipment for extended over-water operations and for certain other operations      |
| <a href="#"><u>121.574</u></a>                | Oxygen for medical use by passengers                                                                            |





## 14 CFR Part 135

| 14 CFR Part 135 Inclusive but not limited to: |                                                                               |
|-----------------------------------------------|-------------------------------------------------------------------------------|
| <a href="#"><u>135.3</u></a>                  | Rules applicable to operations subject to this part                           |
| <a href="#"><u>135.43</u></a>                 | Crewmember certificates: International operations                             |
| <a href="#"><u>135.73</u></a>                 | Inspections and tests                                                         |
| <a href="#"><u>135.89</u></a>                 | Pilot requirements: Use of oxygen                                             |
| <a href="#"><u>135.98</u></a>                 | Operations in the North Polar Area                                            |
| <a href="#"><u>135.145</u></a>                | Aircraft proving and validation tests                                         |
| <a href="#"><u>135.157</u></a>                | Oxygen equipment requirements                                                 |
| <a href="#"><u>135.165</u></a>                | Communication and navigation equipment: Extended over-water or IFR operations |
| <a href="#"><u>135.364</u></a>                | Maximum flying time outside the United States                                 |





# Advisory Circulars (AC)

| Advisory Circulars (AC) Inclusive but not limited to: |                                                                                                                                                             |
|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#"><u>AC 00-63</u></a>                       | Use of Cockpit Displays of Digital Weather and Aeronautical Information                                                                                     |
| <a href="#"><u>AC 20-138</u></a>                      | Airworthiness Approval of Positioning and Navigation Systems                                                                                                |
| <a href="#"><u>AC 20-140</u></a>                      | Guidelines for Design Approval of Aircraft Data Link Systems Supporting Air Traffic Services (ATS)                                                          |
| <a href="#"><u>AC 20-150</u></a>                      | Airworthiness Approval of Satellite Voice Equipment Supporting Air Traffic Service (ATS) Communication                                                      |
| <a href="#"><u>AC 20-165</u></a>                      | Airworthiness Approval of Automatic Dependent Surveillance—Broadcast (ADS -B Out System)                                                                    |
| <a href="#"><u>AC 90-96</u></a>                       | Approval of U.S. Operators and Aircraft to Operate Under IFR in European Airspace for B-RNAV/RNAV5 and P-RNAV                                               |
| <a href="#"><u>AC 90-105</u></a>                      | Approval Guidance for RNP Operations and Barometric Vertical Navigation in the U.S. National Airspace System and in Oceanic and Remote Continental Airspace |
| <a href="#"><u>AC 90-114</u></a>                      | Automatic Dependent Surveillance—Broadcast (ADS-B) Operations                                                                                               |
| <a href="#"><u>AC 90-117</u></a>                      | Data Link Communications                                                                                                                                    |
| <a href="#"><u>AC 91-70</u></a>                       | Oceanic and Remote Continental Airspace Operations                                                                                                          |
| <a href="#"><u>AC 91-85</u></a>                       | Approval of Aircraft and Operators for flight in Reduced Vertical Separation Minimum Airspace                                                               |
| <a href="#"><u>AC 120-42</u></a>                      | Extended Operations (ETOPS and Polar Operations)                                                                                                            |
| <a href="#"><u>AC 135-42</u></a>                      | Extended Operations (ETOPS and Polar Operations)                                                                                                            |





## Technical Standard Orders (TSO)

| Technical Standard Orders (TSO) Inclusive but not limited to: |                                                                                                                             |
|---------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| <a href="#"><u>TSO-C115</u></a>                               | Flight management systems (FMS) using multi-sensor inputs                                                                   |
| <a href="#"><u>TSO-C145</u></a>                               | Airborne Navigation Sensors Using the Global Positioning System (GPS) Augmented by the Wide Area Augmentation System (WAAS) |
| <a href="#"><u>TSO-C146</u></a>                               | Stand-Alone Airborne Navigation Equipment Using the Global Positioning System (GPS) Space Based Augmentation System (SBAS)  |
| <a href="#"><u>TSO-C154</u></a>                               | Universal Access Transceiver (UAT) Automatic Dependent Surveillance-Broadcast (ADS-B) Equipment                             |
| <a href="#"><u>TSO-C157</u></a>                               | Aircraft Flight information Services-Broadcast (FIS-B) Data Link Systems and Equipment                                      |
| <a href="#"><u>TSO-C159</u></a>                               | Next Generation Satellite Systems (NGSS) Equipment                                                                          |
| <a href="#"><u>TSO-C160</u></a>                               | Very High Frequency (VHF) Digital Link (VDL) Mode 2 Communication Equipment                                                 |
| <a href="#"><u>TSO-C166</u></a>                               | Extended Squitter Automatic Dependent Surveillance - Broadcast (ADS-B) and traffic information                              |
| <a href="#"><u>TSO-C195</u></a>                               | Avionics Supporting Automatic Dependent Surveillance - Broadcast (ADS-B) Aircraft Surveillance Applications (ASA)           |
| <a href="#"><u>TSO-C196</u></a>                               | Airborne Supplemental Navigation Sensors for Global Positioning System Equipment Using Aircraft-Based Augmentation          |





# FAA Orders

## ***FAA Orders Inclusive but not limited to:***

|                                             |                                                                                                                                    |
|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#"><u>8000.75</u></a>              | Aviation Safety Inspector En Route Inspection Procedures                                                                           |
| <a href="#"><u>8000.89</u></a>              | Designation of Voluntary Disclosure Reporting Program (VDRP) Information As Protected From Public Disclosure Under 14 CFR Part 193 |
| <a href="#"><u>8000.373</u></a>             | Federal Aviation Administration Compliance Program                                                                                 |
| <a href="#"><u>8110.55</u></a>              | How to Evaluate and Accept Processes for Aeronautical Database Supplier                                                            |
| <a href="#"><u>8110.103</u></a>             | Alternative Methods of Compliance (AMOC)                                                                                           |
| <a href="#"><u>8260.58 (Also TERPS)</u></a> | United States Standard for Performance Based Navigation (PBN) Instrument Procedure Design                                          |
| <a href="#"><u>8260.19</u></a>              | Flight Procedures and Airspace                                                                                                     |
| <a href="#"><u>8430.24</u></a>              | International Aviation Safety Assessment Program                                                                                   |
| <a href="#"><u>8900.1</u></a>               | <b>Flight Standards Information Management System (Located in DRS)</b>                                                             |



# International Civil Aviation Organization (ICAO) Documents



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[NAT OPS Bulletins](#)

## NAT Documents Inclusive but not limited to:

|                                   |                                                                                            |
|-----------------------------------|--------------------------------------------------------------------------------------------|
| <a href="#">NAT DOC 001</a>       | NAT SPG Handbook                                                                           |
| <a href="#">NAT DOC 003</a>       | High Freq. Management Guidance Material for the N. Atlantic Region                         |
| <a href="#">NAT DOC 004</a>       | Common Aeradio Com. Interface Control Doc. for the N. Atlantic Region                      |
| <a href="#">NAT DOC 006, Pt 1</a> | Air Traffic Management Operational Contingency Plan - North Atlantic Region - 1st Editions |
| <a href="#">NAT DOC 006, Pt 2</a> | Volcanic Ash Contingency Plan - NAT Region                                                 |
| <a href="#">NAT DOC 006, Pt 3</a> | Space Weather Contingency Procedures                                                       |
| <a href="#">NAT DOC 007</a>       | North Atlantic Operations and Airspace Manual                                              |
| <a href="#">NAT DOC 008</a>       | Application of Separation Minima - North Atlantic Region - (NAT ASM)                       |
| <a href="#">NAT DOC 010</a>       | Consolidated Reporting Responsibilities Handbook - NAT Region                              |
| <a href="#">NAT DOC 011</a>       | PBCS Monitoring and Reporting Guidance                                                     |
| <a href="#">NAT DOC 012</a>       | NAT TIG ATSP Analyst Handbook, Edition 1                                                   |
| <a href="#">NAT DOC 013</a>       | Operational Guidance for Commercial Space Operations (CSO)                                 |
| <a href="#">GOLD (DOC 10037)</a>  | Global Operational Data Link Document (Link to Purchase)                                   |
| <a href="#">ICAO DOC 4444</a>     | Procedures for Air Navigation Services (PANS) - Air Traffic Management (Link to Purchase)  |
| <a href="#">ICAO DOC 7030</a>     | Regional Supplementary Procedures (Link to Purchase)                                       |
| <a href="#">ICAO DOC 9613</a>     | Performance-based Navigation (PBN) Manual (Link to Purchase)                               |
| <a href="#">ICAO DOC 9750</a>     | Global Air Navigation Plan                                                                 |
| <a href="#">ICAO DOC 9869</a>     | Performance-Based Communication and Surveillance (PBCS) Manual (Link to Purchase)          |

## NAT Operations Bulletins *Inclusive but not limited to:*

|                                   |                        |
|-----------------------------------|------------------------|
| <a href="#">NAT OPS Bulletins</a> | List NAT OPS Bulletins |
|-----------------------------------|------------------------|



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[Embry-Riddle:Electronic AIPs by Country](#)

## International Web Sources Links

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- [Nav Canada](#)
- [Denmark NAVAIR AIM](#)
- [European Aviation Safety Agency \(EASA\)](#)
- [AIP Iceland](#)
- [ISAVIA](#)
- [Ireland Aeronautical Information Publication \(AIP\)](#)
- [Norwegian Aeronautical Information Publication \(AIP\)](#)



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# Pilot Resources

## Charts and Guides

- [digital — Terminal Procedures Publication \(d-TPP\)/Airport Diagrams](#)
- [Digital - Chart Supplement \(d-CS\)](#)
- [North Atlantic Charts](#)
- [VFR Raster Charts](#)
- [IFR En Route Aeronautical Charts and Planning](#)
- [Instrument Flight Procedures Information Gateway](#)
- [Aeronautical Chart User Guide](#)
- [Airport Diagrams](#)
- [ADS-B Prediction Tool](#)

## Flight Planning

- [NOTAMS](#)
- [NOTAM Search](#)
- [Aeronautical Information Publication \(AIP\)](#)
- [Aeronautical Information Manual \(AIM\)](#)
- [ADS-B Prediction Tool](#)
- [Temporary Flight restrictions](#)
- [Aviation Weather Center](#)
- [FAA Flight Planning Information](#)
- [Flight Service 1800wxbrief](#)
- [Flight Plan Quick Reference Brochure](#)
- [Critical DME List](#)
- [FAA Form 7233-4 \(International Flight Plan\)](#)
- [Find an Aviation Medical Examiner \(AME\)](#)
- [SkyVector \(Aeronautical Charts\)](#)
- [AC 91-74, Pilot Guide: Flight in Icing Conditions](#)
- [US Domestic CPLDC Flight and Route PG](#)

## FAA Offices

- [Flight Standards District Offices \(FSDO\)](#)
- [Certificate Management Offices \(CMO\)](#)
- [Aircraft Certification Service](#)
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- [International Field Offices](#)
- [Office of Safety Standards](#)
- [FAA Safety Team \(FAAST Team\)](#)
- [Rotorcraft](#)
- [Flight Technologies and Procedures Division: Flight Operations Group](#)
  - [Performance Based Navigation \(PBN\)](#)
  - [Satellite Based Navigation \(SatNav\)](#)
  - [Data Communications \(DataComm\)](#)
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## Useful Links

- [Technical Standard Orders](#)
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- [Airworthiness Directives \(ADs\)](#)
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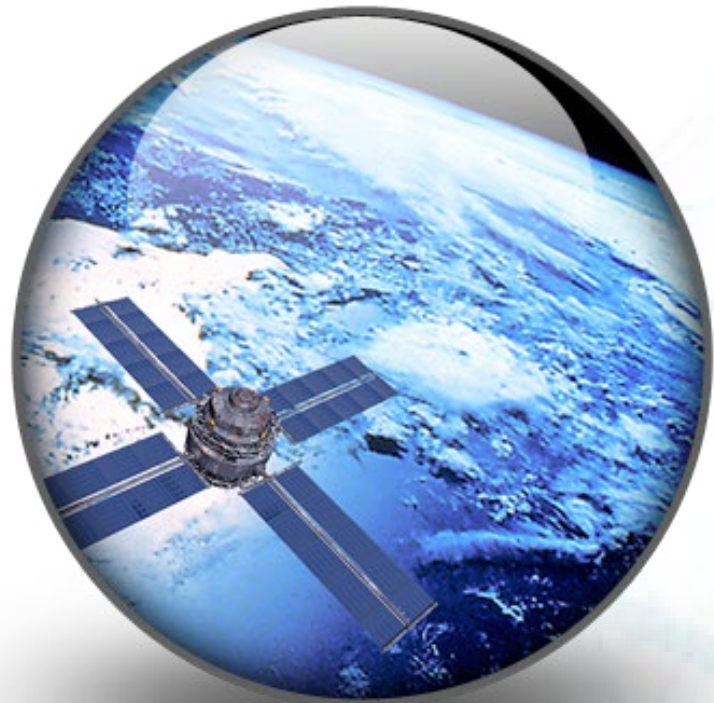
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- [Data Link Communications](#)
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# Long Range Communications

AIP



SATVOICE

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SEE ENR 7.1

## Long Range Communication Links

**GOLD (Global Operational Data Link Document)**,  
*Doc 10037, Published by ICAO (Link to Purchase)*

### 14 CFR

- 91.511** Communication and Navigation Equipment for Overwater Operations  
**121.351** Communication and Navigation Equipment for Extended Over-Water  
**135.165** Communication and Navigation for Extended Overwater Operations

### Advisory Circulars

- AC 20-150** Airworthiness Approval of Satellite Voice Equipment Supporting Air  
Traffic Services (ATS)  
Communication  
**AC 91-70** Oceanic and Remote Continental Airspace Operations  
**AC 90-117** Data Link Communication Communications

### FAA InFOs

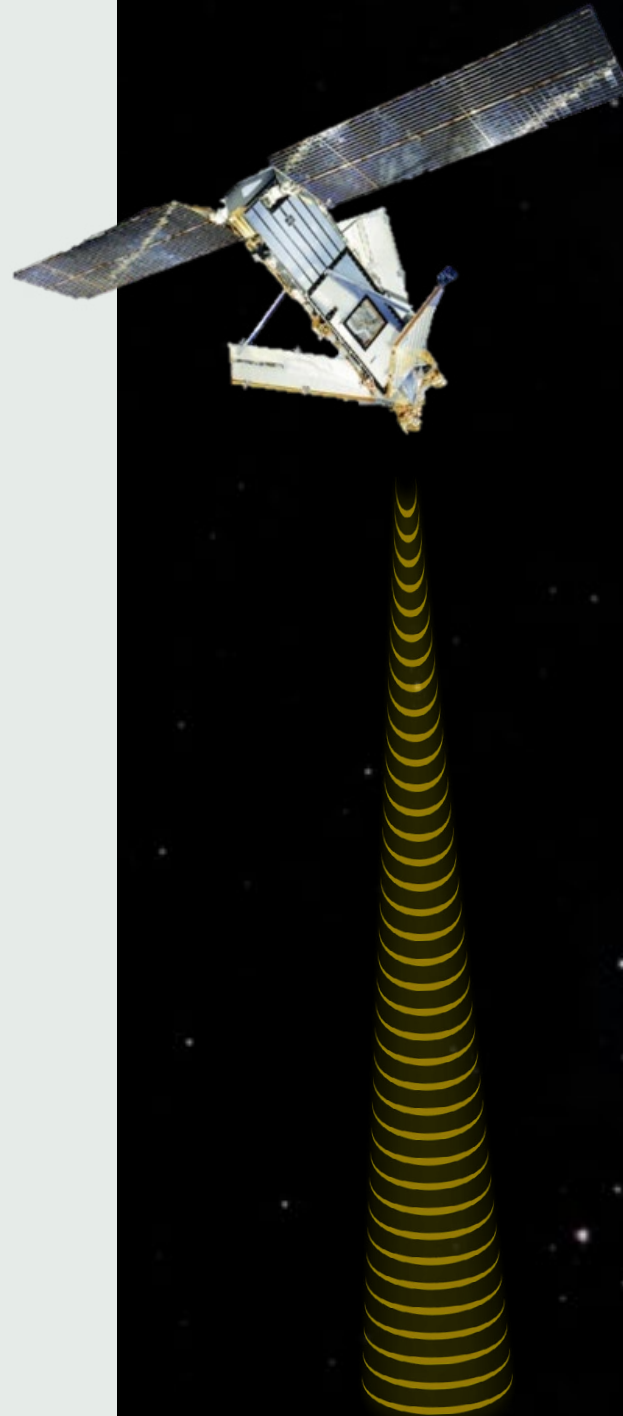
**InFO 15008** Iridium Satellite Voice (SATVOICE) with Safety Services

**FAA Regulation Division, Legal Interpretations & Chief Counsel's Opinions**



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# Data Link Communication



- [A056 Communication Application Guide](#)
- [NAT OPS Bulletin 2023 001 Rev05](#) NAT Oceanic Clearance Removal
- [MMEL Policy Letter \(PL\) 106, HF Communication](#)
- [nFO 23008](#) FAA Policy Change for United States (U.S.) Domestic
- [Data Communcation Program \(DataComm\)](#)
- [AC 90-117](#), Data Link Communications
- [AC 20-140](#), Guidelines for Design Approval of Aircraft Data Link Communication Systems Supporting Air Traffic Services (ATS) This AC provides airworthiness requirements for the type design approval of aircraft with a data link system installed.
- [AC 91-70](#), Oceanic and Remote Continental Airspace Operations
- [GOLD \(Global Operational Data Link Document\)](#) Doc 10037, Published by ICAO (Link to Purchase)
- [NAT OPS Bulletins](#)
- [Collins Aerospace ARINCDirect Login](#)
- [SITA](#)
- [AC 20-160](#), Onboard Recording of Controller Pilot Data Link Communication in Crash Survivable Memory
- [Annex 6](#), Operation Of Aircraft-Intl Commercial Air Transport 9th Edition - 6.3.3 Data Link Recorders
- [Annex 6 Part II](#), General Aviation 3.6.3 and Appendix 3.1 Flight Recorders
- [14 CFR Parts 23, 25, 27, §29.1457, §91.609](#)
- [Rule by the Federal Aviation Administration on 03/02/2015](#) Policy Regarding Datalink Communications Recording Requirements

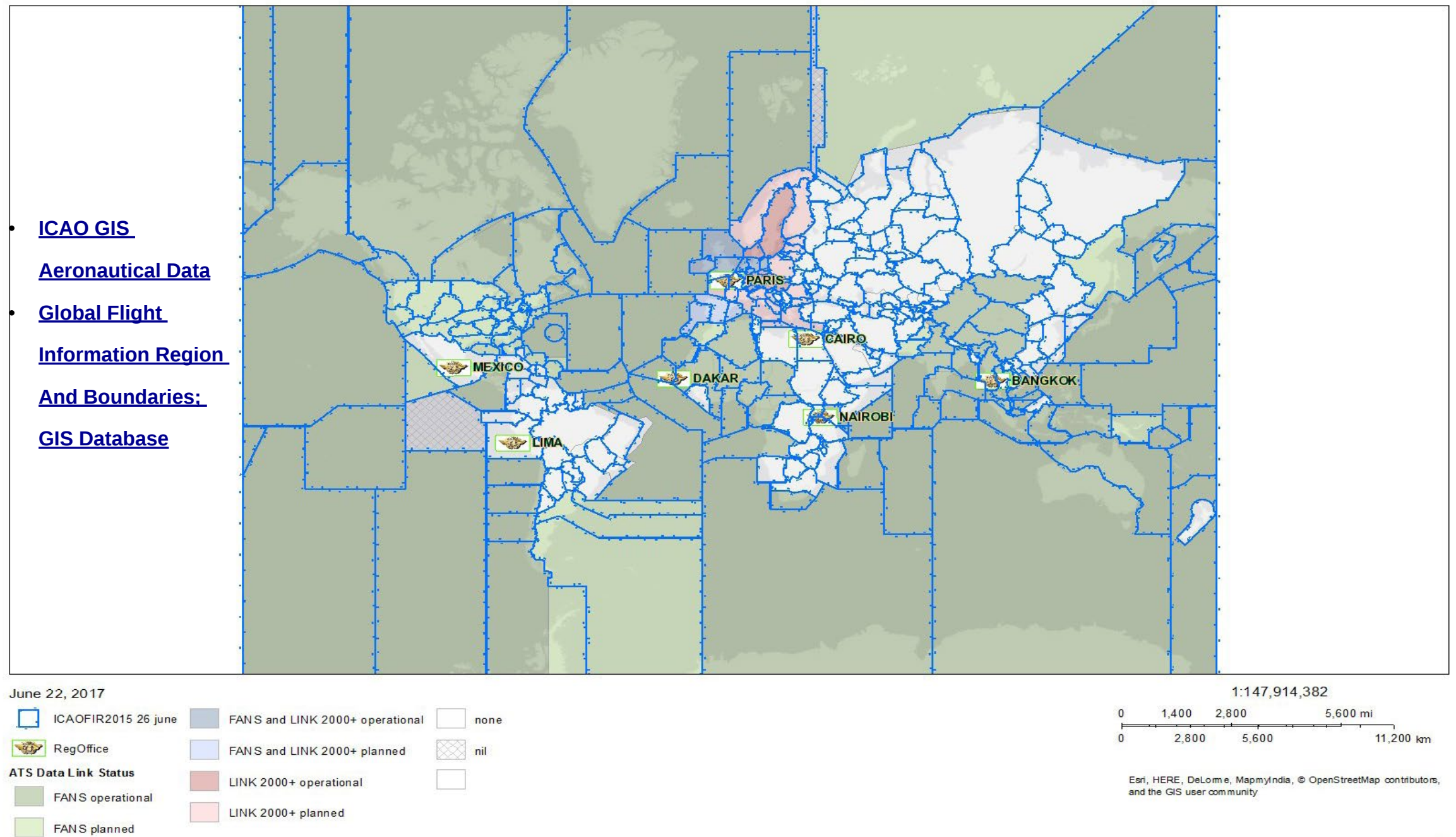
- [InFO 15008](#), Iridium Satellite Voice (SATVOICE) with Safety Services
- [NAS Data Communication Guide](#)
- [CPDLC End2End Description](#)
- [FAA Site: Oceanic and Remote Airspace \(Special Areas of Operation\)](#)
- [FAA Site: Data Comm](#)
- [AIP ENR 7.5](#) Operational Policy Performance-Based Navigation (PBN) and Performance-Based Communication and Surveillance (PBCS)
- [FANS 1/A Problem Reporting \(Works Better on Google Chrome\)](#)
- [NAS Operational Problem Reporting \(Use Google Chrome\)](#)
- [ICAO DOC 9869](#), Performance-Based Communication and Surveillance (PBCS) Manual (Link to Purchase)
- [NAT OPS Bulletin 2019 003 Rev 05](#) Data Link Performance Improvement Options
- [En Route CPDLC Quick Reference Guide](#)



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# ICAO GIS Mapping

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# Acronyms



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| Acronym   | Definition                                                            |
|-----------|-----------------------------------------------------------------------|
| <b>A</b>  |                                                                       |
| A/FD      | Airport/Facility Directory                                            |
| AAA       | Airport Airspace Analysis                                             |
| AAD       | Assigned Altitude Deviation                                           |
| AAO       | Adverse Assumption Obstacle                                           |
| AAS       | Airport Advisory Service                                              |
| AAWU      | Alaskan Aviation Weather Unit                                         |
| ABAS      | Aircraft Based Augmentation System                                    |
| AC        | Advisory Circular                                                     |
| ACA       | Arctic Control Area                                                   |
| ACARS     | Aircraft Communication Addressing and Reporting System                |
| ACAS      | Airborne Collision Avoidance System                                   |
| ACC       | Area Control Center                                                   |
| ACI       | Airport Council International                                         |
| ACL       | ATC Clearance                                                         |
| ACM       | ATC Communication Management                                          |
| ACO       | Aircraft Certification Office                                         |
| ACP       | Actual Communication Performance                                      |
| ACSP      | Aeronautical Communication Service Provider                           |
| ACTP      | Actual Communication technical Performance                            |
| ADC       | Air Data Computer                                                     |
| ADCUS     | Advise Customs                                                        |
| ADDs      | Aviation Digital Data Service                                         |
| ADF       | Automatic Direction Finder                                            |
| ADIRU     | Air Data Inertial Reference Unit                                      |
| ADIZ      | Air Defense Identification Zone                                       |
| ADMS      | Atmospheric Dispersion Modelling System                               |
| ADS       | Automatic Dependent Surveillance                                      |
| ADS-ADD   | ADS Aircraft Derived Data                                             |
| ADS-B     | Automatic Dependent Surveillance-Broadcast                            |
| ADS-B In  | ADS-B signal received onboard from another aircraft or ground station |
| ADS-B Out | ADS-B signal sent from aircraft to ground station or other aircraft   |
| ADS-C     | Automatic Dependent Surveillance-Contract                             |
| ADS-NRA   | ADS in Non-Radar Airspace                                             |



| Acronym | Definition                                                          |
|---------|---------------------------------------------------------------------|
| ADS-RAD | ADS in Radar Airspace Blending of ADS & SSR                         |
| AEDT    | Aviation Emissions Design Tool                                      |
| AEEC    | Airlines Electronic Engineering Committee                           |
| AEM III | Advanced Emission Model                                             |
| AeroNav | Aeronautical Navigation Products                                    |
| AFB     | Air Force Base                                                      |
| AFCS    | Automatic Flight Control System                                     |
| AFIS    | Automatic Flight Information Service                                |
| AFM     | Airplane Flight Manual                                              |
| AFN ATS | Facilities Notification (FANS logon)                                |
| AFS     | FAA Office Symbol for Flight Standards Services                     |
| AFSS    | Automated Flight Service Station                                    |
| AFTN    | Aeronautical Fixed Telecommunication Network                        |
| AGHME   | Aircraft Geometric Height Measurement Element                       |
| AGL     | Above Ground Level                                                  |
| AHRS    | Attitude Heading Reference System                                   |
| AIC     | Aeronautical Information Circular                                   |
| AIFSS   | Aviation International Flight Service Station                       |
| AIM     | Aeronautical Information Manual                                     |
| AIP     | Aeronautical Information Publication                                |
| AIR     | FAA office symbol for: Aircraft Certification Services              |
| AIRE    | Atlantic Interoperability Initiative to Reduce Emissions            |
| AIREP   | Aircraft Reports                                                    |
| AIRMET  | Airman's Meteorological Information                                 |
| AIS     | Aeronautical Information Service                                    |
| AISR    | All centers, some military facilities, some international ATC units |
| AKD     | Altitude Keeping Device                                             |
| ALAQS   | Airport Local Air Quality Studies                                   |
| ALD     | Available Landing Distance                                          |
| ALS     | Approach Light Systems                                              |
| ALTRV   | Altitude Reservation                                                |
| AMOC    | Alternative Means of Compliance                                     |
| AMSL    | Above Mean Sea Level                                                |
| AMSS    | Aeronautical Mobile Satellite Service                               |



| Acronym | Definition                                             |
|---------|--------------------------------------------------------|
| AMU     | Areas of Magnetic Unreliability                        |
| AMVER   | Automated Merchant Vessel Report                       |
| ANC     | Air Navigation Commission                              |
| ANCON   | Aircraft Noise Control Model                           |
| ANP     | Actual Navigation Performance                          |
| ANP     | Air Navigation Plan                                    |
| ANP     | Aircraft Noise and Performance                         |
| ANSP    | Air Navigation Service Provider                        |
| AOC     | Aeronautical Operational Control                       |
| AOCC    | Airline Operation Control Center                       |
| AOV     | Air Traffic Safety Oversight Service                   |
| AP      | Autopilot System                                       |
| APM     | Aircraft Performance Model                             |
| APMT    | Aviation Environmental Portfolio Management Tool       |
| APNT    | Alternate Position Navigation and Time                 |
| APP     | Airport Planning and Programming                       |
| APQI    | Aircraft Position Quality Indicator                    |
| APU     | Auxiliary Power Unit                                   |
| APV     | Approach with Vertical Guidance                        |
| AQP     | Advance Qualification Program                          |
| AR      | Authorization Required                                 |
| ARENA   | Areas Noted for Attention                              |
| ARFF IC | Aircraft Rescue and Fire Fighting Incident Commander   |
| ARINC   | Aeronautical Radio Incorporated                        |
| ARO     | Airport Reservations Office                            |
| ARP     | Airports                                               |
| ARSA    | Airport Radar Service Area                             |
| ARSR    | Air Route Surveillance Radar                           |
| ARTCC   | Air Route Traffic Control Center                       |
| ARTS    | Automated Radar Terminal System                        |
| ASDE-X  | Airport Surface Detection Equipment - Model X          |
| ASE     | Altimetry System Error                                 |
| ASEPS   | Advanced Surveillance - Enhanced Procedural Separation |
| ASOS    | Automated Surface Observing System                     |



| Acronym   | Definition                                                    |
|-----------|---------------------------------------------------------------|
| ASR       | Aviation Safety Report                                        |
| ASR       | Airport Surveillance Radar                                    |
| ASR       | Antenna Structure Registration                                |
| ASRS      | Aviation Safety Reporting System                              |
| ATA       | Actual Time of Arrival                                        |
| ATC       | Air Traffic Control                                           |
| ATCC      | Air Traffic Control Center                                    |
| ATCRBS    | Air Traffic Control Radar Beacon System                       |
| ATCSCC    | Air Traffic Control System Command Center                     |
| ATCT      | Airport Traffic Control Tower                                 |
| ATD       | Along-Track Distance                                          |
| ATIS      | Automatic Terminal Information Service                        |
| ATM       | Air Traffic Management                                        |
| ATN       | Aeronautical Telecommunication Network                        |
| ATO       | Air Traffic Organization (FAA Office symbology)               |
| ATOP      | Advance Technologies and Oceanic Procedures (Oceanic Centers) |
| ATS       | FAA office symbol for: Air Traffic Organization               |
| ATSA-AIRB | Enhanced Traffic Situational Awareness when Airborne          |
| ATSA-ITP  | Enhanced Traffic Situational Awareness In-Trail-Procedures    |
| ATSA-S&M  | Enhanced Sequencing & Merging operations                      |
| ATSA-SURF | Enhanced Traffic Situational Awareness on the Airport Surface |
| ATSA-VSA  | Enhanced Visual Separation on Approach                        |
| ATSP      | Air Traffic Services Provider                                 |
| ATSU      | Air Traffic Service Unit                                      |
| ATT       | Attitude Retention System                                     |
| AVS       | FAA office symbol for: Office of Aviation Safety              |
| AWC       | Aviation Weather Center                                       |
| AWO       | All Weather Operations                                        |
| AWOS      | Automated Weather Observing System                            |
| AWPR      | Automatic Waypoint Reporting                                  |
| AWSS      | Automated Weather Sensor System                               |
| AWTT      | Aviation Weather Technology Transfer                          |
| AWW       | Severe Weather Forecast Alert                                 |
| <b>B</b>  |                                                               |



| Acronym   | Definition                                           |
|-----------|------------------------------------------------------|
| BAASS     | Bigelow Aerospace Advanced Space Studies             |
| BADA      | Base of Aircraft Data                                |
| baro VNAV | Barometric Vertical Navigation                       |
| BBS       | Bulletin Board System                                |
| BC        | Back Course                                          |
| BECMG     | Becoming group                                       |
| BITE      | Built-In Test Equipment                              |
| BMVBS     | German Ministry of Transport                         |
| BORPC     | Basic Operational Requirements and Planning Criteria |
| BOTA      | Brest Oceanic Transition Area                        |
| BRG       | Bearing                                              |
| B-RNAV    | Basic Area Navigation                                |
| <b>C</b>  |                                                      |
| CAA       | Civil Aviation Authority                             |
| CAASD     | Center for Advanced Aviation Systems Development     |
| CAATS     | Canadian Automated Air Traffic System                |
| CAD       | Centralized ADS-C system                             |
| CAEP      | ICAO Committee on Aviation Environmental Protection  |
| CANSO     | Civil Air Navigation Services Organization           |
| CAR       | Caribbean Region                                     |
| CAR-SAM   | Caribbean–South America (ICAO term)                  |
| CARTS     | Common Automated Radar Terminal System               |
| CAT       | Clear Air Turbulence                                 |
| CATEX     | Categorical Exclusion                                |
| CB        | Cumulonimbus Clouds                                  |
| CC        | Connection                                           |
| CD        | Controller Display                                   |
| CDA       | Current Data Authority                               |
| CDFA      | Continuous Descent Final Approach                    |
| CDI       | Course Deviation Indicator                           |
| CDL       | Configuration Deviation List                         |
| CDR       | Coded Departure Route                                |
| CDTI      | Cockpit Display of Traffic Information               |
| CDU       | Control Display Unit                                 |



| Acronym   | Definition                                                                                        |
|-----------|---------------------------------------------------------------------------------------------------|
| CENPAC    | Central Pacific                                                                                   |
| CEP       | Central East Pacific                                                                              |
| CERAP     | Combined Center/RAPCON                                                                            |
| CFA       | Controlled Firing Area                                                                            |
| CFIT      | Controlled Flight into Terrain                                                                    |
| CFL       | Cleared Flight Level                                                                              |
| CFM       | Company Flight Manual                                                                             |
| CFP       | Computer Flight Plan                                                                              |
| CFR       | Code of Federal Regulations                                                                       |
| CFRS      | Centralized FMC Waypoint System                                                                   |
| CHDO      | Certificate-Holding District Office                                                               |
| CIS       | Commonwealth of Independent States                                                                |
| CM        | Context Management                                                                                |
| CMA       | Central Monitoring Agency                                                                         |
| CMO       | Certificate Management Office                                                                     |
| CNS       | Communications, Navigation, and Surveillance                                                      |
| CNS/ATM   | Communications, Navigation and Surveillance/Air Traffic Management                                |
| CO        | Carbon Monoxide                                                                                   |
| CO2       | Carbon Dioxide                                                                                    |
| COA       | Certificate of Waiver or Authorization                                                            |
| COSPAS    | Space System for the Search of Vessels in Distress (Acronym transliterated from Russian, meaning) |
| CPC       | Connect Request (Euro Control)                                                                    |
| CPDLC     | Controller-Pilot Data Link Communications                                                         |
| CPDLC-DCL | Controller-Pilot Data Link Communications Departure Clearance                                     |
| CR        | Connect Request                                                                                   |
| CRC       | Cyclic Redundancy Check                                                                           |
| CRM       | Collision Risk Model                                                                              |
| CRM       | Cockpit Resource Management                                                                       |
| CSP       | Communication Service Providers                                                                   |
| CSPO      | Closely Spaced Parallel Operations                                                                |
| CTA       | Control Area                                                                                      |
| CTAF      | Common Traffic Advisory Frequency                                                                 |
| CTR       | Control Zone                                                                                      |
| CU        | Cumulus Clouds                                                                                    |



| Acronym  | Definition                                                    |
|----------|---------------------------------------------------------------|
| CVFP     | Charted Visual Flight Procedure                               |
| CVRS     | Computerized Voice Reservation System                         |
| CWA      | Center Weather Advisory                                       |
| CWSU     | Center Weather Service Unit                                   |
| <b>D</b> |                                                               |
| DA       | Decision Altitude                                             |
| DA       | Data Authority                                                |
| DARP     | Dynamic Airborne Reroute Procedure                            |
| D-ATIS   | Data link (or Digital) Automatic Terminal Information Service |
| DCDU     | Datalink Control & Display Unit                               |
| DCL      | Departure Clearance                                           |
| DCNS     | Data Communication Network System                             |
| DCP      | Data Collection Package                                       |
| DCPC     | Direct Controller Pilot Communications                        |
| DDTC     | Data link Delivery of Taxi Clearance                          |
| DER      | Departure End of Runway                                       |
| DEWIZ    | Distant Early Warning Identification Zone                     |
| DF       | Direction Finder                                              |
| DfT      | Department for Transport                                      |
| DH       | Decision Height                                               |
| DL       | Data Link (CPDLC, ATN, ACARS, AFIS)                           |
| DLIC     | Data Link Initiation Capability                               |
| DLS      | Data Link Services                                            |
| DM       | Downlink Message                                              |
| DME      | Distance Measuring Equipment                                  |
| DME/N    | Standard DME                                                  |
| DME/P    | Precision DME                                                 |
| DOD      | Department of Defense                                         |
| DOF      | Digital Obstacle File                                         |
| DOI      | Department of Interior                                        |
| D-ORIS   | Data link Operational “En-Route” Information Service          |
| DP       | Instrument Departure Procedure                                |
| DPU      | Data Processor Unit                                           |
| DR       | Dead Reckoning                                                |



| Acronym   | Definition                                   |
|-----------|----------------------------------------------|
| DRS       | Dynamic Regulatory System                    |
| DRT       | Diversion Recovery Tool                      |
| DRVSM     | Domestic Reduced Vertical Separation Minimum |
| DSC       | Downstream Clearance                         |
| D-SIG     | Data link Surface Information & Guidance     |
| D-TAXI    | Data link Taxi Instruction                   |
| DTC DUATS | Direct File Over the Internet                |
| DTED      | Digital Terrain Elevation Data               |
| DUATS     | Direct User Access Terminal System           |
| DVA       | Diverse Vector Area                          |
| DVFR      | Defense Visual Flight Rules                  |
| DVRSN     | Diversion                                    |
| <b>E</b>  |                                              |
| EA        | Environmental Assessment                     |
| EASA      | European Aviation Safety Agency              |
| ECAC      | European Civil Aviation Conference           |
| ECI       | Environmental Condition Indicator            |
| EDCT      | Expect Departure Clearance Time              |
| EDMS      | Emissions and Dispersion Modelling System    |
| EDR       | Excessive Descent Rate                       |
| EDTO      | Extended Diversion Time Operations           |
| EFAS      | En Route Flight Advisory Service             |
| EFIS      | Electronic Flight Instrument System          |
| EFV       | Enhanced Flight Visibility                   |
| EFVS      | Enhanced Flight Vision System                |
| EGPWS     | Enhanced Ground Proximity Warning System     |
| EICAS     | Engine Indicating and Crew Alerting System   |
| EIS       | Environmental Impact Statement               |
| ELT       | Emergency Locator Transmitter                |
| EMAS      | Engineered Materials Arresting System        |
| EPE       | Estimate of Position Error                   |
| EPI       | Environmental Key Performance Indicator      |
| EPU       | Estimate of Position Uncertainty             |
| ERAM      | Enroute Automated Modernization              |



| Acronym     | Definition                                              |
|-------------|---------------------------------------------------------|
| ESV         | Expanded Service Volume                                 |
| ETA         | Estimated Time of Arrival                               |
| ETD         | Estimated Time of Departure                             |
| ETE         | Estimated Time En Route                                 |
| ETOPS       | Extended Operations                                     |
| ETP         | Equal Time Point                                        |
| EUR         | Europe                                                  |
| EUR/NAT     | Europe and North Atlantic                               |
| EUROCAE     | European Organization for Civil Aviation Equipment      |
| EUROCONTROL | European Organization for the Safety Air Navigation     |
| EVS         | Enhanced Vision System                                  |
| EWINS       | Enhanced Weather Information System                     |
| <b>F</b>    |                                                         |
| FA          | Area Forecast                                           |
| FAA         | Federal Aviation Administration                         |
| FAB         | Functional Airspace Blocks                              |
| FAF         | Final Approach Fix                                      |
| FANS        | Future Air Navigation System                            |
| FAROS       | Final Approach Runway Occupancy Signal                  |
| FAS         | Final Approach Segment                                  |
| FASID       | Facilities and Services Implementation Document         |
| FAST        | Future Aviation Scenario Tool                           |
| FAWP        | Final Approach Waypoint                                 |
| FB          | Fly-by                                                  |
| FBO         | Fixed Base Operator                                     |
| FCC         | Federal Communications Commission                       |
| FD          | Flight Director                                         |
| FDC         | Flight Data Center                                      |
| FDE         | Fault Detection and Exclusion                           |
| FDP2000     | Flight Data Processing 2000 (Anchorage Domestic Center) |
| FDPS        | Flight Data Processing System                           |
| FESG        | ICAO Forecasting and Economic Support Group             |
| FIC         | Flight Information Center                               |
| FIP         | Flight Inspection and Procedures                        |



| Acronym | Definition                                             |
|---------|--------------------------------------------------------|
| FIR     | Flight Information Region                              |
| FIS     | Flight Information Service                             |
| FIS-B   | Flight Information Services Broadcast                  |
| FISDL   | Flight Information Services Data Link                  |
| FL      | Flight Level                                           |
| FLAS    | Flight Level Allocation Scheme                         |
| FLIP    | Flight Information Publication                         |
| FLIPCY  | Flight Plan Consistency                                |
| FLIPINT | Flight Path Intent                                     |
| FLTA    | Forward Looking Terrain Avoidance                      |
| FMC     | Flight Management Computer                             |
| FMC WPR | Flight Management Computer Waypoint Position Reporting |
| FMCS    | Flight Management Computer System                      |
| FMS     | Flight Management System                               |
| FMSP    | Flight Management System Procedure                     |
| FN_AK   | FANS 1/A (+) Logon Response                            |
| FN_CAD  | FANS 1/A (+) Contact Request                           |
| FN_COMP | FANS 1/A (+) Contact Complete                          |
| FN_CON  | FANS 1/A (+) Logon Request                             |
| FN_RESP | FANS 1/A (+) Contact Response                          |
| FO      | Fly-over                                               |
| FOCA    | Federal Office of Civil Aviation (Germany)             |
| FOM     | Figure of Merit                                        |
| FOM     | Forecasting and Operations Module                      |
| FOM     | Flight Operations Manual                               |
| FOV     | Field of View                                          |
| FPA     | Flight Path Angle                                      |
| FPFO    | Flight Procedures Field Office                         |
| FPNM    | Feet Per Nautical Mile                                 |
| FPO     | Flight Procedures Office                               |
| FPV     | Flight Path Vector                                     |
| FRMS    | Fatigue Risk Management System                         |
| FROP    | Final Roll-Out point                                   |
| FRT     | Fixed Radius Transition                                |



| Acronym  | Definition                                                  |
|----------|-------------------------------------------------------------|
| FSDO     | Flight Standards District Office                            |
| FSIMS    | Flight Standards Information Management System              |
| FSS      | Flight Service Station                                      |
| FSTD     | Flight System Training Device                               |
| FTE      | Flight Technical Error                                      |
| FTR      | Flexible Track Route                                        |
| FTS      | Flexible Track System                                       |
| FUA      | Flexible Use of Airspace                                    |
| <b>G</b> |                                                             |
| GBAS     | Ground Based Augmentation System                            |
| GCO      | Ground Communication Outlet                                 |
| GEO      | Geostationary Satellite                                     |
| GFAAF    | Global Framework for Aviation Alternative Fuels             |
| GHG      | Green House Gas (emissions)                                 |
| GIS      | Geographical Information System                             |
| GLONASS  | Global Orbiting Navigation Satellite System (Russian)       |
| GLS      | "Global Navigation Satellite System [GNSS] Landing System " |
| GMS      | Global Positioning System Monitoring System                 |
| GMT      | Greenwich Mean Time                                         |
| GMU      | GPS (Height) Monitoring Unit                                |
| GNE      | Gross Navigation Error                                      |
| GNSS     | Global Navigation Satellite System                          |
| GNSSP    | Global Navigation Satellite System Panel                    |
| GOLD     | Global Operational Data Link Document                       |
| GP       | General Purpose                                             |
| GPS      | Global Positioning System                                   |
| GPU      | Ground Power Unit                                           |
| GPWS     | Ground Proximity Warning System                             |
| GRAS     | Ground-based Regional Augmentation System                   |
| GRECO    | Graphical Trajectory Co-ordination                          |
| GRI      | Group Repetition Interval                                   |
| GSD      | Geographical Situation Display                              |
| GSE      | Ground Support Equipment                                    |



| Acronym  | Definition                                                          |
|----------|---------------------------------------------------------------------|
| GUS      | Ground Uplink Station                                               |
| <b>H</b> |                                                                     |
| HAA      | Height Above Airport or Helicopter Air Ambulance                    |
| HAR      | High Altitude Redesign                                              |
| HAT      | Height Above Touchdown                                              |
| HDG      | Heading                                                             |
| HDTA     | High Density Traffic Airports                                       |
| HEDA     | Helicopter En Route Descent Area                                    |
| HEMS     | Helicopter Emergency Medical Services                               |
| HF       | High Frequency                                                      |
| HFDL     | High Frequency Data Link                                            |
| HIL      | Horizontal Integrity Limit (is equal to the Horizontal Alert Limit) |
| HIRL     | High Intensity Runway Lights                                        |
| HLA      | High Level Airspace                                                 |
| HMI      | Human Machine Interface                                             |
| HMU      | Height Monitoring Unit                                              |
| hPa      | Hectopascals                                                        |
| HR       | Human Range                                                         |
| HRR      | Helicopter Rapid Refueling Procedures                               |
| HSI      | Horizontal Situation Indicator                                      |
| HUD      | Head-Up Display                                                     |
| Hz       | Hertz                                                               |
| <b>I</b> |                                                                     |
| I&I      | Implementation and Impact                                           |
| IAF      | Initial Approach Fix                                                |
| IAP      | Instrument Approach Procedure                                       |
| IAS      | Indicated Air Speed                                                 |
| IATA     | International Air Transport Association                             |
| IAWP     | Initial Approach Waypoint                                           |
| ICAO     | International Civil Aviation Organization                           |
| ICD      | Interface Control Document                                          |
| IF       | Intermediate Fix                                                    |
| IFP      | Instrument Flight Procedures                                        |
| IFR      | Instrument Flight Rules                                             |



| Acronym  | Definition                                                      |
|----------|-----------------------------------------------------------------|
| IFSET    | ICAO Fuel Savings Estimation Tool                               |
| IGA      | International General Aviation                                  |
| ILS      | Instrument Landing System                                       |
| ILS/PRM  | Instrument Landing System/Precision Runway Monitor              |
| IM       | Inner Marker                                                    |
| IMC      | Instrument Meteorological Conditions                            |
| IN       | International Notice to Airmen                                  |
| INM      | Integrated Noise Model                                          |
| INS      | Inertial Navigation System                                      |
| IOC      | Initial Operational Capability                                  |
| IPDS     | Instrument Procedure Design System                              |
| IR       | IFR Military Training Route                                     |
| IRS      | Inertial Reference System                                       |
| IRU      | Inertial Reference Unit                                         |
| ISA      | International Standard Atmosphere                               |
| ITCZ     | Intertropical Convergence Zone                                  |
| ITP      | In-Trail Procedures                                             |
| ITWS     | Integrated Terminal Weather System                              |
| <b>J</b> |                                                                 |
| JAA      | Joint Aviation Authority                                        |
| <b>K</b> |                                                                 |
| KHz      | Kilohertz                                                       |
| km       | Kilometer                                                       |
| KPA      | Key Performance Areas                                           |
| KPI      | Key Performance Indicator                                       |
| <b>L</b> |                                                                 |
| LAA      | Local Airport Advisory (within 10 miles of an airport with FSS) |
| LAA      | Lowest Authorized Altitude                                      |
| LAAS     | Local Area Augmentation System                                  |
| LAHSO    | Land and Hold Short Operations                                  |
| LAQ      | Local Air Quality                                               |
| LAT      | Latitude                                                        |
| LAWRS    | Limited Aviation Weather Reporting Station                      |
| LDA      | Landing Distance Available                                      |



| Acronym  | Definition                                                             |
|----------|------------------------------------------------------------------------|
| LDA      | Localizer Type Directional Aid                                         |
| LDA/PRM  | Localizer Type Directional Aid/Precision Runway Monitor                |
| LDE      | Lateral Deviation Event (LDE)                                          |
| LDOC     | Long Distance Operational Control                                      |
| LIRL     | Low Intensity Runway Lights                                            |
| LLWAS    | Low Level Wind Shear Alert System                                      |
| LLWAS NE | Low Level Wind Shear Alert System Network Expansion                    |
| LLWAS-RS | Low Level Wind Shear Alert System Relocation/Sustainment               |
| LNAV     | Lateral Navigation                                                     |
| LOA      | Letter of Authorization                                                |
| LOC      | Localizer                                                              |
| LODA     | Letter of Design Approval                                              |
| LOE      | Line Oriented Evaluation                                               |
| LOFT     | Line Oriented Flight Training                                          |
| LONG     | Longitude                                                              |
| LOP      | Line-of-Position                                                       |
| LP       | Localizer Performance                                                  |
| LPV      | Localizer Performance with Vertical Guidance                           |
| LRCS     | Long-Range Communication System                                        |
| LRDE     | Level Range Deviation Event                                            |
| LRNP     | Long-Range Navigation Program                                          |
| LRNS     | Long-Range Navigation System                                           |
| LTP      | Landing Threshold Point                                                |
| LUAW     | Line Up and Wait                                                       |
| LZ       | Landing Zone                                                           |
| <b>M</b> |                                                                        |
| MACS     | Military Aviation Communication System                                 |
| MAGENTA  | Model for Assessing Global Exposure to the Noise of Transport Aircraft |
| MAHWP    | Missed Approach Holding Waypoint                                       |
| MAP      | Missed Approach Point                                                  |
| MARSA    | Military Assumes Responsibility for Separation of Aircraft             |
| MAS      | Message Assurance                                                      |
| MASPS    | Minimum Aircraft System Performance Specification                      |
| MAWP     | Missed Approach Waypoint                                               |



| Acronym | Definition                                     |
|---------|------------------------------------------------|
| MBM     | Market Based Measures                          |
| MCA     | Ministry of Civil Aviation                     |
| MCDU    | Multi-function Cockpit Display Unit            |
| MDA     | Minimum Descent Altitude                       |
| MEA     | Minimum En Route Altitude                      |
| MEARTS  | Micro En Route Automated Radar Tracking System |
| MEL     | Minimum Equipment List                         |
| MET     | Meteorology Information                        |
| MET     | Meteorological                                 |
| METAR   | Aviation Routine Weather Report                |
| MHz     | Megahertz                                      |
| MIA     | Minimum IFR Altitude                           |
| MIRL    | Medium Intensity Runway Lights                 |
| MLS     | Microwave Landing System                       |
| MM      | Middle Marker                                  |
| MMEL    | Master Minimum Equipment List                  |
| MMS     | Mineral Management Service                     |
| MNPS    | Minimum Navigation Performance Specification   |
| MOA     | Memorandum of Agreement                        |
| MOA     | Military Operations Area                       |
| MOCA    | Minimum Obstruction Clearance Altitude         |
| MOPS    | Minimum Operational Performance Standards      |
| MORA    | Minimum Off-Route Altitude                     |
| MPI     | Management Performance Indicator               |
| MRA     | Minimum Reception Altitude                     |
| MRB     | Magnetic Reference Bearing                     |
| MRN     | Message Reference Number                       |
| MSA     | Minimum Sector Altitude                        |
| MSA     | Minimum Safe Altitude                          |
| MSAW    | Minimum Safe Altitude Warning                  |
| MSL     | Mean Sea Level                                 |
| MSpec   | Management Specification                       |
| MTBF    | Mean Time Between Failures                     |
| MTI     | Moving Target Indicator                        |



| Acronym   | Definition                                                                                   |
|-----------|----------------------------------------------------------------------------------------------|
| MTOS      | Mountain Obscuration                                                                         |
| MTR       | Military Training Route                                                                      |
| MTT       | Minimum Time Track                                                                           |
| MTTR      | Mean Time To Repair                                                                          |
| MVA       | Minimum Vectoring Altitude                                                                   |
| MWA       | Mountain Wave Activity                                                                       |
| MWO       | Meteorological Watch Office                                                                  |
| <b>N</b>  |                                                                                              |
| NAA       | National Airworthiness Authority                                                             |
| NAARMO    | North American Approval Registry and Monitoring Organization                                 |
| NACO      | National Aeronautical Charting Office (predecessor to FAA Aeronautical Information Services) |
| NAM       | North American Region                                                                        |
| NAPT      | National Airspace and Procedures Team                                                        |
| NAR       | North American Route                                                                         |
| NAS       | National Airspace System                                                                     |
| NASA      | National Aeronautics and Space Administration                                                |
| NASR      | National Airspace System Resource                                                            |
| NAT       | North Atlantic Region                                                                        |
| NAT OTS   | North Atlantic Organized Track System                                                        |
| NAT SPG   | North Atlantic Systems Planning Group                                                        |
| NATS      | National Air Traffic Services (UK Air Traffic Service Provider)                              |
| NAV       | Navigation                                                                                   |
| Nav Specs | Navigation Specifications                                                                    |
| NAVAID    | Navigational Aid                                                                             |
| NAVCEN    | Coast Guard Navigation Center                                                                |
| NCA       | Northern Control Area (Canada)                                                               |
| NCR       | Negative Climb Rate                                                                          |
| NCWF      | National Convective Weather Forecast                                                         |
| ND        | Navigation Display                                                                           |
| NDA       | Next Data Authority                                                                          |
| NDB       | Nondirectional Radio Beacon                                                                  |
| NDB       | Navigation Data Base                                                                         |
| NEPA      | National Environmental Policy Act                                                            |
| NEXRAD    | Next Generation Weather Radar                                                                |



| Acronym | Definition                                      |
|---------|-------------------------------------------------|
| NextGen | Next Generation                                 |
| NFDC    | National Flight Data Center                     |
| NFPG    | National Flight Procedures Group                |
| NFPO    | National Flight Procedures Office               |
| NGA     | National Geospatial-Intelligence Agency         |
| NIRS    | Noise Integrated Routing System                 |
| NM      | Nautical Miles                                  |
| NMAC    | Near Midair Collision                           |
| NOAA    | National Oceanic and Atmospheric Administration |
| NOF     | NOTAM offices                                   |
| NOPAC   | North Pacific                                   |
| NoPT    | No Procedure Turn Required                      |
| NOTA    | Northern Oceanic Transition Area                |
| NOTAM   | Notice to Airmen                                |
| NOx     | Nitrogen Oxides                                 |
| NOx-CSM | Nitrogen Oxides Cost Spreadsheet Model          |
| NPA     | Nonprecision Approach                           |
| NPOLE   | North Pole                                      |
| NRA     | Non-Radar Airspace                              |
| NRS     | Navigation Reference System                     |
| NRS     | National Reference System                       |
| NSA     | National Security Area                          |
| NSE     | Navigation Sensor Error                         |
| NSE     | Navigation System Error                         |
| NSW     | No Significant Weather                          |
| NTSB    | National Transportation Safety Board            |
| NTZ     | No Transgression Zone                           |
| NWS     | National Weather Service                        |
| O       |                                                 |
| OAC     | Oceanic Area Control Center                     |
| OADR    | Oceanic Altitude Deviation Reports              |
| OASIS   | Flight Services in Alaska                       |
| OAT     | Outside Air Temperature                         |
| OBS     | Omni-bearing Selector                           |



| Acronym  | Definition                                                    |
|----------|---------------------------------------------------------------|
| OCA      | Obstacle Clearance Altitude                                   |
| OCA      | Oceanic Control Area                                          |
| OCD      | Oceanic Clearance Delivery                                    |
| OCEAN 21 | FAA oceanic Flight Data Processing System. See also ATOP.     |
| OCH      | Obstacle Clearance Height                                     |
| OCL      | Oceanic Clearance                                             |
| OCS      | Obstacle Clearance Surface                                    |
| ODP      | Obstacle Departure Procedure                                  |
| OE       | Obstruction Evaluation                                        |
| OEM      | Original Equipment Manufacturers                              |
| OESB     | Oceanic Errors Safety Bulletin                                |
| OFDPS    | Offshore Flight Data Processing System                        |
| OIS      | Operational Information System                                |
| OIS      | Obstacle Identification Surface                               |
| OM       | Outer Marker                                                  |
| OPI      | Operational Performance Indicator                             |
| OPR      | Office of Primary Responsibility                              |
| OpSpecs  | Operation Specification                                       |
| ORT      | Operational Requirements Table                                |
| OSAP     | Offshore Standard Approach Procedure                          |
| OTS      | Organized Track System                                        |
| <b>P</b> |                                                               |
| P/CG     | Pilot/Controller Glossary                                     |
| PA       | Precision Approach                                            |
| PAC      | Pacific Region                                                |
| PACOTS   | Pacific Organized Track System                                |
| PAI      | Principal Avionics Inspector                                  |
| PAM      | Path Arrival Management                                       |
| PANS     | Procedures for Air Navigation Services                        |
| PANS-ABC | ICAO Abbreviations and Codes                                  |
| PANS-ATM | Procedures for Air Navigation Services-Air Traffic Management |
| PAPI     | Precision Approach Path Indicator                             |
| PAR      | Precision Approach Radar                                      |
| PAR      | Preferred Arrival Route                                       |



| Acronym | Definition                                                 |
|---------|------------------------------------------------------------|
| PARC    | Performance-Based Operations Aviation Rulemaking Committee |
| PBCS    | Performance-Based Communication and Surveillance           |
| PBN     | Performance Based Navigation                               |
| PC      | Proficiency Check                                          |
| PDA     | Premature Descent Alert                                    |
| PDC     | Pre-departure Clearance                                    |
| PDE     | Path Definition Error                                      |
| PEC     | Position Error Correction                                  |
| PEE     | Position Estimate Error                                    |
| PEGAS   | Russian Federation Air Quality Model                       |
| PFD     | Personal Flotation Device                                  |
| PID     | Pilot Initiated Downlink                                   |
| PinS    | Point-in-Space                                             |
| PIREP   | Pilot Weather Report                                       |
| PMI     | Principal Maintenance Inspector                            |
| PNF     | Pilot-Not-Flying                                           |
| POB     | Persons on Board                                           |
| POC     | Point of Contact                                           |
| POFZ    | Precision Obstacle Free Zone                               |
| POH     | Pilot's Operating Handbook                                 |
| POI     | Principal Operations Inspector                             |
| PORT    | Pilot Operational Response Time                            |
| POS     | Position                                                   |
| PPO     | Prior Permission Only                                      |
| PPS     | Precise Positioning Service                                |
| PQI     | Position Quality Indicator                                 |
| PRB     | Procedure Review Board                                     |
| PRM     | Precision Runway Monitor                                   |
| PRM     | Preferred Route Message                                    |
| P-RNAV  | Precision RNAV                                             |
| PSE     | Path Steering Error                                        |
| PSR     | Primary Surveillance Radar                                 |
| PT      | Procedure Turn                                             |
| PT      | Proficiency Training                                       |



| Acronym  | Definition                                         |
|----------|----------------------------------------------------|
| PVT      | Position, Velocity & Time                          |
| <b>Q</b> |                                                    |
| Q Routes | High-altitude RNAV routes                          |
| QA       | Quality Assurance                                  |
| <b>R</b> |                                                    |
| R/T      | Radio Telephony                                    |
| RA       | Resolution Advisory                                |
| RAA      | Remote Advisory Airport                            |
| RAIM     | Receiver Autonomous Integrity Monitoring           |
| RAIS     | Remote Airport Information Service                 |
| RAPT     | Regional Airspace and Procedures Team              |
| RBDT     | Ribbon Display Terminals                           |
| RCAG     | Remote Center Air/Ground                           |
| RCC      | Rescue Coordination Center                         |
| RCLS     | Runway Centerline Lighting System                  |
| RCO      | Remote Communications Outlet                       |
| RCP      | Required Communication Performance                 |
| RCP A    | Required Communication Performance Availability    |
| RCP C    | Required Communication Performance Continuity      |
| RCP ET   | Required Communication Performance Expiration Time |
| RCP I    | Required Communication Performance Integrity       |
| RD       | Rotor Diameter                                     |
| REF      | Reference                                          |
| REIL     | Runway End Identifier Lights                       |
| REL      | Runway Entrance Lights                             |
| RF       | Radius-to-Fix                                      |
| RFM      | Rotorcraft Flight Manual                           |
| RGS      | Radio Ground Station                               |
| RIL      | Runway Intersection Lights                         |
| RLIM     | Runway Light Intensity Monitor                     |
| RNAV     | Area Navigation                                    |
| RNP AR   | RNP Authorization Required                         |
| RNL      | Reference Noise Levels                             |
| RNP      | Required Navigation Performance                    |



| Acronym                  | Definition                                                                                                                                |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| ROC                      | Required Obstacle Clearance                                                                                                               |
| RPAT                     | RNP Parallel Approach Runway Transitions                                                                                                  |
| RSP                      | Required Surveillance Performance                                                                                                         |
| RSTP                     | Required Surveillance Technical Performance                                                                                               |
| RTA                      | Required Time of Arrival                                                                                                                  |
| RTC                      | Required Terrain Clearance                                                                                                                |
| RVFP                     | Area Navigation Visual Flight Procedure                                                                                                   |
| RVR                      | Runway Visual Range                                                                                                                       |
| RVSM                     | Reduced Vertical Separation Minimum                                                                                                       |
| RWS                      | Runway Segment                                                                                                                            |
| RWSL                     | Runway Status Light                                                                                                                       |
| RWY                      | Runway                                                                                                                                    |
| <b>S</b>                 |                                                                                                                                           |
| S&M                      | Sequencing and Merging                                                                                                                    |
| SAGE                     | System for Assessing Aviation's Global Emissions                                                                                          |
| SAM                      | System Area Monitor                                                                                                                       |
| SAM                      | South America Region                                                                                                                      |
| SAO                      | Special Areas of Operations                                                                                                               |
| SAR                      | Search and Rescue                                                                                                                         |
| SARP                     | Standards and Recommended Practices (ICAO)                                                                                                |
| SARPSS                   | Standards and Recommended Practices, also FAA's Safety Assurance System                                                                   |
| SARSAT                   | Search and Rescue Satellite-Aided Tracking                                                                                                |
| SAS                      | Stability Augmentation System                                                                                                             |
| SAT                      | Static Air Temperature                                                                                                                    |
| SATCOM                   | Satellite Communication                                                                                                                   |
| SATCOM Voice or SATVOICE | Satellite Voice Communication                                                                                                             |
| SBAS                     | Satellite-based Augmentation System                                                                                                       |
| SC                       | Stratocumulus Clouds                                                                                                                      |
| SCA                      | Southern Control Area (Canada)                                                                                                            |
| SDF                      | Simplified Directional Facility                                                                                                           |
| SDL                      | Satcom Data Link                                                                                                                          |
| SELCAL                   | Selective Calling ( <i>ICAO managed communications method used to notify aircraft that a ground radio station wishes to communicate</i> ) |
| SESAR                    | Single European Sky ATM Research                                                                                                          |



| Acronym | Definition                                       |
|---------|--------------------------------------------------|
| SET     | Select Event Training                            |
| SFL     | Sequenced Flashing Lights                        |
| SFR     | Special Flight Rules                             |
| SIA     | Standard Instrument Approach                     |
| SIAP    | Standard Instrument Approach Procedure           |
| SID     | Standard Instrument Departure                    |
| SIGMET  | Significant Meteorological Information           |
| SLA     | Standard Landing Aid                             |
| SLOP    | Strategic Lateral Offset Procedures              |
| S-LRCS  | Single Long Range Communication System           |
| S-LRNS  | Single Long-Range Navigation System              |
| SM      | Statute Mile                                     |
| SMGCS   | Surface Movement Guidance Control System         |
| SMO     | System Management Office                         |
| SMS     | Safety Management System                         |
| SNR     | Signal-to-noise Ratio                            |
| SOIA    | Simultaneous Offset Instrument Approaches        |
| SONDEO  | Study on Noise Exposure Around European Airports |
| SOP     | Standard Operating Procedure                     |
| SOTA    | Shannon Oceanic Transition Area                  |
| SPC     | Storm Prediction Center                          |
| SPF     | Special Procedure Form                           |
| SPI     | Special Pulse Identification                     |
| SPOT    | Special Purpose Operational Training             |
| SPS     | Standard Positioning Service                     |
| SRM     | Safety Risk Management                           |
| SRMD    | Safety Risk Management Document                  |
| SRMDM   | Safety Risk Management Decision Memorandum       |
| SSB     | Single Sideband                                  |
| SSEC    | Static Source Error Correction                   |
| SSR     | Secondary Surveillance Radar                     |
| STAPES  | System for Airport Noise Exposure Studies        |
| STAR    | Standard Terminal Arrival                        |
| STARS   | Standard Terminal Automation Replacement System  |



| Acronym  | Definition                                                       |
|----------|------------------------------------------------------------------|
| STC      | Supplemental Type Certificate                                    |
| STMP     | Special Traffic Management Program                               |
| SUPPS    | Supplementary Procedures                                         |
| SVA      | Enhanced Successive Visual Approaches                            |
| SVS      | Synthetic Vision System                                          |
| SWIM     | System Wide Information Management                               |
| SWSL     | Supplemental Weather Service Locations                           |
| <b>T</b> |                                                                  |
| TA       | Traffic Advisory                                                 |
| TAA      | Terminal Arrival Area                                            |
| TAC      | Terminal Area Chart                                              |
| TACAN    | Tactical Air Navigation                                          |
| TAF      | Terminal Area Forecast                                           |
| TARGETS  | Terminal Area Route Generation Evaluation and Traffic Simulation |
| TAS      | True Airspeed                                                    |
| TAWS     | Terrain Awareness Warning System                                 |
| TC       | Type Certificate                                                 |
| TCAS     | Traffic Alert and Collision Avoidance System                     |
| TCH      | Threshold Crossing Height                                        |
| TD       | Time Difference                                                  |
| TDLS     | Tower Data Link System                                           |
| TDM      | Track Definition Message                                         |
| TDWR     | Terminal Doppler Weather Radar                                   |
| TDZ      | Touchdown Zone                                                   |
| TDZE     | Touchdown Zone Elevation                                         |
| TDZL     | Touchdown Zone Lights                                            |
| TEC      | Tower En Route Control                                           |
| TERPS    | Terminal Instrument Procedures                                   |
| TF-5     | Task Force-5                                                     |
| TGL      | Temporary Guidance Leaflet                                       |
| THL      | Takeoff Hold Lights                                              |
| TIS      | Traffic Information Service                                      |
| TIS-B    | Terminal Information Service - Broadcast                         |
| TKE      | Track Keeping Error                                              |



| Acronym  | Definition                                            |
|----------|-------------------------------------------------------|
| TLS      | Target Level of Safety                                |
| TLS      | Transponder Landing System                            |
| TMA      | Terminal Maneuvering Area                             |
| TMI      | Track Message Identification                          |
| TOD      | Top of Descent                                        |
| TPP      | Terminal Procedures Publications                      |
| TQM      | Total Quality Management                              |
| TRACON   | Terminal Radar Approach Control Facility              |
| TRN      | Monitored Operational Performance                     |
| TRSA     | Terminal Radar Service Area                           |
| TSA      | Transportation Security Administration                |
| TSE      | Total System Error                                    |
| TSO      | Technical Standard Order                              |
| TSOA     | Technical Standard Order Authorization                |
| TVE      | Total Vertical Error                                  |
| TWDL     | Two-Way Data Link                                     |
| TWIB     | Terminal Weather Information Broadcast                |
| TWIP     | Terminal Weather Information for Pilots               |
| <b>U</b> |                                                       |
| UA       | Unmanned Aircraft                                     |
| UAS      | Unmanned Aircraft System                              |
| UAV      | Unmanned Aerial Vehicle                               |
| UDDF     | Universal Data Delivery Format                        |
| UFO      | Unidentified Flying Object                            |
| UHF      | Ultrahigh Frequency                                   |
| UM       | Uplink Message                                        |
| UNEP     | United Nations Environment Program                    |
| UNFCCC   | United Nations Framework Convention on Climate Change |
| UPR      | User Preferred Route                                  |
| USB      | Upper Sideband                                        |
| USIFPP   | United States Instrument Flight Procedures Panel      |
| USNOF    | United States NOTAM Office                            |
| UTA      | Upper Control Area                                    |



| Acronym  | Definition                                                                                       |
|----------|--------------------------------------------------------------------------------------------------|
| UTC      | Universal Time Coordinated                                                                       |
| UWS      | Urgent Weather SIGMET                                                                            |
| <b>V</b> |                                                                                                  |
| VAR      | Volcanic Activity Reporting                                                                      |
| VASI     | Visual Approach Slope Indicator                                                                  |
| VCOA     | Visual Climb Over the Airport                                                                    |
| VDA      | Vertical Descent Angle                                                                           |
| VDL      | VHF Data Link                                                                                    |
| VDP      | Visual Descent Point                                                                             |
| VFR      | Visual Flight Rules                                                                              |
| VGSI     | Visual Glide Slope Indicator                                                                     |
| VHF      | Very High Frequency                                                                              |
| VIP      | Video Integrator Processor                                                                       |
| VLF      | Very Low Frequency                                                                               |
| VMC      | Visual Meteorological Conditions                                                                 |
| VMINI    | Instrument Flight Minimum Speed                                                                  |
| VNAV     | Vertical Navigation                                                                              |
| Vne      | Never Exceed Speed                                                                               |
| VNEI     | Instrument Flight Never Exceed Speed                                                             |
| VOLMET   | Meteorological Information For Aircraft In Flight                                                |
| VOR      | Very High Frequency Omni-directional Range                                                       |
| VOR/DME  | VHF Omnidirectional Range/Distance Measuring Equipment                                           |
| VORTAC   | VHF Omni-directional Range/Tactical Air Navigation                                               |
| VOT      | VOR Test Facility                                                                                |
| VR       | VFR Military Training Route                                                                      |
| VRE      | Vertical Rate of Change Event                                                                    |
| Vref     | Reference landing approach speed                                                                 |
| VSM      | Vertical Separation Minimum                                                                      |
| Vso      | Stalling speed or the minimum steady flight speed in the landing configuration at maximum weight |
| VTF      | Vector to Final                                                                                  |
| VV       | Vertical Visibility                                                                              |
| VVI      | Vertical Velocity Indicator                                                                      |
| Vx       | Speed for Best Angle of Climb                                                                    |
| Vy       | Speed for Best Rate of Climb                                                                     |



| Acronym          | Definition                                                                                                      |
|------------------|-----------------------------------------------------------------------------------------------------------------|
| VYI              | Instrument Climb Speed, Utilized Instead of VY for Compliance with the Climb Requirements for Instrument Flight |
| <b>W</b>         |                                                                                                                 |
| WA               | AIRMET                                                                                                          |
| WAAS             | Wide Area Augmentation System                                                                                   |
| WAC              | World Aeronautical Chart                                                                                        |
| WAH              | When Able Higher                                                                                                |
| WAT              | West Atlantic                                                                                                   |
| WCE              | Waypoint Change Event                                                                                           |
| WFO              | Weather Forecast Office                                                                                         |
| WG               | Working Group                                                                                                   |
| WGS-84           | World Geodetic System of 1984                                                                                   |
| WGS-84 Ellipsoid | A mathematical model of the earth's shape based on WGS-84 survey information                                    |
| WMO              | World Meteorological Organization                                                                               |
| WMS              | Wide-Area Master Station                                                                                        |
| WMSC             | Weather Message Switching Center                                                                                |
| WMSCR            | Weather Message Switching Center Replacement                                                                    |
| WP               | Waypoint                                                                                                        |
| WPR              | Waypoint Position Report                                                                                        |
| WRS              | Wide-Area Ground Reference Station                                                                              |
| WS               | SIGMET                                                                                                          |
| WSO              | Weather Service Office                                                                                          |
| WSP              | Weather System Processor                                                                                        |
| WST              | Convective Significant Meteorological Information                                                               |
| WW               | Severe Weather Watch Bulletin                                                                                   |
| <b>X</b>         |                                                                                                                 |
| XTK              | Cross-Track Error                                                                                               |





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## Contacts



**Federal Aviation  
Administration**

## **Flight Technologies and Procedures Division, Flight Operations Group**

800 Independence Ave SW, Building 10A / 8th Floor, Washington, DC 20591 | Email: [9-AWA-AVS-AFS410@faa.gov](mailto:9-AWA-AVS-AFS410@faa.gov)

Phone: (202) 267-8806

Costa, Michael (FAA), (Acting) Group Manager | [michael.l.costa@faa.gov](mailto:michael.l.costa@faa.gov) | 469-891-1252

### **FAA Contacts**

*(SMEs for Oceanic and Remote Continental Operations)*

| Name                                      | Phone        | Email                                                                        | Area of Expertise                                                                                                                                      |
|-------------------------------------------|--------------|------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Costa, Michael (FAA)<br>Section D Manager | 469-891-1252 | <a href="mailto:michael.l.costa@faa.gov">michael.l.costa@faa.gov</a>         | Long-range Navigation<br>Oceanic and Remote Continental Airspace Operations                                                                            |
| Atkins, Howard B (FAA)                    | 317-698-9148 | <a href="mailto:howard.b.atkins@faa.gov">howard.b.atkins@faa.gov</a>         | AMU/Polar Operations<br>Long-range Navigation<br>Oceanic and Remote Continental Airspace Operations<br>North Atlantic Safety Oversight Group (NAT SOG) |
| DiFrancesco, Douglas (FAA)                | 480-307-0148 | <a href="mailto:douglas.difrancesco@faa.gov">douglas.difrancesco@faa.gov</a> | Long-range Navigation<br>Oceanic and Remote Continental Airspace Operations                                                                            |



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| Name                   | Phone        | Email                          | Area of Expertise                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------|--------------|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Kelley, Kevin C (FAA)  | 202-267-8854 | <b>kevin.c.kelley@faa.gov</b>  | Long-range Navigation<br>North Atlantic (NAT) Scrutiny Group (International group)<br>North Atlantic Technology and Interoperability Group (NAT TIG) (International group) Oceanic and Remote Continental Airspace Operations<br>Oceanic Event Review Committee (OERC) Operations Specifications Working Group (OSWG)<br>Performance Based Operations Aviation Rulemaking Committee (PARC) Communications Working Group (PARC-CWG) |
| Lopez, Armando (FAA)   | 305-505-0319 | <b>armando.lopez@faa.gov</b>   | Long-range Navigation<br>Oceanic and Remote Continental Airspace Operations                                                                                                                                                                                                                                                                                                                                                        |
| Marshall, John A (FAA) | 314-283-3230 | <b>john.a.marshall@faa.gov</b> | Long-range Navigation<br>Oceanic and Remote Continental Airspace Operations                                                                                                                                                                                                                                                                                                                                                        |
| Medina, Gary           | 505-804-8622 | <b>gary.medina@faa.gov</b>     | Long-range Navigation<br>Oceanic and Remote Continental Airspace Operations                                                                                                                                                                                                                                                                                                                                                        |



| Name                              | Phone        | Email                                | Area of Expertise                                                                                                                                  |
|-----------------------------------|--------------|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Patton, Ronald Howard (FAA)       | 314-324-4085 | <b>ron.h.patton@faa.gov</b>          | Long-range Navigation<br>Oceanic and Remote Continental Airspace Operations                                                                        |
| Salomon, Richard                  | 203-214-5141 | <b>richard.E-CTR.Salomon@faa.gov</b> | Long-range Navigation<br>Oceanic and Remote Continental Airspace Operations                                                                        |
| Stokes, Scott                     | 734-598-0096 | <b>scott.r.stokes@faa.com</b>        | Long-range Navigation<br>Oceanic and Remote Continental Airspace Operations                                                                        |
| Wisniewski, Mark CTR (Contractor) | 202-267-8843 | <b>mark.ctr.wisniewski@faa.gov</b>   | Long-range Navigation<br>Oceanic and Remote Continental Airspace Operations<br>Special Areas of Operations (SAO) Operations Specification (OpSpec) |



# International Contacts

| Country                                                                                                      | Contact              | Organization                                            | Address                                                                             | Phone                          | Email                        |
|--------------------------------------------------------------------------------------------------------------|----------------------|---------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------|------------------------------|
| <b>Canada</b><br>           | Noel Dwyer           | NAV CANADA<br>International Coordination                | 77 Metcalfe Street<br>Ottawa, Ontario<br>K1P 5L6<br>Canada                          | +1 (613) 563-7211              | Noel.dwyer@navcanada.ca      |
| <b>Iceland</b><br>          | Bjarni K. Stefánsson | ISAVIA                                                  | Reykjavik Airport<br>IS-101 Reykjavik<br>Iceland                                    | +354 424 4000                  | bjarni.stefansson@isavia.is. |
| <b>Norway</b><br>           | Morten Tjonndal      | Avinor Bodo ATCC                                        | N-8041 Bodo<br>Norway                                                               | +47 670 33 753/ +47 911 05 587 | morten.tjonndal@avinor.no    |
| <b>Portugal</b><br>        | Nelson Pimentel      | Navegação Aerea de Portugal                             | Apartado 47<br>Aeroporto de Santa Maria<br>9580 - Vila do Porto<br>Azores, Portugal | +351 296 820 503               | nelson.pimentel@nav.pt       |
| <b>United Kingdom</b><br> | Andy Shand           | UK NATS<br>GM Customer Affairs<br>Customer Affairs (UK) | 4000 Parkway, Whiteley, Fare-<br>ham Hants, PO157 FL                                | 01489 444924                   | andy.shand@nats.co.uk        |
| <b>United States</b><br>  | Vincent McMenamy     | Specialist Oceanic and Offshore                         | 600 Independence Avenue, SW<br>Washington, DC 20591                                 | +1 (202) 267-0627              | vincent.mcmenamy@faa.gov     |



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