

SECTION 2

INTERNATIONAL OCEANIC AIRSPACE NOTICES

INTRODUCTION

The following information contains the most current notices involving airspace matters pertaining to U.S. internationally delegated airspace. The information provided is divided into two sections: General and Region Specific.

GENERAL

COMMUNICATIONS REQUIREMENTS IN OCEANIC AIRSPACE DELEGATED TO THE FAA FOR PROVISION OF AIR TRAFFIC SERVICES

1. The United States Aeronautical Information Publication (AIP), (section ENR 7.1, paragraph 6) describes satellite voice (SATVOICE) communications services available in Anchorage, New York and Oakland oceanic control areas (OCAs), along with the requirements for use of those services. The AIP currently allows use of suitably installed and operated SATVOICE to communicate with New York and San Francisco RADIO only “when unable to communicate on HF” (High Frequency) radio. Some questions have arisen as to what constitutes being “unable” to communicate on HF.
2. Anchorage, New York and Oakland OCAs are “high seas” (international) airspace (for U.S. operators, 14 CFR § 91.703 refers). Therefore, all operations therein must comply with ICAO Annex 2 (*Rules of the Air*), which requires that aircraft “maintain continuous air–ground voice communication watch on the appropriate communication channel...” (Paragraph 3.6.5.1). This means that a long–range communication system (LRCS) is required whenever operations will exceed the range of VHF voice communications between aircraft and air traffic control. Additionally, regulations issued by the State of Registry/ State of the Operator may stipulate how many LRCS are required. Examples of such regulations, for U.S. operators, include 14 CFR §§ 91.511, 121.351, 125.203 and 135.165.
3. An operator is considered to be “unable to communicate on HF” during poor HF propagation conditions (commonly referred to as “HF Blackouts”), or if he/she suffers inflight HF radio failure. In those cases, that operator can use AIP–compliant SATVOICE equipment and procedures to continue the flight to destination. A one–time return flight through Anchorage, New York and Oakland OCAs, to obtain maintenance on the HF radios, would also be acceptable under these circumstances, and would meet the criteria for use of SATVOICE with New York and San Francisco RADIO as per the AIP. Operators must still comply with applicable regulations on how many LRCS are required, as well as with applicable Minimum Equipment List (MEL) provisions.
4. When first establishing communications with New York or San Francisco RADIO via SATVOICE, the flight crew should request a “callback check.” Such a check will help ensure RADIO can contact the crew during the period of SATVOICE use. The table below illustrates a sample callback check. Additionally, in the event the operator has indicated capability for SATVOICE via both Iridium and Inmarsat (by listing codes M1 and M3 in Item 10 of the ATC flight plan), the flight crew should inform the RADIO operator of the service to use for communicating with the aircraft.

Sample Transcript of SATVOICE Callback Check	
SATVOICE call from the air:	“New York RADIO, Airline 123, request SATVOICE Callback check.” For aircraft equipped with both Inmarsat and Iridium: “... on Inmarsat/Iridium (as applicable)”
Answer from the ground:	“Airline 123, copy, terminating call, will call you right back”
New SATVOICE call from ground:	“Airline 123, New York RADIO with your SATVOICE Callback, how do you read?”
SATVOICE answer from the air:	“Loud and clear, SATVOICE Callback check good, good day!”

5. FAA point of contact: Aviation Safety Inspector Kevin C. Kelley, Flight Technologies and Procedures Division, 202-267-8854, Kevin.C.Kelley@faa.gov.

(Flight Operations Group, Flight Technologies and Procedures Division, Flight Standards Service, 2/28/2019)

REGION SPECIFIC

SPECIAL EMPHASIS ITEMS FOR OPERATIONS ON NORTH ATLANTIC TRACKS/ROUTES EMPLOYING REDUCED LATERAL SEPARATION

On 29 March 2018 the Reduced Lateral Separation Minimum (RLatSM) trial on the ICAO North Atlantic (NAT) Organized Track System (OTS) concluded. In its place, the ICAO NAT region implemented 23 nautical mile lateral spacing (with waypoints defined by ½-degree latitude) for operators specifically authorized for Performance Based Communications and Surveillance (PBCS) and Performance Based Navigation (PBN) separation criteria. Implementation of PBCS and PBN separation criteria began with three OTS tracks, between flight levels 350-390 inclusive, being set aside specifically for aircraft authorized PBCS and PBN operations.

The ICAO Europe/North Atlantic (EUR/NAT) office has published a number of NAT Ops Bulletins. The office provides those bulletins on its public website. Three bulletins provide particularly useful information to help operators safely fly wherever reduced lateral separation minimums, e.g. ½-degree latitude, are applied in oceanic airspace. Those bulletins are:

- Number 2018_001 *Implementation of Performance Based Separation Minima*
- Number 2017_003 *RLatSM Phase 2 Aeronautical Information Circular*
- Number 2015_003 *RLatSM Special Emphasis Items – Phase 2 Update*

While the information provided in the two RLatSM bulletins generally focuses on the now-concluded RLatSM trials, the guidance provided on the *special emphasis items*, and the procedures to follow in the event of communication, navigation and surveillance equipment failures, remains relevant to operations under PBCS separation minimums. Information includes:

- *Pilot training on map and FMC displays of ½ degree and whole degree waypoints*
- **Required** *pilot procedures for verifying waypoint degrees and minutes inserted into navigation systems*
- *Pilot in-flight contingency and weather deviation procedures*

Operators are strongly encouraged to review the bulletins and include relevant information in their training programs on oceanic operations. Use the information in the bulletins hand in hand with the information published in the U.S. Aeronautical Information Publication (AIP).

The ICAO EUR/NAT office will coordinate the revision of the NAT Ops Bulletins over the coming months to reflect the conclusion of the RLatSM trials.

Operators may find the bulletins on the *ICAO EUR/NAT* website (<https://www.icao.int/EURNAT/Pages/welcome.aspx>), then selecting *EUR/NAT Documents*, then *NAT Documents*, and then *NAT OPS Bulletins*.

(Performance Based Flight Systems Branch, AFS-470, 5/24/18)

NORTH ATLANTIC DATA LINK MANDATE MARCH 2018 UPDATE

1. Introduction.

a. This notice updates operators on the status of and requirements related to the International Civil Aviation Organization (ICAO) North Atlantic (NAT) region Data Link Mandate (DLM), first instituted in February 2015. This notice also identifies those portions of North Atlantic region airspace where data link equipment is not required. This notice is derived from information published in NAT OPS BULLETIN 2017-1 *NAT Common DLM AIC*. That bulletin is available at the ICAO Europe/North Atlantic office website, under EUR & NAT Documents > NAT Documents > NAT Ops Bulletins. All U.S. operators intending flights in the NAT region should familiarize themselves with all the current NAT Ops Bulletins.

b. Except as identified below, aircraft operating at FL 350 through FL 390, throughout the ICAO North Atlantic region, must be equipped with operable FANS 1/A (or equivalent) CPDLC and ADS-C equipment. This new phase of the NAT DLM went into effect on December 7, 2017. (Prior to December 7, 2017, the mandate applied only to the tracks of the NAT Organized Track System (OTS).)

c. The objectives of the ICAO NAT DLM are to enhance communication, surveillance and ATC intervention capabilities in the NAT in order to reduce collision risk and meet NAT target levels of safety. ADS-C provides conformance monitoring of aircraft adherence to cleared route and flight level, thereby significantly enhancing safety in the NAT. ADS-C also facilitates search and rescue operations and the capability to locate the site of an accident in oceanic airspace. CPDLC significantly enhances air/ground communications and controller intervention capability.

Note: The NAT DLM is expected to expand to include all operations at and above FL 290 beginning in January 2020.

2. Exceptions to DLM.

a. There is airspace within the NAT region where data link equipment is not required. That airspace is as follows:

(1) Air traffic services (ATS) surveillance airspace: airspace where ATS provides surveillance through radar, multilateration, and/or ADS-B and where VHF voice communications are available. In addition to VHF voice capability, aircraft operating in these areas must be equipped with a transponder and/or ADS-B extended squitter transmitter.

Note: The graphic provided at the end of this notice illustrates where ATS surveillance and VHF voice capability generally exists within the NAT region. Operators planning flights in the NAT region with aircraft not meeting DLM requirements must however consult with the applicable State Aeronautical Information Publication (AIP) to determine exactly where they may fly under this exception. Some portions of this surveillance airspace may specifically require ADS-B capability in order to qualify for the DLM exception.

(2) Airspace north of 80° North latitude. (Such airspace lies outside the reliable service area of geostationary satellites.)

(3) The entire New York Oceanic CTA/FIR.

(4) Tango routes T9, T13, T16, T25, and T213 (eastern portion of the NAT). However, the exception for data link equipment on these routes will end not later than January 2020. Operators must check with the applicable State AIPs before planning flights without data link equipment on those routes.

Note: Whenever a NAT OTS track infringes on a Tango route, data link equipage is required on that part of the route infringed upon, for operations at FL 350 through FL 390, for the duration of the published OTS time.

b. Certain specific categories of aircraft are also exempt from the data link equipage requirement. Those aircraft for which Item 18 of the ATC flight plan includes codes STS/FFR, HOSP, HUM, MEDEVAC SAR, or STATE are exempt. However, depending on traffic loading, ATC may not be able to clear those non-equipped flights on the requested route and/or flight level.

c. Pilots of non-equipped aircraft may request a continuous climb or descent, without intermediate level off, through DLM airspace (i.e. FL 350 through FL 390). ATC will approve such requests as traffic allows.

d. Altitude reservation (ALTRV) requests will likewise be considered by ATC on a case by case basis.

3. **Contingency Procedures.** The following procedures should be followed by operators/pilots experiencing data link equipment failure:

a. **Failure prior to departure.** Pilots/operators of aircraft with less than fully operational CPDLC and/or ADS-C equipment should flight plan to remain clear of NAT region data link mandate airspace (i.e. FL 350 through FL 390).

b. **Failure after departure.** ATC may clear aircraft with less than fully operational CPDLC and/or ADS-C equipment to operate in NAT data link mandate airspace as traffic permits. Pilots of such aircraft must notify ATC of their data link equipment status before entering NAT DLM airspace.

c. **Failure after entering DLM airspace.** Pilots must immediately notify ATC of a CPDLC or ADS-C equipment failure while operating within data link mandate airspace. Depending on traffic, ATC may permit the degraded aircraft to continue in DLM airspace, otherwise a climb or descent out of DLM flight levels may be required.

4. **U.S. Operator Authorization to Use FANS 1/A (or equivalent) Data Link Systems.**

a. U.S. operators intending to fly in NAT DLM airspace are required to have been issued operational authorization via Operations Specification, Management Specification or Letter of Authorization (as appropriate) A056 *Data Link Communications*. Advisory Circular (AC) 90-117 *Data Link Communications* provides guidance on operational use, aircraft eligibility, minimum performance and services of communication service providers, performance monitoring, training requirements, and discrepancy reporting related to the use of data link communication systems.

b. Operators may also find helpful the information posted in the “FAA NAT Resource Guide for U.S. Operators,” under the Comm/Nav/Surveillance, Data Link Communications sections. Operators can find the resource guide at the following address:

https://www.faa.gov/about/office_org/headquarters_offices/avs/offices/afx/afs/afs400/afs470/media/NAT.pdf

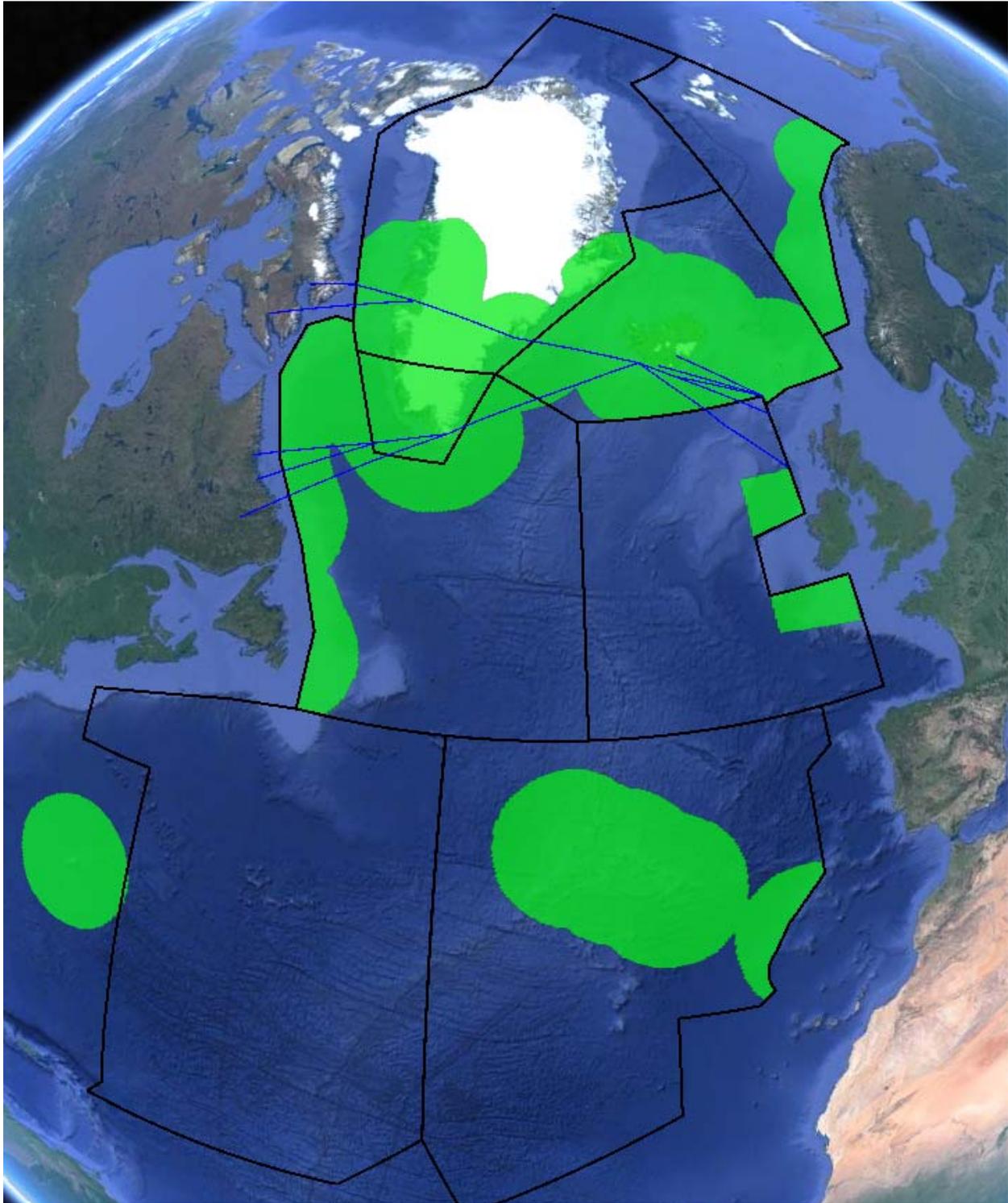
5. **Contacts.**

a. Aviation Safety Inspector Mark Patterson, Performance Based Flight Systems Branch, 202-267-8848, Mark.Patterson@faa.gov.

b. Aviation Safety Inspector Madison Walton, Performance Based Flight Systems Branch, 202-267-8850, Madison.Walton@faa.gov.

c. Senior Aviation Analyst Mark Wisniewski (SAIC), Performance Based Flight Systems Branch, 202-267-8843, Mark.ctr.Wisniewski@faa.gov.

(Performance Based Flight Systems Branch, AFS-470, 3/1/18)

ATS Surveillance Airspace Graphic - NAT Regional Data Link Mandate Phase 2

Note 1. ATS surveillance and VHF voice coverage is provided at and above FL 300 in the green shaded areas.

Note 2. the blue lines on the map represent the NAT Blue Spruce Routes.

SPECIAL NOTICE -- NAT ATS MESSAGE FORMAT

The following is submitted in an effort to standardize ATS message formats for air/ground communications in the North Atlantic (NAT) Region:

a. General

1. All NAT air-ground messages are categorized under one of the following headings (excluding emergency messages):

(a) Position Report.

(b) Request Clearance.

(c) Revised Estimate.

(d) Miscellaneous Message.

2. In order to enable ground stations to process messages in the shortest possible time, pilots should observe the following rules:

(a) Use the correct type of message applicable to the data transmitted.

(b) State the message type on the contact call to the ground station or at the start of the message.

(c) Adhere strictly to the sequence of information for the type of message.

(d) All times in each of the messages should be expressed in hours and minutes.

b. Description of ATS Message Types. Aircraft should transmit air-ground messages using standard RTF phraseology in accordance with the following:

1. POSITION. To be used for routine position reports.

Content and Data Sequence

(a) "POSITION."

(b) Flight identification.

(c) Present position.

(d) Time over present position (hours and minutes).

(e) Present flight level.

(f) Next position on assigned route.

(g) Estimated time for next position (hours and minutes).

(h) Next subsequent position.

(i) Any further information; e.g., MET data or Company message.

EXAMPLE-

"Position, SWISSAIR 100, 56N 010W 1235, flight level 330, estimating 56N 020W 1310, next 56N 030W"

2. REQUEST CLEARANCE.

(a) To be used, in conjunction with a routine position report, to request a change of mach number, flight level, or route and to request westbound oceanic clearance prior to entering Reykjavik, Santa Maria or Shanwick CTAs.

Content and Data Sequence

- (1) "REQUEST CLEARANCE."
- (2) Flight identification.
- (3) Present or last reported position.
- (4) Time over present or last reported position (hours and minutes).
- (5) Present flight level.
- (6) Next position on assigned route or oceanic entry point.
- (7) Estimate for next position or oceanic entry point.
- (8) Next subsequent position.
- (9) Requested Mach number, flight level or route.
- (10) Further information or clarifying remarks.

EXAMPLE-

"Request clearance, TWA 801, 56N 020W 1245, flight level 330, estimating 56N 030W 1320, next 56N 040W, requesting flight level 350"

(b) To be used to request a change in Mach number, flight level, or route when a position report message is not appropriate.

Content and Data Sequence

- (1) "REQUEST CLEARANCE."
- (2) Flight identification.
- (3) Requested Mach number, flight level or route.
- (4) Further information or clarifying remarks.

EXAMPLE-

"Request clearance, BAW 212, requesting flight level 370"

3. REVISED ESTIMATE. To be used to update estimate for next position.

Content and Data Sequence

- (a) "Revised Estimate."
- (b) Flight identification.
- (c) Next position on route.
- (d) Revised estimate for next position (hours and minutes).

- (e) Further information.

EXAMPLE-

“Revised estimate, WDA 523, 57N 040W 0325”

4. MISCELLANEOUS. To be used to pass information or make a request in plain language that does not conform with the content of other message formats. No message designator is required as this will be inserted by the ground station.

Content and Data Sequence

- (a) Flight identification.

- (b) General information or request in plain language and format free.

(ZNY, Updated 5/24/2018)

GULF OF MEXICO RNAV ROUTES Q100, Q102, AND Q105

This NOTAM defines RNAV equipment requirements for operators filing Q100, Q102, and Q105 through Gulf of Mexico airspace. Only aircraft approved for IFR Area Navigation operations will be cleared to operate on Q100, Q102, and Q105 between the surface and FL600 (inclusive).

Operator Determination of RNAV Equipment Eligibility

In accordance with Federal Aviation Regulations 91.511, 121.351, 125.203, and 135.165 (as applicable) an approved Long-Range Navigation System (INS, IRS, GPS or Loran C) is required for operation on these routes.

In addition, operators will not flight plan or operate on these routes unless their aircraft are equipped with RNAV systems that are approved for IFR navigation and the pilots are qualified to operate them. Aircraft may be considered eligible to operate on these routes if they fall under one of the following categories:

a. For new installations, the Airplane Flight Manual must show that the navigation system installation has received airworthiness approval in accordance with one of the following FAA ACs:

1. AC 20-138, as amended (Airworthiness Approval of Positioning and Navigation Systems).
2. AC 25-15 (Flight Management System [FMS] approval).

b. Installations that have previously received airworthiness approval under the following ACs are eligible for Gulf of Mexico Q-route operation provided it is shown in the Airplane Flight Manual:

1. AC 90-45A (RNAV system approval).
2. AC 20-130, as amended (Multi-Sensor Navigation system approval).

NOTE - INS LIMITATIONS. See paragraph f, below.

Operational Requirements and Procedures

a. Class I Navigation: operations on Q100, Q102 and Q105 will continue to be categorized as Class I navigation, as defined in FAA Order 8900.1, Vol. 4, Chapter 1, Section 3, Class I Navigation.

b. Operations Specifications: operators are considered eligible to conduct operations on the Q-routes provided that aircraft are equipped with the appropriate equipment in accordance with the “Operator

Determination of RNAV Equipment Eligibility” paragraph above and operations are conducted in accordance with paragraph (c), (d), (e) and (f) below. Title 14 CFR Parts 121, 125, 135 operators are authorized to operate on the Q-routes when they are issued Operations Specifications (OpSpecs) paragraph B034 (Class I Navigation Using Area Navigation Systems). In addition, OpSpecs B034 must be annotated in OpSpecs paragraph B050 (Enroute Authorizations, Limitations and Procedures), for the Gulf of Mexico High Offshore Airspace.

c. Pilots in command filing on RNAV routes are certifying that the crews and equipment are qualified to conduct RNAV operations.

d. Pilots in command shall be responsible for navigating along route centerline (as defined by the aircraft navigation system) in accordance with the requirements of Title 14 CFR 91, section 181 (course to be flown) and ICAO Annex 2, paragraph 3.6.2.1.1. (Annex 2, paragraph 3.6.2.1 states that flights shall ”in so far as practical, when on an established ATS route, operate on the defined centerline of that route.”)

e. Pilots in command shall notify the Air Route Traffic Control Center (ARTCC) of any loss of navigation capability that affects the aircraft’s ability to navigate within the lateral limits of the route.

f. INS or IRS LIMITATION. For the purposes of operating on the following RNAV routes, Q100, Q102, and Q105, aircraft equipped with Inertial Navigation Systems (INS) or Inertial Reference Systems (IRS) that cannot receive automatic position updates (e.g., DME/DME update) for the entire length of the route, are limited to 1.5 consecutive hours of un-updated operation. In preparation for take-off, this time starts at the time that the INS or IRS is placed in the navigation mode. En route, the maximum time allowed between automatic position updates is 1.5 hours. Systems that perform updating after the pilot has manually selected the navigation aid are considered to have ”automatic update” capability.

g. Radar monitoring will normally be provided. In the event of loss of radar, aircraft will be advised. ATC will ensure that the appropriate nonradar separation is applied during these time periods.

FAA Contacts

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Jerry Bordeaux	AJV-824	202-385-8329	Jerry.Bordeaux@faa.gov

(AFS-470, 4/29/14)

PROCEDURES FOR IN-FLIGHT CONTINGENCIES IN THE NEW YORK OCEANIC CTA/FIR DURING ASEPS TRIAL

a. Introduction

1. The International Civil Aviation Organization’s (ICAO) Separation and Airspace Safety Panel (SASP) has submitted a proposal for amendment to ICAO Document 4444, Procedures for Air Navigation Services – Air Traffic Management, which modifies aircraft contingency procedures to support the operational use of Advanced Surveillance Enhanced Procedural Separation (ASEPS) minima. The amendments for the new ASEPS minima and the new contingency procedures are expected to be published in November 2020.

2. Three Air Navigation Service Providers (ANSP) in the ICAO North Atlantic (NAT) Region – Gander (Canada), Shanwick (the United Kingdom and Ireland), and Santa Maria (Portugal) are planning to trial the

ASEPS minima, using ADS-B as the advanced surveillance, beginning no earlier than March 28, 2019. To support this trial, and maintain regional procedural harmony, all of the NAT ANSPs are planning to implement the proposed contingency procedures at the time the trial starts. The trial is intended to last until November 2020 when the new ASEPS minima are published in ICAO Doc 4444. At that time, the use of trial minima will transition to actual usage by those ANSPs who wish to do so.

3. The procedures contained herein are to be used in place of the procedures contained in the U.S. Aeronautical Information Publication (AIP), ENR 7.3, paragraphs 1, 2, and 4 for operations within the entirety of the New York Center oceanic CTA/FIR. The contingency procedures contained in the U.S. AIP, ENR 7.3, paragraphs 1, 2, and 4 remain applicable to operations within the Anchorage and Oakland Air Route Traffic Control Centers.

4. Although all possible contingencies cannot be covered, the procedures in paragraphs b, c, and d provide for the more frequent cases, such as:

(a) inability to comply with assigned clearance due to meteorological conditions (see paragraph d);

(b) enroute diversion across the prevailing traffic flow (for example, due to medical emergencies (see paragraphs b and c); and

(c) loss of, or significant reduction in, the required navigation capability when operating in an airspace where the navigation performance accuracy is a prerequisite to the safe conduct of flight operations, or pressurization failure (see paragraphs b and c).

NOTE-

Guidance on procedures to follow when an aircraft experiences a degradation in navigation capabilities can be found in ICAO Doc 4444, Procedures for Air Navigation Services – Air Traffic Management, chapter 5, section 5.2.2.

5. The pilot shall take action as necessary to ensure the safety of the aircraft, and the pilot's judgement shall determine the sequence of actions to be taken, having regard to the prevailing circumstances. Air traffic control shall render all possible assistance.

b. General Procedures

NOTE-

Figure 1 provides an aid for understanding and applying the contingency procedures contained in paragraphs b and c.

1. If an aircraft is unable to continue the flight in accordance with its ATC clearance, a revised clearance should be obtained, whenever possible, prior to initiating any action.

2. If prior clearance cannot be obtained, the following contingency procedures should be employed until a revised clearance is received:

(a) leave the cleared route or track by initially turning at least 30 degrees to the right or to the left in order to intercept and maintain a parallel, same direction track or route offset of 9.3 km (5.0 NM). The direction of the turn should be based on one or more of the following:

(1) aircraft position relative to any organized track or route system;

(2) the direction of flights and flight levels allocated on adjacent tracks;

(3) the direction to an alternate airport;

(4) any strategic lateral offset being flown; and

(5) terrain clearance;

(b) the aircraft should be flown at a flight level and an offset track where other aircraft are less likely to be encountered;

(c) maintain a watch for conflicting traffic both visually and by reference to ACAS (if equipped) leaving ACAS in RA mode at all times, unless aircraft operating limitations dictate otherwise;

(d) turn on all aircraft exterior lights (commensurate with appropriate operating limitations);

(e) keep the SSR transponder on at all times and, when able, squawk 7700, as appropriate;

(f) as soon as practicable, the pilot shall advise air traffic control of any deviation from assigned clearance;

(g) use whatever means is appropriate (i.e. voice and/or CPDLC) to communicate during a contingency or emergency;

(h) if voice communication is used, the radiotelephony distress signal (MAYDAY) or urgency signal (PAN PAN) preferably spoken three times, shall be used, as appropriate;

(i) when emergency situations are communicated via CPDLC, the controller may respond via CPDLC. However, the controller may also attempt to make voice communication contact with the aircraft;

NOTE-

Additional guidance on emergency procedures for controllers and radio operators, and flight crew, in data link operations can be found in the Global Operational Data Link (GOLD) Manual (Doc 10037).

(j) establish communications with and alert nearby aircraft by broadcasting, at suitable intervals on 121.5 MHz (or, as a backup, on the inter-pilot air-to-air frequency 123.45 MHz) and where appropriate on the frequency in use: aircraft identification, the nature of the distress condition, intention of the person in command, position (including the ATS route designator or the track code, as appropriate) and flight level; and

(k) the controller should attempt to determine the nature of the emergency and ascertain any assistance that may be required. Subsequent ATC action with respect to that aircraft shall be based on the intentions of the pilot and overall traffic situation.

c. Actions to be Taken Once Offset from Track

NOTE-

The pilot's judgement of the situation and the need to ensure the safety of the aircraft will determine if the actions outlined in c. 2. (a) or (b) will be taken. Factors for the pilot to consider when diverting from the cleared route or track without an ATC clearance include, but are not limited to:

a. operation within a parallel track system;

b. the potential for User Preferred Routes (UPRs) parallel to the aircraft's track or route;

c. the nature of the contingency (e.g. aircraft system malfunction); and

d. weather factors (e.g. convective weather at lower flight levels).

1. If possible, maintain the assigned flight level until established on the 9.3 km (5.0 NM) parallel, same direction track or route offset. If unable, initially minimize the rate of descent to the extent that is operationally feasible.

2. Once established on a parallel, same direction track or route offset by 9.3 km (5.0 NM), either:

(a) descend below FL 290, and establish a 150 m (500 ft) vertical offset from those flight levels normally used, and proceed as required by the operational situation or, if an ATC clearance has been obtained, proceed in accordance with the clearance; or

NOTE-

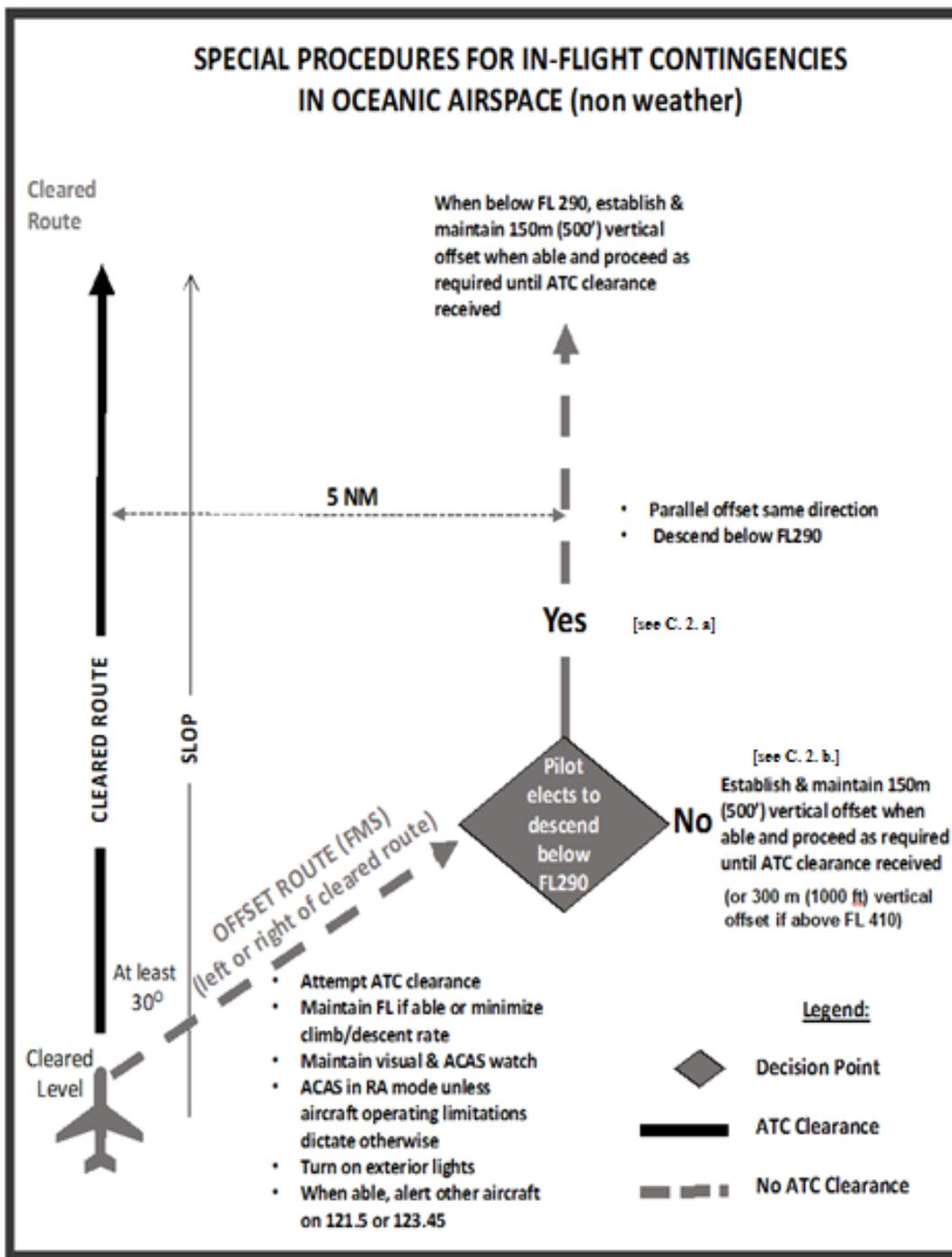
Descent below FL 290 is considered particularly applicable to operations where there is a predominant traffic flow (e.g. east–west) or parallel track system where the aircraft’s diversion path will likely cross adjacent tracks or routes. A descent below FL 290 can decrease the likelihood of conflict with other aircraft, ACAS RA events, and delays in obtaining a revised ATC clearance.

(b) establish a 150 m (500 ft) vertical offset (or 300 m (1000 ft) vertical offset if above FL 410 from those flight levels normally used, and proceed as required by the operational situation, or if an ATC clearance has been obtained, proceed in accordance with the clearance.

NOTE-

Altimetry system error may lead to less than actual 500 ft vertical separation when the procedure above is applied. In addition, with the 500 ft vertical offset applied, ACAS RAs may occur.

Figure 1. Visual aid for understanding and applying the contingency procedures guidance



d. Weather Deviation Procedures

1. General

NOTE-

The following procedures are intended for deviations around adverse meteorological conditions.

(a) When weather deviation is required, the pilot should initiate communications with ATC via voice or CPDLC. A rapid response may be obtained by either:

(1) stating, “WEATHER DEVIATION REQUIRED” to indicate that priority is desired on the frequency and for ATC response; or

(2) requesting a weather deviation using a CPDLC lateral downlink message.

(b) When necessary, the pilot should initiate the communications using the urgency call “PAN PAN” (preferably spoken three times) or by using a CPDLC urgency downlink message.

(c) The pilot shall inform ATC when weather deviation is no longer required, or when a weather deviation has been completed and the aircraft has returned to its cleared route.

2. Actions to be Taken When Controller–Pilot Communications are Established

(a) The pilot should notify ATC and request clearance to deviate from track or route, advising when possible, the extent of the deviation requested. The flight crew will use whatever means is appropriate (i.e. CPDLC and/or voice) to communicate during a weather deviation.

Note – Pilots are advised to contact ATC as soon as possible with requests for clearance in order to provide time for the request to be assessed and acted upon.

(b) ATC should take one of the following actions:

(1) when appropriate separation can be applied, issue clearance to deviate from track; or

(2) if there is conflicting traffic and ATC is unable to establish appropriate separation, ATC should:

[a] advise the pilot of inability to issue clearance for the requested deviation;

[b] advise the pilot of conflicting traffic; and

[c] request the pilot’s intentions.

(c) The pilot should take one of the following actions:

(1) comply with the ATC clearance issued; or

(2) advise ATC of intentions and execute the procedures provided in paragraph d.3. below.

3. Actions to be Taken if a Revised ATC Clearance Cannot be Obtained

NOTE–

The provisions of this paragraph apply to situations where a pilot needs to exercise the authority of a pilot-in-command under the provisions of ICAO Annex 2, 2.3.1.

(a) If the aircraft is required to deviate from track or route to avoid adverse meteorological conditions, and prior clearance cannot be obtained, an ATC clearance shall be obtained at the earliest possible time. Until an ATC clearance is received, the pilot shall take the following actions:

(1) if possible, deviate away from an organized track or route system;

(2) establish communications with and alert nearby aircraft by broadcasting, at suitable intervals: aircraft identification, flight level, position (including ATS route designator or the track code) and intentions, on the frequency in use and on 121.5 MHz (or, as a backup, on the inter-pilot air-to-air frequency 123.45 MHz);.

- (3) watch for conflicting traffic both visually and by reference to ACAS (if equipped);
- (4) turn on all aircraft exterior lights (commensurate with appropriate operating limitations);
- (5) for deviations of less than 9.3 km (5.0 NM) from the originally cleared track or route remain at a level assigned by ATC;
- (6) for deviations greater than or equal to 9.3 km (5.0 NM) from the originally cleared track or route, when the aircraft is approximately 9.3 km (5.0 NM) from track, initiate a level change in accordance with the Table below;
- (7) if the pilot receives clearance to deviate from cleared track or route for a specified distance and, subsequently, requests, but cannot obtain a clearance to deviate beyond that distance, the pilot should apply an altitude offset in accordance with the Table below before deviating beyond the cleared distance;
- (8) when returning to track or route, be at its assigned flight level when the aircraft is within approximately 9.3 km (5.0 NM) of the centerline; and
- (9) if contact was not established prior to deviating, continue to attempt to contact ATC to obtain a clearance. If contact was established, continue to keep ATC advised of intentions and obtain essential traffic information.

NOTE-

If, as a result of actions taken under the provisions of d. 3. (a), the pilot determines that there is another aircraft at or near the same flight level with which a conflict may occur, then the pilot is expected to adjust the path of the aircraft, as necessary, to avoid conflict.

Altitude Offset When Denied Clearance to Deviate 9.3 km (5.0 NM) or More

Originally Cleared Track or Route Center Line	Deviations \geq 9.3 km (5.0 NM)	Level Change
EAST (000° – 179° magnetic)	LEFT	DESCEND 90 m (300 ft)
	RIGHT	CLIMB 90 m (300 ft)
WEST (180° – 359° magnetic)	LEFT	CLIMB 90 m (300 ft)
	RIGHT	DESCEND 90 m (300 ft)