

IBAC TECHNICAL REPORT SUMMARY

Subject: NAT Operations and Air Traffic Management

Meeting: North Atlantic (NAT) Procedures and Operations Group Meeting 2

Reported by Tom Young

POG2 took place at the ICAO Paris Office September 12-16, 2016. In attendance were ANSP representatives from the United Kingdom, Canada, United States, Portugal, France, Norway, Iceland and Ireland. Users were represented by IFALPHA, IATA and IBAC. Also in attendance was the NAT DMO.

GENERAL REPORT

Reduced Lateral Separation Minima

RLatSM Phase 2

There was much discussion about the requirement for controllers in Shanwick and Gander to issue alternate instructions to multiple aircraft operating within the current RLatSM Phase 1 structure. Alternative clearances were required to be issued to flights in response to a loss of, and inability to re-establish, the required datalink connections necessary for the application of 25NM.

With the current rate of CPDLC and ADS-C connection issues, expanding the RLatSM area would inevitably increase the workload due to controller intervention to evaluate appropriate separation minima.

As a result of the FANS issues around CPDLC connections and ADS-C contracts; Shanwick and Gander have concluded that Phase 2 of the RLatSM trial will only take place once the fixes to mitigate the workload caused by FANS issues have been assessed and implemented. There would be a minimum 2 month official notification to operators and other ANSPs of a new implementation date.

With the introduction of ½ waypoints through RLatSM Phase 1, some operators have been filing ½ degree points outside of the intended RLatSM track in many areas. Gander and Shanwick are not in favor of this and will reroute aircraft to whole degrees. However other ANSPs use the ½ degree because of traffic patterns.

IMPACT ON GENERAL AVIATION:

- 1) RLatSM will currently remain on the core tracks of eastbound and westbound NAT Tracks. A 2 month notification of RLatSM Phase 2 will take place. At this time all NAT Tracks will be able to be used of 25nm lateral separation. Aircraft hoping to fly these tracks between FL350-390 will require proper equipage.**
- 2) Filing ½ degree waypoints on flights operating through Gander and Shanwick outside the published RLatSM OTS should be discouraged, as it will almost always result in a reroute, this increasing pilot workload.**

RLatSM Phase 3

IBAC presented a working paper discussing impact of RLatSM Phase 3 on specific operations and situations, such as:

- a) Medical/Humanitarian Flights;
- b) One off Ferry Flights;
- c) Aircraft departing with required PBC, PBN or PBS temporarily unserviceable;
- d) Aircraft unable to equip in a timely basis to meet the RLatSM Phase 3 requirement.

It was noted that Phase 3 would apply throughout the NAT to the **targets of opportunity** and would only be used between RNP4 and FANS 1/A equipped and approved aircraft pairs. Therefore, the concept of exclusionary airspace wouldn't apply and there was no need to define any exemption policy.

IMPACT ON GENERAL AVIATION: Outside of NAT Tracks, flights can continue to flight plan not totally equipped for RLatSM. The reduced lateral will be applied only to targets of opportunity.

SELCAL

POG received an interim report from the NAT SELCAL Project Team.

The Project Team is looking at the following principles:

- a) Elimination of the mid-ocean SELCAL check didn't imply removal of SELCAL equipment on aircraft;
- b) ATC will use "MONITOR" CPDLC messages to assign HF frequencies; and
- c) The pilot does NOT have to check in on the HF frequency but only tunes in the frequency after receiving and WILCO-ing the CPDLC message.

Based on the outcomes of the project team, the NAT IMG will decide on the need for the implementation trial plan.

IMPACT ON GENERAL AVIATION: Nil at this time.

SPACE BASED ADS-B

Work continues on the SPACE BASED ADS-B project, with little firm information received. A project team has been established to address

- a) NAT Region Business Case;
- b) NAT Region CONOPS;
- c) NAT Region Safety Plan;
- d) NAT Region Implementation Plan & Task List.

In addition, the NAT IMG has tasked the SB ADS-B PT to investigate the implementation of flight-plannable step climbs.

The target date of February 2018 for Space Based ADS-B was not referenced in discussions. Indications are that much additional work needs to be completed. An update on progress will be received in the spring of 2017 at the ICAO NAT meetings.

IMPACT ON GENERAL AVIATION: Nil at this time

CONTINGENCY PROCEDURES

The current NAT Doc 007 contingency procedures were reviewed. Currently aircraft are permitted a 180-degree turn back with an engine out (in a 2 engine aircraft) and no ATC clearance in a reduced lateral separation environment.

The following detailed proposed amendments to NAT Doc 7030, NAT Doc 007 and NAT Ops Bulletin RLatSM Phase 2 Special Emphasis Items (SEI) were developed in response to help mitigate these concerns.

ICAO Doc 7030 Proposed Draft

9.6.1.1 Before diverting across the flow of adjacent traffic, the aircraft should intercept the 15 NM lateral offset in the same direction of flight and then climb above FL 410 or descend below FL 280 using the procedures specified in 15.2.2 of the PANS-ATM. However, if the pilot is unable or unwilling to do so, the aircraft should be flown at a level as defined in 15.2.2.3 b) of the PANS-ATM for the diversion until a revised ATC clearance is obtained.

NAT Doc 007 Proposed Draft

13.2.3 It is appreciated that in such emergency situations communication with ATC may not be the highest priority for flight crews. Hence until a revised clearance is obtained the specified NAT in-flight contingency procedures should be carefully followed. Procedures for general use in Oceanic airspace are contained within the ICAO PANS ATM (Doc. 4444), specifically Amendment 2 effective November 2009. Procedures particular to the NAT HLA environment are contained in ICAO NAT Regional Supplementary Procedures (Doc.7030) and AIPs. The procedures are paraphrased below.

13.3 SPECIAL PROCEDURES

13.3.1 The general concept of these Oceanic in-flight contingency procedures is, whenever operationally feasible, to offset from the assigned route by 15 NM and climb or descend to a level which differs from those normally used by 500 ft if below FL410 or by 1000 ft if above FL410.

Initial Action

13.3.2 The aircraft should leave its assigned route or track by initially turning at least 45° to the right or left whenever this is feasible. The direction of the turn should, where appropriate, be determined by the position of the aircraft relative to any organised route or track system (e.g. whether the aircraft is outside, at the edge of, or within the system). Other factors which may affect the direction of turn are: direction to an alternate airport, terrain clearance, levels allocated on adjacent routes or tracks and any known SLOP off sets adopted by other nearby traffic.

Subsequent Action

13.3.3 An aircraft that is able to maintain its assigned flight level, after deviating 10 NM from its original cleared track centreline and therefore laterally clear of any potentially conflicting traffic above or below following the same track, should:

- a) climb or descend 1000ft if above FL410
- b) climb or descend 500ft when below FL410
- c) climb 1000ft or descend 500ft if at FL410

13.3.4 An aircraft that is unable to maintain its assigned flight level (e.g. due to power loss, pressurization problems, freezing fuel, etc.) should, whenever possible, initially minimise its rate of descent when leaving its original track centreline and then when expected to be clear of any possible traffic following the same track at lower levels and while subsequently maintaining a same direction 15 NM offset track, expedite descent descend to an operationally feasible flight level, which differs from those normally used by 500ft if below FL410 (or by 1000ft if above FL410).

13.3.5 Before commencing any diversion across the flow of adjacent traffic or before initiating any turn-back (180°), aircraft should, while while subsequently maintaining a same direction 15 NM offset track maintaining the 15 NM offset track, expedite climb above or descent below the vast majority of NAT traffic (i.e. to a level above FL410 or below FL280), and then maintain a flight level which differs from those normally used: by 1000ft if above FL410, or by 500ft if below FL410. However, if the pilot is unable or unwilling to carry out a major climb or descent, then any diversion or turn-back manoeuvre should be carried out at a level 500 ft different from those in use within NAT HLA airspace, until a new ATC clearance is obtained.

NAT Ops Bulletin RLatSM Special Emphasis Items Proposed Draft

5.8 Pilot In-flight Contingency Procedures and Weather Deviation Procedures (Diversion, Turn-backs, etc.):

In training and checking programs, operators shall place special emphasis on pilot knowledge of and preparation to execute the *Special Procedures for Inflight Contingencies in Oceanic Airspace* published in ICAO Doc 4444, paragraph 15.2 and *Weather deviation procedures* (paragraph 15.2.3).

Pilots must be aware that when crossing adjacent tracks without an ATC clearance, the potential vertical separation provided by the In-flight Contingency Procedure is 500 ft may not be adequately accounting for the allowed RVSM altimetry system error. Pilots must use all the steps called for in the Contingency Procedures to avoid conflict with other aircraft. Consideration should be given to intercepting the 15 NM lateral offset in the same direction of flight and then descending below FL 290 or climbing above FL 410 prior to crossing adjacent tracks or making a 180° turn back. Pilots must also be aware that when unable to obtain an ATC clearance, Weather Deviation Procedures call for a climb or descent of 300 ft. based on direction of flight and direction of deviation, and, in addition, guidance to the pilot is to adjust the path of the aircraft, if necessary, to avoid aircraft at or near the same flight level.

Pilots must stringently follow all measures for avoiding conflict with other aircraft provided for in the Doc 4444 Contingency and Weather Deviation Procedures.

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IMPACT ON GENERAL AVIATION: Once accepted and published, these amendments in Contingency Procedures will need special emphasis to pilots through an education process.

CPDLC ROUTE UPLINKS

A draft implementation plan was presented for the use of CPDLC route clearance uplinks throughout the NAT. CPDLC route clearance uplinks allow flight crews to LOAD an ATC clearance directly into the FMS. These uplinks can be used for:

- oceanic route re-clearance (track change)
- tactical routing
 - i. dynamic Airborne Re-route Procedure (DARP)
 - ii. volcanic Ash Event
 - iii. significant Weather
 - iv. radar Outages
 - v. clear a flight direct to a waypoint after a weather deviation

Although this plan is approved and being promoted forward to the NAT TIG, it is currently only being used by the United States and Portugal. Canada, Iceland and United Kingdom have no current plans to implement this in their CPDLC sets.

IMPACT ON GENERAL AVIATION: Do not expect CPDLC Route Uplinks in Gander, Shanwick and Reykjavik Airspace. New York and Portugal will continue to do so in their airspace.

ICELAND UM137

Iceland AIC 016/2016 was issued on 28 June 2016 with guidance material for aircraft operators on the CONFIRM ASSIGNED ROUTE functionality.

The first phase of the project involved limited manual uplinks of UM137 to gauge the readiness of aircraft operators to correctly respond to the message. Iceland was planning to automate the transmission of the UM137 message in November 2016 but it would be desirable to reach about 90% success rate before the function is automated so that controller workload is not increased significantly

IMPACT ON GENERAL AVIATION: Flights traversing Reykjavik airspace may expect UM137

NAT DOC 007 REVIEW

A review of NAT Doc 007 revealed many inconsistencies against Relevant Global Provisions. These may be of interest to various operators for equipage and flight planning. It includes references to SLOP, contingency procedures, NAT HLA requirements, GPS, LRN, and ICAO Flight Planning Provisions.

Appendix G is attached in separate document.

IMPACT ON GENERAL AVIATION: Document Review was accepted will be required.