

## IBAC Technical Report

Subject: North Atlantic Operations

Meeting: North Atlantic Implementation Management Group (NAT IMG/42)

Reported by: Paul Stinebring (assisted by Brian Bowers)

The NAT IMG/42 meeting was hosted by Avinor in Oslo, 13-16 May 2013. There are several initiatives taking place in the NAT region and all include a reduction in separation to support the NAT SPG safety, capacity and efficiency goals. These changes will affect aircraft equipage and operational approval. Operators are encouraged to plan accordingly.

Large height deviations (LHD's) continue to be a concern within the NAT MNPS airspace. A Vertical Risk Task Force (VRTF) has been established to review data provided by the central Monitoring Agency (CMA) for the past three years. Several height errors have occurred due to the misunderstanding of conditional clearances related to a change of altitude such as climb **to be level at** or **begin climb at**, etc. Given the level of navigation performance requirements in the NAT MNPS airspace ***operators are strongly encouraged to review their company Standard Operating Procedures (SOP's) for both the vertical and lateral navigation procedures to insure that the clearance is understood, properly read back and that the clearance is complied with.***

Operators are also strongly encouraged to include the Strategic Lateral Offset Procedure (SLOP) as documented in ICAO Doc 007 in their SOP's.

Work continues on the plan to further implement Reduced Lateral Separation Minima (RLat SM) in the North Atlantic region. Phase 1 was implemented 7 February 2013. Only aircraft with the appropriate RNP approval, ADS-C and CPDLC will be permitted to operate on the ½ degree spaced tracks.

The second phase will commence 5 February 2015 in specified portions of NAT minimum navigation performance specifications (MNPS) airspace. The vertical and lateral dimensions of the airspace will be defined and advertised at a later date.

The Reduced Longitudinal Separation Minima (RLong SM) trials have now been in effect since March 2011. The RLong SM is applied tactically for aircraft meeting the Navigation and communications requirements. It was reported that the application of RLong SM has increased the number of climbs granted.

During the NAT IMG/42 meeting considerable attention was given to the expansion of the NAT Data Link Mandate (DLM) initiative. Implementation of the DLM is further planned for the following schedule:

- Phase 2A, 5 February 2015: FL350-FL390 within all the OTS.
- Phase 2B, 7 December 2017: FL350-FL390 within all the NAT Region.
- Phase 2C, 30 January 2020: FL290 and above within the NAT Region.

The goals are that: by 2018, 90% of the aircraft operating in the **NAT Region** airspace **FL290 and above** will be with FAN 1/A or equivalent ADS-C and CPDLC and that by 2020. 95% of the aircraft operating in that airspace will be so equipped.

Airspace not included in the NAT Region Data Link Mandate Airspace is: 1) Airspace where ATC surveillance (Radar or ADS-B) is provided. 2) Airspace north of 80 degrees North. 3) West Atlantic WATRS airspace in the New York FIR.

### **Flight Planning**

Flights which may flight plan and operate within the NAT Region DLM airspace are:

- Flights equipped and approved for FANS 1/A or equivalent ADS-C and CPDLC.
- Non-equipped flights which file for special missions such as MEDEVAC, Search and Rescue or State will be approved on a tactical basis.

The current data available indicates that 87% of the NAT flights will be FANS 1/A data link equipped at the phase 2A implementation of the DLM February 2015.

## Operations

- Flights not equipped and approved for operations within the DLM airspace may request continuous climbs and descents through the airspace. Requests will be considered on a tactical basis.
- Altitude reservations request will be considered on a case by case basis.
- Flights experiencing equipment failures after departure will be considered on a tactical basis provided that ATC is advised prior to entering the DLM airspace. If the failure occurs while the flight is within the NAT Data Link Mandate Airspace ATC must be advised, the flight will be re-cleared in accordance with the traffic situation at the time.

It was noted at IMG/42 that solar activity follows an eleven year cycle and that the next solar event is forecast to take place in the NAT Region during 2013. While operators are not expected to develop contingency plans they should be familiar with the phenomena which could take various forms and could have an effect on the following:

- Occupants of the aircraft
- Avionics
- HF communications
- GPS systems
- Satellite navigation and communications systems
- Air traffic control facilities

Expert opinion suggest that many of the technologies and systems used in the NAT Region could be at risk of degradation or complete loss during an extreme solar activity event. It should be noted that extreme events do not necessarily correlate with peaks of the solar cycle, as they could happen at any time.

Forecasting of space weather is not an accurate science therefore actions taken by Air Navigation Service Providers (ANSP's) and Flight crews would most likely be reactive. In a "worst case scenario" an extreme solar flare event could black out HF for up to three days, render ADS/CPDLC and Satcom unreliable or unavailable, affect aircraft avionics and disrupt ground communications and power supplies.

**Note:** Operators should be aware that during February 2013 New York changed the clearance delivery procedures for flights which include an oceanic segment (NOTAM A0017/13). NAV Canada disagrees with this procedure explaining that some flights in recent months have approached the Gander Oceanic entry point without a proper oceanic clearance and re-back of the three required elements of Route, Altitude and Speed.

**Note:** The Second Addition of the Global Operational Data Link Document (GOLD) has been issued by ICAO. This document establishes the operational performance standards for FANS 1/A and ATN B1 data link operations using automatic dependent surveillance – contract (ADS-C), controller-pilot data link communications (CPDLC) and the flight management computer waypoint position reporting (FMC WPR). Operators should be familiar with this document when developing oceanic operating procedures and SOP's.