RLatSM
Reduced Lateral Separation Trial
Introduction

Slide pack to give background on the Reduced Lateral Separation Trial (RLAT) highlighting the key points of note for Operators, associated publications, supporting activities taking place and references that support the trial.
RLAT Introductory Video hosted on
http://www.nats.aero/RLat/
RLAT HEADLINES
RLatSM Phase 1 commences no earlier than Westbound Tracks on the **12th November 2015**

RLatSM takes place in the NAT Region Datalink Mandate Airspace (**FL350-390**)

There is no need to opt into the trial. Clearances will be issued according to eligibility from the flight plan.

RNP4 approvals are required to participate in the trial.

OTS Track Message **NOTE 3** secured to indicate RLatSM Tracks (**Similar to Note 2 utilised for DLM.**)

Tactical re-route onto half degree tracks prior to entry are not permitted. (unless there is a CPDLC OCL capability.)

Enhanced conformance monitoring tools utilising ADS-C demand reports prior to entry and CPDLC post entry are being utilised.

There is no change to in-flight contingency procedures.

There is no change to SLOP procedures.
NEW BOUNDARY FIXES
Scottish 5LNCS (10W)

Boundary Points
- RATSU
- ATSIX
- BALIX
- ORTAV
- ADODO
- ERAKA
- ETILO
- GOMUP

Landfalls
- LUSEN
- AKIVO
- ODPEX
- NINEX
- AMTAP
- ETSOM
- EVNAL
- GINGA

17TH September 2015.

12TH November 2015.
Boundary Points

ETIKI

0845W

SEPAL

Brest

Brest 5LNCS(0845W)

Landfalls

REGHI

UMOXA

LAPEX

TIVLU

RIVAK

12TH November 2015.
There are a number of new fixes that are planned for the September AIRAC which are known as GOTA Phase 2 fixes, i.e. ones that are 30nm separated from the new fixes that went in as part of the GOTA Phase 1 introduction last September.

15th October published.

12th November 2015 available for use.
BACKGROUND
What is the RLAT Separation Trial?

It is a **trial** of a reduced lateral separation (25nm) to prove it brings benefit and is safe to use, so that it can become a global separation standard.

Practical Application of 25nm (half degree) trial will be carried out in 3 phases as set out in the Implementation Plan which can be found on the ICAO Paris Website:

Trial is being carried out in 3 phases:

1. One RLAT OTS track between 2 core tracks (**12th Nov**)
2. All OTS (approximately 1 year)
3. All area (TBC)

Each phase is vertically coincident with the DLM at that time (**FL350-FL390**)
Which ANSPs are participating in Phase 1 and 2 of the RLAT Trial?

Gander and Shanwick participating in Phase 1 and Phase 2 of the trial.
Phase 1
Single RLAT (half degree) Track published FL350-FL390 (X) with adjacent tracks

Half degree separation against W & Y (whole degree) published all OTS levels.
10 Minute Crossing Separation

Included in the software upgrade to ATC system (GAATS+) NATS and NAVCANADA are implementing an existing longitudinal intersecting separation of 10 minutes utilising frequent updates in position reports using ADS-C.
CLEARANCES TO FLIGHTS
Equipped flights (FANS + RNP4) can be cleared on RLAT tracks at RLAT levels.
All flights can be cleared to cross RLAT tracks at RLAT levels but only touch an RLAT track at one point.

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Flights that don’t meet criteria (i.e. not RNP4) cannot be cleared on RLAT track at RLAT levels.
CLEARANCE TO FLIGHTS

Boundary Points

- Equipped flights (FANS + RNP4) can be cleared on RLAT tracks at RLAT levels.

- All flights can be cleared to cross RLAT tracks at RLAT levels but only touch an RLAT track at one point.

- No flights will be cleared to join RLAT tracks at RLAT levels that touch an RLAT track at more than one point.

- Flights that don’t meet criteria (i.e. not RNP4) cannot be cleared on RLAT track at RLAT levels.

- Only flights that have planned on half degree RLAT track will be cleared on that track, no flights will be rerouted onto a half degree track prior to entry.
REQUIREMENTS
5.9  **RLatSM Operational policies (aircraft CNS system failure, data link system failure, etc.):**

5.9.1  **Objective.** The guidance provided in section 5.9 is intended to apply during the RLatSM trials that are scheduled to start on 12 November 2015. It is intended to supplement the Global Operational Data Link Document (GOLD) guidance to controllers and flight crew on data link service failures and aircraft data link system failures (GOLD paragraphs 4.9.4 and 5.9.4 respectively).

5.9.2  **RLatSM Required CNS System Failure Prior to Departure.** If a flight experiences a failure of an RLatSM required CNS system PRIOR TO DEPARTURE, the flight should flight plan so as to remain clear of NAT RLatSM tracks between FL 350-390 (inclusive).

5.9.3  **RLatSM Required CNS System Failure After Departure But Prior to Entering On To RLatSM Tracks Between FL 350-390 (Inclusive).** If a flight experiences a failure of an RLatSM required CNS system AFTER DEPARTURE BUT PRIOR TO ENTERING RLatSM AIRSPACE, the flight should contact ATC and request a revised clearance that will keep it clear of NAT RLatSM tracks between FL 350-390 (inclusive).

5.9.4  **RLatSM Required CNS System Failure After Entering On To RLatSM Tracks Between FL 350-390 (Inclusive).** If a flight experiences a failure of an RLatSM required CNS system WHILE OPERATING IN RLatSM AIRSPACE, ATC must be immediately advised. Such flights may be re-cleared to exit RLatSM airspace, but consideration will be given to allowing the flight to remain in the airspace, based on tactical considerations. (GOLD paragraph 4.9.4.8 refers).

5.9.5  **Continuous Climb or Descent of Aircraft Not RLatSM Eligible.** Any aircraft that is not RLatSM eligible may request continuous climb or descent without intermediate level off through the vertical extent of the NAT RLatSM airspace. Such requests will be considered on a tactical basis.
Clearances are initially based on flight plan designators as no FANS connections are in place at the time of issue.
Shanwick system will then check for FANS connections prior to entry.
**Boundary Points**

**Equipped** flights which **do not** meet connection criteria prior to entry **cannot be** cleared on RLat tracks at RLat levels where RLat separation is being applied.
Equipped flights which do not meet connection criteria prior to entry could be cleared on RLat tracks at RLat levels if RLat separations are not being applied and insufficient notice is given that flight cannot establish connections.
Equipped flights which do not meet connection criteria prior to entry will not be cleared on to RLat tracks at RLat levels if there is sufficient notice given that the flight cannot establish the connections.
Flight is equipped and indicates correct equipage on Flight Plan (J5/J7/D1/PBN L)

Flight requests Track A FL370 at 90minutes from boundary at 1200z, and is cleared as requested.
Flight is equipped and indicates correct equipage on Flight Plan (J5/J7/D1/PBN L)

Requesting track when not flight planned as equipped will be recorded.

Flight requests Track A FL370 at 90 minutes from boundary at 1200z, and is cleared as requested.

Clearance below RLAT or outside RLAT will be issued.
Boundary Points

Flight logs onto domestic agency

40mins or more

Shanwick

Scottish
Flight logs onto domestic agency

If not logged onto domestic then system will check if manual logon with Shanwick occurs at least 20 mins from the boundary (as per GOLD) otherwise revised clearance below RLAT or outside RLAT will be issued.

40 mins or more
Datalink transfer process commences by domestic sending up NDA message to avionics (CDA = EGGX)

Approximately 18mins
Datalink transfer process commences by domestic sending up NDA message to avionics (CDA = EGGX)

If transfer process fails, then minimum of 13 minutes from the boundary domestic will be aware and instruct immediate logon to EGGX.

If manual logon not successful, then revised clearance expected.
EGGX establishes connection and ADS-C contracts / CPDLC connection requests sent to avionics.

Approximately 17mins
EGGX establishes connection and ADS-C contracts / CPDLC connection requests sent to avionics.

EGGX system will attempt to establish contracts twice and if fails warning will be output no later than 12 minutes from the boundary which may result in revised clearance.

Approximately 17 mins
EGGX sends up ADS-C DEMAND to avionics to establish that NEXT = ERAKA and NEXT+1 = 58N
EGGX Sends up ADS-C Demand to avionics to establish that NEXT = **ERAKA** and NEXT+1 = **58N**

If out of conformance then EGGX will request domestic controller to confirm next position after entry.
Domestic agency send END SERVICE to avionics to ensure EGGX becomes the active centre (CDA)
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If END SERVICE fails, domestic will contact EGGX and flight may be requested to perform re-logon to EGGX.

If unsuccessful, then revised OAC level may be issued.
EGGX sends up ‘WELCOME MESSAGE’ to establish Current Data Authority
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If this fails, ATC will initially contact previous ANSP and have END SERVICE sent manually, or will instruct crew to perform a re-logon to EGGX to recycle the system.

If unsuccessful, then revised OAC level may be issued.
EGGX phased approach of sending UM137 ‘confirm assigned route’ to crew, who are then required to send a response by selecting the button armed by the UM137 (and not by freetext entry).

EGGX conformance checks full routing.
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EGGX conformance checks full routing.

Any non conformance immediately communicated with pilot;

“EGGX CONFIRMS YOUR POSITION REPORT INDICATES INCORRECT ROUTING. CHECK FULL DEGREES AND MINUTES LOADED INTO FMC. OUR CLEARED ROUTE IS [route]”
ENHANCED CONFORMANCE MONITORING
Prior to entry GAATS+ will send ADS-C DEMAND requests until such time the boundary and the next position have been confirmed as being correct, otherwise planner will see non conformance warnings prior to entry.

Once flight has entered the OAC, CPDLC will be utilised (initially tactically) such that the pilot will be requested to send down the full loaded route in the FMC, which GAATS+ will conformance monitor from entry to exit. Once again only if non conformance would the controller be informed.

Crew action is to respond by selecting the appropriate button that sends the FMS routing….not to freetext the whole route as has been seen during operational tests.
FREQUENTLY ASKED QUESTIONS
When are the airspace changes that support Rlat coming into force?

On the 17th of September two new points south of BALIX on the 10W interface will become active.

On the 12th of November two new points north of BALIX on the 10W interface, new Gander Oceanic Transition Area (GOTA) points, and two new points on the BREST interface will become active.
How will the tracks be designed and indicated to operators?

The ANSP responsible for designing the tracks will identify the core tracks, (the tracks with the highest loading) from the Priority Route Message data, and subject to their location and other tactical considerations, will designate these tracks as the Rlat tracks.

The Rlat tracks will be identified in **Note 3** of the OTS Track Message.

Rlat will be at published OTS levels, but will only be between FL350-FL390, noting that levels can be left off the Rlat tracks in line with all other OTS tracks.
What are the flight planning requirements associated with Rlat?

As detailed in AIC065/2015 operators wishing to fly on the Rlat tracks between FL350-390 are required to flight plan;

Field 10a – Comms capability (J5–Inmarsat & J7–Iridium SATCOM)
Field 10b – Surveillance capability (D1–ADS-C)
Field 18 – RNP4 (inserting ‘PBN’ followed by ‘L1’)

It is important that your Comms and Navigation status are correctly reflected in your submitted flight plan, otherwise you will likely receive a less optimal Oceanic Clearance.
What are the AFN_CON (logon) procedures approaching the NAT?

As detailed in GOLD (Global Datalink Document) crews are required to perform manual logon approximately 20 minutes from the NAT boundaries, unless they are already logged onto an adjacent centre, who will perform the datalink handover process which is a seamless process to the crew.
What will happen if the logon is not performed or cannot be achieved?

Should the crew fail to perform a logon in good time, the controller will be alerted to the fact that the aircraft no longer meets the criteria to be eligible to be cleared on the Rlat track, and subject to the traffic situation at that time, will be likely to receive a revised non Rlat clearance.

If the logon fails during the handover process, the transferring agency will contact the flight and instruct the crew to perform a manual logon to avoid a re-clearance being issued.
Why do you need connections in place prior to entering the NAT?

ADS-C provides our procedural controllers with a regular update of where the flight is (14-minute reports) as well as instant reports should the flight deviate from clearance.

CPDLC provides a fast communication capability to the controller that assures a level of intervention capability.

It is this Comms and Surveillance capability that permits reductions in standard separations in remote areas such as the North Atlantic.
Why and when will be you be sending UM137 (Confirm Assigned Route)?

In addition to utilising pre boundary ADS-C Demand reports, UM137 gives the controller assurance that the full oceanic route loaded into the active flight plan of the Flight Management System is in conformance.

Shanwick will initially use UM137 tactically so as to monitor responses from crews, and to manage associated workload. When this assurance is gained, the adaptation will be set such that UM137 will be sent automatically 5 minutes after entry.

Crews action is to send DM40 through enabled menu button.
How is Shanwick issuing Rlat Oceanic Clearances when flight has not yet established datalink communications?

Our system will initially use the Flight Plan information to base a clearance, as it does for MNPS and RVSM.

At pre-determined times our system will then look for the associated logons and establishment of CPDLC connections and ADS-C contracts prior to entry.

Should any of those not be established the flight will no longer meet the criteria, and will be subject to a re-clearance.
What is likely to happen should a flight be subject to a re-clearance?

Should a Shanwick planning controller be made aware that a flight no longer meets the criteria for the Rlat clearance, then subject to traffic and separations a new clearance outside the Rlat track area will be considered.

ATC Procedures are being finalised such that the Oceanic controller will call domestic who will then liaise with the crew accordingly.
What is likely to happen should a flight be subject to a re-clearance?

It is important that a swift ATC decision is reached and implemented to avoid unnecessary workload, and therefore it is important for crews to respond quickly.

Ensuring that the appropriate request for oceanic clearance in relation to the datalink capability is made, is important to avoid late changes to Oceanic Clearance, which will result in higher workload both to ATC and the crew.
Is there any difference to operations when the flight has entered the NAT?

Should a flight lose criteria (manually logs off by selecting ATC COMM OFF) then our system will output associated warnings.

The oceanic controller will then attempt to have the connections re-established prior to initiating an enroute re-clearance.

Shanwick will be utilising UM79 (re-route) clearance message as part of the system update, noting that crews will continue to be required to reconnect to flight plan should a reroute result in a discontinuity at the oceanic exit point.
FAQ’s FOR RLAT (Timeline)

What is likely to happen should a flight be subject to a re-clearance?

It is important that ADS-C provides the improved surveillance capability, and CPDLC provides swift communications. Therefore should either of these components be lost, then the controller is required to re-establish them or revert to standard separations by issuing re-clearances.

Correct flight planning and use of datalink functionality will mitigate against re-clearances.
What is likely to happen should a flight be subject to a re-clearance?

As part of the success criteria for Phase 1 of the trial, Shanwick will be monitoring datalink performance both in terms of system but also user actions, so that improvements can be put in place to mitigate poor performance.

As part of that, operators will be contacted should investigations indicate incorrect flight planning or operation.
How does Rlat impact the NAT Contingency Procedures?

As stated in the revised AIC for RLAT, and the Special Emphasis Items Ops Bulletin (003), there are no changes to the in flight contingency procedures weather deviation procedures as detailed in PANS ATM Doc444 Para15.2 & 15.2.3.

Pilots must stringently follow all measures for avoiding conflict with other aircraft provided for in the PANS ATM Doc4444.
What should crew do if there is a datalink handover failure at the boundary?

As stated in the GOLD (Global Datalink Document) the datalink handover process should be seamless to the crew.

If the handover fails, then ATC will instruct the crew accordingly. Normal response is for crew to be instructed to select ATC Comm Off and logon to next agency.

It is important that this is done, otherwise the receiving ANSP will not indicate the appropriate criteria and as stated before may consider a re-clearance.
OPERATIONAL INFORMATION
How are operators being informed?

**UK RLATSM AIC** being published on the 1st October which updates current AIC 062/2015 and includes text relating to SLOP and Contingency Procedures 065/2015

*Note that same text as NAVCANDA AIC published in June*
How are operators being informed?

**Special Emphasis Items Ops Bulletin**

003/2015

Can be found on the ICAO Paris Website.
How are operators being informed?

**UK ARINC424 Identifiers AIC** for half-degree waypoints in the Shanwick Oceanic Control Area.

059/2015

*Note that same text as NAVCANDA AIC*

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**AERONAUTICAL INFORMATION CIRCULAR P 059/2015**

**UNITED KINGDOM**

1. **Introduction**

   1.1 Flights operating eastbound or westbound within the North Atlantic (NAT) Region are normally flight planned so that specified latitudes and longitudes (30°W, 40°W etc.) are crossed at whole degrees of latitude. This operating concept has supported a lateral separation minimum of 60 nautical miles (NM) in the NAT minimum navigation performance specification (MNPS) airspace. Commencing 12 November 2015, an operational trial of a 25 NM lateral separation minimum will be implemented by establishing NAT organized track system (OTS) tracks that are spaced by one-half degree of latitude.

   1.2 Insertion of latitude/longitude waypoints into the flight management computer (FMC) can be achieved using multiple formats and accomplished via automated or manual means. However, while standard pre-flight and in-flight procedures call for each pilot to independently display and verify the degrees and minutes included into the FMC for each waypoint defining the cleared route of flight, recent occurrences of gross navigation errors within the NAT Region indicate that certain formats and entry methods for insertion of latitude/longitude waypoints are more error prone than others.

   1.3 In particular, manual entry of latitude/longitude waypoints using short codes derived from the ARINC-424 paragraph 7.2.5.
How are operators being informed?

Web based video covering practical aspect of RLAT due for publication in August and hosted on NATS.Areo
How are operators being informed?

**NATS Hosted Telecon**

Telecon-1:
28th August 2015.

1300z

0044 (0) 2086185326

Pin 7704030#
How are operators being informed?

**NATS.aero website**
Conntaining briefing material, introductory video and other links from August 2015.

http://www.nats.aero/RLat/
• RLAT AIC (065/2015)

• ARINC 424 AIC (059/2015)

• NEW POINTS INTRODUCED;
  • SCOTTISH – September / November AIRAC
  • GANDER – November AIRAC
  • BREST – November AIRAC

• RLAT IMPLEMENTATION PLAN AVAILABLE ON ICAO WEBSITE

• NAT OPS BULLETIN WITH ‘SPECIAL EMPHASIS ITEMS’ PUBLISHED (003-2015)
SUMMARY
NATS proposes to declare a transition period from 12-17 November and will allocate one RP2 exemption day during this period.
• RLAT Phase 1 and 10 minute crossing separation commences on the 12th of November (EGGX & CZQX)

• Need RNP4 to be eligible to fly on RLAT tracks and be separated by 25nm

• Note 3 of OTS Track Message will identify RLAT Tracks

• New fixes on the various boundaries start to appear in September

• Crews to respond to ‘confirm assigned route’ upon entry by selecting appropriate key rather than manually respond.

• Correct datalink operations important to minimise impact to ATC and crews.

• No change to SLOP procedures.

• No change to in flight contingency and weather deviation procedures.