

AIRMAIL

News, views and opinion for the aviation industry

Reduced separation brings benefits for North Atlantic operators

NATS and NAV CANADA are jointly engaged in a trial of a Reduced Longitudinal Separation Minimum (RLongSM) in the Shanwick and Gander Oceanic Control areas.

The trial allows flights which are Future Air Navigation System (FANS) equipped to operate with 5 minutes time separation in-trail between them rather than the standard 10 minutes. The goal of RLongSM is to allow more North Atlantic flights to be able to climb to their optimal flight levels. As flights burn off fuel they become lighter and therefore need to climb to stay at the most fuel efficient flight level. With the present separation standards of around 10 minutes it is often impossible for flights to get to these higher levels, particularly on the more popular and therefore more densely populated routes.

Developments

The initial benefit modelling was completed by members of NATS' Operational Analysis department, encompassing safety (in collaboration with the Prestwick team and international counterparts through ICAO working groups), cost-benefit and environmental analysis. Emily Martin, NATS Senior Research Analyst who was the lead technical analyst summarised the work as "comprehensive studies testing key assumptions using data from the operational trial and showing the expected benefits of RLongSM".

Early results

Analysis of the 13 months of collected trial data showed that 2,100 RLongSM events had occurred within Shanwick, of which over 1,200 involved climb or descent requests. These scenarios were modelled for environmental impact using the JetPlanner tool and the results show estimated savings for just the Shanwick RLongSM application of around 300 kg of fuel, which equates to approximately \$400 US and 1000kg of CO2 for each RLongSM-enabled profile change. At the same time traffic samples have been monitored to ensure that there has been no increase in the chance of a loss of separation or the number of safety events.

How airlines can benefit from RLongSM

Traditionally it has been accepted that flights would rarely get climb clearances in the busy areas of North Atlantic airspace. One B767 Captain with 25 year's experience told NATS that, in his opinion, 'crews were so unsuccessful in getting a climb clearance, that they stopped asking'. Recent Shanwick data actually shows that about 60% of flights which request a climb will get a climb of at least a thousand feet and around 50% get their requested level. Therefore, it is worthwhile encouraging crews to ask for climbs. This was supported by the Captain who said 'it's also wise to remember that RLongSM has collateral benefits to non-FANS flights: a Flight Level vacated by a FANS jet is now available to any aircraft.'

Further developments

NATS and NAV CANADA have been leading moves to have RLongSM adopted by ICAO as a globally accepted procedure. Jacky Civil, NATS Statistical Expert, described the experience of presenting a mathematical model to the Maths Working Group of the ICAO Separation and Airspace Safety Panel in Montreal as being 'a very challenging, but ultimately satisfying experience to defend the safety modelling work through such a rigorous review. It's an important part of the process to allow the global aviation community to have confidence in the safety of RLongSM.'

Welcome to the fourth issue of the NATS newsletter, Airmail. It's designed to keep you up to date with news and latest developments from the global leader in air traffic control and airport performance.

NATS provides answers to the critical issues faced by airports, ANSPs and the aviation industry around the world. And we don't simply address the issues in isolation: we always bear in mind the bigger picture.

If there are any topics that you would like further information on or general enquiries, please contact us at: Airmail@nats.co.uk

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The benefits of working with NATS – a wider impact

Although many customers contract NATS to solve a particular problem, or help them understand the latent capacity of an airport or airspace, working with NATS can often deliver additional benefits across a wider stakeholder group.

On a recent consultancy contract in Asia-Pacific, NATS staff were closely engaged in conversations with the national airline to understand local operating issues in order to unlock unused runway capacity at an airport. Two key elements of runway capacity are pilot performance and runway occupancy times. NATS works closely with airline stakeholders on all aspects of runway performance and, during one such conversation, the NATS consultant was discussing the extended runway occupancy times of that airline at Heathrow. The conversation helped the airline understand how their own performance plays a key part in maximising the airport throughput. Subsequently, the NATS consultant provided the relevant statistics to back up the conversation, and highlight the extent of the problem.

With that conversation in mind, and the data from NATS now available, the airline started to give presentations on these important messages at numerous pilot forums, as well as in their notices to air crew. As one pilot involved told us, “No major change of policy, just education of crew how every second counts”; which is of course the phrase that NATS Consultants often use as it is key to optimising performance and driving the operation to the maximum which is safely possible.

The education process of the pilots not only helped at the airline base in Asia-Pacific, but further reduced the airline’s runway occupancy times at Heathrow. This proactive approach, and working with a customer base to help them understand the benefits available by working with NATS, is providing measurable benefits around the world. The airline concerned recently told NATS that it will keep on monitoring its own performance and asked NATS to continue supplying the performance data for the UK.

For an airline, the ability to access best practice and measurable performance benchmarks provides real targets that can be worked towards, and NATS has a track record of working closely with airlines to help them improve pilot performance. Such targets, when met, provide benefits to all the airports where that airline operates. For airports, the drive to a performance based operation allows the full utilisation of runway capacity, potentially deferring the construction of a new runway, with the associated capital costs and potential airport disruption for a number of years.

As NATS staff work around the world, not only do they deliver the high value Consultancy services for which they are justifiably known, they also offer advice and support to optimise operations both overseas and at home.



Benchmarking airport capacity and identifying near-term enhancements at Australia's busiest airports

More than any other country, Australia relies on aviation to overcome the long-distance relationship it has with the rest of the world. Not only does the vast island continent separate Australians from other countries, it is often an expanse that needs to be bridged to connect Australian cities.

Whilst the global economic climate remains challenging, the Australian aviation sector has continued to see strong growth in aviation both internationally, and domestically.

Australian Air Navigation Services Provider, Airservices, contracted NATS to undertake an airport capacity enhancement baselining exercise for four of Australia's busiest airports – Brisbane, Melbourne, Perth and Sydney. In early 2012 a NATS team undertook an extended site visit to the 4 airports over a 9 week period to assess current capacity constraints and investigate opportunities to improve airport performance as part of Airservices collaborative Airport Capacity Enhancement (ACE) programme.

Observations of the airfields were made by NATS Air Traffic Control and Operational Analysis experts and a range of recommendations was provided to help support and prioritise future ACE initiatives. A key success of the study was the development of a baseline for each airport against which ACE initiatives and future capacity studies may be measured. In doing so, future decision making may now be informed by a quantitative assessment of operational benefits and capacity enhancement measures.

Guy Habermann (Airservices ACE Project Manager) was the Airservices focal point and contract manager for the project – “The engagement of NATS to conduct this study has expedited the implementation of our ACE strategy and has provided a broad range of observations and recommendations that has exerted a strong positive influence upon our plans to enhance runway capacity at the ACE focal airports”.



NATS at World ATM Congress

This February NATS will be a key supporter of the first World ATM Congress, being held in Madrid, Spain. The conference and exhibition, which is a joint production of CANSO, the Civil Air Navigation Services Organisation, and ATCA, the US-based Air Traffic Control Association, will be the preeminent trade conference in the air navigation services industry.

Driven by the industry, for the industry, this event provides a platform for aviation leaders to discuss the way forward at this critical point in air traffic management development.

NATS' stand will showcase our customer-focussed, innovative solutions to aviation's toughest challenges. The NATS stand will feature:

- iFacts, the revolutionary new set of controller tools already in operation at our Swanwick Centre;
- Flight Profile Monitor: NATS new performance measurement tool to enable airfields to improve their continuous climb and continuous descent rates;
- ferroNATS, our joint venture with Ferrovial, which is in the process of taking operational control at ten towers in Spain, and;
- Airport Performance: Based upon our unique insights managing some of the busiest airports in the world as well as smaller regional airfields, NATS offers total solutions to improve the capacity, safety and efficiency of airports.

Subject matter experts and senior managers from NATS will be on hand to discuss our approach to capacity development, safety enhancement, environmental responsibility and operational efficiency throughout the event.

On the opening day of the show, 12 February, NATS CEO Richard Deakin will participate in the SESAR Forum entitled "From Innovation to Solution", to discuss the progress towards the modernisation of European Air Traffic Management and to give an outlook onto key milestones in 2013.

That same day, NATS will also host a session in the ATM Theatre to discuss the challenges of delivering safe, efficient air traffic services during London's Olympic summer. General Manager London Terminal Control, Paul Haskins, and London Terminal Control Operational Supervisor, Brian Wheeler, will present on airspace management for the London 2012 Olympic and Paralympic Games of 2012.

This discussion will explain how, through collaborative working, forward planning and capacity enhancement, we accommodated an additional 4000 plus aircraft, including a surge in business and general aviation flights, at the same time as providing business as usual services to five of the busiest airports in the world. All whilst accommodating and working within the biggest Military Airborne Security event the UK has seen in modern times.

NATS has also been shortlisted for two IHS Jane's ATC Awards this year; in the Innovation category for iFACTS, our world-first system for reducing en route controller workload and predicting future conflicts, and in the Service Provision category for our work delivering the Olympics. The awards will be presented at the CANSO ATM Dinner on 11 January.

Come visit us on stand 890 and join us on February 12 in the ATM Theatre from 10:15 - 11:15 for our presentation on the Olympic Challenge, and in rooms N105 - N106 from 15:00 for Richard Deakin's presentation on the future of European ATM.

