

Safety and Airspace Regulation Group

Page 1 of 11

Airspace Change Proposal - Environmental Assessment

Version: 1.0/ 2016

Title of Airspace Change Proposal	Newcastle International Airport Airspace Change Proposal Standard Terminal Arrival Route (STAR) and PRNAV – GNSS approaches
Change Sponsor	Newcastle International Airport Limited (NIAL)
SARG Project Leader	██████████
Case Study commencement date	25/04/2016
Case Study report as at	31/05/2018
File Reference	ACP-2014-02

Instructions

In providing a response for each question, please ensure that the 'Status' column is completed using the following options:

- Yes
- No
- Partially
- N/A

To aid the SARG Project Leader's efficient Project Management it may be useful that each question is also highlighted accordingly to illustrate what is: **resolved** Green **not resolved** Amber **not compliant** Red as part of the AR Project Leader's efficient project management.

Safety and Airspace Regulation Group

Page 2 of 11

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1.	Introduction	
	<p>This report describes the environmental considerations relevant to the proposed creation of a STAR and PRNAV (GNSS) approaches at Newcastle International Airport. The change has been submitted by Newcastle International Airport to the Civil Aviation Authority.</p> <p>The assessment is based upon information presented in the proposal document Newcastle International Airport: Airspace Change Proposal Standard Terminal Arrival Route (STAR) and PRNAV – GNSS Approaches</p> <p>Newcastle International airport is a single runway airport orientated 07/25. The proposal is to establish a STAR within the confines of Airway P18, to the east of the Airway centre line from abeam waypoint ABKAT to abeam waypoint GIRLI from FL130 to FL90. The proposed STAR will be available to aircraft approaching Newcastle along Airways P18 and Y250 24 hours per day, 7 days per week. Currently, all aircraft on approach to Newcastle are guided by verbal instructions from Air Traffic Controllers. Implementation of a STAR will allow aircraft that are suitably equipped to use 'Area Navigation' RNAV based flight procedures for their approach towards NIAL. These flights will still be monitored by the controllers and the controllers can issue instructions if necessary just as they do now.</p> <p>The current radio navigation and landing aids consist of:</p> <ul style="list-style-type: none">• Instrument Landing Systems (or ILS) with Distance Measuring Equipment (DME) for each end of the runway, and• A Non-Directional Beacon (NDB) (NT) <p>The proposed STAR ends at FL90 and so modelling is not required under Air Navigation Guidance and CAP 725.</p>	

2.	Guidance to the CAA	Status
2.1	Is the proposal consistent with Government policy and/or guidance from Government to the CAA?	Yes

Safety and Airspace Regulation Group

Guidance issued to the Civil Aviation Authority sets¹ out a framework for the environmental objectives that the CAA must consider when assessing airspace change proposals. In addition to these objectives, there may be other legitimate operational objectives, such as the overriding need to maintain an acceptable level of air safety, the desire for sustainable development or to enhance the overall efficiency of the UK airspace network, which need to be considered alongside these environmental objectives. The Government looks to the CAA to determine the most appropriate balance between these competing characteristics.

Flights over National Parks and AONBs are not prohibited by legislation² as a general prohibition against over-flights would be impractical. Government policy focuses on minimising the over-flight of more densely populated areas below 7,000 feet (amsl), but accepts that reducing CO₂ emissions between 4,000 and 7,000 feet (amsl) can also be a consideration. However, where it is practical to avoid over-flight of National Parks and AONBs below 7,000 feet (amsl), the Guidance asks that the CAA requires sponsors to consider this when developing their proposals.

3.	Rationale for the Proposed Change	Status
3.1	Does the rationale for the ACP include environmental reasons?	Yes
	Yes, the proposal aims to provide an environmental benefit through reduced fuel and maintenance costs, fuel burn and emissions as a result of increased adherence to Continuous Descent Operations, (CDO) reduced fuel uplift through improved accuracy of flight planning. This proposal contributes to the government priority of improving the environmental performance through more efficient use of airspace and to make a contribution to reducing the aviation industry's environmental impacts.	

4.	Nature of the Proposed Change	Status
4.1	Is it clear how the proposed change will operate, and therefore what the likely environmental impacts will be?	Yes
	Newcastle airport's plans to introduce a (RNAV) GNSS approach will offer the opportunity for more efficient flight by those aircraft that follow the STAR (followed by a GNSS Approach) reducing fuel use and CO ₂ emissions – a government priority for aviation and one of the	

¹ For those Airspace Change Proposals being considered under the CAA's process as set out in CAP725, the relevant DfT guidance is "Guidance to the Civil Aviation Authority on Environmental Objectives Relating to the Exercise of its Air Navigation Functions, January 2014"

² National Parks and Access to the Countryside Act 1949, National Parks (Scotland) Act 2000, and "Duties on relevant authorities to have regard to the purposes of National Parks, Areas of Outstanding Natural Beauty (AONBs) and the Norfolk and Suffolk Broads Guidance Note", DEFRA 2005.

Safety and Airspace Regulation Group

	<p>CAA's Strategic Objectives by "Improving environmental performance through more efficient use of airspace and (to) make an efficient contribution to reducing the aviation industry's environmental impacts."</p> <p>Also, implementation of a RNAV STAR is in accordance with UK and EU policies on Performance Based Navigation (PBN) being "an essential component of delivering the objectives underpinning the Future Airspace Strategy and consequential modernisation of the UK airspace system."</p> <p>The airport has confirmed that the proposed RNAV Hold associated with the GNSS Missed Approach Procedure is coincident with the existing NDB Hold.</p> <p>The airport plans to reduce the dispersion of aircraft flight tracks on approach to the airport; on the basis that RNAV (GNSS) approach procedures will produce highly repeatable more predictable routes. The airport also aspires to improve the implementation of CDOs. (a CAA objective). The achievement rate of which has an associated fuel and CO₂ saving of 50 – 100 kg fuel per flight (ICAO Doc 9931).</p>	
4.2	Have alternative options been considered, and have the environmental impact of each alternative been assessed?	Yes
	<p>The options considered by NIAL were:</p> <ul style="list-style-type: none"> • Do Nothing • Design and propose 2 STARS one for each Runway (25 & 07) • Design and propose a single STAR with an Initial Approach Fix (or IAF) at the end of the STAR that could be used for either RW 	
5.	Noise	Status
5.1	Has the noise impact been adequately assessed?	Yes
	<p>Yes, it has been adequately assessed in terms of meeting the key requirements of CAP725. The proposal is based upon the principal that the proposed RNAV routes will be designed to follow current pattern of aircraft tracks as closely as possible. As the RNAV final approaches are not anticipated to affect the aircraft route, the GNSS approaches; to both Runway 25 and Runway 07 mimic the vectors that ATC give to aircraft on approach to Newcastle and as such are unlikely to have any noise effect.</p> <p>Noise has been adequately assessed in terms of meeting the key requirements of CAP725. The proposal is based upon the principal that the proposed RNAV routes will be designed to follow current pattern of aircraft tracks as closely as possible. The RNAV final approaches will not affect the aircraft route, time taken or aircraft thrust settings, the proposal should not have a negative noise impact.</p>	

Safety and Airspace Regulation Group

	<p>However as is asserted in the proposal, the expected increase in Continuous Descent Operation achievement and increased use of Low Power Low Drag procedures are intended to reduce noise. The airspace change is expected to provide more efficient route spacing and through better noise abatement compliance, all of which are factors that may result in a noise benefit for areas immediately beneath the approach path. However, securing achievement of CDO and Low Power Low drag approach compliance remain within the gift of the aircraft operators.</p>
5.2	<p>Has the noise impact been adequately presented in the consultation and the submitted proposal?</p>
	Yes
	<p>The noise effect of this proposal has been considered in a number of ways; through consideration of the location and orientation of the proposed tracks; (in that they mimic existing vectoring patterns,) through the proposal to implement CDO and low power Low Drag procedures and through a qualitative assessment of RNAV navigation.</p> <p>Implementation of a RNAV (GNSS) STAR at Newcastle Airport from FL140, incorporates provision for CDO and use of Low Power Low Drag procedures, and will offer the opportunity for more efficient flight by those aircraft that follow the STAR.</p> <p>The reduced dispersion of aircraft on approach that is associated with the application of RNAV technology, will slightly reduce overflight even for the majority of people currently overflowed by aircraft on approach through aircraft following a more defined route. Those people living directly under the RNAV route will experience some additional aircraft that are flying more directly overhead, however these aircraft will be flying higher than today and in a cleaner “low power low drag” configuration that is quieter than that which is experienced today.</p>

6.	Emissions	Status
6.1	<p>Has the impact on CO₂ emissions been adequately assessed?</p>	Yes
	<p>Yes; the CO₂ emissions have been adequately assessed. The CAA agree with the proposal that aircraft using the proposed STAR at Newcastle airport will potentially have reduced emissions. As no new airspace is being requested as part of this ACP there is not expected to be any consequent impact on emissions for General Aviation traffic.</p>	
6.2	<p>Has the impact on CO₂ emissions impact been adequately presented in the consultation and the submitted proposal?</p>	Yes

Safety and Airspace Regulation Group

Yes, CO₂ emissions should be reduced if this proposal is implemented at Newcastle.

7.	Local Air Quality	Status
7.1	Has the impact on Local Air Quality been adequately assessed?	Yes
	Yes; as the proposal does not include any changes to flight paths below 3000ft therefore should not impact on Local air quality.	
7.2	Has the impact on Local Air Quality been adequately presented in the consultation and the submitted proposal?	Yes
	The proposal does not include any changes to flight paths below 3000ft therefore should not impact on Local air quality.	

8.	Tranquillity	Status
8.1	Has the impact on tranquillity been adequately considered?	Yes
	Yes; the proposal as presented aims to replicate the current procedures. Therefore, aircraft will not be operating in new areas. The area that will be overflown by the proposed RNAV procedures has been checked by the sponsor for sites where tranquillity is important such as tourist attractions, open air venues etc and overflight/tranquillity issues discussed with local councils via the Newcastle International Airport Consultative Committee (NIACC). As aircraft flight tracks remain the same, there are unlikely to be any adverse effects on any AONBs or National Parks in the vicinity. Additionally, aircraft will be higher than today and as such are not likely to cause any significant tranquillity issues.	
8.2	Has the impact on tranquillity been adequately presented in the consultation and the submitted proposal?	Yes
	Yes; as the proposal aims to replicate current procedures there is not expected to be any impact on tranquillity or visual intrusion.	

9.	Visual Intrusion	Status
9.1	Has the impact of visual intrusion been adequately considered?	Yes

Safety and Airspace Regulation Group

	<p>The assessment makes no reference to visual intrusion specifically, however, they have stated that as the procedures replicate current procedures no new areas will be overflowed. On this basis considering the extent of the likely impact and the areas overflowed below 4,000ft, visual intrusion has been adequately considered.</p>	
9.2	Has the impact of visual intrusion been adequately presented in the consultation and the submitted proposal?	Yes
	<p>The consultation makes no reference to visual intrusion, however as the proposal is intending to replicate current procedures, no new areas are expected to be overflowed. While those areas beneath the RNAV procedures will see more aircraft directly overhead, these aircraft will be flying at higher than they currently do today.</p>	

10.	Biodiversity	Status
10.1	Has the impact upon biodiversity been adequately considered?	Yes
	<p>While biodiversity is not expressly mentioned in the impact assessment, based on the anticipated effects of this proposal, there is unlikely to be any impact specifically upon biodiversity. The airport has developed a Landscape and wildlife Strategy and the protection of wildlife on site is taken to be very important, with the airport working in partnership with a variety of local non-statutory conservation bodies to ensure the protection and preservation of both locally and Nationally important species.</p>	
10.2	Has the impact upon biodiversity been adequately presented in the consultation and the submitted proposal?	Yes
	<p>There are no statements in the environmental impact assessment about biodiversity, but this is acceptable for this proposal as it is very unlikely to have any such impact.</p>	

11.	Continuous Descent Approaches	Status
11.1	Has the implementation of, or greater use of, CDAs been considered?	Yes
	<p>Yes, the noise abatement procedures provide guidance on descent and speed requirements to facilitate continuous descent and low power low drag approach procedures. According to the consultation document, (CDA achievement is currently at around 70%) the proposal aims to continue the trend toward reduction through provision of more efficient route spacing facilitating better noise abatement compliance.</p>	

Safety and Airspace Regulation Group

12.	Impacts Upon National Parks and/or AONBs	Status
12.1	Does the proposed change have an impact upon any National Parks or Areas of Outstanding Natural Beauty (AONBs)?	No
	As the proposal aims to replicate the current procedures, and does not introduce any additional airspace, there is not expected to be any change to the impact on any AONBs or National Parks overflow. In addition, where areas are overflowed by following of the RNAV CDA profile will result in aircraft overflying at higher altitudes than is the case today.	
13.	Traffic Forecasts	Status
13.1	Have traffic forecasts been provided, are they reasonable, and have these been used to reflect the future impact of the proposal?	Yes
	Yes; NIAL are predicting continued growth in traffic through to 2035 and beyond.	
14.	Consultation	Status
14.1	If undertaken, has evidence of non-aviation stakeholder consultation been provided?	Yes
	NIAL consulted with a range of non-aviation stakeholders including: individual residents, Local Government, Parish Councils, residents' groups, "other" stakeholders and representatives of the private sector.	
14.2	Has account been taken of the results of the environmental factors raised by consultees or has evidence been provided to indicate why this has not been possible?	Yes
	Of the four objections raised to the proposal, one was withdrawn following dialogue, the other concerned the methodology used for Standard Instrument Departures (or SIDS) and not the NIAL proposal. NIAL remain in close dialogue with both Durham Tees Valley Airport (DTVA) and NATS to resolve their objections.	
15.	Compliance with CAP 725	Status
15.1	Have all environmental assessment requirements specified in CAP 725 been met, where applicable?	Yes

Safety and Airspace Regulation Group

All the relevant environmental assessment requirements have been met.

16.	Other Aspects	Status
16.1	Are there any other aspects of the ACP, that have not already been addressed in this report, that may have a bearing on the environmental impact?	No
	All relevant environmental assessment requirements have been met.	

17.	Recommendations	Status
17.1	Are there any recommendations for the Post-Implementation Review?	Yes
	<ul style="list-style-type: none"> Monitor and record use of GNSS (RNAV) IAPs for each of the runways, to ensure Post Implementation usage figures are available for comparison to estimated usage provided in support of the proposal. A representative sample of radar tracks portrayed on a map for comparison as part of the PIR. The portrayal should enable a clear comparison of GNSS (RNAV) IAPs versus visual approaches, in order to illustrate and difference in traffic patterns. Monitor and record CDO achievement rates for each runway before and after implementation for submission to the Post Implementation Review. 	

18.	Government Approval	Status
18.1	Is the approval of the Secretary of State for Transport required in respect of the environmental impact of the airspace change proposal?	No
	No, as no significant environmental dis-benefit will result from this proposal approval is not required from the Secretary of State.	No

19.	Conclusions	

Safety and Airspace Regulation Group

19.1	Can an overall environmental benefit be demonstrated (or justified/supported)?	No
	As the proposal aims to replicate the current day non-precision procedures, and does not affect traffic growth, any environmental impacts would, in all likelihood, be negligible.	

Outstanding Issues		
Serial	Issue	Action Required
1		
2		

Additional Compliance Requirements (to be satisfied by Change Sponsor)	
Serial	Requirement
1	
2	

Environmental Assessment Sign-off/Approval	Name	Signature	Date

Safety and Airspace Regulation Group

Environmental Assessment completed by:			26 Mar 2018
Environmental Assessment approved by:			14/02/2019

Approver - Environment Comments: Despite the date of K Coffin signature she did review the recent addition of the ETSES (on 26th Oct 2018), it did however change her original assessment as the hold is FL090+.