

Safety and Airspace Regulation Group

Page 1 of 10

Airspace Change Proposal - Environmental Assessment

Version: 1.0/ 2016

Title of Airspace Change Proposal	Doncaster Airport SIDs & IAPs
Change Sponsor	Doncaster Sheffield Airport
SARG Project Leader	[REDACTED]
Case Study commencement date	
Case Study report as at	30 August 18
File Reference	ACP-2016-19

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 10

Airspace Change Proposal - Environmental Assessment

Version: 1.0/ 2016

1.	Introduction	
	<p>Doncaster Sheffield Airport (DSA) proposes the introduction of area Navigation (RNAV) Standard Instrument Departure (SID) procedures and RNAV Instrument Approach Procedures (IAPs) designed in accordance with current Civil Aviation Authority (CAA) policies. The adoption of the departure procedures (SIDs) requires an additional portion of controlled airspace for procedure containment to the east of DSA.</p> <p>This ACP, triggered by the withdrawal of the GAM VOR, is a proposal by DSA to replace the existing conventional SIDs and the outdated PDRs with RNAV-1 (GNSS) SID procedures designed to provide controlled airspace linkage for aircraft departing from DSA to enter the en-route ATS route network.</p> <p>The Gamston VOR on which all existing SIDS and Preferred Departure Routes is predicated, is being removed as part of a National rationalisation programme. To ensure the continuation of operations at the airport it is necessary to replace the existing departure procedures with procedures not reliant on this Nav Aid. The proposed SIDS will be designed to meet modern Performance based Navigation (or PBN) procedures aligned to the UK's Future air Navigation Strategy the new SIDS will be based on Global Navigation Satellite Systems (or GNSS) with a navigational standard of RNAV 1. An Omni Directional Departure procedure will be implemented for each runway to accommodate those aircraft unable to fly using GNSS based procedures. The sponsor has confirmed that they only anticipate the ODD's being used approximately 3 times per month.</p> <p>To accommodate the extremely unlikely event that the Instrument Landing system Fails, DSA also propose to introduce RNAV Instrument Approach Procedures (or RNAV IAPs). The ILS will remain the primary means of instrument approach it is proposed that the Noise Preferential Routings (NPRs) be amended to be coincident with the proposed departure profiles.</p> <p>The proposal also intends to introduce a suite of RNAV Instrument Approach Procedures (or IAPs) to complement the existing ILS procedures.</p> <p>DSA proposes to replace these five procedures with five RNAV-1 SIDs. The proposed SID procedures are:</p> <ul style="list-style-type: none">• UPTON 2A to replace UPTON 1A;• UPTON 2B to replace UPTON 1B;• UPTON 2C to replace UPTON 1C;• ROGAG 1A to replace the ROGAG 20 South PDR; and	

Safety and Airspace Regulation Group

	<ul style="list-style-type: none"> • ROGAG 1B to replace the ROGAG 02 PDR <p>It became evident, during stakeholder consultation that aircraft do not follow the current SIDs or Preferred Departure Routes as they were designed. Whilst there are differences in the ways in which procedures have been interpreted there is consistency in the way in which they have been flown. This includes the case for the UPTON 2B from which aircraft are vectored having reached a suitable altitude without flying the full procedure, a practice that is expected to continue exactly as it does today in the proposed airspace scenario. Full replication of the existing departures was proven to be not entirely possible due to a variety of factors, including design incompatibility with the PDRs which did not align with PANS-OPS criteria. A balance was sought between that which was previously designed versus that which is currently flown. Introduction of a speed restriction on the proposed turn overhead Crowle is anticipated to minimise any potential ballooning that could otherwise occur on this procedure. For the departures, a balance was found between what was previously designed and what was flown. The final approach track of the proposed RNAV IAPs replicates that of the existing ILS procedures. There is little expected change to how aircraft will track over the ground when flying the RNAV IAP resulting in minimal change to the impact on the environment.</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
	The proposal is consistent with guidance to the CAA provided in the form of the Air Navigation Guidance 2014, however the Air Navigation Guidance 2017 (under consultation) is incorrectly referenced in the Consultation document.	

3.	Rationale for the Proposed Change	Status
3.1	Does the rationale for the ACP include environmental reasons?	Yes
	The proposal seeks to minimize communities affected by aviation noise.	
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

Safety and Airspace Regulation Group

	The RNAV IAPs replicate the existing ILS procedures while seeking to upgrade them to RNAV procedures in line with the Future Airspace Strategy. The proposal does not seek any changes to the Airspace configuration surrounding the airport beyond what is necessary to support the new procedures.	
4.2	Have alternative options been considered, and have the environmental impact of each alternative been assessed?	Yes
	<p>Three alternative options were considered as part of this ACP: Do Nothing, Replicate, and Redesign:</p> <ul style="list-style-type: none"> • Do Nothing – this option is not available because the navigational aid that the current procedures rely upon is being withdrawn by NATS Services Ltd; or • Replicate – this option was considered the most viable as the entry and exit points to the existing route network will remain extant and the controlled airspace configuration to the west was designed around the procedures that exist today; or • Redesign – given the existing controlled airspace configuration to the west and the airspace activities to be considered to the east, there was very limited scope for designing procedures radically differently from how they are today. It was considered that the opportunity to deliver significant environmental or operational benefits from the complete redesign of the procedures was minimal without total redesign of the associated airspace. 	

5.	Noise	Status
5.1	Has the noise impact been adequately assessed?	Yes
	Leq (16hr) Contours, (including forecast contours) and SEL footprints are provided in the consultation and proposal documents.	
5.2	Has the noise impact been adequately presented in the consultation and the submitted proposal?	Yes
	Leq contours produced for current situation, situation immediately following the change and the situation in five years following the change. Contours are considered from 51dBA to 72 dBA. 72 dBA is not required or presented in the material however is merely used as a sensitivity assessment. SEL footprints are presented for the Boeing 737-800 for both 2017 and 2023 as this is both the most frequent and noisiest aircraft predicted to operate from Doncaster Sheffield for these two scenarios. SEL's are presented for 80dB(A) and 90 dB(A) levels in accordance with guidance. The change to Omni Directional Departures is not expected to have any impact on the noise environment as aircraft will rarely use the procedures. Whilst there is now a proposed speed restriction on the UPTON 2B SID at CNN26,	

Safety and Airspace Regulation Group

which could potentially cause a ballooning to the outside of the turn, the procedure was only used 10 times in the whole of 2018 and the frequency of use is not intended to increase. Also, aircraft on the UPTON SID will behave as they do today, being vectored by ATC prior to reaching point UPTON.
Population within the footprint areas for each changing SID has been calculated and presented again in accordance with the guidance.

6.	Emissions	Status
6.1	Has the impact on CO₂ emissions been adequately assessed?	Yes
	An ERCD assessment of CO ₂ emissions was undertaken for the changing routes UPTON 1A (U1A) and UPTON 1C (U1C), and the Planned Departure Routes ROGAG 02 (R02) and ROGAG 20 South (R20S). UPTON 2B was omitted from consideration as it is a SID that was rarely used in the assessment year, 2016. The average runway split over this period for departure movements was 67% RWY 20 / 33% RWY 02 , this was used in the modelling.	
6.2	Has the impact on CO₂ emissions impact been adequately presented in the consultation and the submitted proposal?	Yes
	An explanation of the modelling undertaken is provided in an annex to the consultation document, along with the predicted changes to track distances flown, fuel burnt and CO ₂ emitted are provided. There is a track distance increase to the proposed SIDs when compared to the current procedures which results in a forecast net increase in annual CO ₂ e of 13.4 tonnes.	

7.	Local Air Quality	Status
7.1	Has the impact on Local Air Quality been adequately assessed?	Yes
	No assessment required by the CAA of Local Air quality as neither the airport nor the surrounding airspace lies within an Air Quality Management Area.	
7.2	Has the impact on Local Air Quality been adequately presented in the consultation and the submitted proposal?	Yes
	An explanation of the rationale why no assessment has been undertaken is presented in the consultation document. The CAA agreed no assessment was required.	

Safety and Airspace Regulation Group

8.	Tranquillity	Status
8.1	Has the impact on tranquillity been adequately considered?	Yes
	Yes, the orientation and location of flight paths relative to AONB's SSSI's and National Parks has been considered for changes to airspace below 7000 feet. The conclusion of this consideration being that while a slightly greater portion of a SSSI will be overflowed by one route this was necessary to avoid overflight of a population centre.	
8.2	Has the impact on tranquillity been adequately presented in the consultation and the submitted proposal?	Yes
	Both the assessment made and resulting impact of the changes on tranquillity is adequately explained and presented in the consultation document	
9.	Visual Intrusion	Status
9.1	Has the impact of visual intrusion been adequately considered?	Yes
	Both the assessments made and resulting impact of the changes on visual intrusion are adequately explained and presented in the consultation document	
9.2	Has the impact of visual intrusion been adequately presented in the consultation and the submitted proposal?	Yes
	Both the assessments made and resulting impact of the changes on visual intrusion are adequately explained and presented in the consultation document, however the impact on communities was given greater weighting than visual intrusion impact in the design of the routes this is explained in the Proposal document.	
10.	Biodiversity	Status
10.1	Has the impact upon biodiversity been adequately considered?	Yes
	The impact on biodiversity has been considered, however as in this case changes to airspace are considered unlikely to impact on biodiversity	
10.2	Has the impact upon biodiversity been adequately presented in the consultation and the submitted proposal?	Yes

Safety and Airspace Regulation Group

The impact on biodiversity has been considered and presented however as in this case changes to airspace are considered unlikely to impact on biodiversity.

11.	Continuous Descent Approaches	Status
11.1	Has the implementation of, or greater use of, CDAs been considered?	Yes
<p>The proposed RNAV procedures result in increased predictability and consistency in that they allow pilots to plan a more continuous descent profile by informing them of the distance to touchdown and any level/speed restrictions that are in place.</p>		

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
<p>No National Parks, AONB's or SSSI's are likely to be impacted by this change.</p>		

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
<p>Traffic forecasts were provided for 2017 for use to examine the existing and proposed airspace arrangements and for 2023.</p>		

14.	Consultation	Status
14.1	If undertaken, has evidence of non-aviation stakeholder consultation been provided?	Yes
<p>According to the Stakeholder consultation report, Non-aviation stakeholders targeted included representatives from County, District, Borough, and Town and Parish Councils from areas that are likely to be impacted by the change. Environmental organisations were also invited to respond to the consultation, as were Members of Parliament (MPs). The Airports Consultative Committee (ACC) was also contacted for response.</p>		

Safety and Airspace Regulation Group

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
	<p>Yes, respondents from Tickhill, Dunsville, Stainton Langold, and Graingley on the Hill. In each of these cases the current routes and proposed routes were compared in accordance with the objections received. The sponsor acknowledged these concerns but provided rationale as to why they do not believe them to be in issue, mainly because in most cases there is no significant difference between the proposed SID design and the existing design. In some circumstances (e.g. Tickhill) the community should see an improvement against the current SID. The consultation material did state that proposed departure routes have been matched to those currently in operation as far as possible, with minor modifications where necessary, or where a benefit to the community can be achieved.</p>	
15.	Compliance with CAP 725	Status
15.1	Have all environmental assessment requirements specified in CAP 725 been met, where applicable?	Yes
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
17.	Recommendations	Status
17.1	Are there any recommendations for the Post-Implementation Review?	Yes
	<p>In addition to any requirements placed on the sponsor as part of the decision letter, the Sponsor is advised to monitor traffic levels against the forecast used to promulgate the new procedures (and produce the Leq noise contours). The sponsor should continue to monitor for ILS failures (in accordance with established KPI's)</p> <p>The sponsor is also advised to monitor for any changes to standard vectoring/self positioning procedures and CDA achievement rates post implementation.</p>	

Safety and Airspace Regulation Group

--	--	--

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

19.	Conclusions	
19.1	Can an overall environmental benefit be demonstrated (or justified/supported)?	No
	<p>Some benefit (in both noise and emissions terms) should be accrued through the increased predictability of the track taken by the aircraft on the approach through increased uptake of Continuous Descent Operations (or CDO's). However, it is not possible to predict this benefit accurately. Previous analysis has shown that a typical non-CDO has approximately 5 NM of level flight at altitudes from 3,000 to 6,000 feet compared to a perfect CDO, results in noise increases of up to 2.5 to 5 dB, over distances from touchdown of 10 to 20nm. (ICAO Doc 9931) It is not possible, as stated in the consultation document, to predict the precise tracks of aircraft using the RNAV IAPs due to the RNAV IAPS not having a normal T or Y bar extension.</p>	

Outstanding Issues		
Serial	Issue	Action Required
1		
2		

Additional Compliance Requirements (to be satisfied by Change Sponsor)

Safety and Airspace Regulation Group

Serial	Requirement
1	
2	

Environmental Assessment Sign-off/Approval	Name	Signature	Date
Environmental Assessment completed by:	[Redacted]	[Redacted]	2019
Environmental Assessment approved by:	[Redacted]	[Redacted]	13/11/2019
Approver - Environment Comments: No further Comment			