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Title of Airspace Change Proposal	Proposal to Introduce RNAV IAPs to Runway 03 at London Biggin Hill Airport (LBHA)
Change Sponsor	Regional Airports Ltd
SARG Project Leader	
Case Study commencement date	22/05/2020
Case Study report as at	20/10/2020
File Reference	ACP-2013-08

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.

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1. Introduction This proposal is about the introduction of new Instrument Approach Procedure (IAP) to Runway 03 at London Biggin Hill Airport (LBHA) to enable bad weather operations to be conducted safely and efficiently and provide a full instrument approach capability for suitably equipped aircraft, together to provide a measure of protection to aircraft carrying out instrument approaches at LBHA. The Airport has developed and is attracting increasing numbers of modern corporate aircraft types and it is now appropriate to establish an instrument approach capability in order to enable all-weather operations to be conducted safely and efficiently. The introduction of the new procedure will provide a full instrument approach capability to Runway 03 which does not currently exist. The current IAPs require that when Runway 03 is in use, aircraft must make an approach to Runway 21 followed by a visual circling manoeuvre to reposition onto the final approach to land on Runway 03. The sponsor describes this in their documentation as: "Instead, aircraft must carry out an IAP to Runway 21 (ILS/DME or VOR/DME) until breaking out of cloud and then carry out a visual circling manoeuvre, retaining visual contact with the runway and configuring the aircraft for landing, to land on Runway 03. (This is known as a Circling Approach.)" The sponsor has stated the objectives of the proposal as being: To provide a viable IAP which facilitates all-weather operations to Runway 03; • To provide operating minima substantially better than that provided by a Circling Approach to Runway 03 following an instrument approach to Runway 21; If practicable, provide a Precision Approach capability for suitably equipped aircraft; • To enable effective integration with extant Air Traffic Management operations and IFPs within the LTMA and, where applicable, adjacent controlled airspace with the minimum of additional ATC workload or disruption to extant operations to and from adjacent airports/aerodromes (including Redhill and Kenley); • To contain arriving aircraft within controlled airspace to the maximum extent practicable; • To be compatible with the contracted surveillance ATS provided to LBHA by NATS, or a modification of it: • To reflect, as far as practicable within the overriding airspace and operational safety requirements, the DfT guidance on environmental objectives: • To minimise, to the maximum extent practicable, the environmental impact of IFR flights inbound to LBHA Runway 03 on local communities: • To be designed in accordance with the procedure design criteria detailed in ICAO PANS-OPS for RNAV IAPs and to utilise any flexibility

afforded by PANSOPS to optimise the procedure design to reflect the performance of modern aircraft types or for environmental

• To be safely and consistently flyable by any of the aircraft types likely to use the procedure to access LBHA from the LTMA.

improvement:

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2.	Guidance to the CAA	Status	
2.1	Is the proposal consistent with Government policy and/or guidance from Government to the CAA?	Yes	
	Guidance issued to the Civil Aviation Authority¹ sets out a framework for the environmental objectives that the CAA must assessing airspace change proposals. In addition to these objectives, there may be other legitimate operational objectives overriding need to maintain an acceptable level of air safety, the desire for sustainable development or to enhance the overathe UK airspace network, which need to be considered alongside these environmental objectives. The Government looks determine the most appropriate balance between these competing characteristics. Guidance suggests that the assessment of the environmental characteristics of airspace changes is to be carried out in according the altitude based priorities as set out in the guidance; those being that: Between 0 and 1,000ft the emphasis is on reducing the impact on local air quality, (where legal limits are at risk of being breat Between 1,000ft and 4,000ft the emphasis should be on limiting the exposure of the population to noise, and between 4,000ft whilst noise remains a priority it should be balanced against the need to not disproportionately affect fuel burn and emissions. Where changes affect the airspace above 7,000ft the priority is promotion of the most efficient use of the airspace, minimising	s, such as the all efficiency of to the CAA to dance with ched), and 7,000ft	
	The procedures requested to be changed here relate to airspace from ground level up to an altitude of 2100ft. Therefore in act the published Air Navigation Guidance and the altitude based priorities therein, noise and local air quality are the priorities consideration. Population data has been used to assess the noise impacts of the proposal, using the noisiest and most frequent aircraft types noise assessment undertaken on behalf of the sponsor. This is in keeping with the requirements of government Policy, although data used to provide population was simply stated as CACI data, the timeliness of the data remains unquoted. The only Air Quality management area declared by the local authority is located some 4.2 Miles to the North West of the airp position of the changes proposed and the fact that the dominant wind direction in England is from the South West, the AQMA be impacted by the change.	the priority areas for aft types as part of the v, although the source the airport. Given the	

3.	Rationale for the Proposed Change	Status
3.1	Does the rationale for the ACP include environmental reasons?	No

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¹ DfT, Guidance to the Civil Aviation Authority on Environmental Objectives Relating to the Exercise of its Air Navigation Functions, January 2014

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No, the ACP is stated by the sponsor as intending to future-proof the airport, while also acting as a back-up to the ILS in the event of ILS failure. However, to support LBHA's developments the Airport's management has undertaken to reduce environmental impacts on the Airport's local populace to the maximum extent practical. Details of the consultation, results obtained and the Airport management's very public commitment to improving the environment in the locale; that included:

A defined noise limit (half that originally envisaged by the council in 1997)

Online Flight tracking and noise monitoring

Noise measures reviewed every 5 years

Tighter controls on light aircraft

Raising arrival and departures to keep aircraft higher wherever possible

4.	Is it clear how the proposed change will operate, and therefore what the likely environmental impacts will be?	Status
4.1	The subject of this proposal is: the introduction of an IAP that will provide an instrument approach capability to Runway 03 which does not currently exist. This will enable all-weather operations to be conducted safely and efficiently when the weather conditions dictate that Runway 03 is in use and reflects the enhanced navigation capabilities of the generation of business aircraft currently operating at LBHA. The current IAPs for LBHA require that, when Runway 03 is in use, an aircraft must carry out an instrument approach to Runway 21 followed by a visual circling manoeuvre to reposition onto the final approach to land on Runway 03.	Yes
4.2	Have alternative options been considered, and have the environmental impact of each alternative been assessed?	Yes
	Yes, according to the summary table submitted for the development of the IAPs (contained as table 6.1 in the original ACP do following options were considered:	cument) the
	 Do Nothing Replicate Visual Manoeuvring flight path (left or right – hand circuit) RNAV right handed circuit IAP from ALKIN LBHA inbounds to runway 03 integrated into LGW Runway 08 approach sequence before breaking off (approximately) 	6NM from

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- 5b. RNAV (GNSS) LNAV Non-Precision IAP from downwind leg, left-handed circuit (as specified in item 4 above)
- 5c. RNAV_(GNSS) LNAV Non-Precision IAP from downwind leg, left hand circuit (as specified in item 4 above) with adjusted intermediate Approach Segment

The headline considerations made of the proposed procedure are detailed by the sponsor as:

- Interactions with LGW operations
- · Retaining aircraft inside controlled airspace; and
- A number of more specific considerations and decisions taken in relation to the alignment of the proposed procedure in relation to key features, such as roads and conurbations all of which are detailed in the remainder of Document 02 of the ACP submission.

Following on from these considerations there followed quantified environmental assessments such as noise exposure levels - SEL - in the Purley/Coulsden area, the results of which are published in the consultation document.

5.	Noise	Status	
5.1	Has the noise impact been adequately assessed?	Yes	
	The sponsor has publicly stated noise as an objective as part of their overall airport environmental program: To minimise the environmental impact of aircraft and the airport operation through a continuous process of proactive measure monitoring; for the purposes of supporting this change proposal, a noise study was commissioned with consultants Bickerdike study included: daytime Leq contours and also Sound Exposure Level (or SEL) footprints for the noisiest and most frequent a using the airport. CACI population data was then used to provide population counts within the footprints and contours generat to quantifying the areas enclosed by the same.	Bickerdike Allen. This frequent aircraft types	
	These steps are in keeping with the requirements as set out in CAA CAP725, and the accompanying Air Navigation Guidance.		
5.2	Has the noise impact been adequately presented in the consultation and the submitted proposal?	Yes	
	Noise information has been supplied including 16-hour Leq contour areas within the main consultation document from 57dB(A) to 63dB(A). The 51dB(A) contour plot has been reproduced in a separate document: (Document reference: CL-5220-DOC-021 V1.0.) The FAA's Integrated Noise Model (or INM) was used to produce the contours, it should be noted that INM, a historic FAA tool has now been		

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superseded by AEDT. Included in the noise assessment is detail on LEq (16hr) Noise Contours at a 57dB level for 2014 (the last complete calendar year for the ACP), forecast contours for 2020 and a "new 57dB(A) Maximum Limit" contour. SEL footprints have also been produced at the 80 and 90 dB(A) levels for the current situation and proposed situation, using the same model and these too are presented as part of Document CL-5220-DOC-21 V1.0 this is again in keeping with the requirements of CAP725.

The areas for the SEL footprints along with associated CACI population data is presented all of which is acceptable as part of a sponsor's submission under CAA CAP725.

Has the impact on CO₂ emissions been adequately assessed?				
	Yes			
CAP725 requires CO ₂ to be assessed and presented based on • An estimation of the mass of fuel burned and, therefore, CO ₂ emitted for the different options considered;				
 An estimation of the current situation; An estimation of the proposed airspace change scenario (based on current traffic levels); and An estimation of the situation after five years of growth following the proposed change. 				
		Biggin Hill Airport analysed Fuel burn and CO2 based on a representative mix of 12 frequent visiting aircraft types (based on traffic) These calculations were based intentionally on "worst case" track distance scenarios for each individual aircraft type. provided by the sponsor to evidence the maximum likely CO2 Impact for the current Day (2016) and the future considered scenarios.	e" track distance scenarios for each individual aircraft type. Data is	
		A high-level assessment of the fuel burn and emissions impact of this proposal is given in the consultation document, explaining hincreased efficiency balances against a slightly longer track.		
Has the impact on CO₂ emissions impact been adequately presented in the consultation and the submitted proposal?	Yes			
Data is provided on greenhouse gas emissions as Greenhouse gas emissions in kg CO _{2e,} for each approach procedure and a aircraft type based on 2016 aircraft data. The sponsor argues that it is not possible to provide annual totals either for the imp year or the forecast position 5 years after implementation. Those reasons being:				
The perceived lack of linear growth in forecast traffic,				
 The perceived uncertainty around the proportion of traffic that elect to use the IAP, 				
The lack of certainty around runway in use, and,				
	 An estimation of the mass of fuel burned and, therefore, CO₂ emitted for the different options considered; An estimation of the current situation; An estimation of the proposed airspace change scenario (based on current traffic levels); and An estimation of the situation after five years of growth following the proposed change. Biggin Hill Airport analysed Fuel burn and CO2 based on a representative mix of 12 frequent visiting aircraft types (based on traffic) These calculations were based intentionally on "worst case" track distance scenarios for each individual aircraft type. provided by the sponsor to evidence the maximum likely CO2 Impact for the current Day (2016) and the future considered so A high-level assessment of the fuel burn and emissions impact of this proposal is given in the consultation document, explain increased efficiency balances against a slightly longer track. Has the impact on CO₂ emissions impact been adequately presented in the consultation and the submitted proposal? Data is provided on greenhouse gas emissions as Greenhouse gas emissions in kg CO_{2e} for each approach procedure and a aircraft type based on 2016 aircraft data. The sponsor argues that it is not possible to provide annual totals either for the important of the forecast position 5 years after implementation. Those reasons being: The perceived lack of linear growth in forecast traffic, The perceived uncertainty around the proportion of traffic that elect to use the IAP, 			

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 Contradictory evidence produced through marginally different mechanisms used to produce fuel burn evidence for different types of operation at the airport.

While these points are all noted, it is believed the sponsor could have provided estimated annual totals caveated with required conditions.

7.	Local Air Quality	Status
7.1	Has the impact on Local Air Quality been adequately assessed?	Yes
	The sponsor states in their consultation document in response to Air Quality is that there are no changes affecting flight paths which are contained within circa 3NM of Biggin Hill Airport. The closest AQMA is located 3.4 miles to the North East of the air the predominant wind direction in the UK emanating from the South West, it is unlikely that the changes proposed would impered by the second of the AQMA.	rfield. With
7.2	Has the impact on Local Air Quality been adequately presented in the consultation and the submitted proposal?	No
	The only mention of Air Quality in the consultation document is a statement that says that there are no proposed changes at 0 1,000ft within a 3nm radius of Biggin Hill airport. The closest point to the airfield that is classified as an Air Quality Management Area is approximately 3.4 miles to the North W airport. The predominant wind direction in the UK is from the South West, on a ratio of approximately 70:30 reducing the likel AQMA being affected by the changes proposed accordingly.	Vest of the

8.	Tranquillity	Status
8.1	Has the impact on tranquility been adequately considered?	Yes
	The DfT's guidance to the CAA (DfT, 2014 – paragraph 8.4) requires CAA whenever practicable and in line with the altitude-bein the Guidance, to take into account the concept of tranquillity when making decisions regarding airspace below 7,000 feet (a CPRE has defined tranquillity as 'the quality of calm experienced in places with mainly natural features and activities, free from manmade ones' it is accepted therefore that tranquillity is linked to enjoyment of quiet outside areas. CAP725 offered very little guidance on assessing the concept of tranquillity stating instead that there is no universally accepted statement that remains true to this day. It is generally accepted that the concept of tranquillity relates to both noise and visual Sponsors have successfully managed to demonstrate tranquillity impacts acceptably using a combination of operational diagranoise assessment detail. The sponsor in this case has attempted to quantify tranquillity effects qualitatively and provided both	amsl) m disturbance ed metric a l intrusion. rams and

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diagrams, and noise data (as noise contours and footprints) which, if taken together, can be considered to provide an illustration of the tranquillity impact of the change.

The sponsor reports in their consultation document that they have assessed visual intrusion and tranquillity, and provide qualitative statements relating to the congested situation (both in terms of the airspace and the local area) within which Biggin Hill operates, given the above statements which also remain true, this degree of consideration is acceptable as the statements made remain to be the case. The sponsor correctly states that the proposed changes are not expected to affect any AONB's, and then goes on to consider SSSI's that lie below and adjacent to the proposed IAP.

1. Has the impact on tranquility been adequately presented in the consultation and the submitted proposal?

The sponsor reports on the expected impact on tranquility in relation to both AONB's and SSSI's, putting the operations proposed into the context of the pre-existing airspace construct and operation. The sponsor also provides qualitative descriptions of differences stakeholders might observe to the traffic patterns in the area.

9.	Visual Intrusion	Status
9.1	Has the impact of visual intrusion been adequately considered?	No
	In terms of visual intrusion, the sponsor acknowledges that recognised analysis techniques are not best suited to aircraft uses. Howev whilst this is true, it is felt that the approach taken by many sponsors and accepted by the CAA of providing at least a qualitative assessment of any differences in how aircraft movements might be perceived, would have been useful, and could have been relatively easily achieved. CAP725 states on the subject of tranquillity & visual intrusion: Change Sponsors may use the techniques described ur operations diagrams to communicate to consultees how the airspace will be used.	
9.2	Has the impact of visual intrusion been adequately presented in the consultation and the submitted proposal?	No
	The sponsor has not made any material attempt to analyse visual intrusion impacts, however it is understood that this ACP is least in part to resolve issues raised about the fact that currently 100% of aircraft using the airport are when approaching Run required to make a downwind instrument approach to Runway 21, followed by a visual circling manoeuvre to land on runway modus operandi has the unfortunate effect of ensuring that 100% of all arrivals operating under Instrument Flight Rules (IFR) same ground features and conurbations without the dispersion usually generated when a reciprocal runway is in use. Therefore inevitable that some disturbance and visual intrusion will be perceived to occur as a result of this proposal. That this is the car reflected in the change proposal documentation.	way 03 03. This overfly the ore, it seems

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10.	Biodiversity	Status
10.1	Has the impact upon biodiversity been adequately considered?	Yes
	The sponsor has assessed Biodiversity through reference to SSSI's in the locality of where the change is proposed. These sites reportedly include those where breeding birds assemble, however as the sponsor also acknowledges these sites are already and will continue to be overflown by aircraft operating in Class G (uncontrolled) airspace, and that the effects of the proposed changes are unlit to be distinguishable from those operations taking place in the class G airspace, all aspects of which remain unpredictable.	
10.2	Has the impact upon biodiversity been adequately presented in the consultation and the submitted proposal?	Yes
	The sponsors assessment of Biodiversity is contained within the consultation document associated with this proposal, the as based on SSSI's in the vicinity of the change whereas CAP725 talks of AONB's and National Parks, however this is acceptal are no AONB's or National Parks likely to be affected.	

11.	Continuous Descent Approaches	Status
11.1	Has the implementation of, or greater use of, CDAs been considered?	Yes
	The sponsor states that:- the application of Continuous Descent Approaches was considered however that it was not possible incorporate them to any greater extent than they were already present, due to the complexity of the existing route structure ar requirement for the safe integration of traffic flows and IFPs in the TMA.	

12	.	Impacts Upon National Parks and/or AONBs	Status
12.		Does the proposed change have an impact upon any National Parks or Areas of Outstanding Natural Beauty (AONBs)?	No
		No, National Parks are located close to this proposed change, the nearest AONB to this proposal is the Surrey Hills AONB whapproximately 16 Miles to the South West of the Airport.	nich is located

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

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Version 2 of the EIA supplement was updated by the sponsor to explicitly include traffic forecast information in relation to the emissions and fuel burn elements of the assessment, at the request of the Regulator. Traffic forecast information in the updated version was provided for a five-year forecast based on the baseline year of 2016. In addition to this, the sponsor confirmed that the airspace change proposal "...is not being introduced as a means to generate traffic growth over and above that which has already been approved for LBHA"

14.	Consultation	Status
14.1	If undertaken, has evidence of non-aviation stakeholder consultation been provided?	Yes
	Within the consultation document details of all consultees consulted with, was provided; This included details of both aviation aviation stakeholders: County, Borough, District, Town, Village and Parish Councils over whose areas of interest the propose lay. Certain national environmental organisations were also included, together with appropriate Members of Parliament.	
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
	It is noted that a total of 36 responses were received to the consultation, the sponsor identified key themes from those responsals an "interactions document" was developed by the sponsor that detailed the operational interactions involved in the proposition sponsor stated these interactions would be subject to further work by the sponsor. It is stated in that; "A number of issues, be operational and an environmental nature, were raised by the responses to the Consultation. These issues will need to be additionable to the proposal can be progressed to a formal ACP to be submitted. It should also be noted that a subsequent second round of consultation was undertaken by the sponsor, The following environmental issues were raised by consultees in response to Biggin's proposal:	sal. The oth of an dressed and
	 More aircraft will directly overfly the Coulsdon area - not currently overflown. Increased noise exposure to high population density; Spurious arguments regarding high ambient noise levels; Lack of consideration of other routes; Benefits to other communities outweighed by disbenefits to Coulsdon residents. No justification documented for chosen route over other routes. 	

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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
	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?	
	Ongoing monitoring of use of the IAP to measure against the forecast traffic, mix and volume and track compliance, in prepar Implementation Review assessments.	ation for Post

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?		
	Airspace change proposals can be 'called in' if they: are considered to be of strategic national importance (in brief) where, it is that a proposed airspace change could prevent the successful delivery of ongoing future airspace changes that could increase capacity as agreed in that National Policy Statement (NPS), or		
	Where a change could have a National Security impact, or		
	Where the change could impact on the UK's Industrial strategy as it relates to space ports where a proposal establishe airspace, or airspace zones specifically linked to the UK policy on the safe use of drones in the UK.		

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• In order to assess this sponsor's must have submitted an assessment of whether the change could lead to a change in distribution of noise that results in 10,000 net increase in the number of people subjected to a noise level of at least 54dB(A)

Or,

the proposed change could result in any volume of airspace classified as Class G being reclassified as Class A, C, D or E

In this case the sponsor produced L(A)eq contours and associated population assessments for 57dB, 63dB, and 69dB. The maximum population contained in any of these contours was estimated by the sponsor to be 200 people in the 57dB contour (the largest contour) and the population density of the London Borough of Bromley is estimated (by the Borough authority) to be 4630 people. The contour would need to more than double in size in order to meet the 'call in' criteria.

19.	Conclusions	
19.1	Can an overall environmental benefit be demonstrated (or justified/supported)?	No

Outsta	Outstanding Issues		
Serial	Issue	Action Required	
1			
2			

Additional Compliance Requirements (to be satisfied by Change Sponsor)

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Serial	Requirement
1	
2	

Environmental Assessment Sign-off/Approval	Name	Signature	Date
Environmental Assessment completed by:			20/10/2020
Environmental Assessment approved by:			19/11/2020

Approver - Environment Comments: Points raised re tranquillity understood but agree that these do not prevent agreement to this annex.