

## Safety and Airspace Regulation Group

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Airspace Change Proposal - Operational Assessment

Version: 1.0/ 2016

<b>Title of Airspace Change Proposal</b>	Glasgow Prestwick RNAV SIDs and IAPs
<b>Change Sponsor</b>	Glasgow Prestwick Airport
<b>SARG Project Leader</b>	[REDACTED]
<b>Case Study commencement date</b>	02/03/2018
<b>Case Study report as at</b>	25/11/2018
<b>File Reference</b>	

### 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  not resolved  not compliant  as part of the AR Project Leader's efficient project management.

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1.	Justification for change and “Option Analysis”	Status
1.1	<p><b>Is the explanation of the proposed change clear and understood?</b></p> <p>The proposed change is explained in the proposal document (received in October 2017) as well as setting out the current situation. More recently (November 2018) The sponsor has provided a letter modifying the proposal only in respect of adding a proposal to amend the designators for three existing STARs which terminate at the TRN VOR. The need for this modification to the designators was identified during the IFP assessment. My recommendation is that this modification does not necessitate a re-consultation on the main proposal.</p>	YES
1.2	<p><b>Are the reasons for the change stated and acceptable?</b></p> <p>The proposal clearly sets out the justification for the proposal, the removal of the Turnberry VOR and New Galloway NDB as part of the VOR rationalisation project. The airport’s current departure procedures are based on these navigation aids and once they are removed, the airport will require new procedures to enable aircraft to arrive into and depart from the airport. The airport is also taking the opportunity to introduce RNP APCH Instrument Approach Procedures which replicate and complement the current ILS and SRA procedures and associated RNAV arrival transitions. These procedures will allow for training on RNAV approaches and as redundancy for the conventional procedures.</p> <p>The reason for the change in name for the STARs is required as the extant naming convention causes both the STARs and the arrival transition designators to be TRN. The proposed change to the STARs is in line with current policy to name STARs after their start point rather than the end point. The STARs themselves remain unchanged.</p>	YES
1.3	<p><b>Have all appropriate alternative options been considered, including the ‘do nothing’ option?</b></p> <p>The sponsor has detailed the options that were considered as part of the proposal as well as the design principles which led to the options being considered or not, in section 6 of the proposal document. The do nothing option was also considered.</p>	YES
1.4	<p><b>Is the justification for the selection of the proposed option sound and acceptable?</b></p> <p>The justification for the selected option is acceptable and based on the design principles set out by the sponsor which aim to replicate where appropriate within design criteria restrictions but to also take advantage of operational improvements and environmental improvements in noise and emissions if possible.</p>	YES
2.	Airspace Description and Operational Arrangements	Status
2.1	<p><b>Is the type of proposed airspace clearly stated and understood?</b></p>	N/A

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	There is no proposal to amend the dimensions or classification of controlled airspace.	
2.2	<b>Are the hours of operation of the airspace and any seasonal variations stated and acceptable?</b>	N/A
	There is no proposal to amend the hours of operation.	
2.3	<b>Is any interaction with adjacent domestic and international airspace structures stated and acceptable including an explanation of how connectivity is to be achieved? Has the agreement of adjacent States been secured in respect of High Seas airspace changes?</b>	YES
	The proposed procedures will interface with Scottish TMA airspace controlled by NATS Prestwick Centre. The proposal details how connectivity to the en route network will be achieved through IAPs from the ends of the STARs and link routes from the end of the SIDs. The link routes will provide connectivity to Y96, T256 and N560. NATS Prestwick Centre have prepared for and are planning on the deployment of the Prestwick ACP, subject to approval.	
2.4	<b>Is the supporting statistical evidence relevant and acceptable?</b>	YES
	The proposal provides detail on traffic forecasts and route usage as well as runway split information and Leq (dBA) data. It details the relatively low number of movements at the airport.	
2.5	<b>Is the analysis of the impact of the traffic mix on complexity and workload of operations complete and satisfactory?</b>	YES
	There will be no impact of traffic mix on complexity and workload of operations as the traffic mix will remain unchanged.	
2.6	<b>Are any draft Letters of Agreement and/ or Memoranda of Understanding included and, if so, do they contain the commitments to resolve ATS procedures (ATSD) and airspace management requirements?</b>	YES
	All extant LoAs will remain in place, which ensure current airspace management requirements are met, as well as those of the proposed changes.	
2.7	<b>Should there be any other aviation activity (low flying, gliding, parachuting, microlight site etc) in the vicinity of the new airspace structure and no suitable operating agreements or ATC Procedures can be devised, what action has the sponsor carried out to resolve any conflicting interests?</b>	N/A
2.8	<b>Is the evidence that the Airspace Design is compliant with ICAO SARPs, Airspace Design &amp; FUA regulations, and Eurocontrol Guidance satisfactory?</b>	YES

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	The proposed change is to the IFPs within controlled airspace associated with Glasgow Prestwick Airport and those procedures will be assessed by the IFP Regulator before implementation. There was an outstanding issue regarding the disconnect between the STARs ending at a hold at FL70 and the arrival transitions commencing at not below 6,000'. This issue will be resolved in the final IFP submission.	
2.9	<b>Is the proposed airspace classification stated and justification for that classification acceptable?</b>	<b>N/A</b>
	No proposed change to airspace classification.	
2.10	<b>Within the constraints of safety and efficiency, does the airspace classification permit access to as many classes of user as practicable?</b>	<b>YES</b>
	No change to airspace classification.	
2.11	<b>Is there assurance, as far as practicable, against unauthorised incursions? (This is usually done through the classification and promulgation)</b>	<b>N/A</b>
	No change to airspace classification or promulgation.	
2.12	<b>Is there a commitment to allow access to all airspace users seeking a transit through controlled airspace as per the classification, or in the event of such a request being denied, a service around the affected area?</b>	<b>YES</b>
	No change to airspace classification or access arrangements.	
2.13	<b>Are appropriate arrangements for transiting aircraft in place in accordance with stated commitments?</b>	<b>YES</b>
2.14	<b>Are any airspace user group's requirements not met?</b>	<b>YES</b>
	In the consultation, the BGA responded to indicate that the Class D airspace around Prestwick Airport is a barrier to gliding activity and requested that the procedures be as steep as possible to minimise the amount of controlled airspace. Prestwick have designed their procedures in accordance with PANS-OPS criteria and have not proposed any changes to the lateral and vertical extent of controlled airspace. The BGA also responded that due to the relatively low volume of traffic, the CAS should be reclassified as Class E + RMZ or conspicuity. The airport has not proposed to change the classification of any of the CAS around the airport.	
2.15	<b>Is any delegation of ATS justified and acceptable? (If yes, refer to Delegated ATS Procedure).</b>	<b>N/A</b>



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<b>2.16</b>	<b>Is the airspace structure of sufficient dimensions with regard to expected aircraft navigation performance and manoeuvrability to contain horizontal and vertical flight activity (including holding patterns) and associated protected areas in both radar and non-radar environments?</b>	<b>YES</b>
	No change to airspace structure. Procedures have been designed to be wholly contained within the extant controlled airspace.	
<b>2.17</b>	<b>Have all safety buffer requirements (or mitigation of these) been identified and described satisfactorily (to be in accordance with the agreed parameters or show acceptable mitigation)? (Refer to buffer policy letter).</b>	<b>N/A</b>
<b>2.18</b>	<b>Do ATC procedures ensure the maintenance of prescribed separation between traffic inside a new airspace structure and traffic within existing adjacent or other new airspace structures?</b>	<b>YES</b>
	ATC procedures have been agreed between Prestwick, Glasgow and Prestwick Centre to ensure separation of aircraft within adjacent airspace structures. An issue has been identified where the TRN SIDs terminate at TRN at 6,000' and the missed approach for some of the IAPs also contain a hold at TRN at 6,000'. Confirmation from CAA ATM has been received that they are content that the process is in place to develop the procedures necessary to mitigate the issue.	
<b>2.19</b>	<b>Is the airspace structure designed to ensure that adequate and appropriate terrain clearance can be readily applied within and adjacent to the proposed airspace?</b>	<b>YES</b>
	No changes are proposed to the vertical or lateral limits of CAS and the proposed IFPs have been designed to be contained within the existing CAS.	
<b>2.20</b>	<b>If the new structure lies close to another airspace structure or overlaps an associated airspace structure, have appropriate operating arrangements been agreed?</b>	<b>YES</b>
<b>2.21</b>	<b>Where terminal and en-route structures adjoin, is the effective integration of departure and arrival routes achieved?</b>	<b>YES</b>
	The departure and arrival procedures have been simulated and found to integrate effectively to the en route network.	
<b>3.</b>	<b>Supporting Resources and CNS Infrastructure</b>	<b>Status</b>

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3.1	<b>Is the evidence of supporting CNS infrastructure together with availability and contingency procedures complete and acceptable? The following are to be satisfied:</b>	
	<ul style="list-style-type: none"> <li>▪ <b>Communication:</b> Is the evidence of communications infrastructure including RT coverage together with availability and contingency procedures complete and acceptable? Has this frequency been agreed with AAA Infrastructure?</li> </ul>	<b>YES</b>
	No change to current operations	
	<ul style="list-style-type: none"> <li>▪ <b>Navigation:</b> Is there sufficient accurate navigational guidance based on in-line VOR or NDB or by approved RNAV derived sources, to contain the aircraft within the route to the published RNP value in accordance with ICAO/ Eurocontrol Standards? Eg. Nav aids – has coverage assessment been made eg. a DEMETER report, and if so, is it satisfactory?</li> </ul>	<b>YES</b>
	RNAV1 DME/DME coverage is shown to be sufficient in Ref 24 – RNAV1 Navigation Assessment Report	
	<ul style="list-style-type: none"> <li>▪ <b>Surveillance:</b> Radar Provision – have radar diagrams been provided, and do they show that the ATS route / airspace structure can be supported?</li> </ul>	<b>YES</b>
	No change to current operations	
3.2	<b>Where appropriate, are there any indications of the resources to be applied, or a commitment to provide them, in line with current forecast traffic growths acceptable?</b>	<b>N/A</b>

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4.	Maps/Charts/Diagrams	Status
4.1	<p>Is a diagram of the proposed airspace included in the proposal, clearly showing the dimensions and WGS84 coordinates?                      (We would expect sponsors to include clear maps and diagrams of the proposed airspace structure(s) – they do not have to accord with AC&amp;D aeronautical cartographical standards (see CAP725), rather they should be clear and unambiguous and reflect precisely the narrative descriptions of the proposals. AC&amp;D work would relate to regulatory consultation charts only).</p>	YES
4.2	<p>Do the charts clearly indicate the proposed airspace change?</p> <p>The proposed routes are clearly indicated on charts in Figures 1 and 2 of the proposal document.</p>	YES
4.3	<p>Has the Change Sponsor identified AIP pages affected by the Change Proposal and provided a draft amendment?</p> <p>Appendix A lists the proposed amendments to the AIP</p>	YES

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5.	Operational Impact	Status
5.1	<p><b>Is the Change Sponsor's analysis of the impact of the change on all airspace users, airfields and traffic levels, and evidence of mitigation of the effects of the change on any of these, complete and satisfactory?</b>  <b>Consideration should be given to:</b>  <b>a) Impact on IFR GAT, on OAT or on VFR general aviation traffic flow in or through the area.</b></p>	YES
	<p>There will be no impact on GAT, OAT or VFR general aviation from the proposal other than to ensure IFR operations from the airport due to the introduction of RNAV SIDs to replace the conventional SIDs which will no longer be available following the removal of relevant nav aids, as a result of the NATS VOR Rationalisation programme.</p>	
	<p><b>b) Impact on VFR Routes.</b></p>	N/A
	<p>There will be no impact on VFR Routes. LoAs with local flying, model aircraft and drone clubs will remain unchanged.</p>	
	<p><b>c) Consequential effects on procedures and capacity, ie on SIDS, STARS, holds. Details of existing or planned routes and holds.</b></p>	YES
	<p>The proposal will ensure that IFR traffic can continue to depart from the airport using SIDs. Current STARS which terminate at TRN will be renamed as BLACA, APPLE and RIBEL to ensure that there is no confusion between STARS and arrival transitions. NERL have agreed to review the STARS within six months of the decision. This will be conducted in accordance with the IFP review process.</p>	
	<p><b>d) Impact on Airfields and other specific activities within or adjacent to the proposed airspace.</b></p>	NO
	<p>There will need to be continued engagement between Prestwick airport and Glasgow airport to ensure that procedures agreed between the airports and Prestwick Centre support the proposed procedures. The ATS inspector for the airport sees no issues with the proposal and the procedures required.                      Military search and rescue helicopter flights operate regularly from the airport and this will continue. All extant LoAs with military stakeholders will remain unchanged.</p>	
	<p><b>e) Any flight planning restrictions and/ or route requirements.</b></p>	N/A
5.2	<p><b>Does the Change Sponsor Consultation letter reflect the likely operational impact of the change?</b></p>	YES
	<p>See Consultation Assessment</p>	



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<b>6.</b>	<b>Economic Impact</b>	<b>Status</b>
6.1	<p><b>Is a provisional economic impact assessment to all categories of operations and users likely to be affected by the change included and acceptable? (This may include any forecast capacity gains and the cost of any resultant additional track mileage).</b></p> <p>No economic appraisal has been made for the proposal as the proposal will not directly lead to any change in economic activity at the aerodrome, other than to be able to continue to allow aircraft to depart using the new RNAV SIDs or ODDs once the relevant Nav aids have been removed from service.</p>	<b>NO</b>

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Case Study Conclusions – To be completed by SARG Project Leader	Yes/No
<b>Has the Change Sponsor met the SARG Airspace Change Proposal requirements and Airspace Regulatory requirements above?</b>	<b>YES</b>
<p>The change sponsor has met the regulatory requirements and has a strong justification for the need for new departure procedures. The sponsor has considered several options for both the departure and arrival procedures and the proposed new RNAV procedures balance both the operational and environmental impacts, while maintaining a high level of safety.</p>	

Outstanding Issues		
Serial	Issue	Action Required
1	IFP approval	IFP approval
2		

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

Recommendations	Yes/No
<b>Is the approval of the SoS for Transport required in respect of the Environmental Impact of the airspace change?</b>	<b>NO</b>

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**Is the approval of the MoD required in respect of National Security issues surrounding the airspace change?**

**NO**



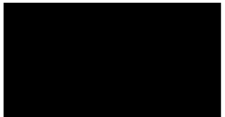

**General Summary**



Glasgow Prestwick Airport need to introduce departure procedures which do not rely on the navigation aids being removed as part of NATS VOR rationalisation programme. For departing aircraft, the airport has proposed RNAV1 SIDs and for those aircraft not RNAV equipped, the airport has also proposed ODDs. The airport has also taken the opportunity to introduce RNP APCH IAPs to complement their existing ILS and SRAs (although the new procedure for runway 21 will become the primary approach - runway 21 is rarely used with an average of one approach per week) as well as arrival transitions from the end of the extant STARs.

**Comments & Observations**



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<b>Operational Assessment Sign-off/ Approvals</b>	<b>Name</b>	<b>Signature</b>	<b>Date</b>
<b>Operational Assessment completed by:</b>	 AR Case Officer		25 Nov 18
<b>Operational Assessment approved:</b>			26 Nov 18
Mgr AR Comments:			

<b>Hd AAA Comment/ Approvals</b>	<b>Name</b>	<b>Signature</b>	<b>Date</b>
<b>Operational Assessment Conclusions approved:</b>			28 Nov 18
<p>Hd AAA Comments:</p> <p><b>This ACP has been proposed by Prestwick in response to the removal of conventional nav aids that supported the existing departure and arrival published procedures.</b></p> <p><b>The CAA's airspace change process has been followed correctly.</b></p>			

**My colleagues have assessed that the proposal is one that broadly replicates existing SIDs and STARS with GNSS within the existing dimensions and classification of CAS, and there is anticipated to be very little change for all affected parties in respect of aircraft tracks or noise if this proposal is implemented.**

**Although the proposal included no change to the CAS aspect of the current airspace design one consultation response suggested that the existing CAS classification be amended from class D to class E + TMZ:**

**I note that the CAA has power to approve a proposal for a change to airspace design *with modifications*. I have considered whether to do so in this case.**

**I have decided not to recommend that the CAA modify the proposal to class E + TMZ in this case before approving it for the following reasons:**

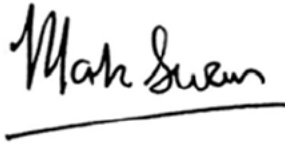
- **CAA has given no indication throughout the development by Prestwick of this ACP that Prestwick should consider whether the existing CAS can safely be amended to Class E + TMZ**
- **Therefore, neither Prestwick nor any other stakeholder has had an opportunity to consider the impact of making that modification to the proposal**
- **If the CAA were to consider modifying the airspace from class D to class E + TMZ before approving the proposal the CAA would have to give consideration to whether this proposal should be re-consulted upon. Due to the transition procedures laid down by the Secretary of State in moving from ANG 2014 to ANG 2017 (and correspondingly from CAA airspace change process CAP 725 to CAP 1616) re-consultation would result in Prestwick having to start this ACP again on CAP 1616.**
- **This airspace change is time critical as the conventional navigation aids supporting the current published procedures are being switched off. A delay to more thoroughly consider the safety implications of such a modification would mean the change being put back by 2 years.**

**I therefore recommend that that this proposal be approved, without modification to airspace classification.**

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**Nonetheless, I note that the government is considering whether the CAA should have specific powers and obligations to review all such pieces of airspace over the next few years, and seek to amend the classification to accommodate more flexible access utilising Electronic Conspicuity for all as the rationale to create broader swathes of a “known environment”.**

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GD SARG Decision/ Approval	Name	Signature	Date
GD SARG Decision:  Approved	Mark Swan GD SARG		29 Nov 18
GD SARG Comments: I too note the BGA point about Class E TMZ and whilst accepting the logic above for making no change, want us to reappraise this aspect of the Change if the appropriate powers become available to the CAA.			