

Safety and Airspace Regulation Group

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Airspace Change Proposal - Operational Assessment

Version: 1.0/ 2016

Title of Airspace Change Proposal	Doncaster SIDs and IAPs
Change Sponsor	Doncaster Sheffield Airport
SARG Project Leader	[REDACTED]
Case Study commencement date	04 Aug 2018
Case Study report as at	21 November 2019
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  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>Is the explanation of the proposed change clear and understood?</p> <p>The documentation sets out clearly the proposal for new RNAV Standard Instrument Departures (SIDs), Omni-directional Departures (ODDs) for non-RNAV capable aircraft and RNAV Instrument Approach Procedures (IAPs). The updated proposal following the sponsor’s additional targeted consultation, now includes an additional CTA to Class E + TMZ/RMZ, while still proposing to lower the base of L60 and L603 to FL125 (Class A).</p>	YES
1.2	<p>Are the reasons for the change stated and acceptable?</p> <p>The proposal for the new departure procedures (and controlled airspace to contain them) is due to the proposed removal of the GAM VOR on which the existing departure procedures rely. The proposed RNAV approach procedures are for an alternative precision approach as redundancy for the extant ILS, as the current alternatives are NDB approaches. It is proposed that the ILS will remain the primary precision approach to both runway ends.</p>	YES
1.3	<p>Have all appropriate alternative options been considered, including the ‘do nothing’ option?</p> <p>The sponsor has considered several alternative options including the “do nothing” option in relation to the procedures and the airspace. The sponsor examined various options for redesigning the procedures to best replicate the procedures as they are today, but design criteria and airspace constraints meant that options for placement of SIDs was limited.</p> <p>Some responses to the engagement and consultation suggested that departure routes for aircraft departing to the east (ROGAG SIDs) could be contained within existing controlled airspace (CAS) – utilising a circling climb. This is potentially the case but would not be the best balance between operational efficiency (flight time), fuel burn (CO2, cost) and access to airspace or aligned with any best practice.</p> <p>The sponsor undertook an additional consultation solely on the classification of the additional CTA with options considered including Class D, Class E, and Class E in addition to TMZ and/or RMZ.</p>	YES
1.4	<p>Is the justification for the selection of the proposed option sound and acceptable?</p> <p>The justification for the selection of the proposed IFPs is sound and incorporates feedback that the sponsor received from the consultation. There was an issue with the SIDs proposed in the original proposal as some did not match the procedures that were consulted upon and one was not airspace contained in accordance with the CAA’s containment policy. The sponsor has since provided additional designs which was submitted to the CAA on 28 January 2019. These procedures are airspace contained but the speeds are different from those consulted upon at some of the waypoints. The SID designs have gone through several iterations since they were originally submitted as part of the proposal but are consistent with what has been consulted upon. The sponsor has undertaken some additional engagement activity with operators based at the aerodrome to gather feedback regarding the procedures as they are now different to those proposed in the consultation. The operators highlighted that the speed restrictions were</p>	YES

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	<p>fuel inefficient and would cause them to potentially fly with flaps extended at lower speeds than ideal for some considerable distance. While this is the case, the designs should also provide noise benefits to local communities by concentrating traffic over areas of low population. Given the Government's current environmental priority given to minimising noise at low altitudes as opposed to CO2 (fuel burn), this is a fair balance for the sponsor to make.</p> <p>The sponsor has indicated that the opportunity to redesign the departure procedures to be radically different from today was limited in scope due to the airspace configuration to the west and the airspace activities to the east.</p> <p>The original proposal for CTA 13 was for it to be Class D. The amended proposal following the sponsor's addendum consultation is for CTA 13 to be Class E + TMZ/RMZ. This reflects a better balance between the low use of the airspace by both CAT and GA aircraft, as it allows for autonomous operations by GA with a transponder and radio, as well as the potential for access arrangements through promulgated procedures or an LoA, if required, for non-transponder/non-radio equipped aircraft.</p> <p>The proposal of the ODDs as an option for those aircraft is a sound solution for the small number of aircraft unable to utilise the RNAV SIDs.</p> <p>The selected designs of the IAPs are acceptable as these are intended as redundancy for the ILS and broadly replicate where aircraft fly currently.</p>
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	Airspace Description and Operational Arrangements	Status
2.1	<p>Is the type of proposed airspace clearly stated and understood?</p> <p>Following an addendum consultation, the sponsor has amended the proposal so that the additional CTA is now proposed as Class E + TMZ/RMZ as opposed to Class D. The sponsor also proposes lowering a portion of the airspace below L60/L603/Y70 to FL125 as Class A</p>	YES
2.2	<p>Are the hours of operation of the airspace and any seasonal variations stated and acceptable?</p>	N/A
2.3	<p>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?</p> <p>The proposed SIDs join the enroute network at points which have been agreed with NERL and where the current departure procedures join the network.</p>	YES

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2.4	Is the supporting statistical evidence relevant and acceptable?	YES
	<p>The ACP does not provide numbers of aircraft that will use each route, but there is data in the Noise Assessment (Document 31), which provides percentage distribution by runway and departure route as well as a total number of aircraft over the summer period 2017. The document states that RWY 02 is used 33% of the time and RWY 20 67% of the time. The ROGAG departure is used 40% of the time from RWY 02 and 48% of the time from RWY 20. The ROGAG departure from RWY 02 is used by 13.2% of total traffic (40% of 33%), and the ROGAG departure from RWY 20 is used by 32.16% of total traffic (48% of 67%). This means that 45.36% of total traffic will use the ROGAG departures. For the summer period in 2017 there were 7,061 arrival and departure movements during the daytime (0700-2300). The number of departures is not split out so for this assessment, I will use half of the movements as departures, so 3,531. ROGAG departures would therefore constitute 1,602 of the total departure movements. The period analysed was 16 June to 15 September inclusive which is 91 days. This would mean that over the period, approximately 17.6 flights per day 0700-2300, used the ROGAG departure. The airport anticipates that the number will increase by 2021 to 7,360 over the same period which would mean a total of 18.34 flights per day.</p> <p>It is likely to be even fewer ATMs, as the CAA stats for the months of June-September (inclusive), show that there were a total of 4,281 ATMs in that period. Using the same calculation method would indicate approximately 9 ATMs per day through the airspace. The ATM figures for 2018 are slightly lower still.</p> <p>On 4 February 2019, the sponsor provided some additional information regarding the number of aircraft movements anticipated through the proposed new airspace. The information provided indicated that during 2018, the average number of Doncaster Sheffield Airport flights through the area where additional controlled airspace is proposed was 6.35 per day.</p> <p>The sponsor has provided evidence of the use of the airspace by other airspace users who have a functioning transponder, and these figures show that approximately 7 aircraft per month use the airspace. Non-transponding aircraft, which currently will be the majority of glider would not be included in that analysis but the feedback in the consultation did not indicate frequent use.</p>	
2.5	Is the analysis of the impact of the traffic mix on complexity and workload of operations complete and satisfactory?	YES
2.6	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?	YES
	<p>Sponsor currently has a number of LoAs which have been reviewed as part of the proposal and is content that they do not need to be amended. A new LoA is required between the MoD and the sponsor regarding the reduction in the buffer around EG R313 (Red Arrows at Scampton). The Draft LoA submitted as part of this proposal details the coordination procedures to be applied between Doncaster Radar and Waddington ATC to allow for a reduced lateral buffer (2nm) from the boundary of EG R313. The LoA ensures that appropriate coordination takes place between each unit which may include the individual co-ordination of each flight on the ROGAG SIDs, depending on what activity is taking place in EG R313.</p>	

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	The relevant ATS Inspector is content that the ATC procedures and training proposed are suitable.	
2.7	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?	YES
	See 2.6 above	
2.8	Is the evidence that the Airspace Design is compliant with ICAO SARPs, Airspace Design & FUA regulations, and Eurocontrol Guidance satisfactory?	YES
	While the ROGAG SID designs have a nominal track within 3nm of the boundary of controlled airspace, the sponsor has undertaken a HAZID exercise and provided an ATS safety case which details how the ATS unit will mitigate the risks in accordance with the CAA's Containment Policy. The relevant ATS Inspector is content with the mitigations.	
2.9	Is the proposed airspace classification stated and justification for that classification acceptable?	YES
	<p>The original selection of Class D airspace for the additional CTA had been justified in Part B of the proposal as it <i>"delivers a known and managed (VFR and IFR) ATC environment that allows VFR access to RT-equipped aircraft in an organised and orderly manner once two-way communication with the operating authority is established"</i> and <i>"Logically, the presence of Class D airspace provides a safer environment for all airspace users than Class E"</i> because in Class E airspace, <i>"VFR aircraft may penetrate and transit without a clearance, or use of radio and without transponding. Essentially, they can be either invisible to ATC, impossible to contact or both and, in any case, are not compelled to comply with any instructions issued by ATC to facilitate the effective integration of flights."</i> (Para 2.14.10). The sponsor has provided evidence that a significant level of VFR traffic is provided with a clearance to enter the CAS associated with the airport.</p> <p>When discussing the possibility of Class E airspace plus additional tools such as a TMZ or listening squawk, in Part B of the original proposal, the sponsor stated <i>"ATC would be required to treat such aircraft as "unknown traffic" and apply the increased radar separation minima applicable and would only be able to endeavour to achieve the specified separation minima through vectoring the IFR (CAT) aircraft off the SID track. The ability for controllers to comply with the vectoring requirements of keeping aircraft 2NM within the boundary of controlled airspace (in accordance with CAP 493, Chapter 6, Section 13A.4) would be compromised and a commensurately larger volume of controlled airspace might be needed to enable compliance."</i> (Para 2.14.11)</p> <p>It may be the case that the volume of controlled airspace required would be different if the proposal were for Class E or Class E plus RMZ or TMZ, but if this permitted entry to the airspace without having to follow an air traffic control clearance, it would provide other airspace users, particularly gliders who often cannot fly in accordance with a clearance due to the way in which they fly, more equitable access to the airspace (provided there were also provisions in place to also allow entry to the airspace without a transponder). If the CTA were Class E + TMZ and the departing Doncaster traffic is</p>	

under radar control, the separation required is detailed in CAP 493 *“in Class E airspace radar returns, however presented, are not allowed to merge unless the pilot in receipt of traffic information advises that he intends to avoid the other aircraft without ATC assistance.”* (CAP 493, Section 1: Chapter 6: ATS Surveillance Systems, Para 10A.4(3)). Depending on a safety assessment made by the ANSP(s) providing ATS in that airspace, a different volume of airspace may be required.

The PIR for the introduction of CAS, which was completed in 2017, set out ARs current thinking on the airspace at Doncaster about future airspace strategy and this included reclassifying CTAs to Class E + TMZ and a listening squawk.

In the consultation feedback, representatives of the glider community highlighted the requirement to fly higher than FL85 (previously up to FL105) when utilising wave effect from the Pennines and the impact that Class D airspace would have on their ability to utilise the airspace. Given the figures in 2.4 of this assessment and the fact that the procedures can still be contained within Class E airspace, it would seem disproportionate to introduce Class D airspace, despite it being normally notified in the UK for CTRs and CTAs (CAA Policy Statement on The Application of ICAO Airspace Classifications in UK Flight Information Regions). Class E + TMZ would contain the procedures in controlled airspace and provide other aircraft the ability to use the airspace without an air traffic control clearance. For aircraft without transponders, specific arrangements could be agreed with the Controlling Authority for access when required.

The sponsor reconsidered their proposal for Class D airspace and undertook an addendum consultation specifically regarding the classification. The sponsor has changed the proposed classification of CTA 13 to Class E + TMZ/RMZ which provides for a better balance of access to the airspace for suitably equipped aircraft. While a TMZ/RMZ provides a way for aircraft to enter CTA 13 without an air traffic control clearance, concern was expressed by some stakeholders that requiring a transponder to enter the volume of controlled airspace would be even more restrictive than the originally proposed Class D, due to the additional challenges of equipping a transponder. The CAA’s Policy for Radio Mandatory Zones and Transponder Mandatory Zones provides the following guidance for operation of non-transponder aircraft in TMZs:

- An aircraft flying within a TMZ without a serviceable transponder is to be flown in accordance with any alternative provisions promulgated for that TMZ or agreed with the Controlling Authority. Prior to entry a pilot must communicate their requirement to the Controlling Authority, alerting them to their presence and intentions, and obtain specific agreement to operate within the TMZ.
- Pilots of aircraft which are neither non-transponder nor non-radio equipped must contact the Controlling Authority by the most appropriate means in order to seek Controlling Authority agreement to operate within the TMZ.
- Prevailing traffic conditions may preclude TMZ Controlling Authority agreement to non-transponder aircraft (or an aircraft with a non-functioning transponder) to operate within a TMZ.

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	<p>As such, I would recommend that the sponsor is required to promulgate alternative provisions for operations in the TMZ/RMZ for non-transponder and non-radio equipped aircraft, in order to maximise the potential access for all airspace users. On 20 November 2019, the sponsor provided an undertaking to the CAA to promulgate its provisions for access to the airspace through an AIC, 28 days before implementation, if approved. These included provisions for non-transponder and non-radio equipped aircraft.</p> <p>The Classification of the proposed airspace as anything other than Class G, will mean that a glider pilot's ability to fly close to/within cloud utilising a sailplane cloud flying rating is restricted.</p> <p>The proposal to lower the portion of L60/603 to provide additional Class A airspace above FL125 (and become part of the Lincolnshire CTA through an associated ACP) would be appropriate as it would not have an impact on gliding in the area - stakeholders consultation feedback indicated that changes above FL100 would not currently impact them. This would also simplify the airspace structure in the region and continue to contain the procedures.</p>	
2.10	Within the constraints of safety and efficiency, does the airspace classification permit access to as many classes of user as practicable?	YES
	<p>See above, access by other airspace users was more restricted than is necessary given the traffic levels in the original proposal.</p> <p>Following the sponsor's addendum consultation, the sponsor has changed the proposed classification of CTA 13 to Class E + TMZ/RMZ which provides for a better balance of access to the airspace for suitably equipped aircraft, but I recommend that the sponsor also promulgate alternative provisions for operations in the TMZ/RMZ for non-transponder and non-radio equipped aircraft, in order to maximise the potential access for all airspace users. On 20 November 2019, the sponsor provided an undertaking to the CAA to promulgate its provisions for access to the airspace through an AIC, 28 days before implementation, if approved. These included provisions for non-transponder and non-radio equipped aircraft.</p>	
2.11	Is there assurance, as far as practicable, against unauthorised incursions? (This is usually done through the classification and promulgation)	YES
	<p>New airspace structures will be charted on relevant VFR charts as well as in the UK AIP. I recommend that the sponsor also promulgate alternative provisions for operations in the TMZ/RMZ for non-transponder and non-radio equipped aircraft, in order to maximise the potential access for all airspace users.</p>	
2.12	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?	YES

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	<p>The sponsor has committed to continue to provide access to airspace users as is the case today but the original classification proposed did not fully mitigate the impact on all airspace users.</p> <p>Following the sponsor's addendum consultation, the sponsor has changed the proposed classification of CTA 13 to Class E + TMZ/RMZ which provides for a better balance of access to the airspace for suitably equipped aircraft. Provided that the sponsor also promulgates alternative provisions for operations in the TMZ/RMZ for non-transponder and non-radio equipped aircraft, this is sufficient. On 20 November 2019, the sponsor provided an undertaking to the CAA to promulgate its provisions for access to the airspace through an AIC, 28 days before implementation, if approved. These included provisions for non-transponder and non-radio equipped aircraft.</p>	
2.13	Are appropriate arrangements for transiting aircraft in place in accordance with stated commitments?	YES
	<p>Provided that the sponsor also promulgates alternative provisions for operations in the TMZ/RMZ for non-transponder and non-radio equipped aircraft, this should be sufficient.</p>	
2.14	Are any airspace user group's requirements not met?	YES
	<p>Glider stakeholders identified the initially proposed Class D CTA as impacting their ability to use the airspace.</p> <p>Following the sponsor's addendum consultation, the sponsor has changed the proposed classification of CTA 13 to Class E + TMZ/RMZ which provides for a better balance of access to the airspace for suitably equipped aircraft. Provided that the sponsor also promulgates alternative provisions for operations in the TMZ for non-transponder and non-radio equipped aircraft, this is sufficient. On 20 November 2019, the sponsor provided an undertaking to the CAA to promulgate its provisions for access to the airspace through an AIC, 28 days before implementation, if approved. These included provisions for non-transponder and non-radio equipped aircraft.</p>	
2.15	Is any delegation of ATS justified and acceptable? (If yes, refer to Delegated ATS Procedure).	N/A
2.16	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?	YES

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	<p>The additional CTA provides protection to the SIDs as well as providing for some ability to vector traffic more directly, therefore reducing track mileage as well as fuel burn and emissions.</p> <p>The justification for the shape of the CTA-13 is to reduce the overall size of the CTA while still containing the vertical profile of the ROGAG SIDs. The design of the CTA provides for the minimum size of controlled airspace to provide a high standard of safety, which also gives controllers flexibility when vectoring traffic. The sponsor has provided mitigation to the placement of the SIDs closer than 3nm of the edge of controlled airspace through proposed ATC procedures. The dimensions of the airspace are sufficient to allow a controller to provide effective traffic information, given the very low-density IFR and VFR use of the airspace.</p>	
2.17	<p>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).</p>	YES
	<p>The sponsor has engaged effectively with the MoD regarding the buffer required for EG R313 to reduce the lateral limit of the buffer to 2nm from 5nm and will agree an LoA, which has been provided in draft, before the introduction of the airspace.</p>	
2.18	<p>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?</p>	YES
	<p>ATS Inspector is content with the arrangements as proposed for a Class E + TMZ/RMZ CTA, the LoA with RAF Waddington and for the lowering of L60/603.</p>	
2.19	<p>Is the airspace structure designed to ensure that adequate and appropriate terrain clearance can be readily applied within and adjacent to the proposed airspace?</p>	YES
2.20	<p>If the new structure lies close to another airspace structure or overlaps an associated airspace structure, have appropriate operating arrangements been agreed?</p>	YES
	<p>See 2.17</p>	
2.21	<p>Where terminal and en-route structures adjoin, is the effective integration of departure and arrival routes achieved?</p>	YES
	<p>Aircraft will continue to join the enroute network as they do today in agreement with NERL.</p>	

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3.	Supporting Resources and CNS Infrastructure	Status
3.1	<p>Is the evidence of supporting CNS infrastructure together with availability and contingency procedures complete and acceptable? The following are to be satisfied:</p> <ul style="list-style-type: none"> ▪ Communication: 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? <p>No change</p>	YES
	<ul style="list-style-type: none"> ▪ Navigation: 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. Navaids – has coverage assessment been made eg. a DEMETER report, and if so, is it satisfactory? <p>A DEMETER report has been provided. This will be approved by IFP.</p> <ul style="list-style-type: none"> ▪ Surveillance: Radar Provision – have radar diagrams been provided, and do they show that the ATS route / airspace structure can be supported? <p>Current radar provision provides coverage for all procedures.</p>	YES
3.2	<p>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?</p> <p>Growth is expected to be low, given the figures in Document 31. The sponsor has indicated that the “...contracted ANSP is, and will continue to be, adequately resourced, in line with forecast growth, to ensure that the airspace is not managed ‘by exclusion’” ie. that in order to manage the traffic, other traffic would not be refused entry into the airspace arbitrarily.</p>	N/A

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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&D aeronautical cartographical standards (see CAP725), rather they should be clear and unambiguous and reflect precisely the narrative descriptions of the proposals. AC&D work would relate to regulatory consultation charts only).</p>	YES
4.2	Do the charts clearly indicate the proposed airspace change?	YES
4.3	Has the Change Sponsor identified AIP pages affected by the Change Proposal and provided a draft amendment?	YES

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5.	Operational Impact	Status
5.1	<p>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? Consideration should be given to: a) Impact on IFR GAT, on OAT or on VFR general aviation traffic flow in or through the area.</p> <p>Glider stakeholders identified the originally proposed Class D CTA as impacting their ability to use the airspace due to the requirement to fly in accordance with a clearance; the sponsor has consistently indicated that it will continue to provide equitable access to the airspace. However, given the anticipated 6 CAT movements per day, and the fact that the procedures could be contained in Class E airspace, Class D airspace for CTR 13 is not considered appropriate.</p> <p>Following the sponsor’s addendum consultation, the sponsor has changed the proposed classification of CTA 13 to Class E + TMZ/RMZ which provides for a better balance of access to the airspace for suitably equipped aircraft, but I recommend that the sponsor also promulgate alternative provisions for operations in the TMZ/RMZ for non-transponder and non-radio equipped aircraft, in order to maximise the potential access for all airspace users. On 20 November 2019, the sponsor provided an undertaking to the CAA to promulgate its provisions for access to the airspace through an AIC, 28 days before implementation, if approved. These include provisions for non-transponder and non-radio equipped aircraft.</p> <p>The proposed classification will still impact glider operations in the area, but the impact is mitigated as suitably equipped aircraft can enter the airspace once two-way radio comms have been established; they do not need to obtain a clearance just announce their details on the RT and get a response from ATC. Provisions for non-equipped aircraft will also provide opportunity to utilise the airspace should the traffic situation allow (which should be the majority of the time, given the very low density of CAT traffic).</p>	YES
	b) Impact on VFR Routes.	N/A
	c) Consequential effects on procedures and capacity, i.e. on SIDS, STARS, holds. Details of existing or planned routes and holds.	YES
	The proposal is intended to introduce new and replace current SIDs to enable departures to continue once the GAM VOR is removed.	
	d) Impact on Airfields and other specific activities within or adjacent to the proposed airspace.	YES

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	e) Any flight planning restrictions and/ or route requirements.	N/A
5.2	Does the Change Sponsor Consultation letter reflect the likely operational impact of the change?	YES

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6.	Economic Impact	Status
6.1	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).	N/A

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Case Study Conclusions – To be completed by SARG Project Leader	Yes/No
<p>Has the Change Sponsor met the SARG Airspace Change Proposal requirements and Airspace Regulatory requirements above?</p>	<p>YES</p>
<p>The change to departures is driven by the current reliance on navigation aids which are going to be removed from service and the addition of RNAV IAPs which will be required in the future by legislation and provide resilience for the ILS.</p> <p>The change sponsor has designed departure procedures which best match the requirement to meet design criteria while minimising the number of new areas overflown. Where design criteria have permitted, the sponsor has designed procedures to reduce noise impact.</p> <p>The PIR for the introduction of CAS at Doncaster, which was completed in 2017, set out ARs current thinking on the airspace at Doncaster about future airspace strategy and this included reclassifying CTAs to Class E + TMZ and a listening squawk.</p> <p>The numbers of Doncaster departures utilising the airspace will be low and not forecast to grow much in the period to 2021.</p> <p>The sponsor had originally proposed that the additional CTA required to contain the procedures should be classified Class D, as that would be safer than Class E or Class E plus TMZ or RMZ because it would provide a known traffic environment. It would minimise controller workload and allow ATC to “...marshall aircraft safely and expeditiously in a coordinated manner through the airspace” (Part B, para 2.14.11) and may be required to be larger if it were Class E or Class E plus. The sponsor makes the point that the Doncaster departures utilising this airspace will be passenger carrying, commercial air transport flights and that ATC already provides equitable access to all of the airspace under its jurisdiction.</p> <p>Given that it is anticipated that at current traffic levels, approximately 6 Doncaster aircraft will pass through the proposed airspace <i>per day</i>, the proposal for Class D was considered disproportionate to the issue being resolved. The fact that a much lower number of non-Doncaster traffic will pass through the airspace means that a suitable balance needs to be found.</p> <p>Following an addendum consultation, the sponsor has changed the proposed classification of CTA 13 to Class E + TMZ/RMZ which provides for a better balance of access to the airspace for suitably equipped aircraft, but I recommend that the sponsor also promulgate alternative provisions for operations in the TMZ/RMZ for non-transponder and non-radio equipped aircraft, in order to maximise the potential access for all airspace users. The sponsor has engaged with operators and relevant ANSPs and has deemed the volume originally proposed as sufficient CAS having changed the proposed classification and I agree that the volume is sufficient given the low density of operations.</p> <p>The sponsor’s selected classification of Class E + TMZ/RMZ does not allow for completely unfettered access to the airspace for suitably equipped aircraft, as the RMZ element requires that two-way radio contact is established before entry into the airspace (unless following other promulgated procedures which would likely require contact with the controlling authority before the flight takes place). It does give the controlling authority more information on the intentions of any aircraft operating within the proposed CTA and also mitigates the possibility of an aircraft operating its transponder only as it enters the airspace, giving the controller less time to take effective traffic management actions, than if the proposal was for TMZ only. It will be important to monitor access arrangements as part of the PIR to confirm that the classification provides sufficient access to all airspace users.</p>	

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Outstanding Issues

Serial	Issue	Action Required
1		
2		
3		
4		

Additional Compliance Requirements (to be satisfied by Change Sponsor)

Serial	Requirement
1	Complete and sign LoA between the sponsor and RAF regarding R313.
2	Promulgate alternative provisions for operations in the TMZ/RMZ for non-transponder and non-radio equipped aircraft in CTA-13

Recommendations

	Yes/No
Is the approval of the SoS for Transport required in respect of the Environmental Impact of the airspace change?	NO
Is the approval of the MoD required in respect of National Security issues surrounding the airspace change?	NO

General Summary

The navigation aid that the current departure procedures at Doncaster Airport are predicated on is being withdrawn. The sponsor developed options in accordance with certain design principles. A formal consultation was undertaken in accordance with the requirements of CAP 725 and the sponsor selected a solution to the airspace issue identified, demonstrating that feedback received from the consultation was considered when deciding on their proposal. Subsequent to the submission of their proposal following advice from the CAA, the sponsor undertook an addendum consultation on the proposed classification of additional CAS and submitted an amended proposal.

Given that it is anticipated that at current traffic levels, approximately 6 aircraft will pass through the proposed CTA 13 per day, the initial proposal for an additional Class D CTA was disproportionate to the issue (containment of SIDs) given that the departing aircraft utilise Class G today. The final proposal of Class E+TMZ/RMZ is a better balance of access to the airspace for suitably equipped aircraft, but I recommend that the sponsor also promulgate alternative provisions for operations in the TMZ/RMZ for non-transponder and non-radio equipped aircraft, in order to maximise the potential access for all airspace users. On 20 November 2019, the sponsor provided an undertaking to the CAA to promulgate its provisions for access to the airspace through an AIC, 28 days before implementation, if approved. These included provisions for non-transponder and non-radio equipped aircraft.

While the addition of the Class E CTA increases the volume of controlled airspace in the area, the airspace is all above FL85. The sponsor provided analysis of transponder equipped aircraft in the proposed volume which indicated 58 movements in an 8-month period. These movements would all be able to utilise the volume of airspace without an ATC clearance provided they follow the procedures for entering the TMZ/RMZ. Other non-transponding aircraft may have been present but the consultation feedback indicated that the use of the airspace by such aircraft was likely to be low. These aircraft may also be able to utilise the Class E TMZ/RMZ if they follow the published procedures for entry. For these reasons, the proposed volume of airspace will not have a significant funneling effect on traffic in the area.

The departure procedures themselves take into consideration noise impact at lower altitudes with CO2 emissions at higher altitudes and given the final proposed classification of the proposed additional CTA, allow for balanced access to the airspace (provided alternative provisions for operations in the TMZ/RMZ for non-transponder and non-radio equipped aircraft are promulgated effectively).

Comments & Observations

Whilst not part of the original proposal, the CAA notes with some regret, that the sponsor did not take the opportunity to reconsider options for classification of the remaining CTAs (other than CTAs 1 and 2) as part of their consultation, in line with CAA opinion expressed in the Robin Hood Airport Doncaster Sheffield (RHADS) Post Implementation Review document, published 14 June 2017.

Safety and Airspace Regulation Group

Operational Assessment Sign-off/ Approvals	Name	Signature	Date
Operational Assessment completed by:	<div style="background-color: black; width: 100px; height: 15px; margin-bottom: 5px;"></div> AR Case Officer	<div style="background-color: black; width: 100%; height: 40px;"></div>	20 November 2019
Operational Assessment approved:	<div style="background-color: black; width: 100px; height: 15px; margin-bottom: 5px;"></div> Mgr AR	<div style="background-color: black; width: 100%; height: 40px;"></div>	13/11/2019

Mgr AR Comments: I recommend approval of Doncaster Airport's proposal given the overriding need to replace the conventional departure procedures with RNAV, in response to the removal of the GAM DVOR, and the introduction of an RNAV IAP for resilience in the event of an ILS failure. Doncaster have listened to their stakeholders and their addendum consultation has brought to the fore the conflicted points of view/wants and needs that often exist between Commercial Air Transport operators, ANSPs and some VFR General Aviation communities; consequently, Doncaster has sought a compromise position that is appropriate to expected usage by all stakeholders and facilitates all to some extent. Whilst Class E with TMZ and RMZ requires additional equipage over Class G, both a radio and transponder, it does enable continued 'clearance free' VFR access to the area concerned, accepting the additional requirement for the VFR traffic to 'make itself known' on the R/T before entry, whilst mitigating many of the difficulties and concerns CAT and ANSPs articulated during the consultation. This application of Class E, with addon conspicuity requirements, is subtly different (using of two requirements; TMZ&RMZ simultaneously) to other similar proposals, however this difference is supported by Doncaster's safety argument that the new CAS is to better protect relatively large Commercial Air Transport aircraft. Notwithstanding the safety argument, as noted above, the PIR will need to track this carefully, and compare/contrast with other applications where just one conspicuity requirement was used. Doncaster should also promulgate arrangements for non-radio and/or non-transponder aircraft ahead of the CAS's implementation and they have provided a written undertaking to the CAA to do this. I accept that a circling climb for departures to the East, as a potential means to avoiding any new CAS, is not appropriate. I regret that no wider attempt was made by Doncaster to review the classification of the extant CTAs but accept that this was not a part of the original proposal.

Hd AAA Comment/ Approvals	Name	Signature	Date
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Safety and Airspace Regulation Group

Operational Assessment Conclusions approved:

**Jon Round
Hd AAA**

21/11/2019

Hd AAA Comments: This proposal is approved. I echo the comments above that taken on its own this airspace change has made a compelling case for a proportionate change that creates a known environment to protect large commercial traffic from unknown traffic. I urge Doncaster to consider as a separate change the re classification of some or all of their Class D CTAs to reflect the alternative options involving class E airspace with additional mitigations such as TMZ and RMZ. Given the confidence that management has in the design and classification of the airspace change that is the subject of this decision, I hope this will be the catalyst for such an initiative. Any proposal would of course be subject to the applicable decision-making process.