Future Airspace Strategy Implementation South (FASI-S)

Bristol Airport

Gateway documentation:

Stage 2 Develop and Assess

Step 2A (ii) Design Principle Evaluation

Sign-Off

Action	Role	Date
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Issue	Date	Comments
Issue 1.0	28/01/2022	First issue submitted to the CAA
Issue 2.0	17/06/2022	Updated following CAA feedback with assessment consistencies removed

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Introduction

This document forms part of the document set required for the CAP1616 airspace change process:
Stage 2 Develop and Assess, Step 2A (ii) Design Principle Evaluation

Its purpose is to consider Bristol Airport Airspace Change Proposal's comprehensive list of airspace design options against its design principles, discarding those which fit least and progressing those which fit better. This document is designed to be read in conjunction with the document *Step 2A (i) Design Options* which describes and illustrates each of the design options, and also refers to a preceding document Step 1B Design Principles.

During Stage 2, we have re-engaged our representative stakeholder groups, recapped the airspace change process and design principles, and explained the fundamental concept of this proposal. We explained the design option constraints, and what was feasible within those constraints. We targeted our stakeholders for feedback relevant to their interests, which informed the construction of this document. We thank the stakeholders for this engagement.

The purpose of the Design Principle Evaluation is to qualitatively assess each design option (e.g., a departure route) against each of the Design Principles. The evidence is high level and based on feedback received from stakeholders and the evolving design work. This assessment states whether each Design Principle is not met, partially met, or fully met. The Design Principles can be found at the end of this document, in Annex A.

A "do nothing" option has also been included (and rejected) for comparison purposes.

During Stage 1B, each Design Principle was assigned a priority (A/B/C) to signify the importance of an airspace change meeting this principle i.e., DP1 (encompassing safety) was assigned the highest priority (A) as any airspace change must maintain or improve the current safety standards. As part of this Design Principle Evaluation, any design option that does not meet a Priority A Design Principle has been discounted and will not be taken forward. Design options mays progress if Design Principles of any priority are fully or partially met. This will allow improvements to be made during subsequent design work. The full RAG (Red/ Amber/ Green) criteria for this assessment can be found in Annex B at the end of this document.

Executive Summary

A total of 8 Hold and 40 Standard Instrument Departure (SID) (23 for Runway 09/ 17 for Runway 27) design options have been evaluated as part of this Design Principle Evaluation; alongside a "do nothing" option. Below is an overview of the design options which are being progressed and rejected; a total of 4 Hold and 13 SID design options have been rejected as part of this process.

Hold Options

- Hold A – progressed
- Hold B – progressed
- Hold C – progressed

- Hold D – rejected (safety/ policy/ operational capacity/ environmental criteria not met)
- Hold E – rejected (AMS/ operational capacity/ environmental criteria not met)
- Hold F – progressed
- Hold G – rejected (safety/ policy/ operational capacity/ environmental criteria not met)
- Hold H – rejected (safety/ policy/ operational capacity/ environmental criteria not met)

Runway 09 SID Options

- B09-1 - progressed
- B09-1A - progressed
- B09-1B - progressed
- B09-2 - progressed
- B09-2A - progressed
- B09-2B - progressed
- B09-3 – rejected (policy/ operational capacity/ environmental criteria not met)
- B09-3A – rejected (policy/ operational capacity/ environmental criteria not met)
- B09-3B – rejected (policy/ operational capacity/ environmental criteria not met)
- B09-4 – rejected (policy/ operational capacity/ environmental criteria not met)
- B09-4A – rejected (policy/ operational capacity/ environmental criteria not met)
- B09-5 – rejected (policy/ operational capacity/ environmental criteria not met)
- B09-5A – rejected (operational capacity criteria not met)
- B09-5B - progressed
- B09-5C - progressed
- B09-6 - progressed
- B09-6A - progressed
- B09-7 – rejected (policy/ environmental criteria not met)
- B09-7A - progressed
- B09-7B - progressed
- B09-7C - progressed
- B09-7D - progressed
- B09-8 – rejected (policy/ operational capacity criteria not met)

Runway 27 SID Options

- B27-1 – progressed
- B27-2 – progressed
- B27-3 – rejected (policy/ operational capacity criteria not met)
- B27-4 – rejected (policy/ operational capacity criteria not met)
- B27-5– progressed
- B27-5A– progressed
- B27-5B– progressed
- B27-6– progressed
- B27-6A – rejected (safety/ policy/ environmental criteria not met)

- B27-6B– progressed
- B27-7– progressed
- B27-7A– progressed
- B27-7B– progressed
- B27-7C– progressed
- B27-7D– progressed
- B27-7E– progressed
- B27-8 – rejected (policy/ operational capacity/ environmental criteria not met)

Bristol Airport has justified why design options have been discounted in the Design Principle Evaluation later on within this document. This is based on stakeholder feedback, design evolution and discussions that have occurred throughout. Upon commencing Stage 3, these individual design options will be integrated into complete airport "scenarios". As covered in our *Stage 2 - Step 2A (i) Design Options* document, which can also be found on the portal, we have started work on this next step. However, the different scenarios will not be analysed or refined further until starting Stage 3.

We acknowledge that the design options presented herein will likely have to evolve based on their combination with other procedures. Similarly, we are open to the situation whereby a design option has to be re-introduced if new feedback comes to light or issues are resolved when it is integrated with other options.

Noise Mitigation Design Principles

The following additional five "sub" Design Principles were included as noise mitigations, in support of the more general "noise-focussed" Design Principle (DP7).

At this point in the process, the design options are not mature enough to align against these specific noise mitigations. Therefore, these will be used during the future Stage 3 consultation to outline which of the final design options best meet each of the above applications of the Government guidance to minimise noise below 7,000ft. Where possible, the Design Principle Evaluation includes qualitative statements on likely noise impacts, under DP7.

Noise Mitigation Design Principle and Priority	Details
DP11) Minimise the number of people newly overflown *Priority c*	To avoid exposing people to aircraft noise who are currently not exposed
DP12) Maximise sharing through predictable respite routes *Priority b*	Operate multiple arrival and departure routes and alternate between these routes at different times of the day or days of the week. This would allow communities to have predictable periods of respite

DP13) Avoid overflying communities with multiple routes, including from other airports *Priority c*	Use the opportunity to work with other airports to find a solution for this.
DP14) Maximise sharing through managed dispersal *Priority c*	An alternative approach to maximising sharing is to spread routes over a wider area to share the impact of noise. This would mean each flight path was flown less frequently but a wider area would be affected by noise
DP15) Minimise the total population overflown *Priority b*	Concentrating aircraft along defined routes to minimise the total number of people exposed to aircraft noise.

Finally, within the Stage 2A Design Options document there was a description of a potential Point Merge procedure option for Bristol Airport. Several disbenefits - including operational complexity and substantial additional CAS required – were identified early on and decided that it would not be appropriate to progress this option. However, for completeness, a Design Principle Evaluation has been completed and can be found within Annex C of this document.

Bristol Airport Baseline Option (do nothing)

DP1: Safety Must maintain and where possible, enhance safety standards (Priority A) *Current safety standards maintained but not enhanced. No improvement from today's operation which has identified safety improvements through local study e.g., current Hold in the overhead.*	PARTIAL
DP2: Policy Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A) *CAP 1711 sets out objectives which a modernised UK airspace must deliver. These include better management of the airspace network, improving environmental performance and better management of noise. "Doing nothing" would not enable these objectives to be met.*	NOT MET
DP3: Regulation Must be compliant with all relevant laws and regulations (Priority A) *No known conflictions.*	MET
DP4: Technical Must maximise efficiency by using modern navigation technology (Priority A) *No change from today therefore no consideration of changing and future technology. This would also not remove the current dependency on outdated ground-based infrastructure.*	NOT MET
DP5: Operational Must provide sufficient capacity to support future demand (Priority A) *No changes to support future growth or known changes in traffic flows, including the updated en route network.*	NOT MET
DP6: Environmental Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A) *No change from today, no improvements introduced.*	PARTIAL
DP7: Environmental Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A) *No change from today, impacts of aircraft noise identical to today.*	PARTIAL
DP8: Operational Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B) *No change from today's operation. However, no interface with upcoming network changes therefore further work would be required which this option does not enable.*	NOT MET
DP9: Technical Should minimise impact on other airspace users (Priority B) *No change from today's operation which does have some impact on other airspace users. Opportunities to explore access improvements would also not be realised.*	PARTIAL
DP10: Technical Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B) *No changes to CAS or impact on adjacent aerodrome and airfields.*	MET

Bristol Airport Stage 2 Hold Options

This section summarises the Design Principle Evaluation for Bristol Airport's 8 Hold options. Figure 1 below shows the Hold options, those in black are being progressed and those in red have been rejected.

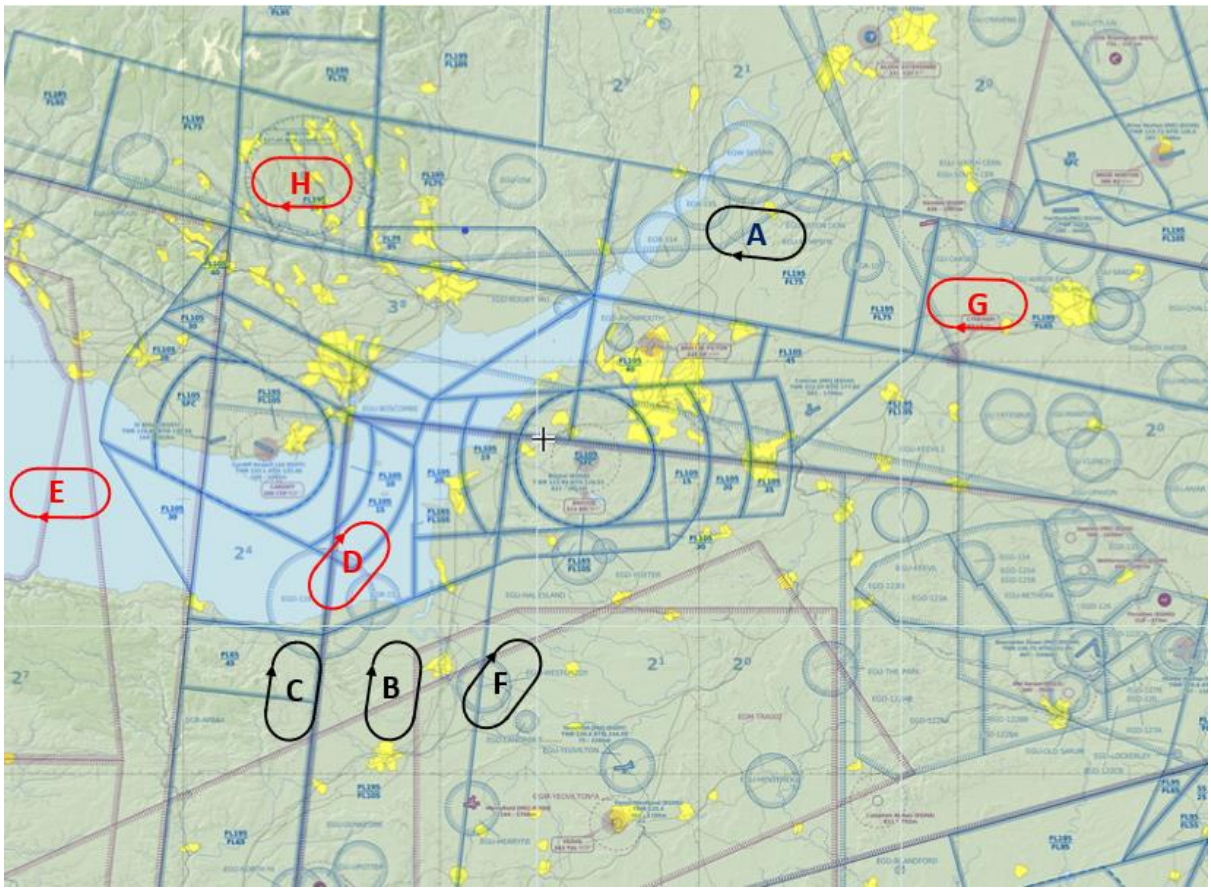


Figure 1: Bristol Airport Stage 2 Hold Options (black: progressed/ red: rejected)

As covered in our *Stage 2A – Step 2A (i) Design Options* document, Holds were rejected based on their specific location therefore indicative transition options were not progressed for these Hold options. Indicative transitions were developed for the Hold options which progress through this Design Principle evaluation as shown in Figure 2 below.

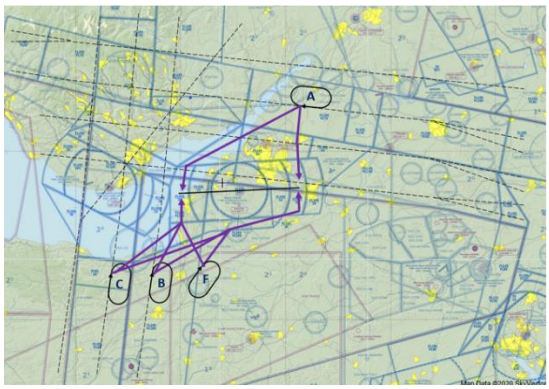
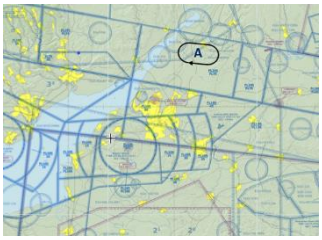


Figure 2: Progressed Holds with indicative transitions



Hold A (to the north-east of Bristol Airport) – PROGRESSED

DP1: Safety	PARTIAL
Must maintain and where possible, enhance safety standards (Priority A)	
No significant safety issues identified.	
DP2: Policy	MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Aligns with the AMS objectives.	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix. *Expectation that this could be separated from other Bristol procedures.*	
DP5: Operational	PARTIAL
Must provide sufficient capacity to support future demand (Priority A)	
Likely to be used by a large amount of inbound traffic. In close proximity to the airport therefore minimising any adverse impact of long transitions and operational timing for efficient sequencing. *However, would possibly struggle to obtain higher Hold levels due to busy network traffic.*	
DP6: Environmental	MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Close proximity to the airport and appropriate distance from touchdown (particularly for Runway 27 arrivals).	
DP7: Environmental	PARTIAL
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
The Hold itself is anticipated to be positioned above 7,000ft therefore no noise impact from its location. Small (new) population potentially impacted by transitions however, this could be mitigated from further design work. Therefore, this design option has the potential to slightly increase overall impacts of aircraft noise when compared to the baseline do-nothing.	
DP8: Operational	PARTIAL
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Good position for both Bristol runways. This Hold location could favour diversions in low visibility conditions. Well positioned for connectivity to the network. *There is a chance that the transition to Runway 27 may interact with Bristol departures to the east therefore further design work may be required.*	
DP9: Technical	PARTIAL
Should minimise impact on other airspace users (Priority B)	
The region of airspace to the North and East is known to be utilised by other airspace users including the military (Brize Norton and RAF Fairford) and Gloucester traffic. This design option could therefore have a minor negative impact on other airspace users.	
DP10: Technical	PARTIAL
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
CAS would likely require (minimal) lowering to the South of this Hold location for where transitions to Runway 27 will probably be positioned. Therefore, this design option would likely require a small increase to CAS when compared to the baseline do-nothing.	

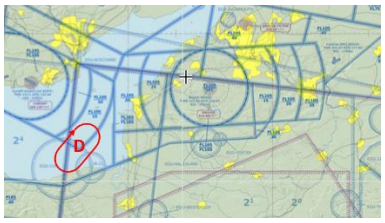
Hold B (to the south-west of Bristol Airport) – PROGRESSED

DP1: Safety	MET
Must maintain and where possible, enhance safety standards (Priority A)	
No significant safety issues identified.	
DP2: Policy	MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Aligns with the AMS objectives.	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix.	
DP5: Operational	MET
Must provide sufficient capacity to support future demand (Priority A)	
No known capacity constraints. *Likely to be used by a large amount of inbound traffic.*	
DP6: Environmental	MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Close proximity to the airport and appropriate distance from touchdown (particularly for Runway 09 arrivals). Fuel planning does not have to take into account additional track miles due to the location therefore no superfluous environmental impact.	
DP7: Environmental	MET
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
The Hold itself is anticipated to be positioned above 7,000ft therefore no noise impact from its location. Transitions would likely not overfly any large populations and the transitions to Runway 09 would take advantage of partially being positioned over water. This design option has the potential to reduce overall impacts of aircraft noise when compared to the baseline do-nothing.	
DP8: Operational	MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Geographically a good location for both Bristol Airport and NATS (en route traffic). *There is flexibility in the precise Hold placement and well positioned for connectivity to the network.* *The location of the Hold overlaps the airspace between Bristol and Cardiff (further development of management procedures needed).*	
DP9: Technical	PARTIAL
Should minimise impact on other airspace users (Priority B)	
Potential impact on a military training area in this region. This design option could therefore have a minor negative impact on other airspace users.	
DP10: Technical	PARTIAL
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Would require a small amount of new CAS (airway width not big enough) - more than Hold C. *Slight impact on Exeter traffic and Bristol southerly departures (without introducing new CAS).* *Less impact on Cardiff traffic than Hold C. Therefore, this design option would likely require a small increase to CAS when compared to the baseline do-nothing.*	

Hold C (to the south-west of Bristol Airport) – PROGRESSED

DP1: Safety	PARTIAL
Must maintain and where possible, enhance safety standards (Priority A)	
Increased workload from interaction with other traffic flows.	
DP2: Policy	PARTIAL
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Capacity may be constrained (requirement within the AMS).	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix.	
DP5: Operational	PARTIAL
Must provide sufficient capacity to support future demand (Priority A)	
Capacity could be constrained due to length of a transition to Runway 27.	
DP6: Environmental	PARTIAL
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Suitable location for a large proportion of flights from the south. *However, a longer transition to Runway 27 than Holds B or F (although a lot of traffic will be arriving from the south). Fuel planning would have to take into account the longer transition to Runway 27 (when compared to other options) which would increase fuel burn, and associated emissions, for airlines.*	
DP7: Environmental	MET
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
The Hold itself is anticipated to be positioned above 7,000ft therefore no noise impact from its location. Transitions would likely not overfly any large populations and transitions to Runway 09 would take advantage of partially being positioned over water. This design option has the potential to reduce overall impacts of aircraft noise when compared to the baseline do-nothing.	
DP8: Operational	PARTIAL
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Well positioned for connectivity to the network. *However, there is a possibility that this would not be under Bristol ATC (current delegated ATS arrangements) which increases operational complexity – although this can be mitigated through further development of procedures. It would also be positioned within a fairly busy region of airspace. Therefore, minor design changes may be needed to further improve resilience.*	
DP9: Technical	PARTIAL
Should minimise impact on other airspace users (Priority B)	
Potential impact on the MoD. This design option could therefore have a minor negative impact on other airspace users.	
DP10: Technical	PARTIAL
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Would require a small amount of new CAS (airway width not big enough) - less so than Holds B or F. *Slight impact on Cardiff and Exeter departures (less interaction with Bristol departures than other options).* *Therefore, this design option would likely require a small increase to CAS when compared to the baseline do-nothing.*	

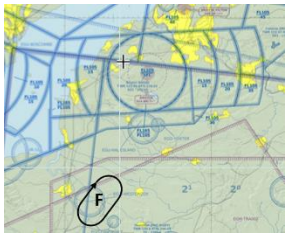
Hold D (to the south-west of Bristol Airport, over the Channel) – NOT PROGRESSED



DP1: Safety	NOT MET
Must maintain and where possible, enhance safety standards (Priority A)	
Insufficient distance for a safe transition to Runway 09, irrespective of a safety case. *Significant increase in workload from interaction with Cardiff traffic (safety case required).*	
DP2: Policy	NOT MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Capacity may be constrained and would not support a shared/ integrated airspace between Bristol and Cardiff traffic (requirements within the AMS).	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix.	
DP5: Operational	NOT MET
Must provide sufficient capacity to support future demand (Priority A)	
Insufficient distance for a transition to Runway 09. *Capacity could also be constrained due to long length of a transition to Runway 27.*	
DP6: Environmental	MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Positioned very close to the airport, minimal fuel burn.	
DP7: Environmental	MET
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
The Hold itself is anticipated to be positioned above 7,000ft therefore no noise impact from its location. Transitions would take advantage of overflying water and where based over land, would not overfly any large populations. This design option has the potential to reduce overall impacts of aircraft noise when compared to the baseline do-nothing.	
DP8: Operational	NOT MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Well, positioned for connectivity to the network. *However, the Hold would be positioned so close to final approach for Runway 09 that transitions would be complex to allow for altitude loss from min stack. Very long Transition for Runway 27 could cause operational issues in Low Vis operations. Therefore, significant resilience issues anticipated.*	
DP9: Technical	PARTIAL
Should minimise impact on other airspace users (Priority B)	
Potential impact on the MoD. This design option could therefore have a minor negative impact on other airspace users.	
DP10: Technical	NOT MET
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Would require a small amount of new CAS (airway width not big enough). This would have a significant conflict with Bristol 27 departures and Cardiff traffic. Therefore, this design option would increase CAS and have a subsequent detrimental interaction with other traffic flows, when compared to the baseline do-nothing.	

Hold E (to the west of Bristol Airport, over the Channel) – NOT PROGRESSED

DP1: Safety	PARTIAL
Must maintain and where possible, enhance safety standards (Priority A)	
Increase in controller workload from complex arrival sequencing (Hold location).	
DP2: Policy	NOT MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Capacity may be constrained; emissions are likely to increase and would not support a shared/ integrated airspace for military stakeholders (requirements within the AMS).	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix.	
DP5: Operational	NOT MET
Must provide sufficient capacity to support future demand (Priority A)	
Would not be used as much as some of the other Hold locations (known inbound directions). *Much more appropriate as a Hold location for Cardiff arrivals.* *Location could constrain arrivals due to very long transition track distances.*	
DP6: Environmental	NOT MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Very long track distance for arrivals from the east alongside the transitions from the Hold. Fuel planning would have to take into account excessive track miles due to the Hold location.	
DP7: Environmental	MET
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
The Hold itself is anticipated to be positioned above 7,000ft therefore no noise impact from its location. Transitions would not overfly any large populations and transitions to Runway 09 would partially overfly water. This design option has the potential to reduce overall impacts of aircraft noise when compared to the baseline do-nothing.	
DP8: Operational	NOT MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Not an optimal location for a Bristol Hold (also known location of a potential Cardiff Hold) – it would create too much complexity in arrival sequencing. *Likely that this would not be under Bristol ATC (current delegated ATS arrangements).* *Operationally very complex due to excessive track distance to Runway 27 (particularly if the Runway changes quickly or in Low Vis operations). Therefore, significant resilience issues anticipated.*	
DP9: Technical	NOT MET
Should minimise impact on other airspace users (Priority B)	
Significant impact on the MoD. This design option could therefore have a significant impact on other airspace users.	
DP10: Technical	PARTIAL
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
This design option would likely require a small increase to CAS when compared to the baseline do-nothing.	



Hold F (south of Bristol Airport) – PROGRESSED

DP1: Safety	MET
Must maintain and where possible, enhance safety standards (Priority A)	
No significant safety issues identified.	
DP2: Policy	PARTIAL
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Would not support a shared and integrated airspace for other airspace users (a requirement of the AMS).	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix. *Expectation that a Hold in this location could be deconflicted from other Bristol procedures.*	
DP5: Operational	MET
Must provide sufficient capacity to support future demand (Priority A)	
No known capacity constraints. Well placed for busy southern routes and for the network to deliver traffic to. Likely to be used by a large amount of inbound traffic.	
DP6: Environmental	MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Positioned close to the airport and equidistant to each runway end (transitions will be short). Fuel planning therefore does not have to take into account additional track miles due to the Hold location.	
DP7: Environmental	PARTIAL
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
The Hold itself is anticipated to be positioned above 7,000ft therefore no noise impact from its location. However, transitions may overfly new populations, albeit not huge numbers of people and in the latter stages reflect the same profile as today. *Overall, the impacts of aircraft noise are likely to be broadly similar to today when compared to the baseline do-nothing.*	
DP8: Operational	MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Geographically a good location for both Bristol and connectivity from the network. There is also flexibility in the Hold placement. *Tactically simple to manage.*	
DP9: Technical	PARTIAL
Should minimise impact on other airspace users (Priority B)	
This region of airspace is known to be utilised by GA and operational air traffic (OAT) – currently Class G airspace. There may be some impact on military operations: Yeovilton and transit traffic (particularly at lower levels) although the Hold is above 7000ft and the Transitions will be aligned as far North as possible. *This design option could therefore have some impact on other airspace users.*	
DP10: Technical	PARTIAL
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
A reasonable amount of new CAS required (could be reduced by the orientation of the Hold). Therefore, this design option would likely require a small increase to CAS when compared to the baseline do-nothing.	

Hold G (to the north-east of Bristol Airport) – NOT PROGRESSED

DP1: Safety	NOT MET
Must maintain and where possible, enhance safety standards (Priority A)	
Robust safety case required to account for this busy region of airspace and potential interactions which could increase controller workload. Significant increase in controller workload required for accurate metering (safety case required).	
DP2: Policy	NOT MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Will constrain the network due to added complexity from interaction with LTMA traffic and Brize Norton. Major impact on capacity and would not support cleaner flights due to increased track distance (requirements of the AMS).	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix.	
DP5: Operational	NOT MET
Must provide sufficient capacity to support future demand (Priority A)	
Not an optimal location for inbound traffic. *Known to be a dynamic traffic environment - will struggle to obtain Hold levels.* *Will constrain the network due to added complexity from interaction with LTMA traffic and Brize Norton.*	
DP6: Environmental	NOT MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Excessive track distance to the airport.	
DP7: Environmental	PARTIAL
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
The Hold itself is anticipated to be positioned above 7,000ft therefore no noise impact from its location. Transition positions and associated impacts would be broadly similar to arrivals today. The impacts of aircraft noise would likely be broadly similar to today when compared to the baseline do-nothing.	
DP8: Operational	NOT MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Maximum level potentially constrained by outbound LTMA traffic. *Operationally very complex due to excessive track distance to Runway 27 (particularly if the Runway changes quickly). Conflict with Brize Norton and Gloucester airways traffic. Therefore, significant resilience issues anticipated.*	
DP9: Technical	PARTIAL
Should minimise impact on other airspace users (Priority B)	
Potential impact on military operations. This design option could therefore have a minor negative impact on other airspace users.	
DP10: Technical	NOT MET
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Detrimental impact on other airfields such as Fairford, Brize Norton and London departures (safety concern). Also, Brize Norton traffic is anticipated to increase their traffic further. Therefore, this design option would have a detrimental interaction with other traffic flows, when compared to the baseline do-nothing.	

Hold H (to the north-west of Bristol Airport, Brecon area) – NOT PROGRESSED

DP1: Safety	NOT MET
Must maintain and where possible, enhance safety standards (Priority A)	
Robust safety case required to account for this busy region of airspace and potential interactions. Significant increase in controller workload required for accurate metering (safety case required).	
DP2: Policy	NOT MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Capacity may be constrained. Would introduce safety risks and not support a shared/ integrated airspace for Bristol and Cardiff traffic flows (requirements within the AMS).	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix.	
DP5: Operational	NOT MET
Must provide sufficient capacity to support future demand (Priority A)	
Potential to be used as a shared Bristol and Cardiff Hold; or a high-level sequencing Hold. Marginal weather conditions could affect the capacity due to complexities from the distance. Capacity likely to be constrained through conflict with arrivals and departures (to the north and west).	
DP6: Environmental	NOT MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Excessive track distance to the airport and for easterly arrivals to reach the Hold.	
DP7: Environmental	PARTIAL
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
The Hold itself is anticipated to be positioned above 7,000ft therefore no noise impact from its location. However, some transitions will be positioned over water but new populations also likely overflown and impacted. Overall, the impacts of aircraft noise are anticipated to be broadly similar to today when compared to the baseline do-nothing.	
DP8: Operational	NOT MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
A Hold in this location could provide the opportunity for a shared Bristol/ Cardiff Hold however there is the possibility that this would not be under the control of Bristol ATC (current delegated ATS arrangements) creating complex traffic marshalling. Operationally very complex due to excessive track distance to Runway 27 (particularly if the Runway changes quickly). Therefore, significant resilience issues anticipated.	
DP9: Technical	MET
Should minimise impact on other airspace users (Priority B)	
No known impact on other airspace users.	
DP10: Technical	NOT MET
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Detrimental impact on Bristol and Cardiff arrivals/departures (safety concern). Therefore, this design option would have a detrimental interaction with other traffic flows, when compared to the baseline do-nothing.	

Bristol Airport Stage 2 Runway 09 SID Options

This section summarises the Design Principle Evaluation for Bristol Airport's 23 Runway 09 SID options. The two figures below show those design options which are being progressed (Figure 3) and those which have been rejected (Figure 4).

Bristol Airport Runway 09 SID options being progressed through Stage 2

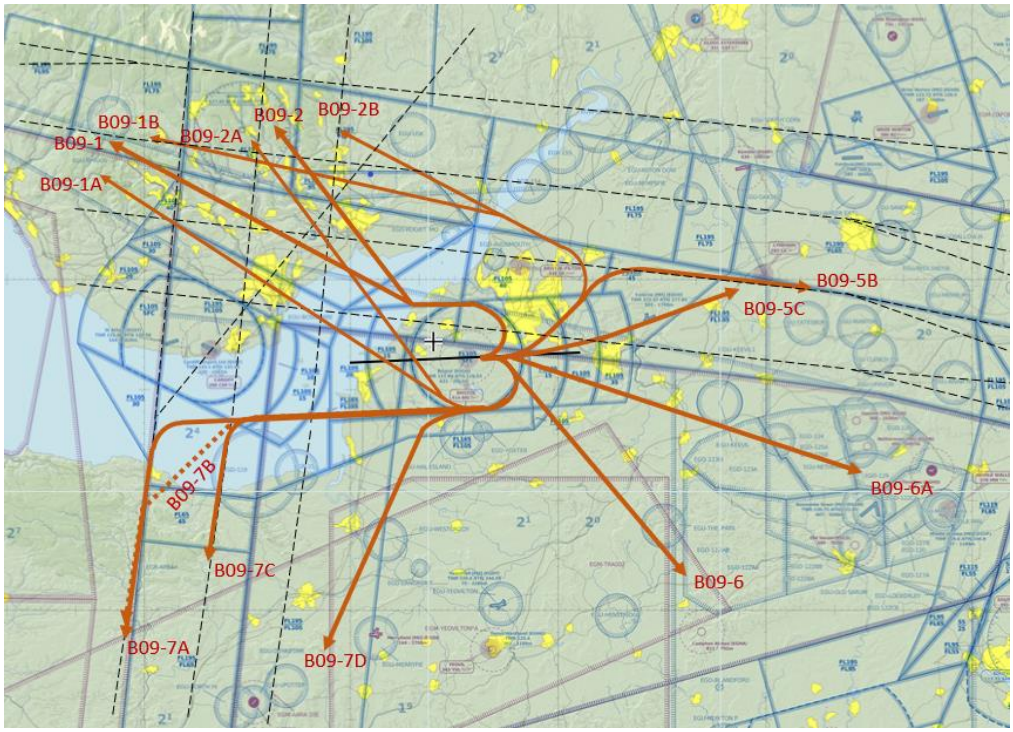


Figure 3: Bristol Airport Stage 2 Runway 09 SID Design Options - being progressed

Bristol Airport Runway 09 SID options not being progressed through Stage 2

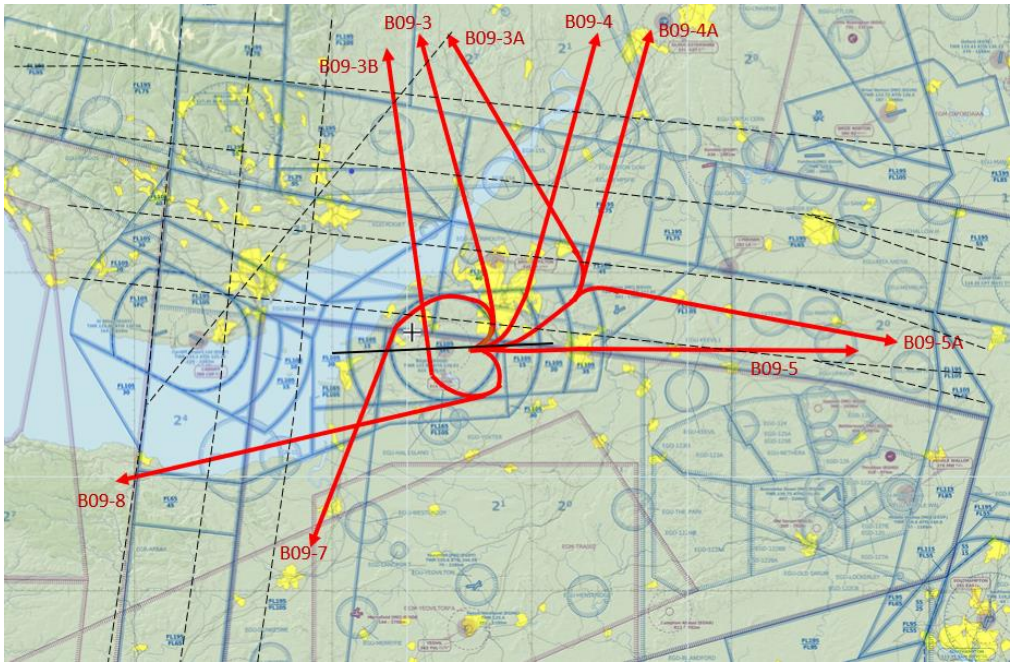


Figure 4: Bristol Airport Stage 2 Runway 09 SID Design Options - being rejected

Runway 09 SID B09-1
(north-west departure towards Strumble) – PROGRESSED

DP1: Safety	MET
Must maintain and where possible, enhance safety standards (Priority A)	
No significant safety issues identified.	
DP2: Policy	MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Aligns with the AMS objectives.	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix and to achieve required turn.	
DP5: Operational	PARTIAL
Must provide sufficient capacity to support future demand (Priority A)	
Should support 1-minute splits from east and southbound departures. *Should allow continuous climb operations (min climb performance may be required) although dependent on separation from known Cardiff traffic.*	
DP6: Environmental	MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Shorter route than currently flown therefore less fuel burn. *Should allow continuous climbs.*	
DP7: Environmental	MET
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Some of the climb will be over the channel. An earlier left turn than current SID could reduce population overflown by avoiding overflying central Bristol. This design option has the potential to reduce overall impacts of aircraft noise when compared to the baseline do-nothing.	
DP8: Operational	MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Well positioned for connectivity to the network (positive resilience).	
DP9: Technical	MET
Should minimise impact on other airspace users (Priority B)	
No known impact on other airspace users.	
DP10: Technical	PARTIAL
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
May require a small amount of new low-level and high-level CAS. Slight interaction with Cardiff traffic and Bristol arrivals (not safety critical). Therefore, this design option would likely require a small increase to CAS and interact more with other traffic flows, when compared to the baseline do-nothing.	

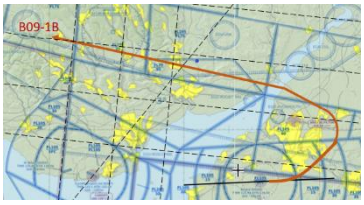
Runway 09 SID B09-1A

(alternate right-turn departure to the north-west) - PROGRESSED

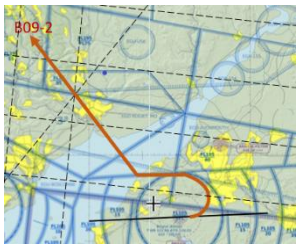
DP1: Safety	PARTIAL
Must maintain and where possible, enhance safety standards (Priority A)	
Robust safety case required for likely conflict with Cardiff operations.	
DP2: Policy	PARTIAL
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Would not support a shared/ integrated airspace for Bristol and Cardiff traffic flows (a requirement of the AMS).	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix and to achieve required turn.	
DP5: Operational	MET
Must provide sufficient capacity to support future demand (Priority A)	
Should support 1-minute splits from east and northbound departures.	
DP6: Environmental	MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Direct routing to Strumble region, minimises fuel burn.	
DP7: Environmental	PARTIAL
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Right-turn avoids flying over Bristol City - a respite option compared to B09-1 – and some of the climb would be over the channel. However, overflies the Mendip Hills AoNB. Overall, the impacts of aircraft noise are likely to be broadly similar to today when compared to the baseline do-nothing.	
DP8: Operational	MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Well positioned for connectivity to the network and provides an alternative connectivity to the network (positive resilience).	
DP9: Technical	PARTIAL
Should minimise impact on other airspace users (Priority B)	
Routed over a gliding site (Mendips). This design option could therefore have a minor negative impact on other airspace users.	
DP10: Technical	PARTIAL
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Highly likely interaction with Cardiff inbounds and outbounds alongside Bristol inbounds to Runway 09 (not safety critical). Therefore, this design option would likely interact more with other traffic flows, when compared to the baseline do-nothing.	

Runway 09 SID B09-1B

(alternate left-turn departure to the north-west) – PROGRESSED



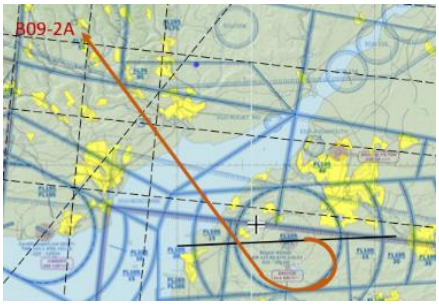
DP1: Safety	MET
Must maintain and where possible, enhance safety standards (Priority A)	
No significant safety issues identified.	
DP2: Policy	MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Aligns with the AMS objectives.	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix and to achieve required turn.	
DP5: Operational	PARTIAL
Must provide sufficient capacity to support future demand (Priority A)	
More suitable for low performance aircraft which cannot achieve a climb above a transition than B09-1. *Should support 1 min splits for east/south departures.* *Potential conflict with transitions from northern Hold, will result in ATC tactical climb above SID level.*	
DP6: Environmental	PARTIAL
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Longer track distance than B09-1 but could be more suitable for low performance aircraft.	
DP7: Environmental	MET
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Avoids flying over Bristol City. Some of the climb would be over the channel. This design option has the potential to reduce overall impacts of aircraft noise when compared to the baseline do-nothing.	
DP8: Operational	MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Provides alternative departure route for lower performance aircraft (positive resilience).	
DP9: Technical	MET
Should minimise impact on other airspace users (Priority B)	
No known impact on other airspace users.	
DP10: Technical	PARTIAL
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Slight interaction with Cardiff traffic (not safety critical). Therefore, this design option would likely interact more with other traffic flows, when compared to the baseline do-nothing.	



Runway 09 SID B09-2

(left-turn departure to the north-west, towards Brecon) – PROGRESSED

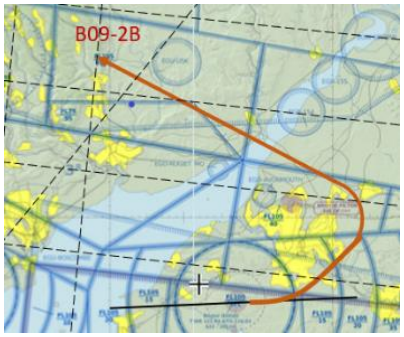
DP1: Safety	MET
Must maintain and where possible, enhance safety standards (Priority A)	
No significant safety issues identified.	
DP2: Policy	MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Aligns with the AMS objectives.	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix and to achieve required turn.	
DP5: Operational	PARTIAL
Must provide sufficient capacity to support future demand (Priority A)	
Should support 1 min splits for east/ south departures. *Should allow continuous climb operations (min climb performance may be required) although dependent on separation from a northern transition and Cardiff traffic.* *Tight turn may not be suitable for lower performance.*	
DP6: Environmental	MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Shorter route than currently flown, lower fuel burn.	
DP7: Environmental	MET
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Early turn could reduce population overflown by avoiding flight over Bristol City and some of the climb would be over the channel. Should also allow continuous climbs. This design option has the potential to reduce overall impacts of aircraft noise when compared to the baseline do-nothing.	
DP8: Operational	MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
No identified issues. Opportunity for continuous climb (positive resilience).	
DP9: Technical	MET
Should minimise impact on other airspace users (Priority B)	
No known impact on other airspace users.	
DP10: Technical	PARTIAL
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
May require a small amount of new low-level and high-level CAS. Slight interaction with Bristol arrivals and Cardiff traffic (not safety critical). Therefore, this design option would likely require a small increase to CAS and interact more with other traffic flows, when compared to the baseline do-nothing.	



Runway 09 SID B09-2A
(alternate right-turn departure to the north-west, towards Brecon) – PROGRESSED

DP1: Safety	PARTIAL
Must maintain and where possible, enhance safety standards (Priority A)	
Robust safety case required for likely conflict with Cardiff operations.	
DP2: Policy	PARTIAL
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Would not support a shared/ integrated airspace for Bristol and Cardiff traffic flows (a requirement of the AMS).	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	PARTIAL
Must maximise efficiency by using modern navigation technology (Priority A)	
Specific RNAV standard may be required dependent on traffic mix and to achieve required turn.	
DP5: Operational	MET
Must provide sufficient capacity to support future demand (Priority A)	
Should support 1 min splits for east/ northern departures.	
DP6: Environmental	PARTIAL
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Longer route than other departures to the north-west.	
DP7: Environmental	PARTIAL
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Right turn avoids overflying central Bristol - a respite option compared to B09-2 – and lots of the climb would be over water. However, overflies the Mendip AoNB. Overall, the impacts of aircraft noise are likely to be broadly similar to today when compared to the baseline do-nothing.	
DP8: Operational	MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Provides an alternative connectivity to the network (positive resilience).	
DP9: Technical	PARTIAL
Should minimise impact on other airspace users (Priority B)	
Overflies a gliding site although should have no greater impact than current operations. This design option could therefore have a minor negative impact on other airspace users.	
DP10: Technical	PARTIAL
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Highly likely interaction with Cardiff inbounds and outbounds alongside Bristol inbounds to Runway 09 (not safety critical). CAS containment to be assured. Therefore, this design option would likely interact more with other traffic flows, when compared to the baseline do-nothing.	

Runway 09 SID B09-2B (alternate left-turn departure to the north-west, towards Brecon) – PROGRESSED

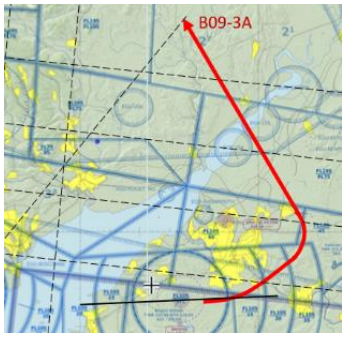


DP1: Safety	MET
Must maintain and where possible, enhance safety standards (Priority A)	
No significant safety issues identified.	
DP2: Policy	MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Aligns with the AMS objectives.	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix and to achieve required turn.	
DP5: Operational	MET
Must provide sufficient capacity to support future demand (Priority A)	
Should support 1 min splits for east/northern departures. *Less requirement for speed restrictions than B09-2 (more suitable for low performance aircraft).*	
DP6: Environmental	PARTIAL
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Longer track distance than B09-1 but designed for low performance aircraft.	
DP7: Environmental	MET
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Left turn avoids overflying central Bristol and some of the climb would be over water. This design option has the potential to reduce overall impacts of aircraft noise when compared to the baseline do-nothing.	
DP8: Operational	MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Route provides alternative for lower performance aircraft (positive resilience).	
DP9: Technical	MET
Should minimise impact on other airspace users (Priority B)	
No known impact on other airspace users.	
DP10: Technical	PARTIAL
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Slight interaction with Cardiff traffic, to be resolved through design (not safety critical). Therefore, this design option would likely interact more with other traffic flows, when compared to the baseline do-nothing.	

Runway 09 SID B09-3
(left-turn departure to the north) – NOT PROGRESSED

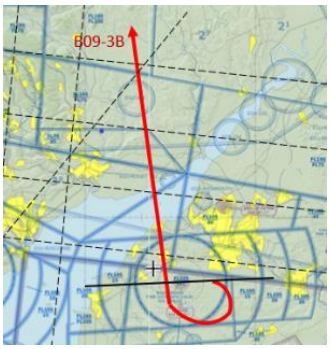
DP1: Safety	PARTIAL
Must maintain and where possible, enhance safety standards (Priority A)	
Increased workload from interaction with other traffic flows.	
DP2: Policy	NOT MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Major impact on capacity from potential position of northern Hold and lack of network connectivity. Would not reduce the noise impact of flights nor provide a shared/ integrated airspace for other traffic flows (requirements of the AMS).	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix and to achieve required turn.	
DP5: Operational	NOT MET
Must provide sufficient capacity to support future demand (Priority A)	
Significant capacity issues from conflict with position of potential Bristol northern Hold. Capacity constraints from lack of network connectivity. Speed limitations potentially required due to tight turn.	
DP6: Environmental	MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Direct departure route to the north. Shorter route than currently flown.	
DP7: Environmental	NOT MET
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Flies directly over the centre of Bristol. This design option has the potential to increase overall impacts of aircraft noise when compared to the baseline do-nothing.	
DP8: Operational	NOT MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Would not comply with network connectivity which would require further CAS and changes to the network design. Significant impact on other current traffic flows. Therefore, significant resilience issues anticipated.	
DP9: Technical	MET
Should minimise impact on other airspace users (Priority B)	
No known impact on other airspace users.	
DP10: Technical	NOT MET
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Anticipated conflict with Birmingham arrivals and departures (workload increase) and a potential interaction with Cardiff traffic and Bristol arrivals. Large increase in CAS required. Therefore, this design option would significantly increase CAS and have an increased interaction with other traffic flows, when compared to the baseline do-nothing.	

Runway 09 SID B09-3A
(alternate left-turn departure to the north) – NOT PROGRESSED

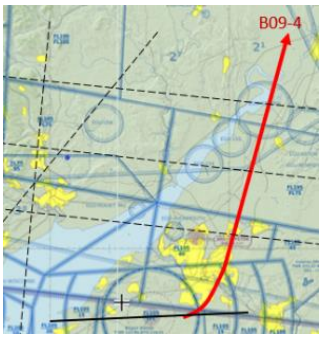


DP1: Safety	PARTIAL
Must maintain and where possible, enhance safety standards (Priority A)	
Increased workload from interaction with other traffic flows.	
DP2: Policy	NOT MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Major impact on capacity from potential position of northern Hold and lack of network connectivity. Would not reduce the noise impact of flights nor provide a shared/ integrated airspace for other traffic flows (requirements of the AMS).	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix and to achieve required turn.	
DP5: Operational	NOT MET
Must provide sufficient capacity to support future demand (Priority A)	
Significant capacity issues from conflict with position of potential Bristol northern Hold. Capacity constraints from lack of network connectivity.	
DP6: Environmental	NOT MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Extended track distance for northern departures, excessive fuel burn.	
DP7: Environmental	MET
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Avoids overflying central Bristol and could support respite. This design option has the potential to reduce overall impacts of aircraft noise when compared to the baseline do-nothing.	
DP8: Operational	NOT MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Would not comply with network connectivity which would require further CAS and changes to the network design. Significant impact on other current traffic flows. Therefore, significant resilience issues anticipated.	
DP9: Technical	MET
Should minimise impact on other airspace users (Priority B)	
No known impact on other airspace users.	
DP10: Technical	NOT MET
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Anticipated conflict with Birmingham arrivals and departures (workload increase) and a potential interaction with Cardiff traffic and Bristol arrivals. Large increase in CAS required. Therefore, this design option would significantly increase CAS and have an increased interaction with other traffic flows, when compared to the baseline do-nothing.	

Runway 09 SID B09-3B
(alternate right-turn departure to the north) – NOT PROGRESSED

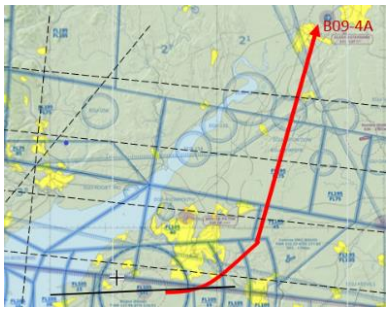


DP1: Safety	PARTIAL
Must maintain and where possible, enhance safety standards (Priority A)	
Increased workload from interaction with other traffic flows.	
DP2: Policy	NOT MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Major impact on capacity, would not support cleaner flights and would not provide a shared/ integrated airspace for other traffic flows (requirements of the AMS).	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix and to achieve required turn.	
DP5: Operational	NOT MET
Must provide sufficient capacity to support future demand (Priority A)	
Capacity constraints from lack of network connectivity. *May require minimum performance requirements due to topography.* *Speed limitation potentially required due to tight turn.* *Significant capacity issues from conflict with position of potential Bristol northern Hold.*	
DP6: Environmental	NOT MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Extended track distance for northern departures, excessive fuel burn.	
DP7: Environmental	PARTIAL
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Right turn avoids overflying central Bristol, could support respite and some of the climb would be over water. However, overflies the Mendip AoNB. Overall, the impacts of aircraft noise are likely to be broadly similar to today when compared to the baseline do-nothing.	
DP8: Operational	NOT MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Would not comply with network connectivity and would require further CAS and changes to the network design. Therefore, significant resilience issues anticipated.	
DP9: Technical	PARTIAL
Should minimise impact on other airspace users (Priority B)	
Positioned near to a gliding site (Mendips). This design option could therefore have a minor negative impact on other airspace users.	
DP10: Technical	NOT MET
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Anticipated conflict with Birmingham arrivals and departures (workload increase) and a potential interaction with Cardiff traffic and Bristol arrivals. Large increase in CAS required. Therefore, this design option would significantly increase CAS and have an increased interaction with other traffic flows, when compared to the baseline do-nothing.	



Runway 09 SID B09-4
(left-turn departure to the north) – NOT PROGRESSED

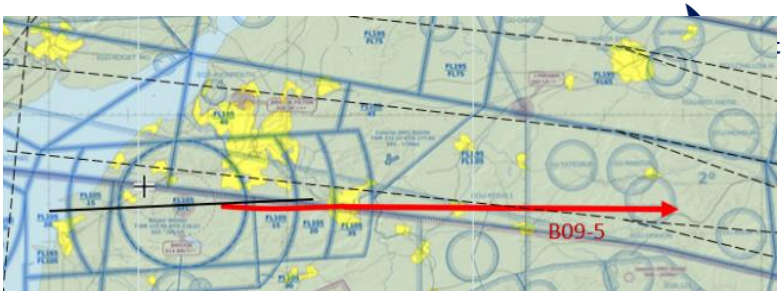
DP1: Safety	PARTIAL
Must maintain and where possible, enhance safety standards (Priority A)	
Increased workload from interaction with other traffic flows.	
DP2: Policy	NOT MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Major impact on capacity (potential location of Northern Hold and lack of network connectivity) and would not provide a shared/ integrated airspace for other traffic flows (requirements of the AMS).	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix and to achieve required turn.	
DP5: Operational	NOT MET
Must provide sufficient capacity to support future demand (Priority A)	
Significant capacity issues from conflict with position of potential Bristol northern Hold. *Limited demand for a departure route in this direction.* *Capacity constraints from lack of network connectivity.*	
DP6: Environmental	MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Direct departure route, minimal fuel burn.	
DP7: Environmental	NOT MET
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Flies over outer areas of Bristol City. This design option has the potential to increase overall impacts of aircraft noise when compared to the baseline do-nothing.	
DP8: Operational	NOT MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Would not comply with network connectivity (possibly requiring further CAS and changes to the network design). Significant impact on other current traffic flows. Therefore, significant resilience issues anticipated.	
DP9: Technical	NOT MET
Should minimise impact on other airspace users (Priority B)	
Large increase in CAS could significantly impact other airspace users in this area. This design option would therefore have a significant impact on other airspace users.	
DP10: Technical	NOT MET
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Interaction with Bristol arrivals and Birmingham traffic (increased workload). Large increase in CAS required. Therefore, this design option would significantly increase CAS and have an increased interaction with other traffic flows, when compared to the baseline do-nothing.	



Runway 09 SID B09-4A
(alternate left-turn departure to the north)
– NOT PROGRESSED

DP1: Safety	PARTIAL
Must maintain and where possible, enhance safety standards (Priority A)	
Increased workload from interaction with other traffic flows.	
DP2: Policy	NOT MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Major impact on capacity from potential position of northern Hold and lack of network connectivity. *Also, would not support cleaner flights nor a shared/ integrated airspace for other traffic flows (requirements of the AMS).*	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix and to achieve required turn. *Should support 1 min splits from east and southbound departures.*	
DP5: Operational	NOT MET
Must provide sufficient capacity to support future demand (Priority A)	
Limited demand for a departure route in this direction. *Significant capacity issues from conflict with position of potential Bristol northern Hold.* *Capacity constraints from lack of network connectivity.*	
DP6: Environmental	NOT MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Extended track distance (excessive fuel burn), particularly when compared to B09-4.	
DP7: Environmental	MET
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Avoids overflying central Bristol (improvement to B09-4) and could be used as a respite route. This design option has the potential to reduce overall impacts of aircraft noise when compared to the baseline do-nothing.	
DP8: Operational	NOT MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Would not comply with network connectivity and would require further CAS and changes to the network design. *Significant impact on other current traffic flows. Therefore, significant resilience issues anticipated.*	
DP9: Technical	MET
Should minimise impact on other airspace users (Priority B)	
No known impact on other airspace users.	
DP10: Technical	NOT MET
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Anticipated conflict with Birmingham arrivals and departures (workload increase) and a potential interaction with Cardiff traffic and Bristol arrivals. Large increase in CAS required. Therefore, this design option would significantly increase CAS and have an increased interaction with other traffic flows, when compared to the baseline do-nothing.	

Runway 09 SID B09-5
(direct eastern departure)
– NOT PROGRESSED

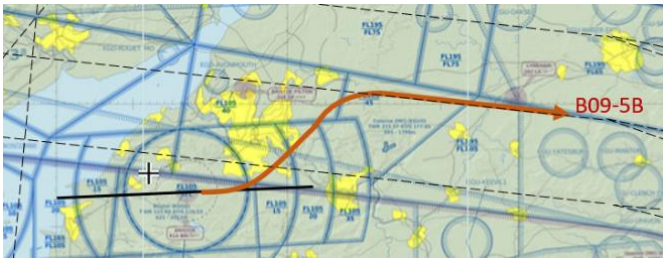


DP1: Safety	MET
Must maintain and where possible, enhance safety standards (Priority A)	
No significant safety issues identified.	
DP2: Policy	NOT MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Major impact on capacity from lack of network connectivity and would not support a reduction in noise impact (requirements of the AMS).	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix and to achieve required turn. *Should support 1 min splits from east and southbound departures.*	
DP5: Operational	NOT MET
Must provide sufficient capacity to support future demand (Priority A)	
Severe capacity constraints from lack of network connectivity.	
DP6: Environmental	PARTIAL
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Direct departure route and shorter than current route. *However, speed restriction is likely to achieve required climb for network target level, which could increase fuel burn.*	
DP7: Environmental	NOT MET
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Directly overflies Bath City. This design option has the potential to increase overall impacts of aircraft noise when compared to the baseline do-nothing.	
DP8: Operational	NOT MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Would not comply with network connectivity and would require further CAS and changes to the network design. Therefore, significant resilience issues anticipated.	
DP9: Technical	MET
Should minimise impact on other airspace users (Priority B)	
No known impact on other airspace users.	
DP10: Technical	NOT MET
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Should be able to deconflict from eastern arrivals. However, likely to require a large amount of additional CAS due to lack of network connectivity. Therefore, this design option would significantly increase CAS when compared to the baseline do-nothing.	

Runway 09 SID B09-5A
(alternate eastern departure)
– NOT PROGRESSED

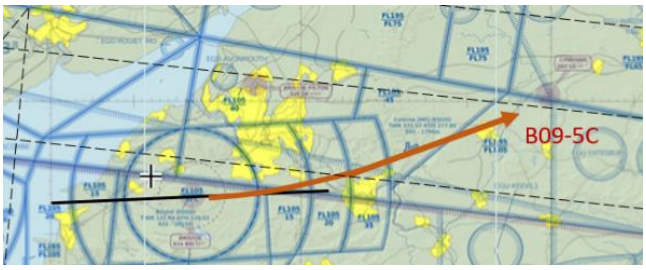
DP1: Safety	MET
Must maintain and where possible, enhance safety standards (Priority A)	
No significant safety issues identified.	
DP2: Policy	PARTIAL
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Major impact on capacity from lack of network connectivity.	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix and to achieve required turn. Should support 1 min splits from east and southbound departures.	
DP5: Operational	NOT MET
Must provide sufficient capacity to support future demand (Priority A)	
Severe capacity constraints from lack of network connectivity.	
DP6: Environmental	PARTIAL
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Less direct and longer track distance than B09-5.	
DP7: Environmental	MET
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Avoids overflying central Bath and Bristol and potential to be used as a respite route from B09-5. This design option has the potential to reduce overall impacts of aircraft noise when compared to the baseline do-nothing.	
DP8: Operational	NOT MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Would not comply with network connectivity and would require further CAS and changes to the network design. Therefore, significant resilience issues anticipated.	
DP9: Technical	MET
Should minimise impact on other airspace users (Priority B)	
No known impact on other airspace users.	
DP10: Technical	NOT MET
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Should be able to deconflict from eastern arrivals. However, likely to require a large amount of additional CAS due to lack of network connectivity. Therefore, this design option would significantly increase CAS when compared to the baseline do-nothing.	

Runway 09 SID B09-5B
(alternate eastern departure)
– PROGRESSED



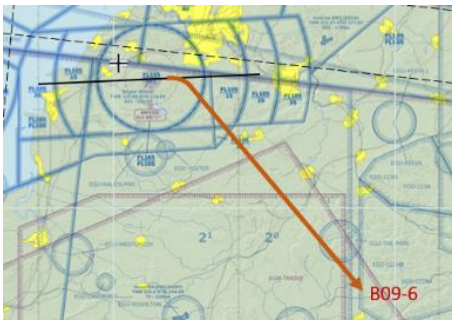
DP1: Safety	MET
Must maintain and where possible, enhance safety standards (Priority A)	
Reduces workload – reflects the tactical route currently used to connect with the network.	
DP2: Policy	MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Aligns with the AMS objectives.	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix and to achieve required turn. *Should support 1 min splits from east and southbound departures.*	
DP5: Operational	MET
Must provide sufficient capacity to support future demand (Priority A)	
The longer track distance - when compared to B09-5C intended to assist in achieving the network level requirement. *Could be used as a low performance route (alternative to B09-5C).*	
DP6: Environmental	PARTIAL
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Less direct and longer track distance than B09-5C. However, no issues from network speed constrictions.	
DP7: Environmental	MET
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Avoids overflying central Bath and Bristol and potential to be used as a respite route from B09-5C. This design option has the potential to reduce overall impacts of aircraft noise when compared to the baseline do-nothing.	
DP8: Operational	MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Well positioned for connectivity to the network. *Suitable for low performance aircraft and formalises what is currently a tactical route and operation (positive resilience).*	
DP9: Technical	MET
Should minimise impact on other airspace users (Priority B)	
No known impacts on other airspace users.	
DP10: Technical	MET
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Should be able to deconflict from eastern arrivals and utilises existing CAS. Therefore, this design option would introduce no additional CAS or introduce any known impact on adjacent aerodromes.	

Runway 09 SID B09-5C
(north-east departure) – PROGRESSED

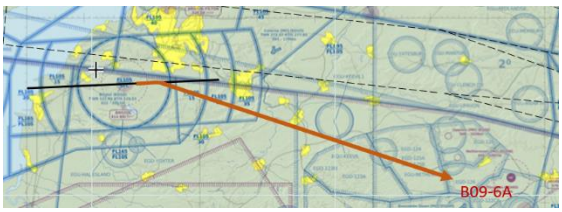


DP1: Safety	MET
Must maintain and where possible, enhance safety standards (Priority A)	
No significant safety issues identified.	
DP2: Policy	MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Aligns with the AMS objectives.	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix and to achieve required turn. *Should support 1 min splits from east and southbound departures.* *Should allow continuous climb operations (although it will likely require high performance aircraft).*	
DP5: Operational	MET
Must provide sufficient capacity to support future demand (Priority A)	
No known capacity concerns. Aligned with future route network	
DP6: Environmental	PARTIAL
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Direct departure route and shorter than current route. Should achieve continuous climbs. *However, network speed restrictions may be required to achieve climb which could increase fuel burn.*	
DP7: Environmental	MET
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Precisely routed to minimise population overflown (subject to detailed design). This design option has the potential to reduce overall impacts of aircraft noise when compared to the baseline do-nothing.	
DP8: Operational	MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Similar profile to today's Noise Preferential Route (NPR) and what is currently tactically flown. *Well positioned for connectivity to the network and suitable route for high performance aircraft e.g., jet traffic operating from Bristol Airport (positive resilience).*	
DP9: Technical	MET
Should minimise impact on other airspace users (Priority B)	
No known impacts on other airspace users.	
DP10: Technical	MET
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Should be able to deconflict from eastern arrivals and no new CAS required (would have required if positioned further south). Therefore, this design option would introduce no additional CAS or introduce any known impact on adjacent aerodromes.	

Runway 09 SID B09-6 (south-east departure)
– PROGRESSED

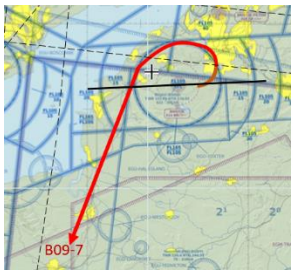


DP1: Safety	MET
Must maintain and where possible, enhance safety standards (Priority A)	
No safety issues identified, subject to timed new CAS.	
DP2: Policy	MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Aligns with the AMS objectives.	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix and to achieve required turn.	
DP5: Operational	MET
Must provide sufficient capacity to support future demand (Priority A)	
Could be used specifically as an early morning offload route during a known period of high demand. Supports reduced departure intervals from Eastbound traffic during peak early morning departure flows and could help to reduce pre-departure delays. A secondary benefit could be realised by removing/ reducing some traffic flows from the London Middle sectors. Should allow continuous climb operations.	
DP6: Environmental	MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Direct departure route. Large reduction in track distance and fuel burn when in use. Should support continuous climbs.	
DP7: Environmental	MET
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Does not directly overfly any heavily populated areas. This design option has the potential to reduce overall impacts of aircraft noise when compared to the baseline do-nothing.	
DP8: Operational	PARTIAL
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Airline preference for this departure route (known busy periods when this would be used). However, would not comply with current network connectivity (possibly requiring further CAS and changes to the network design).	
DP9: Technical	PARTIAL
Should minimise impact on other airspace users (Priority B)	
Potential conflict with MoD operations but restricted timings could alleviate this through FUA. This design option could therefore have a minor negative impact on other airspace users.	
DP10: Technical	PARTIAL
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Revised and new selectable CAS will be required but it could be matched to demand periods (also potentially additional CDRs/ FUA). Therefore, this design option would increase CAS during limited hours, when compared to the baseline do-nothing.	



Runway 09 SID B09-6A
(alternate south-east departure) – PROGRESSED

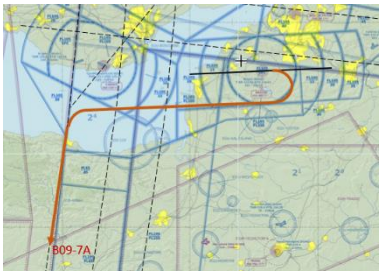
DP1: Safety	MET
Must maintain and where possible, enhance safety standards (Priority A)	
No significant safety issues identified.	
DP2: Policy	MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Aligns with the AMS objectives.	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix and to achieve required turn.	
DP5: Operational	PARTIAL
Must provide sufficient capacity to support future demand (Priority A)	
Could be used specifically as an early morning offload route during a known period of high demand. *Will not support reduced separation from eastbound departing traffic during peak early morning departure flows.* *Continuous climb operations not assured.*	
DP6: Environmental	PARTIAL
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
More direct route overall with associated reduction in track distance and fuel burn when in use. *Local increased track distance due to wrap-around route*	
DP7: Environmental	MET
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Does not overfly any large populations. This design option has the potential to reduce overall impacts of aircraft noise when compared to the baseline do-nothing.	
DP8: Operational	PARTIAL
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Airline preference for this departure route (known busy periods when this would be used). *However, would not comply with current network connectivity. Will require revised network integration in an already busy area of network traffic.*	
DP9: Technical	PARTIAL
Should minimise impact on other airspace users (Priority B)	
Potential conflict with MoD operations but restricted timings could alleviate this through FUA. This design option could therefore have a minor negative impact on other airspace users.	
DP10: Technical	PARTIAL
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Revised and new CAS required although it could be matched to demand periods. Therefore, this design option would increase CAS during limited hours and have a potential increased interaction with other traffic flows, when compared to the baseline do-nothing.	



Runway 09 SID B09-7
(southern departure) – NOT PROGRESSED

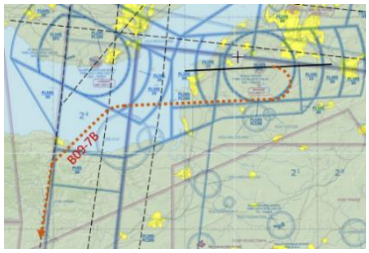
DP1: Safety	PARTIAL
Must maintain and where possible, enhance safety standards (Priority A)	
Robust safety case required to account for this busy region of airspace and potential interactions.	
DP2: Policy	NOT MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Would not support cleaner flights (environmental improvement) nor a shared/ integrated airspace for other traffic flows (requirements of the AMS).	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix and to achieve required turn.	
DP5: Operational	PARTIAL
Must provide sufficient capacity to support future demand (Priority A)	
Would not support 1 min splits from north/eastern departures. *Turn after departure may require speed restrictions to achieve required CAS containment.*	
DP6: Environmental	NOT MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Excessive track mileage and associated fuel burn due to wrap-around procedure.	
DP7: Environmental	MET
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Supports respite and could potentially be positioned over the Channel. This design option has the potential to reduce overall impacts of aircraft noise when compared to the baseline do-nothing.	
DP8: Operational	NOT MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
This would be an operationally complex procedure due to separation from inbound traffic from the North and integration with Cardiff traffic (slight amendment of the route would not mitigate this). Therefore, significant resilience issues anticipated.	
DP9: Technical	PARTIAL
Should minimise impact on other airspace users (Priority B)	
Low impact subject to CAS containment. This design option could therefore have a minor negative impact on other airspace users.	
DP10: Technical	NOT MET
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Significant conflict with Bristol inbound traffic (safety concern). Therefore, this design option would have a detrimental interaction with other traffic flows, when compared to the baseline do-nothing.	

Runway 09 SID B09-7A (alternate southern departure) – PROGRESSED



DP1: Safety	MET
Must maintain and where possible, enhance safety standards (Priority A)	
No significant safety issues identified.	
DP2: Policy	MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Aligns with the AMS objectives.	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix and to achieve required turn.	
DP5: Operational	PARTIAL
Must provide sufficient capacity to support future demand (Priority A)	
Supports 1 min splits from south/ eastern departures. *Should allow continuous climb operations.* *However, may require minimum performance requirements due to topography (high ground).*	
DP6: Environmental	MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Shorter route than currently flown. *Should support continuous climbs.*	
DP7: Environmental	PARTIAL
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Does not overfly any large populations, however, overflies the Mendip AoNB. Overall, the impacts of aircraft noise are likely to be broadly similar to today when compared to the baseline do-nothing.	
DP8: Operational	MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Well positioned for connectivity to the network (positive resilience).	
DP9: Technical	PARTIAL
Should minimise impact on other airspace users (Priority B)	
Positioned near to a gliding site (Halesland). This design option could therefore have a minor negative impact on other airspace users.	
DP10: Technical	PARTIAL
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Improved fit around Exeter traffic, when compared to today. However, would require a small amount of new permanent CAS. Therefore, this design option would likely require a small increase to CAS when compared to the baseline do-nothing.	

Runway 09 SID B09-7B (alternate southern departure) – PROGRESSED

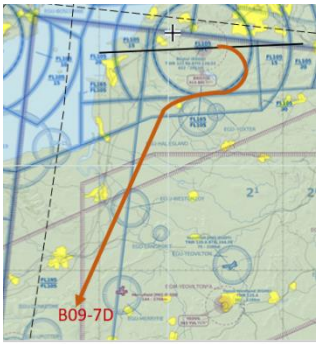


DP1: Safety	MET
Must maintain and where possible, enhance safety standards (Priority A)	
No significant safety issues identified.	
DP2: Policy	MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Aligns with the AMS objectives.	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix and to achieve required turn.	
DP5: Operational	PARTIAL
Must provide sufficient capacity to support future demand (Priority A)	
Supports 1 min splits from south/ eastern departures. *Should allow continuous climb operations.* *However, may require minimum performance requirements due to topography (high ground).*	
DP6: Environmental	MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Shorter route than currently flown. *Should support continuous climbs.*	
DP7: Environmental	PARTIAL
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Does not overfly any large populations, however, overflies the Mendip AoNB. Overall, the impacts of aircraft noise are likely to be broadly similar to today when compared to the baseline do-nothing.	
DP8: Operational	MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Well positioned for connectivity to the network (positive resilience).	
DP9: Technical	PARTIAL
Should minimise impact on other airspace users (Priority B)	
Positioned near to a gliding site (Halesland). This design option could therefore have a minor negative impact on other airspace users.	
DP10: Technical	PARTIAL
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Improved fit around Exeter traffic, when compared to today. However, would require a small amount of new permanent CAS. Therefore, this design option would likely require a small increase to CAS when compared to the baseline do-nothing.	

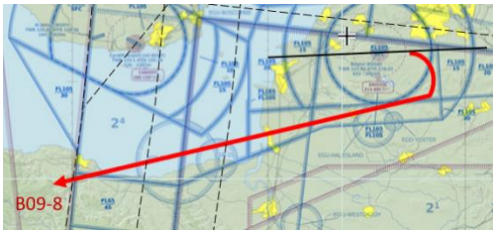
Runway 09 SID B09-7C (alternate southern departure) – PROGRESSED

DP1: Safety	MET
Must maintain and where possible, enhance safety standards (Priority A)	
No significant safety issues identified.	
DP2: Policy	MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Aligns with the AMS objectives.	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix and to achieve required turn.	
DP5: Operational	PARTIAL
Must provide sufficient capacity to support future demand (Priority A)	
Supports 1 min splits from south/ eastern departures. *Should allow continuous climb operations.* *However, may require minimum performance requirements due to topography (high ground).*	
DP6: Environmental	MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Shorter route than currently flown. *Should support continuous climbs.*	
DP7: Environmental	PARTIAL
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Does not overfly any large populations, however, overflies the Mendip AoNB. Overall, the impacts of aircraft noise are likely to be broadly similar to today when compared to the baseline do-nothing.	
DP8: Operational	MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Well positioned for connectivity to the network (positive resilience).	
DP9: Technical	PARTIAL
Should minimise impact on other airspace users (Priority B)	
Positioned near to a gliding site (Halesland). This design option could therefore have a minor negative impact on other airspace users.	
DP10: Technical	PARTIAL
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Improved fit around Exeter traffic, when compared to today. However, would require a small amount of new permanent CAS. Therefore, this design option would likely require a small increase to CAS when compared to the baseline do-nothing.	

Runway 09 SID B09-7D (alternate southern departure) – PROGRESSED



DP1: Safety Must maintain and where possible, enhance safety standards (Priority A) *No significant safety issues identified.*	MET
DP2: Policy Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A) *Aligns with the AMS objectives.*	MET
DP3: Regulation Must be compliant with all relevant laws and regulations (Priority A) *No known conflictions.*	MET
DP4: Technical Must maximise efficiency by using modern navigation technology (Priority A) *Appropriate RNAV standard to be used dependent on traffic mix and to achieve required turn.*	MET
DP5: Operational Must provide sufficient capacity to support future demand (Priority A) *Supports 1 min splits from north/eastern departures.* *Should allow continuous climb operations.* *However, may require minimum performance requirements due to topography (high ground).*	PARTIAL
DP6: Environmental Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A) *Shorter route than currently flown.* *Should support continuous climbs.*	MET
DP7: Environmental Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A) *Does not overfly any large populations, however, overflies the Mendip AoNB. Overall, the impacts of aircraft noise are likely to be broadly similar to today when compared to the baseline do-nothing.*	PARTIAL
DP8: Operational Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B) *Well positioned for connectivity to the network (positive resilience).*	MET
DP9: Technical Should minimise impact on other airspace users (Priority B) *Positioned near to a gliding site (Halesland) and potential impact on MoD operations. This design option could therefore have a minor negative impact on other airspace users.*	PARTIAL
DP10: Technical Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B) *Improved fit around Exeter traffic, when compared to today. However, would require a small amount of new permanent CAS, although not at low level. Therefore, this design option would likely require a small increase to CAS when compared to the baseline do-nothing.*	PARTIAL



Runway 09 SID B09-8 (south-west departure, towards Lands' End) – NOT PROGRESSED

DP1: Safety	PARTIAL
Must maintain and where possible, enhance safety standards (Priority A)	
Robust safety case required to account for this busy region of airspace and potential interactions.	
DP2: Policy	NOT MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Major impact on capacity from lack of network connectivity and would not support a shared/ integrated airspace for Bristol and Cardiff traffic flows (requirements of the AMS).	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix and to achieve required turn.	
DP5: Operational	NOT MET
Must provide sufficient capacity to support future demand (Priority A)	
Severe capacity constraints from lack of network connectivity. *May require minimum performance requirements due to topography (high ground).* *Not a widely utilised route: low demand vs development cost.*	
DP6: Environmental	MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Direct route (minimal fuel burn).	
DP7: Environmental	PARTIAL
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Does not overfly any large populations, however, overflies the Mendip AoNB. Overall, the impacts of aircraft noise are likely to be broadly similar to today when compared to the baseline do-nothing.	
DP8: Operational	NOT MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Would not comply with network connectivity and would require further CAS and changes to the network design. Therefore, significant resilience issues anticipated.	
DP9: Technical	PARTIAL
Should minimise impact on other airspace users (Priority B)	
Potential conflict with military training areas to the west. This design option could therefore have a minor negative impact on other airspace users.	
DP10: Technical	NOT MET
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Detrimental impact on Bristol inbounds from the south, and Cardiff departures (safety concern). High-level CAS also required. Therefore, this design option would increase CAS and have a detrimental interaction with other traffic flows, when compared to the baseline do-nothing.	

Bristol Airport Stage 2 Runway 27 SID Options

This section summarises the Design Principle Evaluation for Bristol Airport's 17 Runway 27 SID options. The two figures below show those design options which are being progressed (Figure 5) and those which have been rejected (Figure 6).

Bristol Airport Runway 27 SID options being progressed through Stage 2

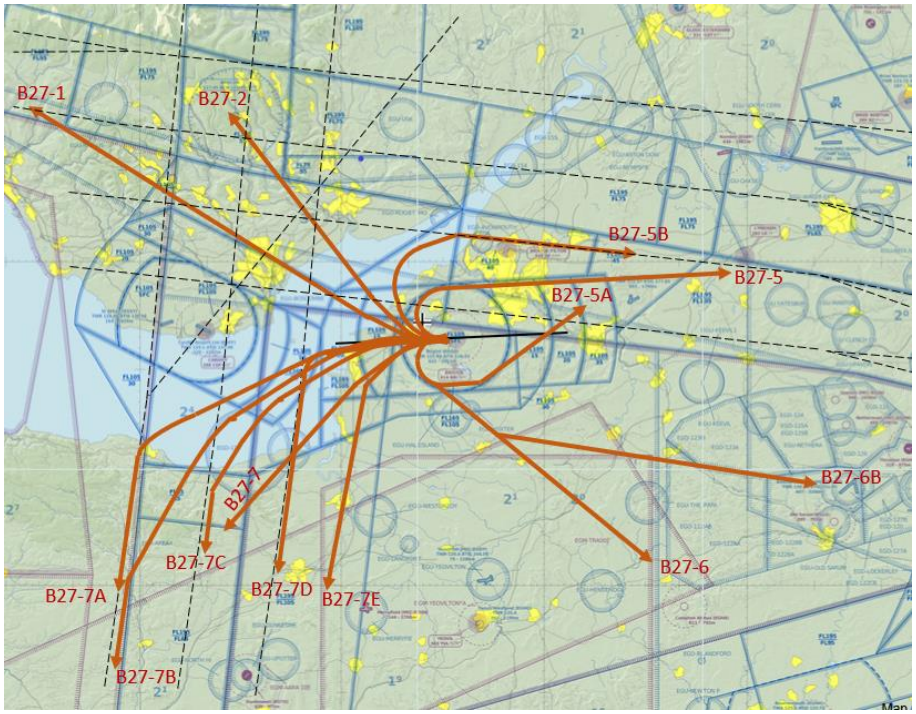


Figure 5: Bristol Airport Stage 2 Runway 27 SID Design Options - being progressed

Bristol Airport Runway 27 SID options not being progressed through Stage 2

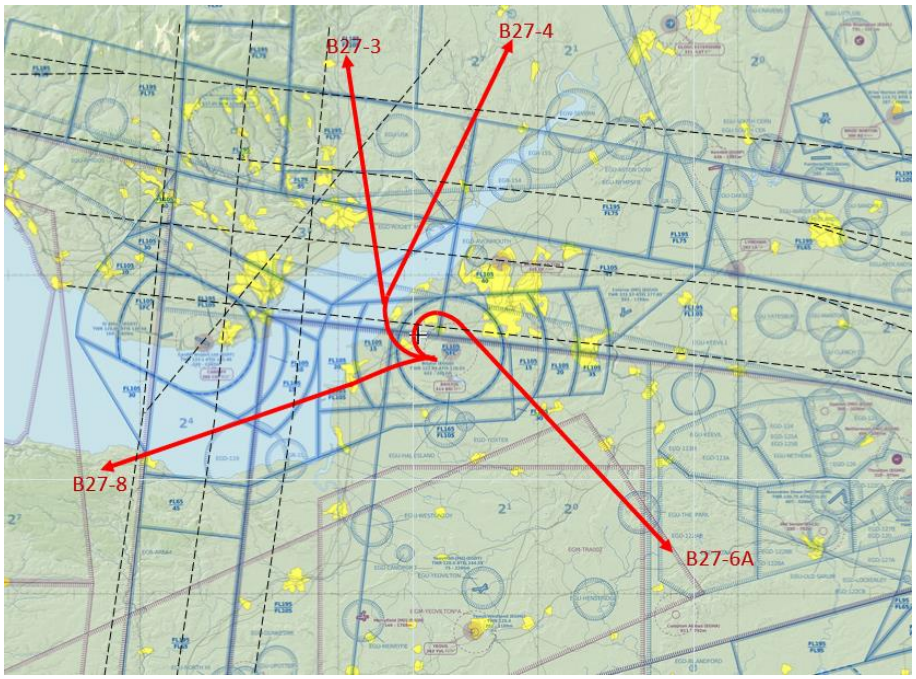
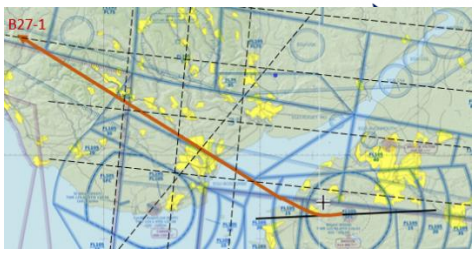
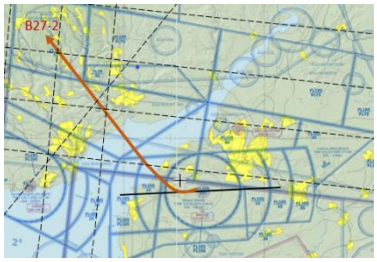


Figure 6: Bristol Airport Stage 2 Runway 27 SID Design Options - being rejected



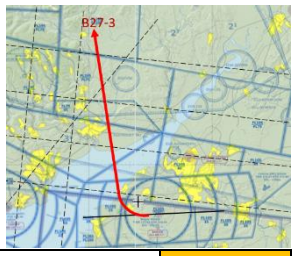
Runway 27 SID B27-1
(north-west departure) – PROGRESSED

DP1: Safety	MET
Must maintain and where possible, enhance safety standards (Priority A)	
No significant safety issues identified.	
DP2: Policy	MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Aligns with the AMS objectives.	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix. *Potential for reduced departure separation from other SIDs through the earlier initial turn.* *Should allow continuous climb operations (min climb performance may be required).*	
DP5: Operational	MET
Must provide sufficient capacity to support future demand (Priority A)	
No known capacity constraints.	
DP6: Environmental	MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
More direct route than the current route via BCN. *Should allow continuous climbs.*	
DP7: Environmental	PARTIAL
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
A lot of climb over the channel although could impact populations in/around Cardiff. Overall, the impacts of aircraft noise are likely to be broadly similar to today when compared to the baseline do-nothing.	
DP8: Operational	MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Systemised version of what is currently flown and well positioned for connectivity to the network. *Should be suitable for high performance aircraft (positive resilience).*	
DP9: Technical	MET
Should minimise impact on other airspace users (Priority B)	
No known impact on other airspace users.	
DP10: Technical	PARTIAL
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
A small amount of additional CAS possibly required to the north-west of Cardiff Airport and a slight interaction with Cardiff Runway 12 departures and inbound traffic. Therefore, this design option would likely require a small increase to CAS and increased interaction with other traffic flows when compared to the baseline do-nothing.	



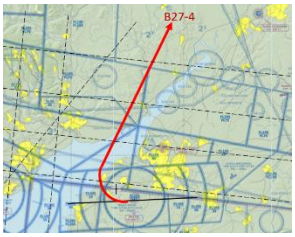
Runway 27 SID B27-2
(north-west departure, towards Brecon) – PROGRESSED

DP1: Safety	MET
Must maintain and where possible, enhance safety standards (Priority A)	
No significant safety issues identified – potential safety benefit in a reduced number of interactions required by the controller.	
DP2: Policy	MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Aligns with the AMS objectives.	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix. *Potential for reduced departure separation from other SIDs through the earlier initial turn.* *Should allow continuous climb operations (min climb performance may be required).*	
DP5: Operational	MET
Must provide sufficient capacity to support future demand (Priority A)	
No known capacity constraints.	
DP6: Environmental	MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
More direct route than the current route via BCN. *Should allow continuous climbs.*	
DP7: Environmental	MET
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
A lot of climb over the Channel and avoids large populations. This design option has the potential to reduce overall impacts of aircraft noise when compared to the baseline do-nothing.	
DP8: Operational	MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Systemised version of what is currently flown and well positioned for connectivity to the network. *Should be suitable for high performance aircraft (positive resilience).*	
DP9: Technical	MET
Should minimise impact on other airspace users (Priority B)	
No known impact on other airspace users.	
DP10: Technical	PARTIAL
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Potential interaction with Cardiff inbound and outbound routes. Therefore, this design option would likely have an increased interaction with other traffic flows when compared to the baseline do-nothing.	



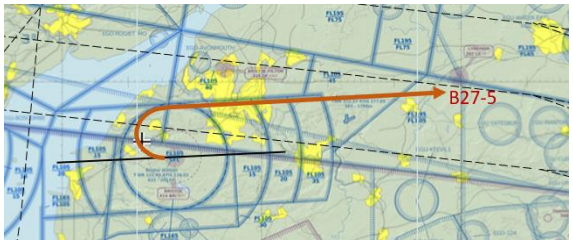
Runway 27 SID B27-3 (northern departure) – NOT PROGRESSED

DP1: Safety	PARTIAL
Must maintain and where possible, enhance safety standards (Priority A)	
Robust safety case required to account for this busy region of airspace and potential interactions.	
DP2: Policy	NOT MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Major impact on capacity from lack of network connectivity and would not support a shared/ integrated airspace with other known traffic flows (requirements of the AMS).	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix. *Potential for reduced departure separation from other SIDs through the earlier initial turn*	
DP5: Operational	NOT MET
Must provide sufficient capacity to support future demand (Priority A)	
Severe capacity constraints from lack of network connectivity. *Significant capacity issues from conflict with position of potential Bristol northern Hold.*	
DP6: Environmental	MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Direct route to northern destinations.	
DP7: Environmental	MET
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
A lot of the climb positioned over the Channel and overflies less populated areas than some of the other routes. This design option has the potential to reduce overall impacts of aircraft noise when compared to the baseline do-nothing.	
DP8: Operational	NOT MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Would not comply with network connectivity and would require further CAS and changes to the network design. Also, likely conflict with known traffic flows. Therefore, significant resilience issues anticipated.	
DP9: Technical	PARTIAL
Should minimise impact on other airspace users (Priority B)	
Overflies a gliding site. This design option could therefore have a minor negative impact on other airspace users.	
DP10: Technical	NOT MET
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Significant interaction with Cardiff traffic, Bristol arrivals and Birmingham traffic (safety concern). Large increase in CAS also required. Therefore, this design option would increase CAS and have a detrimental interaction with other traffic flows, when compared to the baseline do-nothing.	



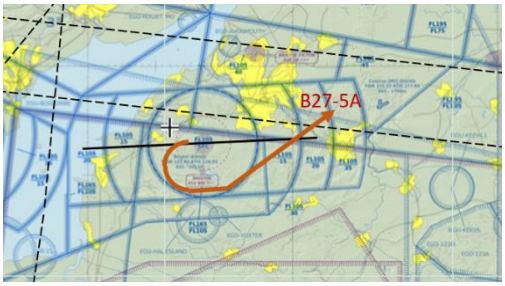
Runway 27 SID B27-4 (north-east departure) – NOT PROGRESSED

DP1: Safety	PARTIAL
Must maintain and where possible, enhance safety standards (Priority A)	
Robust safety case required to account for this busy region of airspace and potential interactions.	
DP2: Policy	NOT MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Major impact on capacity from lack of network connectivity and would not support a shared/ integrated airspace with other known traffic flows (requirements of the AMS).	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix.	
DP5: Operational	NOT MET
Must provide sufficient capacity to support future demand (Priority A)	
Severe capacity constraints from lack of network connectivity. *Potentially limited hours of use due to lack of CAS and very limited demand for a departure route in this direction. Significant capacity issues from conflict with position of potential Bristol northern Hold.*	
DP6: Environmental	MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Direct route to a small number of destinations.	
DP7: Environmental	MET
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Much of the initial climb makes use of being positioned over water. This design option has the potential to reduce overall impacts of aircraft noise when compared to the baseline do-nothing.	
DP8: Operational	NOT MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Would not comply with network connectivity and would require further CAS and changes to the network design. Also, likely conflict with known traffic flows. Therefore, significant resilience issues anticipated.	
DP9: Technical	MET
Should minimise impact on other airspace users (Priority B)	
No known impact on other airspace users.	
DP10: Technical	NOT MET
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Significant interaction with Bristol arrivals and Birmingham traffic (safety concern). Large increase in CAS required. Therefore, this design option would increase CAS and have a detrimental interaction with other traffic flows, when compared to the baseline do-nothing.	



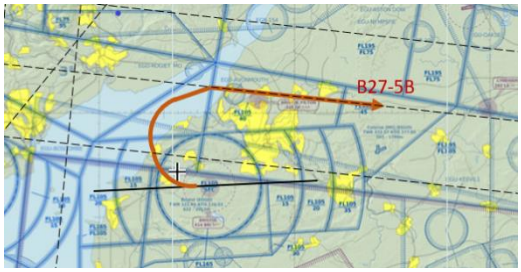
Runway 27 SID B27-5
(eastern departure) – PROGRESSED

DP1: Safety	MET
Must maintain and where possible, enhance safety standards (Priority A)	
No significant safety issues identified.	
DP2: Policy	MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Aligns with the AMS objectives.	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix. *Potential for reduced departure separation from other SIDs from the earlier initial turn.* *Should allow continuous climb operations (min climb performance may be required) - dependent on separation from potential northern Hold.*	
DP5: Operational	PARTIAL
Must provide sufficient capacity to support future demand (Priority A)	
May require speed limits to achieve required turn performance. *Potential impact with Bristol inbounds may impact potential for CCO/ CDOs.* *May require step-climb to avoid inbound transition.*	
DP6: Environmental	MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Shorter track distance than the current departure route. *Should allow continuous climbs.*	
DP7: Environmental	PARTIAL
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Due to an early turn this route is likely to just be below 7,000ft above parts of Bristol City and therefore impact ground-based stakeholders. Overall, the impacts of aircraft noise are likely to be broadly similar to today when compared to the baseline do-nothing.	
DP8: Operational	MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Well positioned for connectivity to the network. Follows current practice to what is flown today with improved network connectivity (positive resilience).	
DP9: Technical	MET
Should minimise impact on other airspace users (Priority B)	
No known impact on other airspace users.	
DP10: Technical	PARTIAL
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Utilises current CAS however may require a small revision of CTA bases to the north of Bristol Airport (no anticipated impact to other airspace users). However, potential impact with Bristol inbounds from the north/ east. Therefore, this design option may introduce a small amount of additional CAS and increased interaction with other traffic flows, when compared to the baseline do-nothing.	



Runway 27 SID B27-5A
(alternate eastern departure) – PROGRESSED

DP1: Safety	MET
Must maintain and where possible, enhance safety standards (Priority A)	
No significant safety issues identified.	
DP2: Policy	MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Aligns with the AMS objectives.	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix. *Potential for reduced departure separation from other SIDs from the earlier initial turn.*	
DP5: Operational	PARTIAL
Must provide sufficient capacity to support future demand (Priority A)	
May require speed limits to achieve required turn performance. *May require step-climb to avoid inbound transition.*	
DP6: Environmental	MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Shorter track distance than the current departure route.	
DP7: Environmental	PARTIAL
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Could be used as a respite/ alternative route (from the normal right-turn departure) to the east and used to avoid overflying Bristol & Bath. However, will overfly the Mendip Hills AoNB. Overall, the impacts of aircraft noise are likely to be broadly similar to today when compared to the baseline do-nothing.	
DP8: Operational	MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Well positioned for connectivity to the network. New route which formalises the current tactical option of left turn out (positive resilience).	
DP9: Technical	PARTIAL
Should minimise impact on other airspace users (Priority B)	
Potentially overflies a gliding site. This design option could therefore have a minor negative impact on other airspace users.	
DP10: Technical	PARTIAL
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Potential additional CAS required to the south/ east of Bristol Airport. Slight interaction with Runway 27 inbounds. Therefore, this design option may introduce a small amount of additional CAS and increased interaction with other traffic flows, when compared to the baseline do-nothing.	



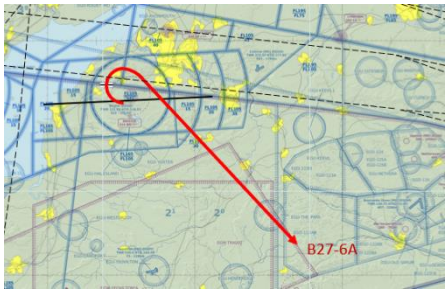
Runway 27 SID B27-5B (alternate eastern departure for slow climbing aircraft) – PROGRESSED

DP1: Safety	MET
Must maintain and where possible, enhance safety standards (Priority A)	
No significant safety issues identified.	
DP2: Policy	MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Aligns with the AMS objectives.	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix. *Potential for reduced departure separation from other SIDs through the earlier initial turn.*	
DP5: Operational	PARTIAL
Must provide sufficient capacity to support future demand (Priority A)	
Could be used for low performance departures however, possibly not suitable for aircraft able to achieve greater climb/ height.	
DP6: Environmental	PARTIAL
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Shorter track distance than the current departure route but longer than proposed B27-5.	
DP7: Environmental	MET
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Possibility for some of the climb to be over the channel and avoids Bristol City (for low performance/ slow climbers). Could be used as a respite route to the east. This design option has the potential to reduce overall impacts of aircraft noise when compared to the baseline do-nothing.	
DP8: Operational	MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Well positioned for connectivity to the network. Extra track distance could allow separation from other departures/ transitions (positive resilience).	
DP9: Technical	MET
Should minimise impact on other airspace users (Priority B)	
No known impact on other airspace users.	
DP10: Technical	PARTIAL
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Potential impact with Bristol inbounds and possible Hold location. Therefore, this design option could have an increased interaction with other traffic flows, when compared to the baseline do-nothing.	

Runway 27 SID B27-6 (south-east departure for first rotation traffic) – PROGRESSED

DP1: Safety	MET
Must maintain and where possible, enhance safety standards (Priority A)	
No significant safety issues identified.	
DP2: Policy	MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Aligns with the AMS objectives.	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix.	
DP5: Operational	MET
Must provide sufficient capacity to support future demand (Priority A)	
Would reduce pre-departure delay during first rotation (a known high demand period). *Potential for reduced departure separation from other SIDs through the earlier initial turn.* *Likely to enable CCOs.* *May require minimum performance requirements due to surrounding topography.*	
DP6: Environmental	MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Direct route and significant fuel saving from today (preferential for airlines).	
DP7: Environmental	PARTIAL
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Does not directly overfly any heavily populated areas however does fly over the Mendip Hills AoNB (although only in early hours). Overall, the impacts of aircraft noise are likely to be broadly similar to today when compared to the baseline do-nothing.	
DP8: Operational	PARTIAL
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Network capacity benefit of avoiding sectors directly overhead the LTMA and also avoids LTMA inbounds and outbounds (positive resilience). *However, would not comply with current network connectivity and would possibly require further CAS and changes to the network design.*	
DP9: Technical	PARTIAL
Should minimise impact on other airspace users (Priority B)	
Overflies a gliding site and may conflict with MoD operations (FUA agreement required). This design option could therefore have a minor negative impact on other airspace users.	
DP10: Technical	PARTIAL
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Revised and new selectable CAS will be required but it could be matched to demand periods (also potentially additional CDRs/ FUA). Therefore, this design option would increase CAS during limited hours, when compared to the baseline do-nothing.	

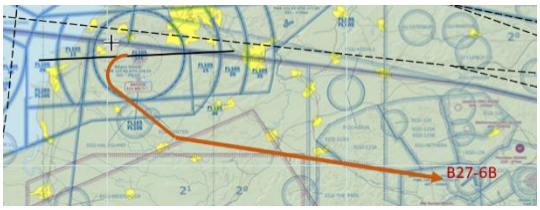
Runway 27 SID B27-6A (alternate south-east departure for first rotation traffic) – NOT PROGRESSED



DP1: Safety Must maintain and where possible, enhance safety standards (Priority A) *Incredibly complex procedure whereby traffic would travel "back at" other Bristol travel. Significant safety concerns due to the very likely confliction with other traffic.*	NOT MET
DP2: Policy Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A) *Reduction in safety standards does not align with the AMS objectives.*	NOT MET
DP3: Regulation Must be compliant with all relevant laws and regulations (Priority A) *No known conflictions.*	MET
DP4: Technical Must maximise efficiency by using modern navigation technology (Priority A) *Appropriate RNAV standard to be used dependent on traffic mix.* *Potential for reduced departure separation from other SIDs through the earlier initial turn.*	MET
DP5: Operational Must provide sufficient capacity to support future demand (Priority A) *Would reduce pre-departure delay during first rotation (a known high demand period).* *However, it would not provide reduced departure separation from other North or Eastbound departures.* *May require minimum climb performance requirements to avoid Bristol City.*	PARTIAL
DP6: Environmental Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A) *Increased local track mileage due to wrap-around (particularly when compared to B27-6).*	PARTIAL
DP7: Environmental Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A) *Supports respite (alternative to B27-6), although likely to increase the population affected by noise due to longer route. More sensitive due to intended use of only in early hours. This design option has the potential to increase overall impacts of aircraft noise when compared to the baseline do-nothing.*	NOT MET
DP8: Operational Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B) *Network capacity benefit of avoiding sectors directly overhead the LTMA and also avoids LTMA inbounds and outbounds (positive resilience).* *However, an operationally complex procedure due to integration of the route with downstream en route sectors. Also would not comply with network connectivity and would possibly require further CAS and changes to the network design.*	PARTIAL
DP9: Technical Should minimise impact on other airspace users (Priority B) *Deconfliction required with MoD operations (time based FUA agreement required). This design option could therefore have a minor negative impact on other airspace users.*	PARTIAL
DP10: Technical Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B) *A small amount of revised and new CAS may still be required but it could be matched to demand periods by use of a managed CDRs). Possible conflict with Bristol Runway 27 inbounds from the north and east. Dependency*	PARTIAL

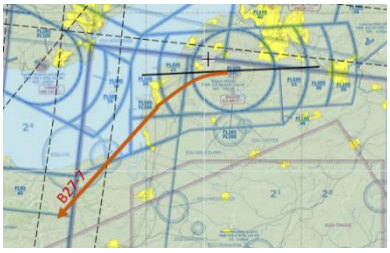
with B27-5A. Therefore, this design option would introduce a small amount of additional CAS and increased interaction with other traffic flows, when compared to the baseline do-nothing.	

Runway 27 SID B27-6B (alternate south-east departure for first rotation traffic) – PROGRESSED

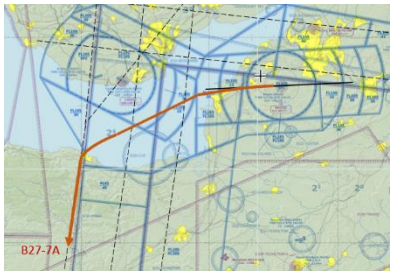


DP1: Safety	MET
Must maintain and where possible, enhance safety standards (Priority A)	
No significant safety issues identified.	
DP2: Policy	MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Aligns with the AMS objectives.	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix.	
DP5: Operational	MET
Must provide sufficient capacity to support future demand (Priority A)	
Would reduce pre-departure delay during first rotation (a known high demand period). *Potential for reduced departure separation from other SIDs through the earlier initial turn.* *Likely to enable CCOs.* *May require minimum performance requirements due to surrounding topography.*	
DP6: Environmental	MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Direct route and significant fuel saving from today (preferential for airlines).	
DP7: Environmental	PARTIAL
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Does not directly overfly any heavily populated areas however does fly over the Mendip Hills AoNB. Overall, the impacts of aircraft noise are likely to be broadly similar to today when compared to the baseline do-nothing.	
DP8: Operational	PARTIAL
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Network capacity benefit of avoiding sectors directly overhead the LTMA and also avoids LTMA inbounds and outbounds (positive resilience). *Potentially a simpler region of network airspace to integrate into, when compared to B27-6, although further detailed work required.*	
DP9: Technical	PARTIAL
Should minimise impact on other airspace users (Priority B)	
Overflies a gliding site and may conflict with MoD operations (FUA agreement required). This design option could therefore have a minor negative impact on other airspace users.	
DP10: Technical	PARTIAL
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Revised and new CAS required but it could be matched to demand periods (also potentially additional CDRs/ FUA). Therefore, this design option would introduce a small amount of limited CAS, when compared to the baseline do-nothing.	

Runway 27 SID B27-7 (southern departure) – PROGRESSED

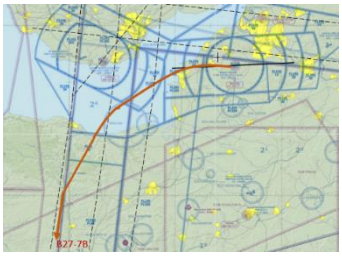


DP1: Safety	MET
Must maintain and where possible, enhance safety standards (Priority A)	
Reduces workload – currently a tactical operation.	
DP2: Policy	MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Aligns with the AMS objectives.	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix. *Potential for reduced departure separation from other SIDs through the earlier initial turn.* *Should allow continuous climb operations (min climb performance may be required) - dependent on separation from southern Hold.*	
DP5: Operational	MET
Must provide sufficient capacity to support future demand (Priority A)	
Potential for reduced departure separation from other SIDs through the earlier initial turn. *Deconflicted from current inbounds from the south (current conflict requires tactical intervention - less workload).*	
DP6: Environmental	MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Shorter route than the today's departure route (airlines currently request this routing). *Should allow published continuous climbs, subject to procedural separation from the Hold.*	
DP7: Environmental	PARTIAL
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Low performance aircraft may overfly some of Weston-Super-Mare shortly after take-off. Some of the remaining flight takes advantage of overflying the water. Overall, the impacts of aircraft noise are likely to be broadly similar to today when compared to the baseline do-nothing.	
DP8: Operational	MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Well positioned for connectivity to the network. Formalises what is currently a very tactical operation and region of airspace and should support high performance aircraft (positive resilience).	
DP9: Technical	MET
Should minimise impact on other airspace users (Priority B)	
No known impact on other airspace users.	
DP10: Technical	PARTIAL
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Improved routing around Exeter traffic. However, likely to require a small amount of new CAS to contain climb to network connection. Potential interaction with Cardiff traffic, subject to ATC procedures. Therefore, this design option would introduce a small amount of additional CAS and increased interaction with other traffic flows, when compared to the baseline do-nothing.	



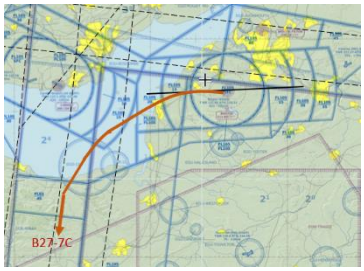
Runway 27 SID B27-7A (alternate southern departure) – PROGRESSED

DP1: Safety	MET
Must maintain and where possible, enhance safety standards (Priority A)	
Reduces workload – currently a tactical operation.	
DP2: Policy	MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Aligns with the AMS objectives.	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix.	
DP5: Operational	MET
Must provide sufficient capacity to support future demand (Priority A)	
Should allow continuous climb operations (min climb performance may be required) - dependent on separation from southern Hold. *Deconflicted from current inbounds from the south (current conflict requires tactical intervention - less workload).*	
DP6: Environmental	MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Shorter route than the today's departure route. *Should allow continuous climbs, subject to procedural separation from the Hold.*	
DP7: Environmental	MET
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Should avoid overflying Weston-Super-Mare. A lot of the remaining flight takes advantage of overflying the water. This design option has the potential to reduce overall impacts of aircraft noise when compared to the baseline do-nothing.	
DP8: Operational	MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Well positioned for connectivity to the network and formalises what is currently a very tactical operation and region of airspace (positive resilience).	
DP9: Technical	MET
Should minimise impact on other airspace users (Priority B)	
No known impact on other airspace users.	
DP10: Technical	PARTIAL
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Separation from Bristol southern arrivals subject to Hold positioning and procedural separation. Potential interaction with Cardiff and Exeter traffic, subject to ATC procedures. Therefore, this design option may have an increased interaction with other traffic flows, when compared to the baseline do-nothing.	



Runway 27 SID B27-7B (alternate southern departure) – PROGRESSED

DP1: Safety	MET
Must maintain and where possible, enhance safety standards (Priority A)	
Reduces workload – currently a tactical operation.	
DP2: Policy	MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Aligns with the AMS objectives.	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix. *Potential for reduced departure separation from other SIDs through the earlier initial turn.* *Should allow continuous climb operations (min climb performance may be required) - dependent on separation from southern Hold.*	
DP5: Operational	MET
Must provide sufficient capacity to support future demand (Priority A)	
Deconflicted from current inbounds from the south (current conflict requires tactical intervention - less workload).	
DP6: Environmental	MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Shorter route than the today's departure route. *Should allow published continuous climbs, subject to procedural separation from the Hold.*	
DP7: Environmental	PARTIAL
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Low performance aircraft may overfly some of Weston-Super-Mare shortly after take-off. A lot of the remaining flight takes advantage of overflying the water. Overall, the impacts of aircraft noise are likely to be broadly similar to today when compared to the baseline do-nothing.	
DP8: Operational	MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Well positioned for connectivity to the network. Formalises what is currently a very tactical operation and region of airspace and should support high performance aircraft (positive resilience).	
DP9: Technical	MET
Should minimise impact on other airspace users (Priority B)	
No known impact on other airspace users.	
DP10: Technical	PARTIAL
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Separation from Bristol southern arrivals subject to Hold positioning and procedural separation. Potential interaction with Cardiff and Exeter traffic, subject to ATC procedures. Therefore, this design option may have an increased interaction with other traffic flows, when compared to the baseline do-nothing.	



Runway 27 SID B27-7C (alternate southern departure) – PROGRESSED

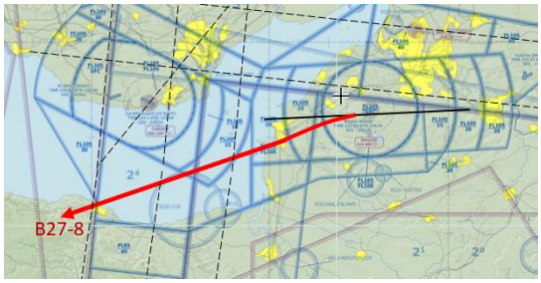
DP1: Safety	MET
Must maintain and where possible, enhance safety standards (Priority A)	
Reduces workload – currently a tactical operation.	
DP2: Policy	MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Aligns with the AMS objectives.	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix. *Potential for reduced departure separation from other SIDs through the earlier initial turn.*	
DP5: Operational	MET
Must provide sufficient capacity to support future demand (Priority A)	
Should allow continuous climb operations (min climb performance may be required) - dependent on separation from southern Hold. *Deconflicted from current inbounds from the south (current conflict requires tactical intervention - less workload).*	
DP6: Environmental	MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Shorter route than the today's departure route. *Should published allow continuous climbs, subject to procedural separation from the Hold.*	
DP7: Environmental	PARTIAL
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Low performance aircraft likely to overfly Weston-Super-Mare shortly after take-off. A lot of the remaining flight takes advantage of overflying the water. Overall, the impacts of aircraft noise are likely to be broadly similar to today when compared to the baseline do-nothing.	
DP8: Operational	MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Well positioned for connectivity to the network and formalises what is currently a very tactical operation and region of airspace (positive resilience).	
DP9: Technical	MET
Should minimise impact on other airspace users (Priority B)	
No known impact on other airspace users.	
DP10: Technical	PARTIAL
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Separation from Bristol southern arrivals subject to Hold positioning and procedural separation. Potential interaction with Cardiff and Exeter traffic, subject to ATC procedures. Therefore, this design option may have an increased interaction with other traffic flows, when compared to the baseline do-nothing.	

Runway 27 SID B27-7D (alternate southern departure) – PROGRESSED

DP1: Safety	MET
Must maintain and where possible, enhance safety standards (Priority A)	
Reduces workload – currently a tactical operation.	
DP2: Policy	MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Aligns with the AMS objectives.	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix.	
DP5: Operational	PARTIAL
Must provide sufficient capacity to support future demand (Priority A)	
Potential for reduced departure separation from other SIDs through the earlier initial turn. Continuous climbs may be constrained due to holding traffic in the south (unlikely to be able to flight plan a continuous climb).	
DP6: Environmental	PARTIAL
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Published continuous climbs may not be possible (increased fuel burn) due to not being procedurally separated from potential Hold.	
DP7: Environmental	PARTIAL
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Low performance aircraft likely to overfly Weston-Super-Mare shortly after take-off. A lot of the remaining flight takes advantage of overflying the water. Overall, the impacts of aircraft noise are likely to be broadly similar to today when compared to the baseline do-nothing.	
DP8: Operational	MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
This route matches where traffic currently flies when a conditional route is available (N90, weekends only). Well positioned for connectivity to the network and formalises what is currently a very tactical operation and region of airspace (positive resilience).	
DP9: Technical	PARTIAL
Should minimise impact on other airspace users (Priority B)	
Potential impact on MoD and GA from new CAS required. This design option could therefore have a minor negative impact on other airspace users.	
DP10: Technical	PARTIAL
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Likely to require a small amount of new CAS to contain climb to network connection. Separation from Bristol southern arrivals subject to Hold positioning and procedural separation. Potential interaction with Cardiff and Exeter traffic, subject to ATC procedures. Therefore, this design option would introduce a small amount of additional CAS and increased interaction with other traffic flows, when compared to the baseline do-nothing.	

Runway 27 SID B27-7E (alternate southern departure) – PROGRESSED

DP1: Safety	MET
Must maintain and where possible, enhance safety standards (Priority A)	
Reduces workload – currently a tactical operation.	
DP2: Policy	MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Aligns with the AMS objectives.	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix. *Potential for reduced departure separation from other SIDs through the earlier initial turn*	
DP5: Operational	PARTIAL
Must provide sufficient capacity to support future demand (Priority A)	
Potential for reduced departure separation from other SIDs through the earlier initial turn. *Continuous climbs may be constrained due to holding traffic in the south (unlikely to be able to flight plan a continuous climb).*	
DP6: Environmental	PARTIAL
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Published continuous climbs may not be possible (increased fuel burn) due to conflict with potential transitions.	
DP7: Environmental	MET
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Should avoid Weston-Super-Mare and does not overfly any other populated areas (below 7,000ft). This design option has the potential to reduce overall impacts of aircraft noise when compared to the baseline do-nothing.	
DP8: Operational	MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
This route matches where traffic currently flies when a conditional route is available (N90, weekends only). *Well positioned for connectivity to the network and formalises what is currently a very tactical operation and region of airspace (positive resilience).*	
DP9: Technical	PARTIAL
Should minimise impact on other airspace users (Priority B)	
Potential impact on MoD and GA from new CAS required. This design option could therefore have a minor negative impact on other airspace users.	
DP10: Technical	PARTIAL
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Likely to require a small amount of new CAS to contain climb to network connection. Separation from Bristol southern arrivals subject to Hold positioning and procedural separation. Potential interaction with Cardiff and Exeter traffic, subject to ATC procedures. Therefore, this design option would introduce a small amount of additional CAS and increased interaction with other traffic flows, when compared to the baseline do-nothing.	



Runway 27 SID B27-8 (south-west departure, towards Lands' End) – NOT PROGRESSED

DP1: Safety	PARTIAL
Must maintain and where possible, enhance safety standards (Priority A)	
Robust safety case required to account for this busy region of airspace and potential interactions.	
DP2: Policy	NOT MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Major impact on capacity from lack of network connectivity and would not support a shared/ integrated airspace for Bristol and Cardiff known traffic flows (requirements of the AMS).	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix.	
DP5: Operational	NOT MET
Must provide sufficient capacity to support future demand (Priority A)	
Anticipated to be a very low demand for this route (vs development cost). *Significant capacity constraints from lack of network connectivity.*	
DP6: Environmental	MET
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Direct track, minimal fuel burn.	
DP7: Environmental	NOT MET
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
This design option would include a lot of climb over the Channel however flies directly over Weston-Super-Mare before climbing over the water. This design option has the potential to increase overall impacts of aircraft noise when compared to the baseline do-nothing.	
DP8: Operational	PARTIAL
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Would not comply with network connectivity and would require further CAS and changes to the network design.	
DP9: Technical	PARTIAL
Should minimise impact on other airspace users (Priority B)	
Potential impact with military training areas to the west. This design option could therefore have a minor negative impact on other airspace users.	
DP10: Technical	NOT MET
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Detrimental impact on Cardiff traffic (e.g., departures and arrivals to/ from the south) and opposite direction Bristol inbounds from the south (safety concern). Therefore, this design option would have a detrimental interaction with other traffic flows, when compared to the baseline do-nothing.	

Annex A: Bristol Airport's Design Principles

Category	Design Principle and Priority	Details
Safety	DP1) Must maintain and where possible, enhance safety standards *Priority A*	Safety is at the forefront of everything Bristol Airport does. We believe that it is crucial that a new airspace design maintains and where possible enhances current safety standards.
Policy	DP2) Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it *Priority A*	CAP 1711 describes what airspace modernisation must deliver including: - the need to increase aviation capacity. - growth to be sustainable. - the need to maximise the utilisation of existing runway capacity
Regulation	DP3) Must be compliant with all relevant laws and regulations *Priority A*	To maintain safety and ensure integration with the wider airspace.
Technical	DP4) Must maximise efficiency by using modern navigation technology *Priority A*	The reliance on legacy technology must be removed. Furthermore, aircraft navigation capabilities have increased. To maximise the benefits that these improvements bring, including satellite navigation standards and route positioning accuracy, arrival and departure routes must be designed to make full use of modern navigation technology.
Operational	DP5) Must provide sufficient capacity to support future demand *Priority A*	We believe that Bristol Airport will need to respond to future growth opportunities and as part of the Airspace Modernisation Strategy programme will, in accordance with government policy, ensure that any new airspace design is sufficient to cope with increased demand and link efficiently into the national network.
Environmental	DP6) Should minimise fuel burn and CO_2 emissions per flight as far as possible *Priority A*	Bristol Airport should, through airspace design, seek to implement the most efficient flight profiles.
Environmental	DP7) Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders **Refer to the Noise Mitigation Design Principles (11-15) ** *Priority A*	Bristol Airport should, where possible, reduce and mitigate noise and its distribution in order to manage the impact of aviation growth on local communities in line with government policies. The Air Navigation Guidance 2017 states that the priority for airspace below 7,000ft is to minimise the impact of aviation noise, unless evidence demonstrates a disproportionate increase in CO_2 emissions

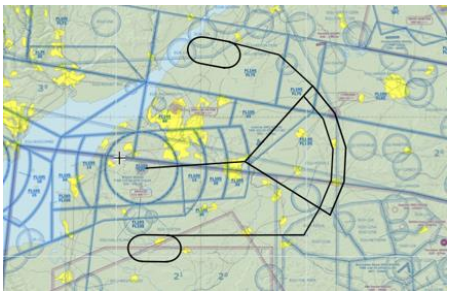
Category	Design Principle and Priority	Details
Operational	DP8) Should maintain or enhance operational resilience of the Air Traffic Control network *Priority B*	Bristol Airport should consider airspace and route designs that benefit the operation and resilience of the airport and the national airspace network.
Technical	DP9) Should minimise impact on other airspace users *Priority B*	In accordance with the CAA's published Airspace Modernisation Strategy, Bristol Airport should consider designs and procedures that facilitate and accommodate access to airspace for non-commercial users, including General Aviation (e.g., recreational aviation or private transport), Ministry of Defence and other aviation communities.
Technical	DP10) Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields *Priority B*	The volume of Controlled Airspace considered by Bristol Airport should be the minimum necessary to deliver a safe and efficient operation, taking into account Procedure Design standards and the needs of adjacent aerodromes and airfields.

Annex B: Design Principle Evaluation – RAG (Red/ Amber/ Green) Criteria

DP1: Safety Must maintain and where possible, enhance safety standards (Priority A)	
No significant safety issues identified.	MET
Issues identified that would require a robust safety case such as increased workload.	PARTIAL
Unlikely to pass a safety case.	NOT MET
DP2: Policy Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Aligned with the AMS.	MET
Partially aligned with the AMS.	PARTIAL
Significantly contradicts with the AMS.	NOT MET
DP3: Regulation Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	MET
Partially aligned with relevant laws and regulations.	PARTIAL
Not aligned with relevant laws and regulations.	NOT MET
DP4: Technical Must maximise efficiency by using modern navigation technology (Priority A)	
No known conflictions. Appropriate RNAV standard to be used.	MET
Limitation on RNAV standard or fleet mix.	PARTIAL
Option would not make use of modern navigation technology.	NOT MET
DP5: Operational Must provide sufficient capacity to support future demand (Priority A)	
No capacity constraints, option supports future schedule.	MET
Potential capacity constraint or low demand anticipated.	PARTIAL
Significant capacity constraints.	NOT MET
DP6: Environmental Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
Design option supports minimising emissions e.g., through placement or distance from airport.	MET
Emissions could be reduced further if design option is tweaked e.g., positioning.	PARTIAL
Option would have an adverse impact on the environment.	NOT MET
DP7: Environmental Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
Has the potential to reduce overall impacts of aircraft noise.	MET
Impacts of aircraft noise likely to be broadly similar to today.	PARTIAL
Has the potential to increase overall impacts of aircraft noise.	NOT MET
DP8: Operational Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	

Positive resilience e.g., good network connectivity, useful positioning of procedures.	MET
Minor design changes may be needed to improve resilience e.g., placement of procedures, avoid busy airspace.	PARTIAL
Significant resilience issues e.g., no network connectivity, operational complexity.	NOT MET
DP9: Technical Should minimise impact on other airspace users (Priority B)	
No known impact on other airspace users such as GA or military operations.	MET
Minor negative impact on other airspace users.	PARTIAL
Significant negative impact on other airspace users.	NOT MET
DP10: Technical Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
No known changes to CAS or impact on adjacent aerodrome and airfields.	MET
Small increase or change to CAS. Interaction with other traffic but not safety critical.	PARTIAL
Significant increase or change to CAS. Detrimental interaction with other traffic would create safety concerns.	NOT MET

Annex C: Point Merge Evaluation



DP1: Safety	NOT MET
Must maintain and where possible, enhance safety standards (Priority A)	
Robust safety case required to account for this busy region of airspace and potential interactions with several other traffic flows. *Significant additional training would be required.* *Concern that a Point Merge would not be an appropriate procedure to react to tactical changes such as Bristol Airport's short notice start/ stop operation in adverse weather conditions.*	
DP2: Policy	NOT MET
Must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it (Priority A)	
Significant capacity constraints (requirement of the AMS) from interaction with interaction/ conflicts with other traffic flows.	
DP3: Regulation	MET
Must be compliant with all relevant laws and regulations (Priority A)	
No known conflictions.	
DP4: Technical	MET
Must maximise efficiency by using modern navigation technology (Priority A)	
Appropriate RNAV standard to be used dependent on traffic mix.	
DP5: Operational	NOT MET
Must provide sufficient capacity to support future demand (Priority A)	
Anticipated to be a very low demand for this type of delay absorption mechanism vs very high development cost. *Significant capacity constraints from interaction/conflicts with other traffic flows.*	
DP6: Environmental	PARTIAL
Should minimise fuel burn and CO2 emissions per flight as far as possible (Priority A)	
The Point Merge sequencing arcs would introduce additional track miles in level flight, although subsequent CDA compliancy would be effective.	
DP7: Environmental	NOT MET
Should use noise-efficient operational practices to minimise the impact of aircraft noise on the local community and stakeholders (Priority A)	
A significant number of people would be newly overflown as aircraft are sequenced from the holds.	
DP8: Operational	NOT MET
Should maintain or enhance operational resilience of the Air Traffic Control Network (Priority B)	
Likely to compromise network efficiency and would also require significant further CAS and changes to the network design.	
DP9: Technical	NOT MET
Should minimise impact on other airspace users (Priority B)	
Detrimental impact from the considerable additional CAS required.	
DP10: Technical	NOT MET
Should minimise controlled airspace (CAS) and impact on adjacent aerodrome and airfields (Priority B)	
Detrimental impact on other airspace users as this would require an excessive amount of CAS to contain the holding patterns and Point Merge transitions.	