Cardiff Airport Design Workshops (Cardiff/ Bristol/ LAMP) (10/08/2021, 01/09/2021)

Attendees:

[redacted] – LD1 Design Team
[redacted] – Cardiff Airport GM
[redacted] – Cardiff Airport Watch Manager
[redacted] – Airspace Change Specialist
[redacted] – ACOG DEG
[redacted] – Cardiff ACP Design Lead
[redacted] – Bristol ACP Design Lead
[redacted] – ACOG ATC Technical Consultant
[redacted] – LD1 Design Lead
[redacted] – Bristol Airport GM
[redacted] – Bristol Airport Watch Manager
[redacted] – Cardiff ACP Project Manager

The majority of Cardiff's first design workshop was held on the 10th August 2021. Due to time restrictions on the 10th August, a short follow-up workshop was held on the 1st September 2021 to finish the design options. The discussion from both workshops have been merged together in the following notes.

Introductions and ACP Background

Update on Cardiff's ACP progress was provided, including Step 2 engagement plans.

Cardiff design lead gave an overview into the main objectives of the airspace change and associated changes. Plans include replacing all 5 current SIDs and providing a delay absorption mechanism such as a new Hold (most likely) or point merge/ trombone procedure (less likely).

Radar data showing Cardiff and Bristol traffic shown (summer 2018) – Brecon (BCN) VOR clearly not being used by a lot of the routes. Direct concentrated tracks shown out of Cardiff.

Bristol departures to the south-west impact where Cardiff can position a new Hold (over the channel). Bristol most likely to continue being a lot busier than Cardiff; design options need to account for this.

Airspace map around Cardiff shared showing potential areas where changes to controlled airspace may be required such as dimensions, height or classification. These areas include the Cotswold CTA (4A/ 9A/ 11A/ 8A/ 12A/ 3A) to the North of Cardiff, uncontrolled airspace to the north-west of Cardiff and the Severn CTA to the south-west of Bristol Airport. Cotswold CTA to the north may require its base raising however, too early in the process to assume any changes.

[redacted]

Point merge discussed but highly unlikely to be progressed. Potential options shown to the south of Bristol Airport or west or Cardiff in the Channel.
Attendees agreed on the following reasons why a point merge would not be appropriate:
- Interactions with Bristol traffic
- High impact on MoD and GA
- Large amount of Class G airspace would be required
- Not enough traffic to justify a point-merge
- Vast majority of traffic would be vectored away from the procedure
- Not situated around the main arrival streams of traffic

Suggestion for Cardiff to overlay the LD1 route structure on designs (as done by Bristol) in order to be pragmatic. Useful for the airports to know where future network traffic is likely to be.

From a Swanwick perspective, Cardiff and Bristol inbounds on separate routes would not be ideal. There are also not enough available network routes for this to be possible.
Network routes W/ X/ Y/ Z shown with allocations for Cardiff and Bristol traffic.

Pushback on there being several changes in close proximity e.g. a change to how systemised traffic is presented following several airport ACPs. There could be large training and safety concerns. Several LAMP iterations alongside airport ACPs could potentially create an issue such as confusion for stakeholders. It's important that linked ACPs are communicated appropriately with stakeholders – such as during consultation – so they understand the combined impact/ benefit of all changes.

Cardiff's preferred Hold location (covered fully below) expected to be south-west from the airport and over the Channel. Example RNAV transitions shown from an example Hold in this location. Potential for conflict with departures in this area but should be able to allow continuous departures with a careful design.

Question raised on whether Cardiff has done any modelling on future demand/ capacity? Not been completed formally for Cardiff.
Helpful exercise to deduce future picture. NATS Analytics helped Bristol with this for their ACP (still anticipating this growth in the future). Cardiff have a Design Principle focused around yielding the maximum capacity benefits.

Objective evidence will also be useful to justify changes such as changes in controlled airspace to the GA community. Likely pushback on changes to controlled airspace around Cardiff Airport.

Before looking at potential design options, Cardiff's Design Principles were shared and run through quickly.

Design Work

SID Discussion

Design work should focus on optimising the design solely for Cardiff Airport in the first instance then consider other operations or relevant proposals.

Runway 12 SID to the South drawn up (route C1). Departures get airborne then immediately turn right towards the South. Large percentage of all Cardiff traffic is from/ to the south.

Southern departures off both runways could end in a similar location (routes C1 and C10). They could merge around EXMOR although this would create a sharp turn on departures (particularly Runway 30). They could also possibly meet closer to Exeter area (likely to be around 12,000ft at this point so no noise concerns).

Noted that St Athan is in close proximity, particularly for Runway 30 deps. Could possibly route around the back then over St Athan.

Routes C9 off Runway 12 and C18 off Runway 30 to the south-east for known popular destinations.

Runway 12 southern departure added (Route C2) which could end at join the Runway 30 south-west departure (Route C11). Potential interaction with proposed Hold location for these SIDs. Suggestion that if a Hold was close enough, with trombone transitions, it gives the option for SIDs to climb out underneath the Hold then climbing once the Hold is passed.

Above SIDs to the south from each Runway drawn up where the majority of flights are routed. Further SIDs to the south-west towards Lands' End added (C3 and C12). A small number of flights are known to flight plan via LAZNO then head back down south-west, due to route charge savings for airlines (no route charge past LAZNO).

Potential for Cardiff departures to fly longer over the channel (less ground-based impact) or to have a Hold in this location (south-west of Cardiff). Trombone transitions from a Hold could allow room for departures (keep the transitions relatively high).

A departure route to the east could replace current flights via CLN. Route directly to the east drawn from each runway end (C8 and C18) with the assumption that Bristol's Hold will be moved away from their overhead and therefore removes traffic from this area. Known destinations to the east and a noise benefit from flying east over the Channel. Network preference for eastern departure route to be the southern side of Bristol CTA.
Additional route (C8a) drawn slightly to the south of the overhead.

North-east departure off Runway 12 (C7) could make use of the remainder of the Bristol Channel, serving known northern UK destinations.

Runway 30 departures to the right could be de-conflicted from Cardiff's preferred Hold location (route C17 drawn). Potential issue from the noise impact for ground-based stakeholders and increased track mileage.

Discussion on whether it is possible to change a SID last minute i.e. if the Hold is active, move a 30 departure from left to right. It would probably have to be done early due to safety/

workload concerns behind this. Known American example of two SID options which can be changed up to the holding point; pilot told which one to fly at this point.
ACOG currently exploring this but not something which is currently done.

Obvious space for a departure route over the Channel to the north-east. North-east departure off Runway 30 (C16) could be routed around Cardiff city centre. However, very likely to interact with inbounds from the north.

Runway 30 North-West departure (C14) for Irish/ Northern Irish departures; and west for infrequent Caribbean departures (C13) which goes straight for about 5 miles then straight west. West route could potentially interact with preferred Hold location.
Equivalent route (C4) included for Runway 12 departures with a right turn over the channel. This could avoid ground-based stakeholders but may interact with holding aircraft.

North route off Runway 30 (C15) included for known UK northern destinations e.g. new controlled airspace. There may not be enough available capacity (or future demand) to warrant this route.

Hold discussion

Cardiff's requirements for a Hold are primarily around future proofing (increase in flights) and large peaks in traffic e.g. event in the city attracting lots of visitors. Weather or training flights could also be factors which would necessitate a Hold. Cardiff traffic still likely to be much less than Bristol (possibly looking at 2 Holds). Cardiff need to be very clear on why a Hold is required; it is a large amount of airspace to justify.

It is likely that Cardiff will require a mechanism to maintain traffic which cannot currently land. Champions league period was the busiest recent period, holding 22/24 aircraft at peak (albeit a very rare event).
A Hold in the overhead would not be ideal due to the known radar garbling issue, making it unable to monitor aircraft.
Suggestion to consider Cardiff's busiest "axis" and use this as priority for a Hold location e.g. CPT inbounds or in from Spain/ Portugal from the south.

Hold 1 – in the overhead – suggested as an option to align with "today". Cardiff's Statement of Need references RNAV capability rather than specifically stating to move the Hold.
There is a known radar issue ("cone of silence") where traffic is "lost" due to the close proximity in the overhead of the airport.
This issue doesn't generally apply to departures, so if Cardiff introduces some tight/ fast-climbing SIDs, there shouldn't be a problem.

Hold to the south-west of Cardiff Airport drawn in (Hold 7). As noted above, it could be positioned close enough to the airport such that departures can pass underneath. The vast majority of arrivals are from the south and east and this would utilise relatively quiet controlled airspace over the Channel.

A Hold to the north (Hold 5) may take aircraft out of the way of other Cardiff traffic. Although this may seem a bit far from the airport, aircraft would be holding during this time in the air anyway. Not currently known who would control a Hold in this region. The descent to landing

could also be positioned over the Channel thus less noise impact.
There is currently lots of "dead" space to the north-west of Cardiff; known to be a quiet section of airspace. There is also a known high level of traffic from the north (45% of arrivals in 2019 from Ireland or UK).

Another option to the north of Bristol airport (Hold 6) suggested which could be used for inbound traffic from the UK/ Ireland. However, this could introduce additional track mileage and interact with Bristol traffic. This could be more beneficial for Bristol Airport as a contingency or shared Hold (note that there have been instances of Bristol utilising Cardiff's current Hold in the past, when needed).
Points above for Hold 5 also similar for Hold 6.

Discussion on whether there would be space in between Rwy12 and Rwy30 departures for a Hold (Hold 2a drawn). There would be benefits from being situated over the Channel however, procedural separation may be an issue.

Position in the north-west (Hold 4) suggested as an alternative position for a Hold, as a lot of the airspace is not currently used. Major disbenefit for this location could be the known wind-farm development due to take place in this region.
Hold 3 included as an alternative within this area of airspace but over the Channel.

There are known benefits of a Hold to the north – such as less new controlled airspace required and minimised impact on users. There could be flexibility on the orientation and precise location so Hold 5 has been included as a "generic" Hold to the north with a variety of specific geographical locations (shown as dotted circles on the map). Likely for controlled airspace to start around 65 going forward which would affect holding levels.

Area of known windfarm development south of wales which could cause issues (TMZ area above).

Question on whether a Hold could be switched based on runway use. No example of this in the past – likely far too complex to implement. ACOG confirmed. Could potentially truncate STAR with transitions to the Hold ends.

It was noted that Cardiff's Statement of Need specifically references the potential for a shared Cardiff and Bristol Hold. A Hold to the south-east (such as Hold 2b) could provide an opportunity for a shared Cardiff/ Bristol Hold with the added benefit of less airspace required (across two Holds). Unsure who would control this and how flights would be allocated across different levels etc.

Discussion held on the potential maximum Hold level if both airports were holding inbounds at the same hold. Dependent on enroute network above and available levels.

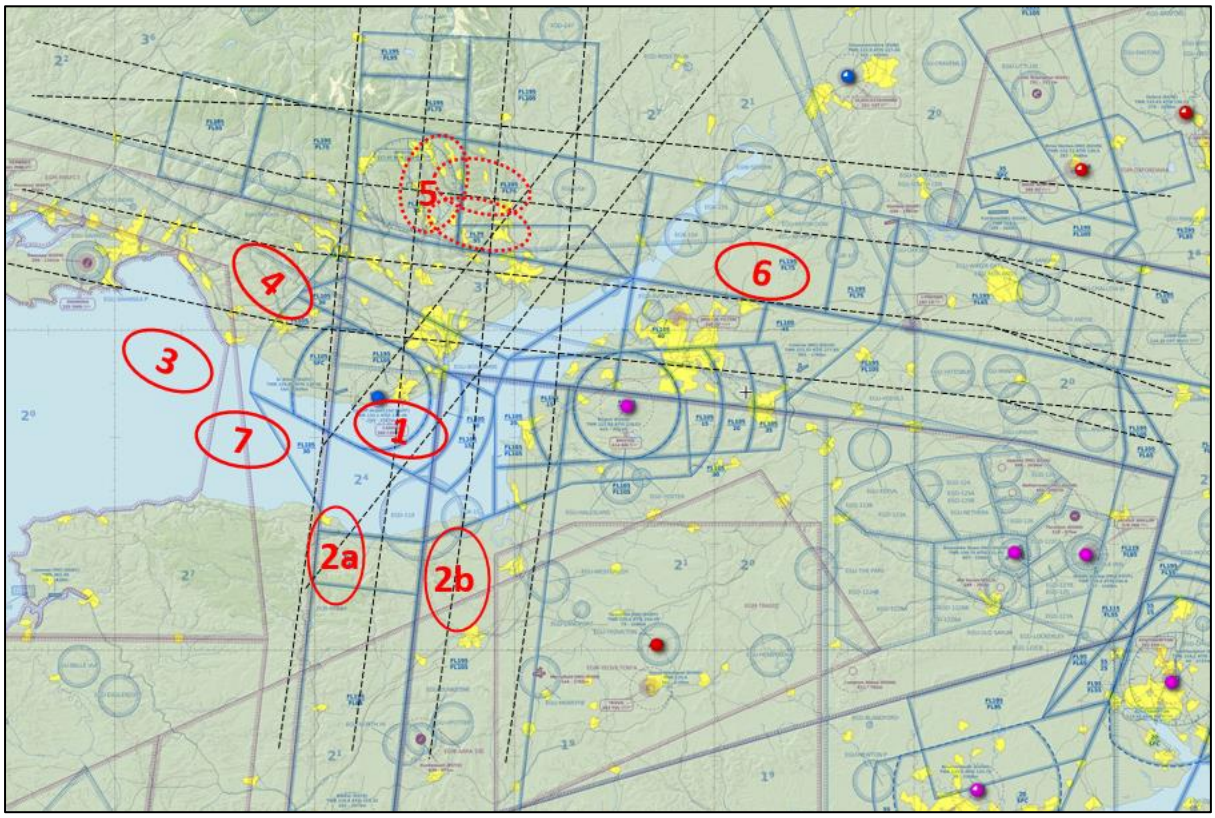
Stansted and Luton used the same Hold for years where there was a single delegated holding facility to assign levels to all holding inbounds. Heathrow and Northolt also share a Hold at times. Birmingham have an alternate Hold which is shared by Manchester and London inbounds.

Option to leave a level in the stack free for either arrivals or departures.

[redacted]

Hold Options

7 potential Hold options were initially drawn up. Cardiff preferred Hold location is number 7, over the Channel and west of the airport.



Hold Pros and Cons

1) *Hold in the overhead (over the CDF) – as per today*

Pros

- Already in place today so minimal change e.g. no change to safety plan or Missed Approach procedures
- Status quo with ground-based stakeholders, consultation may be less contentious than other options
- Less change for aviation stakeholders when compared to other options
- No conflict with Bristol outbounds
- No extra fuel burn/ track mileage when compared to today
- Meets all Design Principles

Cons

- Extra fuel burn compared to other options
- Potential conflict with Runway 27 departures (south-west then south), dependent on alignment
- Known radar issues from Hold being in the overhead
- Conflict with Cardiff departures (most impact on departures of all options)

[redacted]

- Could impact ability for continuous climbs

2a) *Hold to the south of Cardiff Airport*

Pros

- Improvement in safety from today as it is not in the overhead
- Could be deconflicted from departures, dependent on potential separation standards
- Part of the established LAC structure therefore ease of utilising existing network integration
- Transitions over water could provide a noise impact benefit

Cons

- Potential interaction with Exeter outbounds
- High impact on other aviation stakeholders e.g. GA, MoD
- Only really suits arrivals from the south
- Design of the STAR could be difficult to this location

2b) *Hold to the south-east of Cardiff Airport (potential option to be used as a shared Cardiff and Bristol Hold)*

Pros

- Improvement in safety from today as it is not in the overhead
- Reduced impact on the network from a shared Hold
- Potentially less controlled airspace required for a shared Hold (than two individual Holds)
- Transitions over water could provide a noise impact benefit
- More route options for departures from both Cardiff and Bristol Airports

Cons

- Complexity of Hold management/ controlling authority
- Could be difficult to enable enough track mileage for both airport arrivals (potentially mitigated by moving the Hold further south)
- Likely to require 2 exit points off the Hold for each airport
- Transitions to Cardiff Airport would probably cross a southerly SID which would have to be tactically managed
- More airspace or a change to classification probably required
- Will impact the MoD
- Above the Mendip AoNB
- Dependent on the success and alignment of the Bristol ACP
- Not a lot of traffic arriving from this direction (partly due to network design)
- Operationally difficult position

3) *Hold to the west of Cardiff Airport*

[redacted]

Pros

- Improvement in safety as it is not in the overhead
- Transitions over water could provide a noise impact benefit
- Deconfliction from network and departure routes
- Moved away from known wind-farm developments which would affect Hold 4 (below)

Cons

- Large impact on the MoD
- Large amount of additional airspace required
- Unsuitable for training traffic, known to use the Hold
- Long overshoot
- GA traffic cross from Swansea in this area e.g. microlights at FL 70/80
- More fuel required for airlines due to hold location

4) *Hold to the north-west of Cardiff Airport*

Pros

- Improvement in safety as it is not in the overhead
- Could be deconflicted from proposed departure routes (would interact with current routes)

Cons

- Potential infringements (primary and secondary) – safety concern
- Known wind-farm development in this area

5) *Hold to the north of Cardiff Airport, around BCN*
Range of potential locations shown as there is choice for the precise location and orientation

Pros

- Improvement in safety as it is not in the overhead
- Opportunity for traffic from the west, north and east to use this Hold (significant proportion of traffic is from the north)
- Could possibly be designed to be positioned within current controlled airspace, therefore minimised impact on controlled airspace and network users
- Flexibility on location/ orientation to fit in with network

Cons

- Potential conflict with Cardiff departures to the north
- Probable noise impact from transitions (over land and possibly built-up areas)

6) *En-route Hold to the north-east of Cardiff and Bristol Airport*

Pros

[redacted]

- Improvement in safety as it is not in the overhead
- Could be shared with Bristol Airport thus impact fewer people
- Simplifies holding traffic from the east
- Transitions over water could provide a noise impact benefit
- Could potentially work as a contingency or offload Hold used infrequently e.g. bad weather, special events

Cons

- Airlines would have to flight plan for excessive additional fuel (very far from the airport)
- Transitions from this Hold would most likely conflict with Bristol traffic (down the channel); however, a transition may not be required if this were to be used as an en-route Hold. In this case, aircraft could potentially be transferred to a different Hold.
- Very difficult to use for arrival traffic from the south

7) *Hold over the channel, to the south-west of Cardiff Airport*

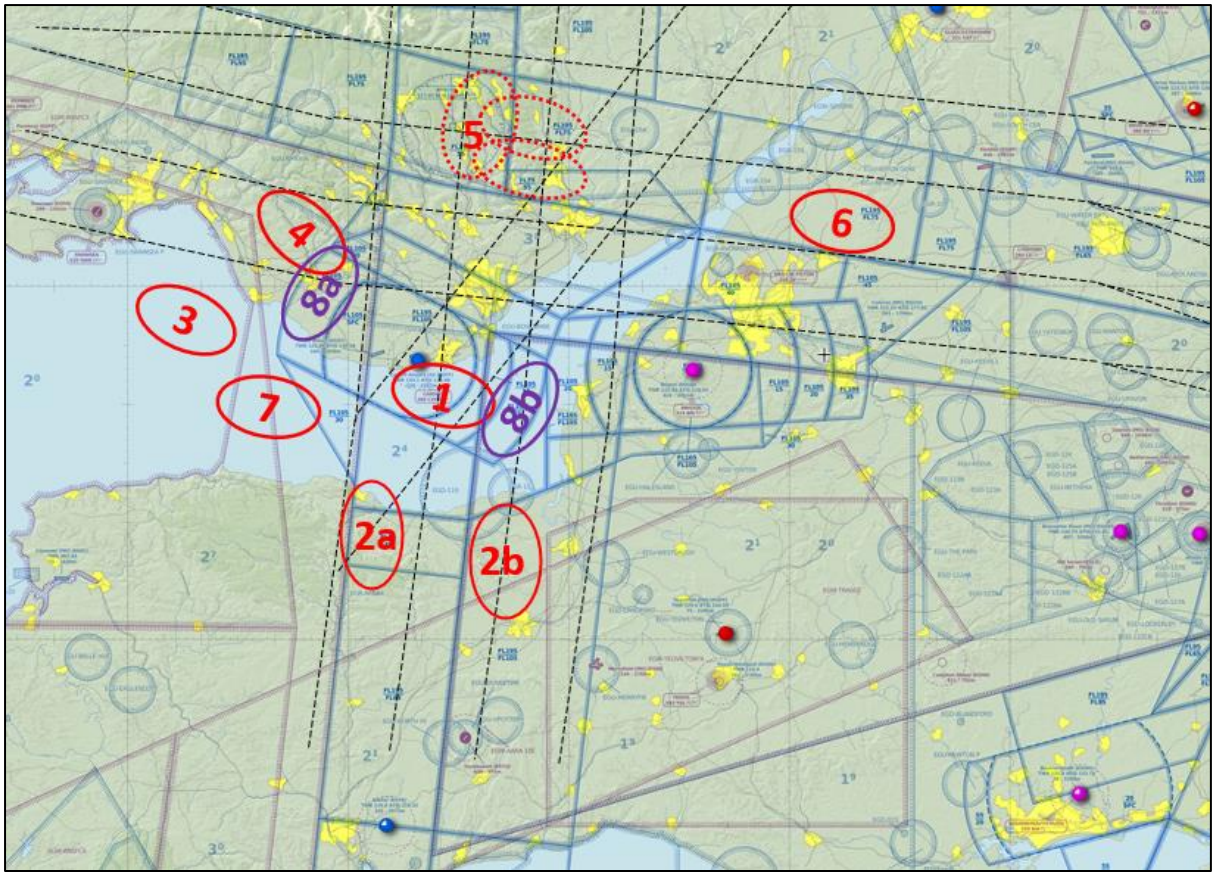
Pros

- Improvement in safety as it is not in the overhead
- Transitions primarily over water therefore noise impact could be minimised (potentially less contentious to consult on than other options)
- Conflicted from, all but one, potential departure route
- Transitions could be trombone approaches into current controlled airspace
- Departures could potentially be held underneath (CDO more beneficial than CCOs)
- Optimal for both runway ends (equidistant)

Cons

- New controlled airspace potentially required
- Training traffic consideration

[redacted]



Following further discussion, an additional 2 Holds – shown in purple above – were added as potential options (Holds 8a and 8b). These are placed close to Cardiff Airport at either runway end.
Originally Hold 8a was assumed to serve Runway 12 and Hold 8b for Runway 30. However, the runway ends could be reversed to allow more distance for descent (down-wind) and allow the Holds to be higher. This could also potentially reduce interactions with Bristol inbounds and outbounds.

8a) *Hold to the north-west of Cardiff Airport, at the "end" of Runway 30*

Pros

- Makes use of otherwise unused ("dead") space above the final approach
- Improvement in safety from today as it is not in the overhead
- Simple transitions
- No interactions with GA who operate at much lower levels
- Within existing controlled airspace
- Option for either direction holding

Cons

- Positioned above populated Bridge End area
- Potential risk of clutter on controller displays – if so, may be difficult to vector onto final approach

- Protected Hold area may require extended controlled airspace (safety assessment required)
- This is an unknown operational procedure/ technique
- If the runway in use was changed after a STAR was issued, this could create operational/ safety concerns. It is likely that STARs will stars from far away.

8b) *Hold to the south-east of Cardiff Airport, at the "end" of Runway 12*

Pros

- Makes use of otherwise unused ("dead") space above the final approach
- Improvement in safety from today as it is not in the overhead
- Simple transitions
- No interactions with GA who operate at much lower levels
- Within existing controlled airspace
- Option for either direction holding

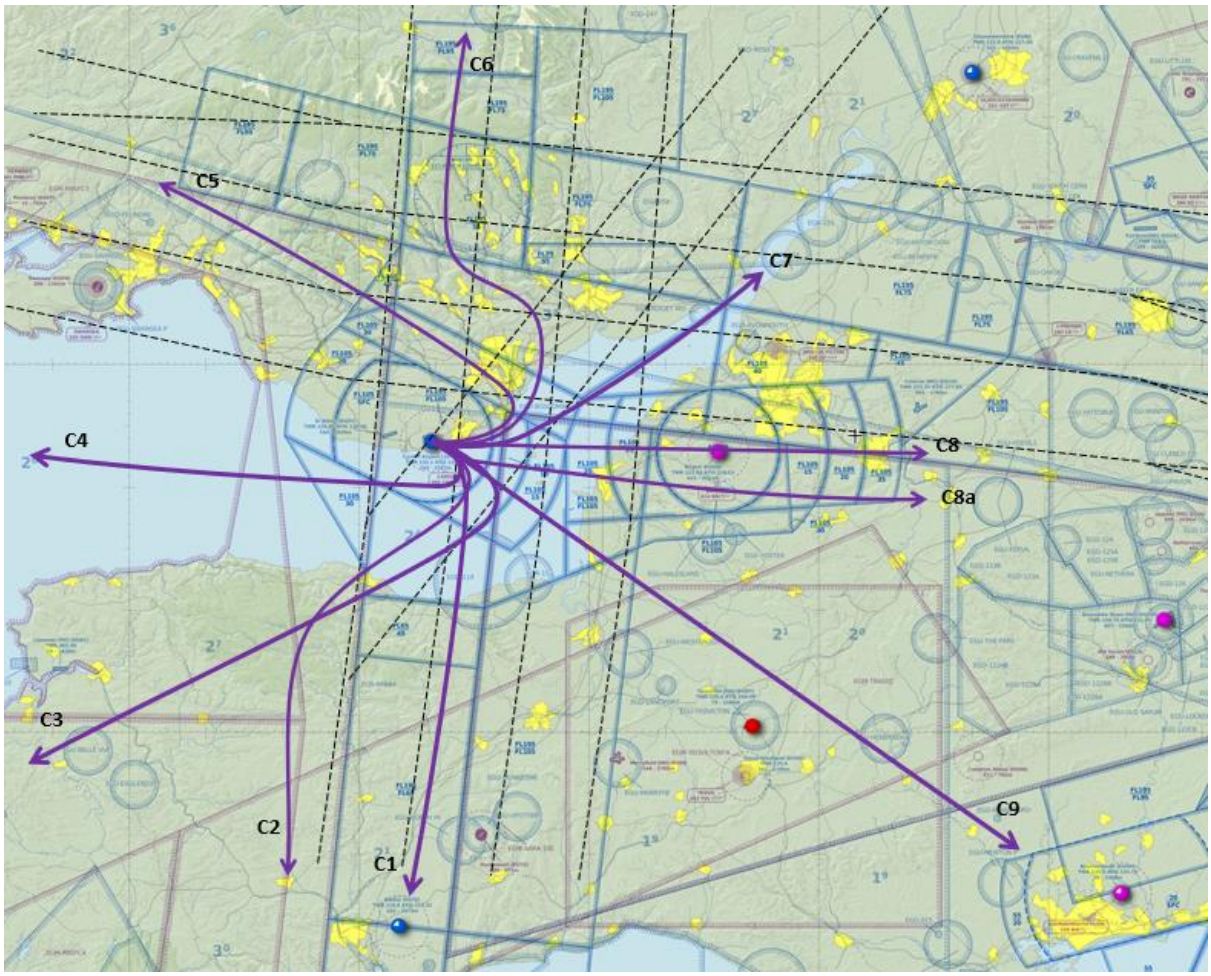
Cons

- Potential interaction with Bristol 27 departures and Runway 09 arrivals from the north (STAR, Hold and transition)
- Potential risk of clutter on controller displays – if so, may be difficult to vector onto final approach
- Protected Hold area may require extended controlled airspace (safety assessment required)
- Potential transition to the north-east is adjacent to Cardiff City (albeit over the Channel)
- Danger area close to the location of this Hold, albeit seldom used
- If the runway in use was changed after a STAR was issued, this could create operational/ safety concerns. It is likely that STARs will stars from far away.
- This is an unknown operational procedure/ technique

[redacted]

SID Options

Runway 12 SIDs (pros and cons)



SID C1 – *Runway 12 departure to the south*

Pros

- Noise benefit from lots of the climb being over water
- Good chance of being deconflicted from the potential Hold(s)
- Potential to truncate and reach the network which could help Bristol traffic
- No significant change from today
- Noise impact similar to today (may be less contentious than other options with ground-based stakeholders)
- A known large amount of traffic flies to/ from the south

Cons

- Impact on MoD operations

SID C2 – *Runway 12 departure to the south*
Possibly joining LD1 route "W"

[redacted]

Pros

- Noise benefit from lots of the climb being over water
- Uses existing airspace
- Part of the established LAC structure therefore ease of utilising existing network integration

Cons

- Potential interaction with proposed Hold
- Impact on GA/ MoD

SID C3 – *Runway 12 departure to the south-west*

Pros

- Noise benefit from lots of the climb being over water
- Cost effective for airlines (albeit not environmentally favourable)

Cons

- Difficult to link in with network
- MoD interactions
- Huge track mileage for any destinations elsewhere to the west (or which there are not many)
- Adverse impact on aviation stakeholders
- New controlled airspace potentially required
- Low demand anticipated for this route/ direction

SID C4 – *Runway 12 departure to the west*

Pros

- Noise benefit from being primarily all over water
- Supports growth for more western/ transatlantic destinations

Cons

- Huge amount of additional controlled airspace required
- Impact on GA stakeholders

SID C5 – *Runway 12 departure to the north-west*

Pros

- Within an established route structure and current operation (flight planned via BCN)
- Safety assured

[redacted]

Cons

- Could conflict with network traffic
- Known wind-farm development in this region
- Large impact on GA users

SID C6 – *Runway 12 departure to the north*

Pros

- Similar to current BCN departure (slightly further to the east) – follows current tracks in use
- Could be routed around a Hold to the north of Cardiff Airport
- Routed to make use of the channel and to avoid populated areas
- Could join and intercept network Route "X"
- Not a huge amount of potential conflictions

Cons

- Interaction with potential Hold in the BCN location

SID C7 – *Runway 12 departure to north-east up the channel*

Pros

- Similar to what is flown today
- Noise impact benefit from being situated over water
- Less track miles flown than today
- No additional controlled airspace required

Cons

- Probably required to join the network further south ("Route D") – minimum height restrictions may be required
- Possible interaction with Bristol 09 arrivals from the north and Runway 27 departures to the north/ east
- Proposed Bristol inbound route would be in direct conflict
- Quite workload intensive e.g. coordination with both Swanwick and Bristol

SIDs C8/ C8a – *Runway 12 departure to the east (two slightly different options)*

Pros

- C8a avoids populated areas more than C8, and flying directly overhead Bristol Airport
- Direct route (environmentally efficient)

[redacted]

- May not require new controlled airspace

Cons

- Might be too far south from where the network requires SID to end
- Complexity of ATC procedures alongside Bristol departures
- Heathrow arrivals could impact climb (network Route E) alongside Stansted/ Luton arrivals (Route D)
- Likely interaction with Bristol arrivals
- Incredibly busy area of airspace in the morning

SID C9 - *Runway 12 departure to the south-east (possibly used during first rotation, known busy period)*

Pros

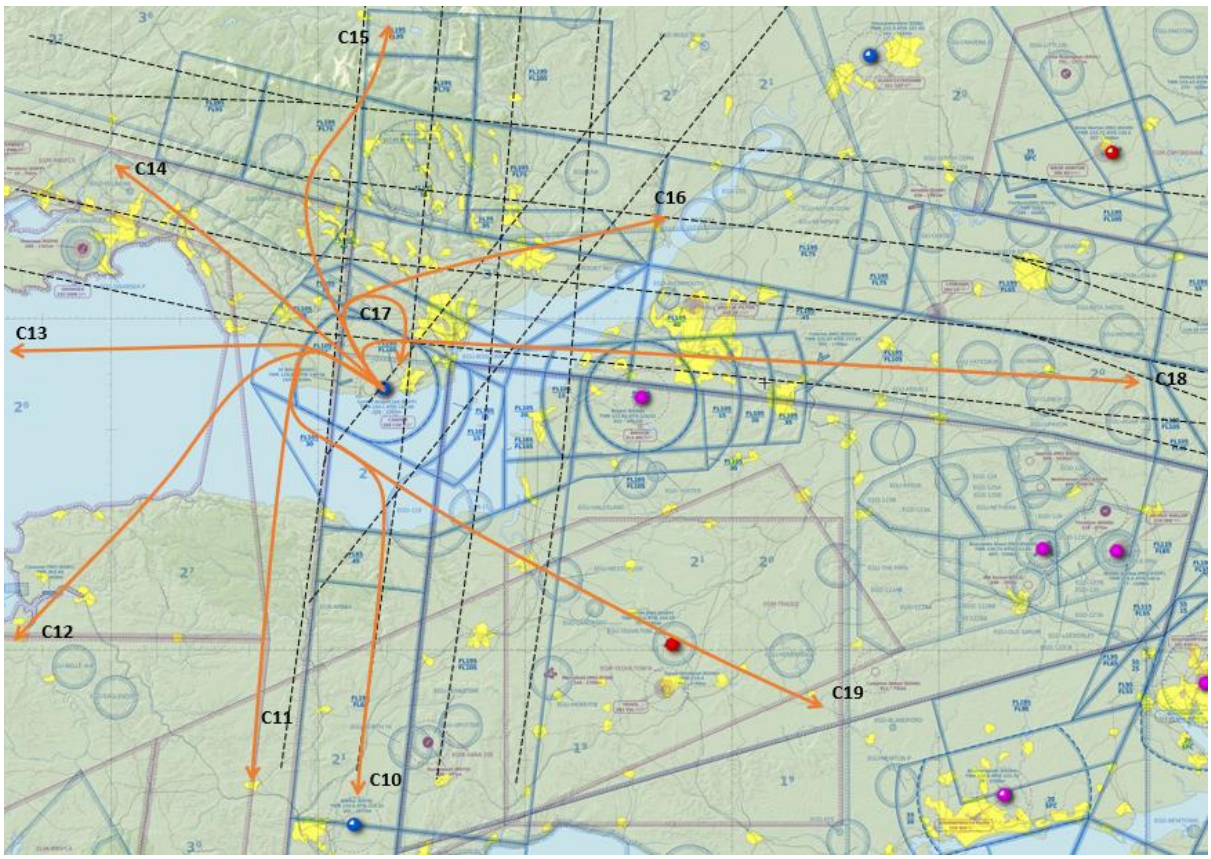
- Direct route to known destinations
- Shorter and more direct route than flown today
- Benefit of flying over the channel early on
- Could be used as an early morning/ first rotation offload route (before MoD usage)

Cons

- Lots of new controlled airspace required
- Known military interactions (TRA)
- Network connectivity/ integration work required
- Potential conflict with Bristol arrivals
- Increased workload for Hurn sector controller
- Height of aircraft may cause interactions with London traffic e.g. Heathrow arrivals

[redacted]

Runway 30 SIDs (pros and cons)



SID C10 – *Runway 30 departure to the south*

Pros

- Noise benefit from lots of the initial climb being over water
- Could be routed away from the Holds
- Potential to truncate and reach the network earlier, which could help Bristol traffic
- No significant change from what is flown today
- Part of the established LAC structure therefore ease of utilising existing network integration

Cons

- Routes around St Athan (albeit no alternative)

SID C11 – *Runway 30 departure directly to the south*

Pros

- Noise benefit from lots of the climb being over water
- Likely to be well integrated with LD1 options

[redacted]

- Part of the established LAC structure therefore ease of utilising existing network integration

Cons

- Extra controlled airspace most likely required
- May need to be held down due to potential Hold location
- In close proximity to St Athan

SID C12 – *Runway 30 departure to the south-west*

Pros

- Noise benefit from lots of the climb being over water
- Cost effective for airlines (albeit not from being environmentally favourable)

Cons

- Difficult to link in with network
- MoD interactions
- Huge track mileage for any destinations elsewhere to the west (or which there are not many)
- Adverse impact on aviation stakeholders
- New controlled airspace potentially required
- Low demand anticipated for this route/ direction

SID C13 – *Runway 30 departure to the west*

Pros

- Noise benefit from being primarily all over water
- Support growth for more western/ transatlantic destinations

Cons

- Huge amount of controlled airspace required
- Impact on GA stakeholders

SID C14 – *Runway 30 departure to the north-west*

Pros

- Within an established route structure and current operation (flight planned via BCN)
- Safety assured

Cons

- Could conflict with network traffic

[redacted]

- Known wind-farm development in this region
- Large impact on GA users

SID C15 – *Runway 30 departure to the north*

Pros

- Not a huge amount of potential conflictions
- New controlled airspace may not be required
- Able to avoid flying above populated Bridge end
- Deconflicted from Cardiff inbound routes
- Should be able to align with the en-route network

Cons

- Interaction with known gliding sites
- Area of known windfarm development
- Potential interaction with slow Cardiff departures
- Likely conflict with a potential Hold location around BCN
- Potentially increased workload for Sector 5 controllers

SID C16 – *Runway 30 departure to the north-east*

Pros

- Very similar to what is flown today
- Could be positioned above other Cardiff traffic
- Likely to make the height required for network integration (Route D)
- Procedures for safely crossing Cardiff/ Bristol traffic are known and used today

Cons

- Potential interaction with Bristol north-west departures
  (height restrictions could be used as there has to be a cross-over at some point)

SID C17 – *Runway 30 wrap-around SID to the south*

Pros

- Deconflicted from potential Hold in the south-west and Cardiff arrivals
- Avoids populated areas and could be as high as 7/10K over the airfield
- Could join network route “W” easily
- Early increased height could help ease integration with the network and remove further conflicts

Cons

[redacted]

- Less options for departure splits
- Lost the ability to radar separate – safety concern
- More track mileage (less direct departure than other options)
- Counter-intuitive – "turn right to head south" and build up complexity
- Potential conflict with Exeter departures

SID C18 – *Runway 30 departure to the east*

Pros

- Early height benefit from turn (particularly when compared to Runway 12 east SID)
- Could integrate with the network
- Direct route (environmentally efficient)
- May not require new controlled airspace

Cons

- Likely interaction with Bristol arrivals
- Incredibly busy area of airspace in the morning

SID C19 – *Runway 30 departure to the south-east*

Pros

- Direct route to known destinations
- Shorter and more direct route than flown today
- Benefit of flying over the channel early on
- Could be used as an early morning/ first rotation offload route (before MoD usage)

Cons

- Lots of new controlled airspace required
- Known military interactions (TRA)
- Network connectivity/ integration work required
- Potential conflict with Bristol arrivals
- Increased workload for Hurn sector controller
- Height of aircraft may cause interactions with London traffic e.g. Heathrow arrivals

Transitions

RNAV Transitions from the Holds were discussed, including the use of a T-Bar either side of the airport – transitions from the Holds would meet the end of the T-Bar procedure. Likely to utilise a down-wind onto the T-Bar procedure and final approach.

[redacted]

Different approach/ trombone options will be beneficial (currently restrictions apply at Cardiff Airport).

A transition in the overhead shouldn't be a problem if separated accordingly.

Example STARs drawn up, based on potential Hold locations. STARs most likely drop down to around 7,000ft. Typically STARs arrive from the north and south, along known network routes.