

ACP-2021-006

**ENABLING BVLOS RPAS OPERATIONS FROM KEEVIL
AIRFIELD, WILTSHIRE**

**STAGE 2B – OPTIONS APPRAISAL
(PHASE 1 – INITIAL)**

Version 2



Ministry
of Defence

Responsible Authors of this Document

The Sponsor for this Airspace Change Proposal is the Ministry of Defence and will be managed under Project LOVERIDGE. The project team is drawn from Joint Helicopter Command, specifically the Watchkeeper Force and 47th Regiment Royal Artillery.

Only responsible authors may implement amendments via the Project LOVERIDGE lead. All revisions will be listed and detailed in the table below.

Revision Number	Affected Part	Revised By	Notes
Initial Issue 1.0		Project LOVERIDGE lead	
Version 2	Sect 1 – Design Options Evolution (p.4) Sect 2 – Option 0 inclusion (p.5) Sect 2 – Danger Area (Simple Design) additional image (p.12) Sect 2 – Preferred Option (p.18)	Project LOVERIDGE lead	Amendments after CAA Gateway review

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Introduction

This document forms part of Stage 2B of the Airspace Change Proposal ACP-2021-006, which aims to facilitate Beyond Visual Line of Sight (BVLOS) take-off and landing of Remotely Piloted Air System (RPAS) from Keevil Airfield, Wiltshire in order to operate within the Danger Areas over Salisbury Plain Training Area.

The aim of this document is to provide evidence to the CAA that the Change Sponsor has adhered to the process laid out in CAP 1616 for Stage 2B prior to the Develop and Assess Gateway.

This document follows a period of stakeholder engagement at Stage 2A in which stakeholders were asked to comment on the effectiveness of the design options against the design principles. The Stage 2A Options Development document (Ref. A) was uploaded to the Portal for stakeholders to provide feedback on. To finish Stage 2A the Design Principle Evaluation document (Ref. E) was also uploaded to the Portal.

Section 1

Context

Statement of Need (SoN). Approval is sought for a Permanent Airspace Change surrounding Keevil Airfield, a satellite aerodrome of RAF Brize Norton located North West of the Salisbury Plain Danger Areas. In order to comply with current MAA regulation, segregated airspace is required to facilitate Beyond Visual Line of Sight (BVLOS) operation of military Remotely Piloted Air Systems (RPAS) between Keevil and EG D123; the principal operating airspace already utilised for military BVLOS activity. The airspace design must enable military RPAS to remain within segregated airspace at all times. Operating from Keevil allows for essential aircrew and groundcrew training in an environment that is not practicable from other UK locations.

Options Considered.

Type of segregated airspace	Suitable for RPAS BVLOS operations	Comment
Class A	No	This option is unjustifiable as: <ul style="list-style-type: none">- IFR flight is mandatory in Class A- It represents an unnecessary restriction on other air users- It would be an unnecessary burden on air traffic service units.
Class D	No	This option is unjustifiable as it would be: <ul style="list-style-type: none">- Unreasonably restrictive to other air users- Be difficult to justify air traffic management resources
Class G (Danger Area)	Yes	Potential to have less impact on other airspace users as it is able to be tactically managed (NOTAM activation rather than notified hours of activation in UK AIP)
Class G (DZ)	Possibly	No precedence of this being used but does afford similar characteristics to that of a DA: <ul style="list-style-type: none">- Both designed to segregate activity without an ability to detect and avoid from other air users.- Both rely on airmanship and Rules of the Air to ensure safe operation.- Both can be activated by NOTAM to alert other air users.

		However currently would not satisfy regulatory segregation requirement.
TMZ / RMZ	No	Not considered viable as it would still not provide adequate segregation from all air users. This would also unjustifiably remove a potentially larger portion of airspace to non-compliant air users.
ATZ	No	Whilst it could be argued that an ATZ does provide a level of segregation for RPAS, in this instance it would not provide the segregated airspace required for BVLOS operations beyond 2NM.

Additionally, the use of Extended Visual Line of Sight (EVLOS) rules was considered however due, to the size and weight classification of the RPAS, CAP 722 EVLOS rules are not applicable to Certified aircraft¹.

As a result of the options above being discounted, the sponsor sought feedback at Stage 2A on three design options:

1. Do nothing
2. Use existing airspace structure
3. Danger Area

Stakeholder Feedback Summary from Stage 2A. Stakeholders were invited to comment on the type of Design Options proposed to ensure that they are aligned with and able to achieve the Design Principles developed in Stage 1. It was stipulated that the specific size and shape of the Design Options will be further developed in subsequent Stages. Stakeholders were also invited to provide any additional feedback of the ACP at this stage as a result of Stage 1.

An engagement methodology (Ref. B) outlines the methods used to ensure stakeholders were engaged with appropriately. Ref. B also contains a list of all stakeholder who were engaged with.

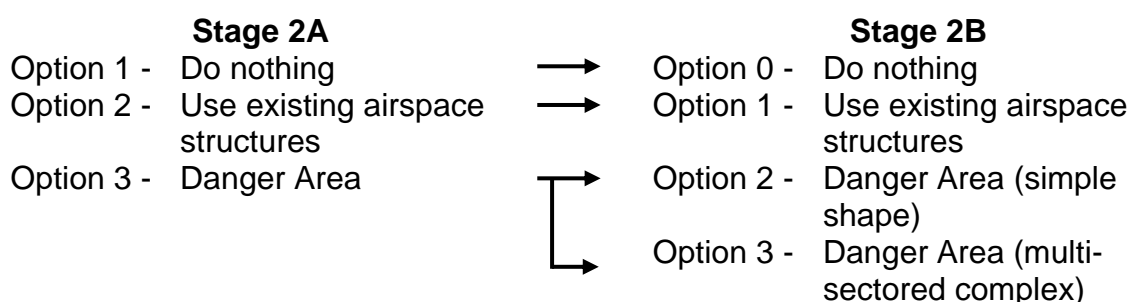
A summary of engagement activity can be found below:

Date	Action	Remarks
19 Jan	Stage 2A engagement document submitted for stakeholders for comment	Two-week engagement period
21 Jan	Stage 2A document published on Portal	
21 Jan	Face-to-face meeting with [REDACTED] GA stakeholder	Minutes provided on the Portal
28 Jan	Virtual meeting with the BGA and Bath, Wilts & North Dorset Gliding Club	Minutes provided on the Portal
2 Feb	Engagement period closed	

¹ CAP 722 p.40

During this stage the Sponsor engaged with a total of 69 stakeholders. Out of that 22 responses to the Design Options were received via email or online form. Design Options feedback can be found at Ref C. Additionally, further engagement evidence can be found at Ref D.

Design Options evolution. As a result of Stage 2A and the Design Principle Evaluation the option to ‘do nothing’ was discounted as it did not meet the design principles. However, this will be assessed as Option 0 within this document. Additionally, Option 3 from Stage 2A (a Danger Area, which included three potential designs) will be sub-divided into two separate options for Stage 2B- each focussed on different principles (a simple design or a more complex multi-sectored structure). Therefore, from Stage 2B onwards the following options will be numbered as per the table below:



All options will still be appraised against a ‘do nothing’ baseline.

Environmental Assessment. A Stage 2 Environmental Impact Assessment can be found at Ref. F. This provides the rationale for the qualitative assessments² made in Section 2 on the following:

- noise impact
- fuel burn/ CO2 emissions³
- traffic forecast.

As the Sponsor cannot accurately estimate how frequently aircraft fly in the vicinity of Keevil or where and at what height they will overfly those on the ground it is not possible to model noise or other environmental impacts quantitatively. As a result, the Sponsor was unable to conduct the detailed assessment as described in CAP 1616a ‘Environmental Technical Annex’, options appraisal of costs and benefits that is set out in the Air Navigation Guidance, or the ‘WebTAG’ quantitative methodology⁴.

For these reasons, developing an assessment of the environmental impacts will be a qualitative not quantitative study. However, during Stage 3 the Sponsor will attempt to quantify aircraft movement in the area by monitoring ADS-B/ radar data for a prolonged period supplemented by BGA glider traces and ‘Airspace4All VFR heatmaps’.

² Transport Act 2000 Sect 70

³ In accordance with CAP1616 and CAP 2091 para.5.13

⁴ WebTAG A3 did not provide useful data due to the majority of the metrics required being unknown.

Section 2

Options Appraisal

Option 0 – Do Nothing



Group	Impact	Level of Analysis
Communities	Noise impact on health and quality of life	Qualitative
Evidence		
As MOD BVLOS RPAS activity would not be able to occur, it is assessed that there will be no change to the noise or quality of life.		
Group	Impact	Level of Analysis
Communities	Air quality	Qualitative
Evidence		
As there is no impact on air traffic patterns or change in the type of aviation activity in the area, it is assessed that there will be no change to air quality.		
Group	Impact	Level of Analysis
Wider society	Greenhouse gas impact	Qualitative
Evidence		
The current situation has a limited effect on general or commercial air traffic below 7,000ft therefore it is assessed that Keevil has a negligible impact on greenhouse gas emissions. Further analysis on the 'do nothing' option with regards to the effect on emissions can be found within the Environmental Impact Assessment.		
Group	Impact	Level of Analysis
Wider society	Capacity / resilience	Qualitative
Evidence		
No change to ATC capacity as multiple LARS units provide coverage of the area and only a small portion of airspace is being considered.		
The funnelling effect between Bristol CTR and SPTA remains unchanged.		

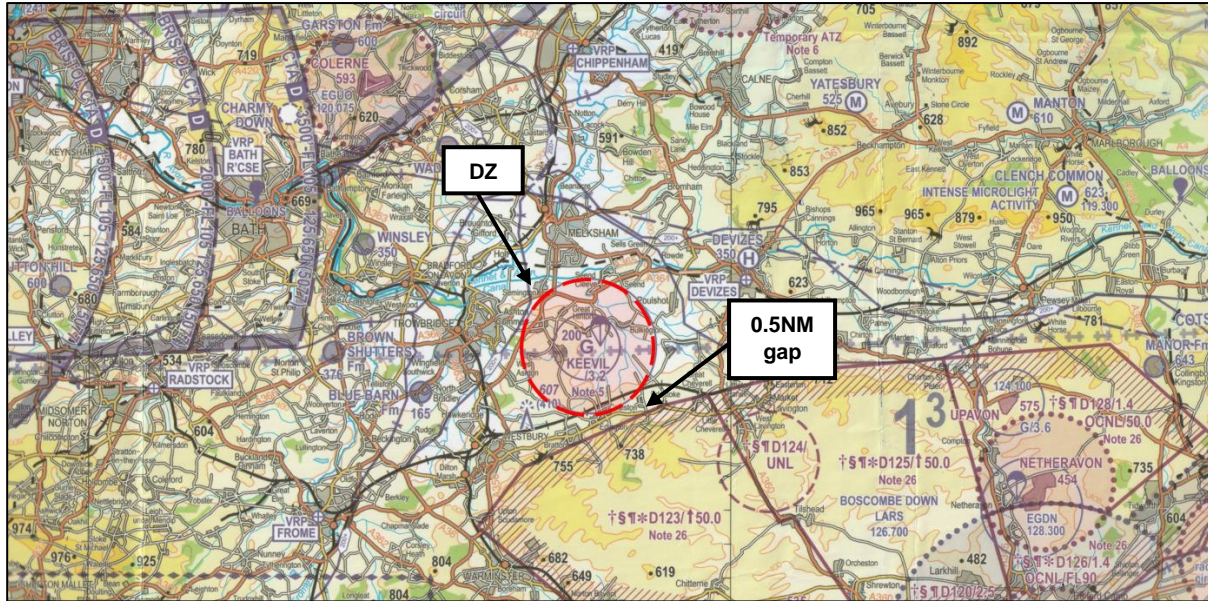
Group	Impact	Level of Analysis
General Aviation	Access	Qualitative
Evidence		
<p>As the airspace is Class G there would be no change to the access seen today. This includes:</p> <ul style="list-style-type: none"> • The published advice to avoid the airfield at all times by 2,000ft and 2NM on VFR charts. • Glider winch-launching activity up to 3,200ft AMSL. • The DZ activated by NOTAM. 		
Group	Impact	Level of Analysis
General Aviation / Commercial Airlines	Economic impact from increased effective capacity	Qualitative
Evidence		
No change to the use of the airspace by GA or commercial airlines.		
Group	Impact	Level of Analysis
General Aviation / Commercial Airlines	Fuel Burn	Qualitative
Evidence		
It is assessed that this option does not cause excessive fuel burn. Aircraft currently operating around Keevil are not adversely affected by gliding activity or DZ activation causing potential deviations from the most fuel-efficient routing. Fuel burn as a result of the current airspace structures is assessed in detail in Ref F.		
Group	Impact	Level of Analysis
Commercial Airlines	Training Costs	N/A
Evidence		
It is assessed that there is currently no impact on commercial airline training costs.		
Group	Impact	Level of Analysis
Commercial Airlines	Other Costs	N/A
Evidence		
It is assessed that there are currently no additional costs to commercial airlines.		
Group	Impact	Level of Analysis
Airport / Air Navigation Service Provider	Infrastructure Costs	N/A
Evidence		
There are no infrastructure costs for airports or ANSPs associated with activities currently undertaken in the area.		
Group	Impact	Level of Analysis
Airport / Air Navigation Service Provider	Operational Costs	N/A
Evidence		
There are no additional operational costs for airports or ANSPs associated with Keevil.		
Group	Impact	Level of Analysis
Airport / Air Navigation Service Provider	Deployment Costs	N/A
Evidence		
There are no deployment costs for airports or ANSPs associated with Keevil.		

Summary of Option 0 Initial Appraisal

It is assessed that Option 0 would not provide the safe airspace operating environment for RPAS operations. The sponsor does not intend to develop Option 0 further in Stage 3.

After Stage 2A the 'do nothing' option was assessed to not adhere to the Design Principles, neither does it meet the intent of the Statement of Need. However, the remaining options will continue to be assessed against the baseline 'do nothing' state.

Option 1 - Use Existing Airspace Structure (DZ)



Group	Impact	Level of Analysis
Communities	Noise impact on health and quality of life	Qualitative
Evidence		
<p>The types of aircraft believed to be affected are gliders (minimal noise impact), microlights, light aircraft and low flying helicopters (the majority being military).</p> <p>ADS-B data suggests that due to the existing airspace structures over Keevil, the majority of aircraft already avoid the glider site / DZ, with a lesser amount routing directly overhead. Most aircraft routings track to the northern edge of the DZ nearing the towns of Frome, Trowbridge, Melksham and Devizes. A lesser amount route through the gap between the glider site and SPTA D123 following the railway line for navigation. It is assessed that should the DZ be activated for the use of BVLOS operations, aircraft will either continue to route north of the glider site or elect to climb over the activated airspace (winch launching already occurs to 3,200ft amsl).</p> <p>Due to the prior notice of airspace activation, pilots planning on routing over or around the DZ will most likely adopt the power settings required earlier. The early adoption of high-power settings to climb to a desired altitude will reduce the noise brought on by drastic power changes of aircraft adopting last minute route changes in order to avoid unpublished gliding or military helicopter activity at Keevil as an example.</p> <p>It is assessed that the activation of the DZ for the purpose of BVLOS operations will result in:</p> <ul style="list-style-type: none"> - No change in the level of noise compared with the 'do nothing' option. - A decrease in noise in some areas with fewer aircraft routing via the railway line between the DZ and D123 - No change in noise patterns for aircraft continuing its track through the activated airspace. 		
Group	Impact	Level of Analysis
Communities	Air quality	Qualitative
Evidence		

The Sponsor assesses that any future airspace activation around Keevil airfield will result in no overall change in air quality.

A minority of aircraft which previously routed directly through the Keevil overhead may now produce CO2 emissions for an additional 0.7Nm routing per aircraft should they require to route around the activated airspace. This is the same distance currently experienced compared to when the existing DZ is activated for paradropping, as aircraft will avoid the new airspace in a similar manner. (see **Image 1** of the *Environmental Impact Study*).

Some aircraft who previously routed around the Keevil gliding site, may opt to now fly through the DZ should they be able to establish confirmation of the activity inside. This will result in a reduction of CO2 emissions due to aircraft being able to take a more direct track.

Aircraft expecting to navigate following the railway track (most southern edge) may require to route around the north resulting in an additional 6Nm (worst case) of track should they not be able or wish to climb over the active airspace. It is assessed that very few GA aircraft will be required to fly from the south, routing around the northern edge of the airspace and back to the south prior to regaining its previous track as this is a very uneconomical and timely method of regaining track (see **Image 2** of the *Environmental Impact Study*).

Group	Impact	Level of Analysis
Wider society	Greenhouse gas impact	Qualitative

Evidence

No additional greenhouse gas emissions compared to the current situation. There is no anticipated increase in air traffic in the area as a result of the DZ being activate compared with 'do nothing' option. As explained in the Air Quality section above, a net zero change in emissions is expected.

Group	Impact	Level of Analysis
Wider society	Capacity / resilience	Qualitative

Evidence

When the Glider site / DZ is active, there may be a slight **increase** in the amount of aircraft routing in between Melksham and the Keevil DZ and contribute to the funnelling effect between Bristol and Salisbury Plain. This is the same as the 'do nothing' option as legacy data shows that most aircraft already choose to route around Keevil and the funnelling can already be seen.

A lesser number of aircraft do opt to route through the southern gap between the Keevil DZ and D123, which may now require alternative routing via the North. In order to reduce the amount of aircraft routing through the North of Keevil, local agreements can be achieved with low flying military helicopters.

Group	Impact	Level of Analysis
General Aviation	Access	Qualitative

Evidence

ADS-B and MLAT traces indicate that GA are mostly routing around the Keevil area due to the possibility of gliding activity and Note 5 in VFR charts advising aircraft to avoid Keevil at all times.

Information on the DZ can be provided by using a published frequency (or by obtaining an ATS), allowing the majority of air users to determine whether flying through a DZ would be safe.

It is assessed that there will be no increase in *non-radio equipped aircraft* routing around or over the DZ compared with doing nothing. This is because it may not be possible for these air users to confirm the activity being conducted at Keevil (currently or with this Design Option) and therefore assess whether it is safe to transit through it.

Group	Impact	Level of Analysis
General Aviation / Commercial Airlines	Economic impact from increased effective capacity	Qualitative

Evidence

There are no changes to air transport or passenger numbers brought on by this proposal. The altitude and location of the proposed airspace does not impact on any airline activity.

Group	Impact	Level of Analysis
General Aviation / Commercial Airlines	Fuel Burn	Qualitative

Evidence

ADS-B and MLAT traces indicate that GA are largely already routing around Keevil or climbing above.

The Sponsor assesses that any additional airspace around Keevil may require a negligible increase in fuel per aircraft type if a DACS is not possible. Further detail can be found in the Environmental Impact Assessment at Ref. F.

Group	Impact	Level of Analysis
Commercial Airlines	Training Costs	N/A

Evidence

It is assessed that there will be no impact on commercial airline training costs as a result of this design option.

Group	Impact	Level of Analysis
Commercial Airlines	Other Costs	N/A

Evidence

It is assessed that there will be no additional costs to commercial airlines as a result of this design option.

Group	Impact	Level of Analysis
Airport / Air Navigation Service Provider	Infrastructure Costs	N/A

Evidence

There are no additional infrastructure costs for airports or ANSPs associated with this option.

Group	Impact	Level of Analysis
Airport / Air Navigation Service Provider	Operational Costs	N/A

Evidence

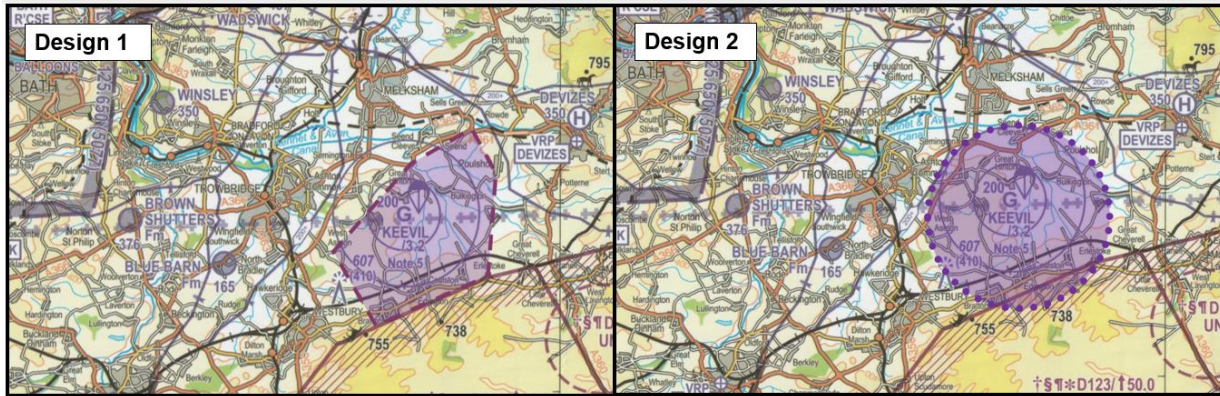
There are no additional operational costs for airports or ANSPs associated with this option.

Group	Impact	Level of Analysis
Airport / Air Navigation Service Provider	Deployment Costs	N/A
Evidence		
There are no deployment costs for airports or ANSPs associated with this option.		

Summary of Option 1 Initial Appraisal

This option received some positive feedback from Stage 2A. Additionally, the Stakeholder believes that, although only partially meeting the Design Principles after the Design Principle Evaluation, it is worthy of further engagement. The option receives positive appraisal compared to the 'do nothing' option for some stakeholders although others believe a Danger Area (options 2 or 3) would better meet the intentions of the Sponsor. This option would still likely require some element of airspace change even if the use of the DZ would be authorised for BVLOS flight as a slight extension of D123 or introduction of a small corridor require to create segregated airspace between the airfield and operating area.

Option 2 - Danger Area (simple design)



Note: These images are for illustrative purposes only. The principle of a simple design consists of a single structure, SFC to a published altitude.

Group	Impact	Level of Analysis
Communities	Noise impact on health and quality of life	Qualitative
Evidence		
<p>The use of a Danger Area allows the Sponsor to tailor the size and shape to their minimum required airspace. The area required to the north of Keevil may be reduced, which will allow more space for transiting aircraft to pass through. This will allow better dissipation of aircraft reducing the effect of noise to the local communities.</p> <p>Aircraft electing to climb over a Danger Area will create less noise impact than those currently routing at lower altitudes. The types of aircraft will not differ from those in either Option 1 or the Do Nothing scenario.</p> <p>ADS-B data suggests that due to the existing airspace structures over Keevil, the majority of aircraft already avoid the glider site / DZ, with very few electing to route directly overhead. A lesser amount route through the gap between the glider site and SPTA D123 following the railway line for navigation. It is assessed that should the DA be activated, aircraft will either continue to route North of the glider site or elect to climb over the activated airspace (which launching already occurs to 3,200ft amsl). Further detail can be found in Ref. F.</p> <p>Due to the prior notice of airspace activation, pilots planning on routing over or around the DZ will most likely adopt the power settings required earlier. The early adoption of high-power settings to climb to a desired altitude will reduce the noise brought on by drastic power changes of aircraft adopting last minute route changes in order to avoid unpublished gliding or military helicopter activity as an example.</p>		
<p>It is assessed that the activation of the DA will result in:</p> <ul style="list-style-type: none"> - No change in the level of noise compared with the 'do nothing' option. - A decrease in noise in some areas with fewer aircraft routing via the railway line between the DZ and D123. - No change in noise patterns for aircraft on a direct track using a Crossing Service. <p>A decrease in noise for aircraft choosing to climb over the activated airspace slightly higher than they currently may have to.</p>		
Group	Impact	Level of Analysis
Communities	Air quality	Qualitative
Evidence		

The Sponsor assesses that any future airspace activation around Keevil will not result in an increase of CO2 emissions. It is assessed that there is no additional impact on air quality compared to when the existing DZ or glider site is activated.

Due to prior notice of airspace activation, pilots should be better able to plan their routing either around or over the airspace. This will allow a gradual climb to altitude over a greater distance, displacing the emissions over a larger area compared to initiating an orbital climb once at the boundary of the DA.

Aircraft expecting to navigate following the railway track (most southern edge) may require to route around the north resulting in an additional 6Nm (worst case) of track should they not be able or wish to climb over the active airspace or obtain a DACS. See Ref. F for further detail on the qualitative assessment on air quality.

Group	Impact	Level of Analysis
Wider society	Greenhouse gas impact	Qualitative

Evidence

No additional greenhouse gas emissions compared to when the current DZ is activated. There is no anticipated increase in air traffic in the area as a result of a Danger Area being activate compared with 'do nothing' option.

WebTAG could not provide any quantifiable data due to the unknown amount and type of aircraft transiting the area. Further analysis can be found in Ref. F.

Group	Impact	Level of Analysis
Wider society	Capacity / resilience	Qualitative

Evidence

The Sponsor assessed that there may be some **reduction** in traffic North of Keevil and a resultant **increase** to the current use of the Keevil airspace by those pilots who are currently avoiding the overhead due to Note 5 in the VFR chart or glider activity. Since a crossing service can be afforded, transiting pilots who normally route around Keevil may now choose to cross through the overhead using a crossing service, slightly reducing their route length, fuel consumption and aircraft congestion north of Keevil.

Group	Impact	Level of Analysis
General Aviation	Access	Qualitative

Evidence

The area is extensively used by GA to route around SPTA. ADS-B traces indicate that GA are largely already routing around the Keevil area due to the possibility of gliding activity and Note 5 in VFR charts advising aircraft to avoid Keevil at all times. ADS-B traces also suggest a lesser amount of pilots are routing via the railway line between the airfield and D123. Even fewer pilots are choosing to route overhead, particularly below 4,000ft.

With a DACS being afforded there may be an increase in aircraft opting to route through the Keevil overhead whilst the Danger Area is active.

However, there will be an increase amount in aircraft routing around or over the airspace if they are not equipped with or qualified to operate a radio as it will not be possible to obtain a Crossing Service and therefore make an assessment of whether not the DA is safe to cross.

Additionally, a DA activated by NOTAM only when required will see even less effect on aircraft access to airspace in the area.

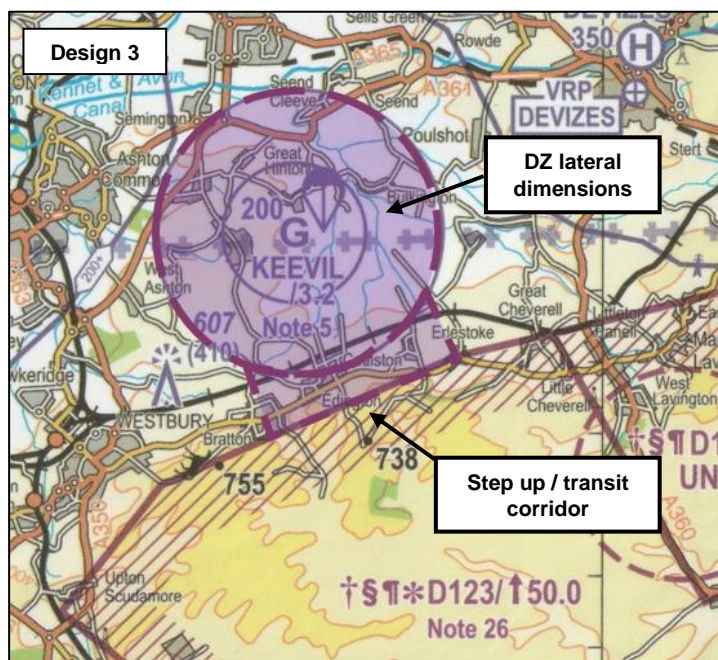
Group	Impact	Level of Analysis
General Aviation / Commercial Airlines	Economic impact from increased effective capacity	Qualitative

Evidence		
There are no changes to air transport or passenger numbers brought on by this proposal. The altitude and location of the proposed airspace does not impact on any airline activity.		
Group	Impact	Level of Analysis
General Aviation / Commercial Airlines	Fuel Burn	Qualitative
Evidence		
Radar traces indicate that GA are largely already routing around Keevil or climbing above. Additionally, any climb that would be required as a result of the DA being activated is inconsequential in fuel burn.		
There is no identified impact on commercial airlines.		
Group	Impact	Level of Analysis
Commercial Airlines	Training Costs	N/A
Evidence		
It is assessed that there will be no impact on commercial airline training costs as a result of this design option.		
Group	Impact	Level of Analysis
Commercial Airlines	Other Costs	N/A
Evidence		
It is assessed that there will be no additional costs to commercial airlines as a result of this design option.		
Group	Impact	Level of Analysis
Airport / Air Navigation Service Provider	Infrastructure Costs	N/A
Evidence		
There are no additional infrastructure costs for airports or ANSPs associated with this option.		
Group	Impact	Level of Analysis
Airport / Air Navigation Service Provider	Operational Costs	N/A
Evidence		
There are no additional operational costs for airports or ANSPs associated with this option.		
Group	Impact	Level of Analysis
Airport / Air Navigation Service Provider	Deployment Costs	N/A
Evidence		
There are no deployment costs for airports or ANSPs associated with this option.		

Summary of Option 2 Initial Appraisal

The sponsor will look to further develop Option 2 at the next Stage. It is assessed that a Danger Area option, adhering to Design Principles to ensure it is as small as possible to achieve technical requirements, will provide a negligible environmental impact. It is also the simplest structure out of the three options. Further refinement will be conducted to develop the dimensions and procedures for this option, particularly to ensure it does not adversely contribute to the funnelling of aircraft and deny use of the railway line for VFR navigation unnecessarily.

Option 3 - Danger Area (multi-sector design)



Note: The multi-sector design consists of several structures (some may be “hanging airspace” not connected to the surface).

Group	Impact	Level of Analysis
Communities	Noise impact on health and quality of life	Qualitative
Evidence		
<p>ADS-B data suggests that due to the existing airspace structures over Keevil, the majority of aircraft already avoid the glider site / DZ, with very few electing to route directly overhead. A lesser amount route through the gap between the glider site and SPTA D123 following the railway line for navigation. Further detail can be found in Ref. F.</p> <p>Compared with Option 2 this DA design may continue to facilitate transit along the railway line depending on the altitude of the transiting aircraft and vertical dimensions chosen for a crossing corridor.</p> <p>It is assessed that the activation of this DA will result in:</p> <ul style="list-style-type: none"> - No change in the level of noise compared with the ‘do nothing’ option, <i>particularly if aircraft are still able to use the railway line as a navigation feature.</i> - No change in noise patterns for aircraft on a direct track using a Crossing Service. - A decrease in noise for aircraft choosing to climb over the activated airspace slightly higher than they currently may have to. 		
Group	Impact	Level of Analysis
Communities	Air quality	Qualitative
Evidence		
<p>The Sponsor assesses that any future airspace activation around Keevil will not result in an increase of CO2 emissions. It is assessed that there is no additional impact on air quality compared to when the existing DZ or glider site is activated. See Ref. F for further detail on the qualitative assessment on air quality.</p>		
Group	Impact	Level of Analysis
Wider society	Greenhouse gas impact	Qualitative
Evidence		

No additional greenhouse gas emissions compared to when the current DZ is activated. There is no anticipated increase in air traffic in the area as a result of a Danger Area being activate compared with 'do nothing' option.

WebTAG could not provide any quantifiable data due to the unknown amount and type of aircraft transiting the area. Further analysis can be found in Ref. F.

No change compared to Option 2.

Group	Impact	Level of Analysis
Wider society	Capacity / resilience	Qualitative

Evidence

The Sponsor assessed that there may be some **reduction** in traffic North of Keevil and a resultant **increase** to the current use of the Keevil airspace by those pilots who are currently avoiding the overhead due to Note 5 in the VFR chart or glider activity. Since a crossing service can be afforded, transiting pilots who normally route around Keevil may now choose to cross through the overhead using a crossing service, slightly reducing their route length, fuel consumption and aircraft congestion north of Keevil.

No change compared to Option 2.

Group	Impact	Level of Analysis
General Aviation	Access	Qualitative

Evidence

ADS-B traces indicate that GA are largely already routing around the Keevil area due to the possibility of gliding activity and Note 5 in VFR charts advising aircraft to avoid Keevil at all times. ADS-B traces also suggest a lesser amount of pilots are routing via the railway line between the airfield and D123. Even fewer pilots are choosing to route overhead, particularly below 4,000ft.

With a DACS being afforded there may be an increase in aircraft opting to route through the Keevil overhead whilst the Danger Area is active.

The key difference between options 2 and 3 is the aim to facilitate VFR navigation using the railway line between D123 and Keevil. Should this be possible it will enable a similar degree of access for GA than what is currently afforded.

Additionally, a DA activated by NOTAM only when required will see even less effect on aircraft access to airspace in the area.

Group	Impact	Level of Analysis
General Aviation / Commercial Airlines	Economic impact from increased effective capacity	Qualitative

Evidence

There are no changes to air transport or passenger numbers brought on by this proposal. The altitude and location of the proposed airspace does not impact on any airline activity.

Group	Impact	Level of Analysis
General Aviation / Commercial Airlines	Fuel Burn	Qualitative

Evidence

Radar traces indicate that GA are largely already routing around Keevil or climbing above. Additionally, any climb that would be required as a result of the DA being activated is inconsequential in fuel burn. For aircraft already routing between D123 and Keevil there will likely be no additional fuel burn should this Design Option be able to facilitate continued access.

There is no identified impact on commercial airlines.

Group	Impact	Level of Analysis
Commercial Airlines	Training Costs	N/A
Evidence		
It is assessed that there will be no impact on commercial airline training costs as a result of this design option.		
Group	Impact	Level of Analysis
Commercial Airlines	Other Costs	N/A
Evidence		
It is assessed that there will be no additional costs to commercial airlines as a result of this design option.		
Group	Impact	Level of Analysis
Airport / Air Navigation Service Provider	Infrastructure Costs	N/A
Evidence		
There are no additional infrastructure costs for airports or ANSPs associated with this option.		
Group	Impact	Level of Analysis
Airport / Air Navigation Service Provider	Operational Costs	N/A
Evidence		
There are no additional operational costs for airports or ANSPs associated with this option.		
Group	Impact	Level of Analysis
Airport / Air Navigation Service Provider	Deployment Costs	N/A
Evidence		
There are no deployment costs for airports or ANSPs associated with this option.		

Summary of Option 3 Initial Appraisal

The sponsor will look to further develop Option 3 at the next Stage. It is assessed that a Danger Area option will have a negligible environmental impact compared with the 'do nothing' option.

Whilst Options 3 is not the simplest DA option, it may help to alleviate the additional pressure of funnelling aircraft who traditionally utilise the railway line to navigate around Salisbury Plain.

Preferred Option

In accordance with CAP 1616 the Sponsor must articulate its preferred design option at this stage. Due to the certainty of current regulatory compliance, and, as a result of the initial options appraisal, the Sponsor's current preferred option is a Danger Area of a simple design (Option 2).

The Sponsor will continue to develop Options 1-3 as outlined in this section with further refinement of each option to be conducted at Stage 3.

Section 3

Next Steps

Evidence to be collected to inform the next stage

In accordance with CAP 1616 para E12, the Sponsor must identify what evidence will need to be collected, and how, to fill its evidence gaps in order to develop the Full Options Appraisal.

Having completed the initial appraisal the following additional evidence will be required in order to develop the appraisal at the next stage:

- Consult on the potential noise impact on residents⁵.
- Monitor air traffic movements using legacy radar/ ADS-B data over a set period in order to:
 - o Assess traffic patterns and the impact on the funnelling effect between Salisbury Plain and the Bristol CTR for different periods of the year (early Spring to Summer).
 - o Better determine the number of movements around Keevil in order to understand current aircraft behaviours and therefore further develop the environmental impact assessment.
- Look to utilise the 'Airspace4All' VFR heatmap and BGA traces to further assess the current funnelling of aircraft in and around Keevil.

ACP Timeline

In order to meet the Develop and Assess Gateway on 25th February the Sponsor submitted all Stage 2 documentation to the CAA by Friday 11th February. Redacted versions will then be uploaded to the Portal.

In the spirit of a 'through-ACP' stakeholder engagement strategy the Sponsor will continue to engage with various local and national stakeholders outside of any formal engagement windows in order to continue developing the Options Appraisal for subsequent consultation.

STAGE	DATE
DEFINE GATEWAY	17 DEC 21
DEVELOP AND ASSESS GATEWAY	25 FEB 22
CONSULT GATEWAY	29 APR 22
UPDATE AND SUBMIT	26 AUG 22
DECIDE GATEWAY	24 FEB 23
IMPLEMENT (TARGET AIRAC)	15 JUN 23

Submit to AIS
by 17 Mar

⁵ With a focus on GA aircraft rather than Commercial Air Traffic