



Proposal for a Temporary Airspace Change NR-EWR BVLOS (ACP-2021-014)

Ammendment Control

Issue	Ammendment	Date
V 1.0	Initial verison supplied to CAA Airspace team also Stakeholders	03/03/2021
V 1.1	Revised edition that now includes findings from Stakeholder engagements and continued consultation with the CAA Airspace team	29/06/2021
V1.2	Revised due to further meeting with the CAA Airspace team. More stakeholders have been engaged along with re-engagement with a small number of the original stakeholders.	24/08/2021
V1.3	Revised due to further communication with the CAA Airspace team.	10/09/2021

Referenced Dcouments

Document	Destription	Date and version
CAP 1616	Airspace Change – Guidance on the regulatory process for changing the notified airspace design and planning and planned and permanent redistribution of air traffic, and on providing airspace information	Version 3.0 22 January 2020

Abbreviations

ACP	Airspace Change Proposal
AGL	Above Ground Level
AMSL	Above Mean Sea Level
BVLOS	Beyond Visual Line of Sight
CAA	Civil Aviation Authority
CAP	Civil Aviation Publication
LoA	Letter of Agreement
NOTAM	Notice to Airman
POC	Proof of Concept
TDA	Temporary Danger Area
UAS	Unmanned Aircraft System
VFR	Visual Flight Rules

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1.0 Introduction

The following document seeks to define the requirement for a temporary restriction to airspace by the creation of a temporary danger area (TDA) above Network Rail infrastructure for the purposes of beyond visual line of sight (BVLOS) flight operations utilising a small unmanned aircraft. This document has been revised from the original document to include some recommended changes.

Network Rail have been using Aerial Inspection tools now for over fifteen years. In the last six years this has included UAS or Drones. Within the last four years four people have lost their lives whilst working in the track environment, one in the last several weeks. These people were on track for various reasons but the primary reason for most people being on the track are visual inspections or responding to incidents. Both of these use cases that have been highlighted that could be carried out by UAS in a large proportion of the 20,000 miles of track that Network Rail manage.

Network Rail know that UAS will not be able to access all of the 20,000 miles of track due to the proximity of the assets, airspace restrictions and weather parameters that UAS may not be able to operate in, however Network Rail need to change its inspection methods to reduce the risk of people having to enter the extremely hazardous track environment, and utilising a UAS that can fly BVLOS is one very strong possibility. Network Rail is a Safety Critical company and so as such would need to prove the case that it can be carried out over the environment we manage.

The Airspace we would like to request falls under Class G and is along a rail corridor that is currently being upgraded, we would like to operate from Bicester Aerodrome, which is well situated and less than 1km from the track, transition above the track and fly for 20 km to the East towards Bletchley. Turn around prior to the built up area and then fly back towards Bicester Aerodrome. The aircraft will fly at 400 feet at all times above ground level along the track once it has taken off and transitioned. The main reason for this is due to four sets of high National Grid pylons and wires and so to avoid them but also a continuous height for data collection providing better accuracies.

With the intended duration being 90 days, we would like the TDA to be active for the week of 6th September 2021 to be able to carry out two days flights. We would then like to go away and come back with two further flights one at the end of September/early October and then a further flight at the end of October. To reduce the airspace restriction to as many users as possible on the days we would like to fly we would operate between 0900-1600 and would be Monday to Friday. Each day of flight would have a NOTAM in place days in advance. The NOTAM will also have the contact telephone number for the Network Rail Air Operations Accountable Manager on so that any air user will be able to contact them and confirm if the flight is in operation.

1.1 Stakeholder Identification

Network Rail Air Operations received a list of stakeholders to engage with from the CAA Airspace team. This is around 40 known air users that are a National list, not specific to a certain area. All 40 were engaged with, along with 17 other stakeholders that were either identified by ourselves or through the process of engaging with Bicester Aerodrome and other local entities. A number of the 17 new stakeholders will have a Letter of Agreement (LoA) in place to facilitate as much use of the airspace as possible.

Upon the latest meeting with the CAA Airspace team a number of new stakeholders were identified. We conducted targeted stakeholder engagement with these additional 7 entities, 2 had already been contacted by our own identification of stakeholders. Further communications continued between these entities to answer questions.

2.0 Objectives

- To fly 20km BVLOS along the track under construction to from Bicester Aerodrome.
- To capture medium definition imagery all along the track to show change detection in lineside ground and vegetation.
- To test ADSB technology alongside the manned aviation aircraft in and around the same airspace.
- To feed back findings to the wider Network Rail family and the CAA who are unable to carry out such tests themselves.

3.0 Summary of Engagement Activity Undertaken to Date

Recognised stakeholders and likely affected air users within the area of operation that have already been engaged with:

- Network Rail and East West Alliance who operate drones
- Network Rail Aviation – Likely affected air user
- Bicester Aerodrome - Likely affected air user

Stakeholders that have been engaged with that could immediately be affected by the 90 day TDA:

- Weston on the Green air users.
- Various Grass strips close to or inside the proposed TDA
- Bicester Gliding Club now based at Aylesbury to the South of the area
- Bicester Aerodrome air users
- National Police Air Service
- Thames Valley Air Ambulance

- Her Majestys Coastguard
- Light Sports Flying Services
- Turweston Airfield
- Dunstable Club

The process of NOTAM application is expected to capture wider stakeholders that might need to be aware of the temporary restriction whilst en route. The proposed operational height is seen to be low risk to general aviation at 400ft AGL. It is noted that a rail line presents a major navigation feature.

As required by CAP 1616 a process for collating any objections or complaints has been established (refer to Section 7.0 of this document). Furthermore engagement with local air users has continued throughout 2021.

A Standard Operating Procedure (SOP) has been set up with Bicester Aerodrome that involves the Air Operations BVLOS team engaging with Bicester Aerodrome employees to gain a briefing first thing upon arrival with regards to any arrivals and departures. This SOP was a suggestion that a number of engaged parties requested.

4.0 Approach

All stakeholders have been contacted initially via email as a way of evidencing that they have been contacted. Then a follow up phone calls or teams/zoom meetings have been held with some of the stakeholders. This approach has been well received allowing as many people the opportunity to ask questions. A further contact has been made with the stakeholders that replied to our engagement to update them on the progress and the reduced flight window needed. All replies received even two of the negative replies have been positive.

This was originally a 90 day TDA, however Network Rail now only needs 2 days, one test day and one flight day, that will be 400 feet above ground level along a 20km piece of track being built. The impact on manned aviation we see is an absolute minimum. We are imposing days and times that the TDA will be in place to try and reduce the impact on other air users. There will also be a contact process for unmanned flights so that these can be facilitated via the National Drone Manager at Network Rail Air Operations. The TDA will not need to be prolonged after the 2 days have been flown. We will be able to carry out enough test flights along the 20 km to suffice the needs of the project in these two days.

5.0 Duration

All stakeholders have had 6 weeks to make contact with Paul Lindup at Network Rail Air Operations on [REDACTED] or email [REDACTED]. We are now in a position to submit all responses to the CAA Air space team for consideration of approving the Temporary Danger Area for the test flights to be carried out.

We envisage a potential activation of the TDA to occur from earliest 21 October through to November 2021. There will be timings of activity between 0900-1600 Monday to Friday only and will be alerted via NOTAM, all other times the TDA will not be active. There will be a telephone number on the TDA for all unmanned flights. As soon as the aircraft is on the ground a call will be made to close down the NOTAM.

6.0 Proposed Area of Operation

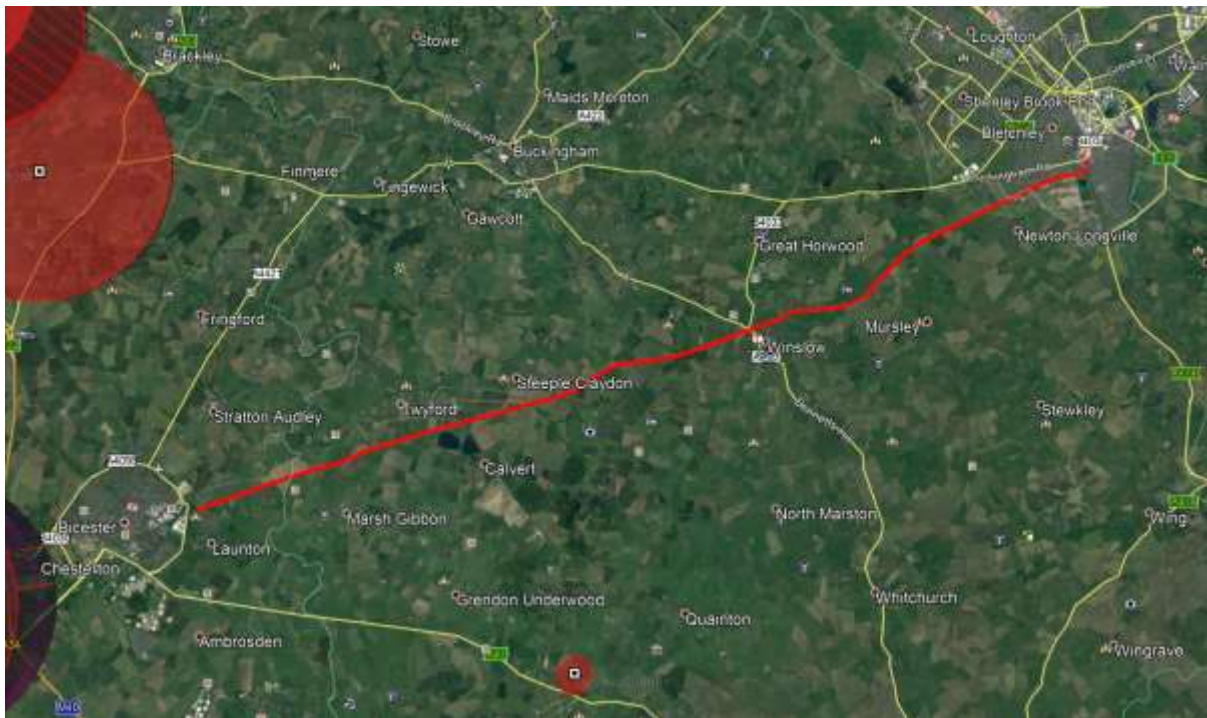


Figure 1 - Topographical Map highlighting extent of East to West Railway line

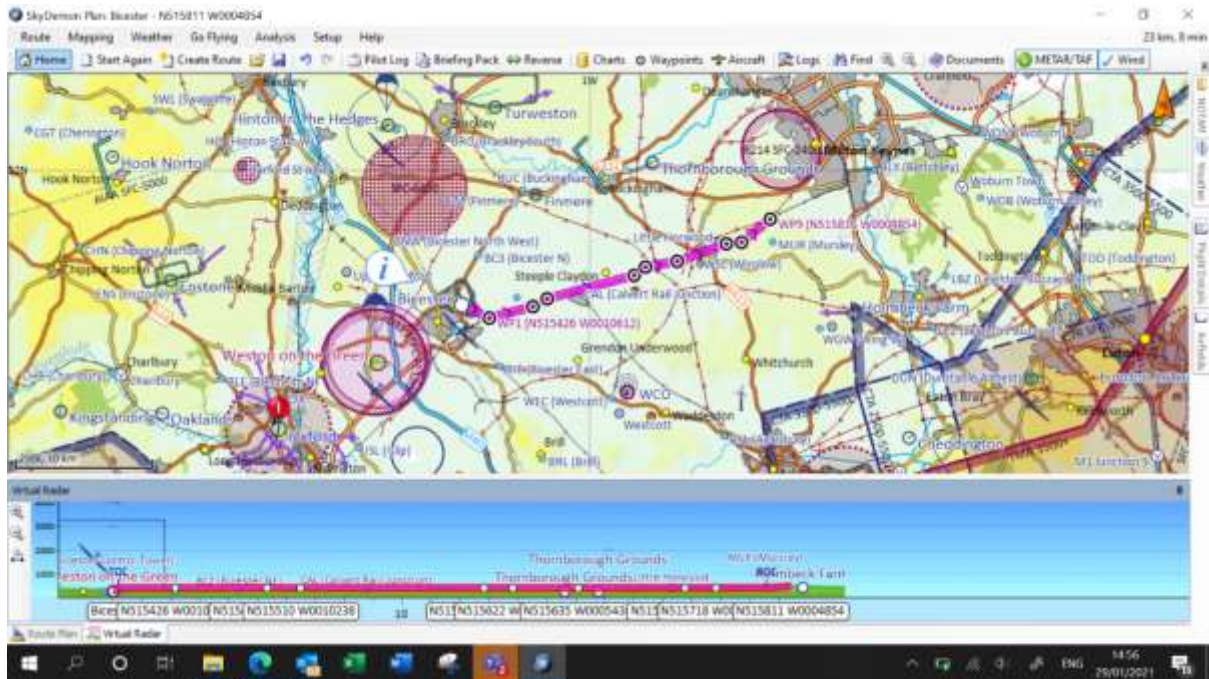


Figure 2 - SkyDemon VFR Flight Plan, detailing surrounding airspace and proposed flight track (magenta line)

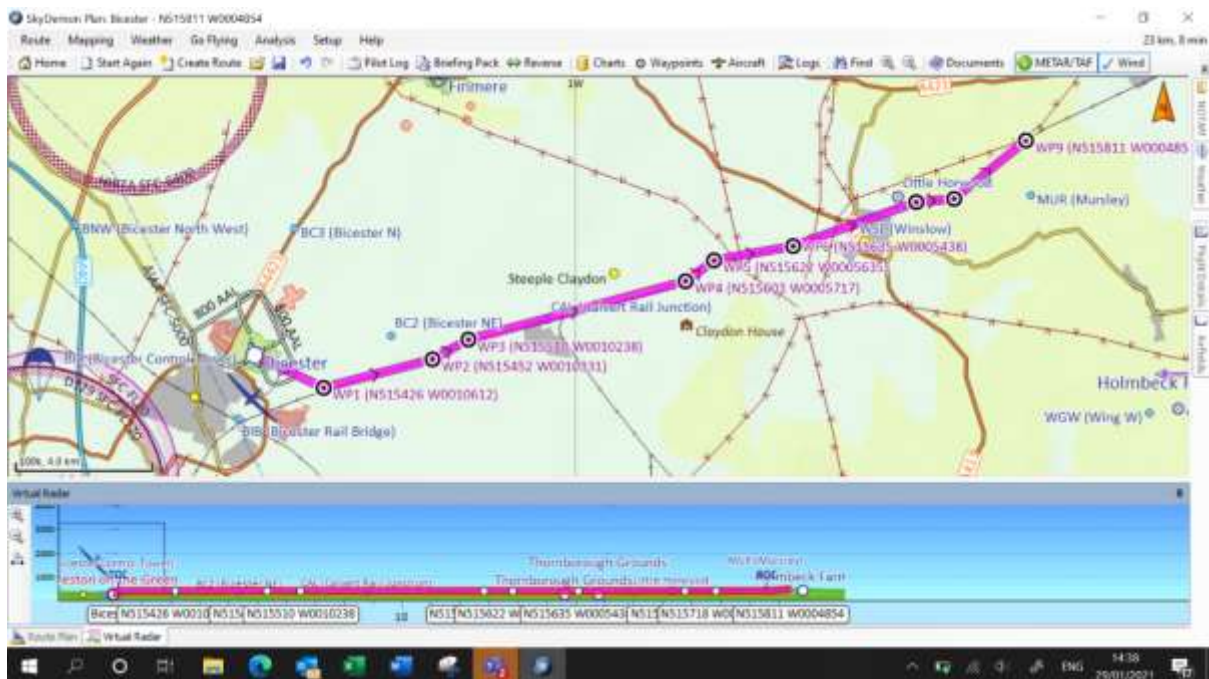


Figure 3 - SkyDemon VFR Flight Plan, detailing surrounding airspace and proposed flight track (magenta line)

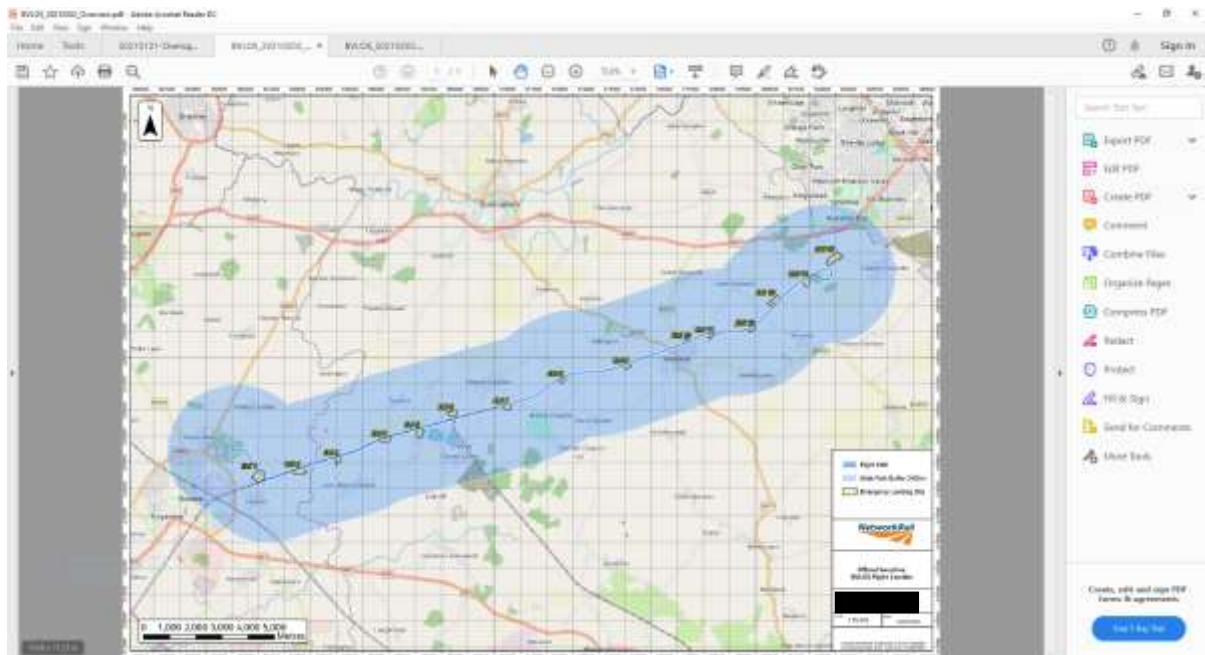


Figure 4 - ESRI ARC GIS Map, detailing glide free area surrounding proposed flight track (Light blue shaded area)

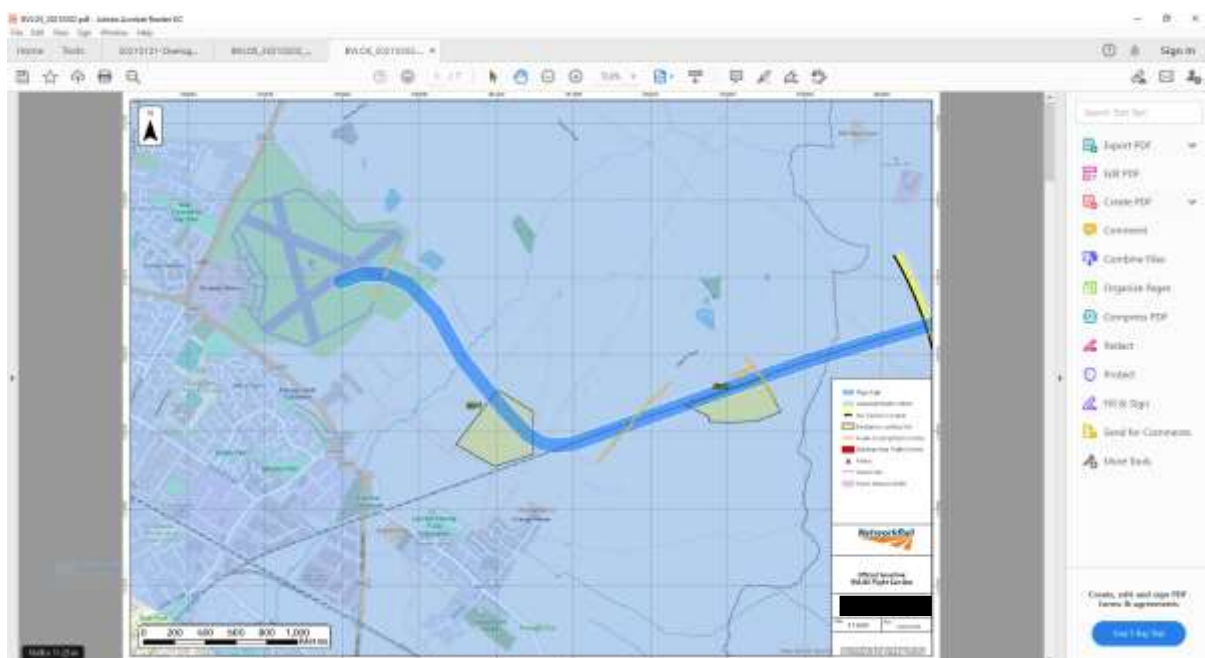


Figure 5 – ESRI ARC GIS Map, detailing proposed aircraft track in relation to East to West Railway Line, including GO/NO GO boundaries, alternate landing sites, higher risk urban areas and proximity to power lines

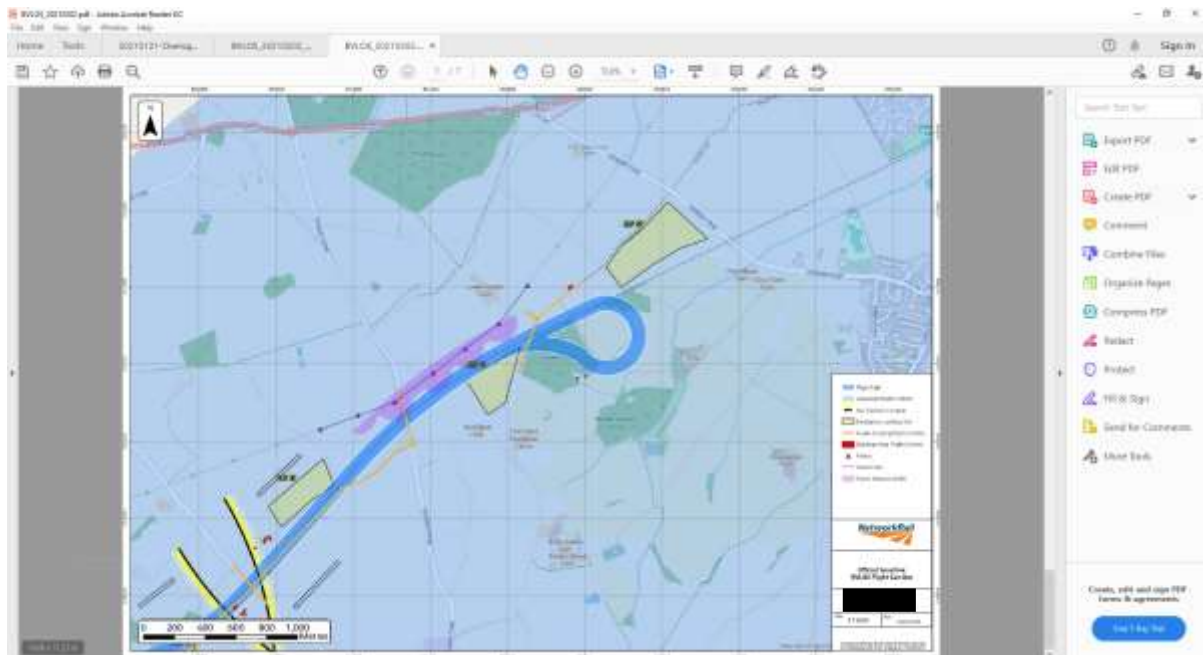


Figure 6 - ESRI ARC GIS Map, detailing proposed aircraft track in relation to East to West Railway Line, including GO/NO GO boundaries, alternate landing sites, higher risk urban areas, proximity to power lines

6.1 Segregated Airspace

Network Rail Air Operations needs a structure of temporary segregated airspace to allow us to fly the designated aircraft in relative safety. The flight will commence along the line of the railway once transitioned from Bicester Aerodrome, all within a 200 metres buffer. The TDA we are requesting allows for another 500 metres either side of this 200 metre buffer for safety, so in total a 1200 metre wide TDA that is then 20kms in length. This is broken down into the following areas:

Location and lateral limits	Height limits	Notes
lines joining successively the following points: a) 51° 55' 24.199"N 001° 09' 08.608"W; b) 51° 59' 20.934"N 000° 47' 09.002"W; c) 51° 57' 21.172"N 000° 46' 13.247"W; d) 51° 53' 24.602"N 001° 08' 11.960"W;	Lower: SFC Higher: 950 feet amsl The aircraft will always be at a max altitude of 400 feet agl	Activity: UAS Beyond Visual Line of Sight (BVLOS) flight Hours: When notified via NOTAM Tel: Network Rail Air Operations Accountable Manager

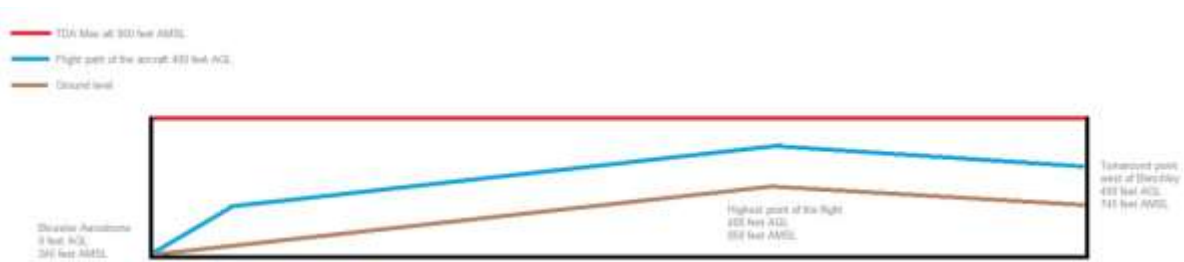
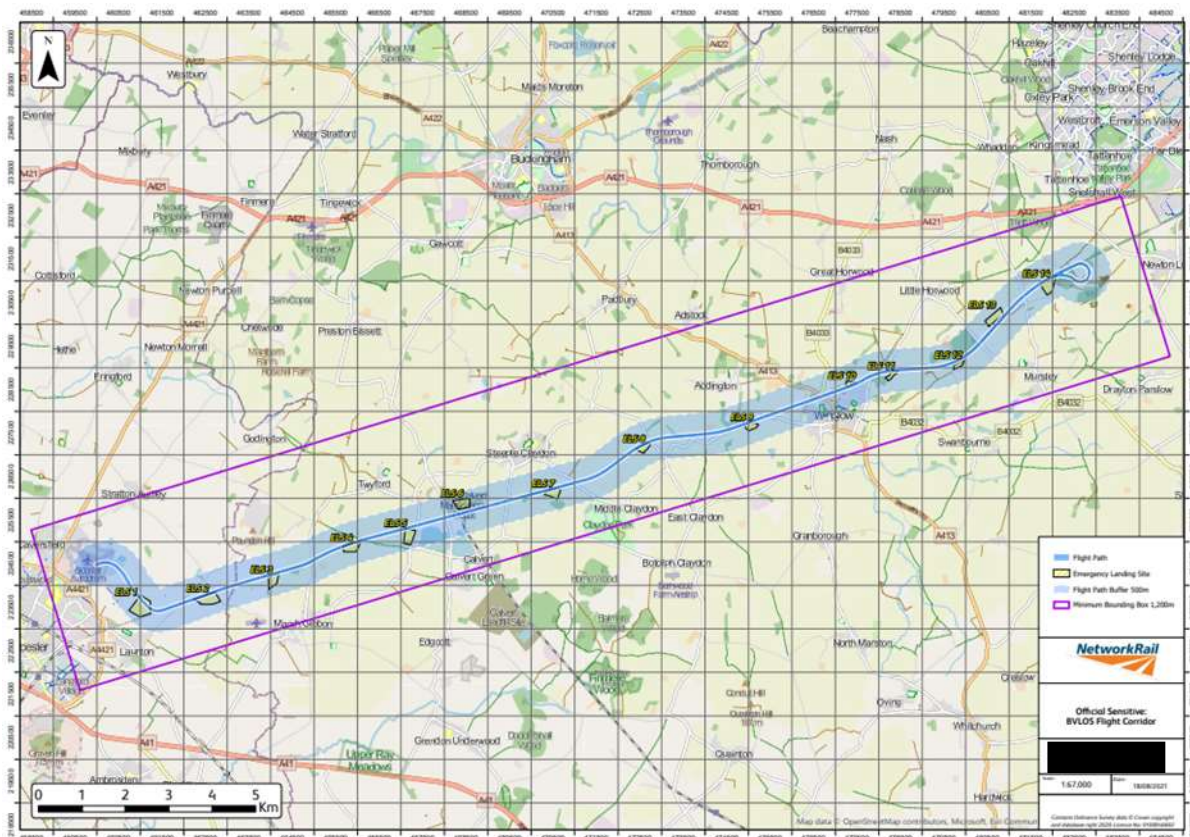


Figure 7 shows a slice through the proposed TDA airspace.

The temporary segregated airspace will be under a NOTAM that will be published at least 24 hours prior to operation along with exact parameters of the TDA also contact details for any crossing/entering requirements.

Below is a representation of the size and shape of the NOTAM Network Rail Air Operations will be requesting.



7.0 Post Engagement

All questions /responses are now with Network Rail's Air Operations, we will re-engage with all stakeholders to thank them once the Airspace team are in the process of marking our application. If we are un-successful then we will also let all stakeholders know. For any users that we have agreed LoA's we will write these up and share to be signed in preparation.

Further contact has been made with all stakeholders that replied to our outreach. They have been updated with the reduction in days needed to fly.

8.0 Record of Responses from Stakeholders

There were a mixture of responses from all of the stakeholders. The negative ones thankfully were low in numbers and these were:

One response stated their company whom grass strip is within the proposed TDA would lose business. It was explained that the TDA would only be live for 3-6 days maximum. LoA will be in force.

An individual that operates from his grass strip also inside of the proposed TDA area also said that it would affect his ability to take off and land or carry out circuits, and so a LoA will be in force.

One stated that they were not happy with so many TDA's being created but was unable to state why they were not happy with this application.

One final person, whom we cannot identify a location for said they were unhappy with our application anyway, again no specific point to this application.

All other responses were in support and even some thanking us for the approach we have taken with engagement. We have had 22 responses to our stakeholder engagement and 33 that did not reply. We expected a number not to reply due to not being affected by our TDA whatsoever.

We are very happy however with the 18 endorsements we did receive.

Stakeholder/Organisation/Person	Comment/Response	Requirement to change the TDA size of location
Airfield Operators Group (AOG)	█████ thanked us for our considered approach to airspace.	No
Association of Remotely Piloted Aircraft Systems UK (ARPAS-UK)	ARPAS UK supports the application by Network Rail for this TDA.	No
British Balloon and Airship Club	█████ explained Hot air balloon operations occur shortly after sunrise and before sunset. Although Hot Air Balloons fly low on their approach to land, and do not generally use recognised landing sites, I believe our operations will not be affected by this TDA. The BBAC therefore does not have any objections to the TDA.	No
British Gliding Association (BGA)	█████ came back with positive response but mentioned the two Gliding entities that operate from Bicester. I explained that a working SOP will be in place to limit issues with Boicester movements.	No, we will be following an SOP with BAC
British Hang Gliding and Paragliding Association (BHPA)	█████ shared the form with Dunstable airfield, see reply from █████ from Dunstable airfield.	No
British Microlight Aircraft Association (BMAA) / General Aviation Safety Council (GASCo)	█████ asked me to attend a zoom dial in where he and a number of other BMAA and other organisations were in attendance. I explained what we are trying to achieve and why and all parties	No,

	<p>in attendance were really appreciative of the attendance and honesty of what we are doing. Also that we only want to try and reduce airspace use for 6 days out of the 90 days. [REDACTED] has provided a response with no objections to the proposed TDA.</p> <p>Further conversation via email with [REDACTED] today 24 Aug 21 confirmed that with the reduced requirement of flights only being over 2 days there will be no need for an LoA</p>	
Light Aircraft Association (LAA)	<p>Spoke to [REDACTED] who was also in attendance at the same meeting as [REDACTED] and he is very happy with the set up and works alongside Bicester. [REDACTED] has asked that a LOA is in place to minimise interruption. We are happy with this approach.</p> <p>[REDACTED] still has not responded so LoA has been created waiting for response from [REDACTED] at LAA.</p>	No, LoA will be in place.
Ministry of Defence - Defence Airspace and Air Traffic Management (MoD DAATM)	<p>Sqn Ldr [REDACTED] replied and said that they would collate an answer but also asked would the TDA be 400 feet AGL. I replied with yes. She has now come back to me again and said that they are happy to work with Network Rail but need to know that when they need to pass through the TDA, that there is a process of contacting the UAS team. There will be just as with Thames Valley Helimed we would like to create an LoA with the contact details of the Accountable Manager who will be on site each day of flight. I need to liaise with Flt Lt [REDACTED] closer to the time. [REDACTED] has not replied with me even though [REDACTED] cc'd him into the communications. An LoA will be created if required.</p> <p>When contacted a second time Sqn Leader [REDACTED] said thanks for the update re the smaller window of TDA</p>	No, their only concern was for low level poor weather and that concern has been quashed as the BVLOS mission will not go ahead if poor weather.
Maritime and Coastguard Agency (MCGA)	<p>[REDACTED] has said she has passed this onto their director, nothing else heard back as yet. Limited response attached. No further contact from [REDACTED] to myself.</p> <p>When contacted a second time [REDACTED] thanks us for the update re the smaller window of TDA</p>	No
National Police Air Service	<p>Spoken to [REDACTED] and he has passed me onto his colleague just to make them aware of the flights. No further contact from their Operations delivery [REDACTED] after reaching out.</p> <p>Further communications to [REDACTED] and he has replied to say, they are happy with the application as long as the NOTAM has the contact number for the RP. I have explained that the Accountable Manager will be the sortie commander and will be next to the RP to make decisions.</p> <p>Further contact with [REDACTED] and they have no concerns as long as the</p>	No

	telephone number is on the NOTAM and that phone is monitored when in flight.	
Hollow Hill Farm, grass strip just inside the proposed TDA	<p>██████ has been contacted by a BMAA member and has made contact direct with questions. ██████ is unhappy with the TDA as it does intersect his flight area. It has been explained that this would be a maximum of 6 days only and he is still unhappy with the restrictions. No further reply back from ██████ so an LoA has been drafted and continued efforts will be made to speak with ██████. If no LoA is required then one is ready as a draft. If not then not a problem.</p>	<p>Possible, with a slight change to area around his grass strip, however due to the safety buffer that his strip is in and only affected for 3-6 days on safety I would recommend that we do not change the TDA area. LoA will be in force.</p> <p>This is now reduced to a 2 day affect and only minimal hours on each day. Still no need to reduce the TDA size.</p>
Grass Strip at Bottolph Claydon	<p>Spoke with ██████ over the phone who is happy with the set up that we only need it for 6 days in the 90 days TDA window. No document attached as was a phone conversation. Spoken to ██████ a second time today 24 Aug 21 and explained that we will only be flying for 2 days only and 1 hour per day. I asked him would he need an LoA and he explained over the phone that he is happy as long as my mobile number is on the NOTAM. I explained that it will be.</p>	No, also ██████ is happy that the Accountable Managers mobile number is on the NOTAM, no need for a LoA.
Light Sports Flying Services	<p>██████ runs a small grass strip and is worried that the 90 days will affect business. I have explained about the 6 days we are looking to fly only. ██████ has replied and said as long as NOTAM in place no need for an LoA. Explained one will be and contact details will be on it.</p>	No
Bicester Gliding Club, now called Windracers Gliding Club	<p>██████ made contact and explained that the Windracers Gliding club had stopped operating due to not have a venue to operate from. Limited reply attached. ██████ reminded me that they no longer operate from Bicester.</p>	No
Turweston Airfield	<p>██████ explained that they are not against the TDA but wished we had involved more of the wider community. We do not know what we do not know. Limited response attached.</p>	No
Dunstable Club	<p>██████ said that they are happy at Dunstable with the TDA area</p>	No
Thames Valley Air Ambulance care of Babcock	<p>██████ has said, happy with the TDA however needs a POC for the flights and a bit of notice. Also phone ██████ prior to lifting and after landing. LoA will be in force between us. ██████ thanked us for updating them, but also said that they sometimes have a visiting aircraft from the Isle of Wight and that they would need to be added to the LoA. Now we have an LoA agreed by our legal team, The LoA is with their legal team however will need to be updated re the introduction of teh IOW aircraft entity too. This will be ongoing until resolved in the next couple of weeks.</p>	No, LoA will be in place with Babcock.
Small airfield to the North of track East of Bicester	<p>██████ was at the same zoom meeting as ██████. He too was happy with the outcome of the meeting.</p>	No

	██████ replied and said that he is happy that no LoA is needed due to the smaller window of operation.	
██████, Unsure of location but is local, referred to as unknown location 1 in Annex C	██████ is not happy that there are many TDA's being created without correct DDA technology to be able to operate in Unsegregated Airspace. I did respond to ██████ to try and explain why we are doing what we are doing and no response back. ██████ replied and thanked us for updating him with the revised plan.	No
██████, Unsure of location but is local referred to as unknown location 2 in Annex C	I am not sure where the contact with ██████ came from, as ██████ submitted his document direct and not on the stakeholder engagement feedback form. He is clearly not happy with what we are trying to do. I have not tried to engage any further due to a lack of knowing where his interface with the intended TDA would be. ██████ replied and thanked us for updating him with the revised plan.	No
Bicester Aerodrome Company BAC	BAC are happy with the TDA application. We are operating from BAC owned land and so are working closely with Charlie and his team. BAC replied to say they had received our update and said see us in October hopefully.	No, LoA will be in place with BAC.
Bicester Soaring Club	██████ is happy to endorse the TDA application as long as we liaise direct with them and BAC, which we will be with BAC as part of the SOPS upon arrival.	No and we will have the SOP in place whilst at the BAC
Air Ambulance/Hems	██████ has been emailed with the plan but no response.	
SAR	██████ has been contacted via email with the plan and no response.	
Pipeline Patrol	██████ has been contacted via email with the plan and no response.	
Powerline Patrol	██████ has been emailed with the plan but no reply.	
Powerline Patrol	██████ has replied to our email saying that as long as the NOTAM has the contact details for the POC on site on the day of flight then they do not see any issues.	No
Pipeline Patrol	██████ has been emailed with the plan but no reply.	
Airspace4All	No reply	
Airport Operators Association (AOA)	No reply	
Aircraft Owners and Pilots Association (AOPA)	No reply	
Airspace Change Organising Group (ACOG)	No reply	
Aviation Environment Federation (AEF)	No reply	
British Airways (BA)	No reply	
BAe Systems	No reply	
British Airline Pilots Association (BALPA)	No reply	
British Airline Pilots Association (BALPA)	No reply	
British Business and General Aviation Association (BBGA)	No reply	

British Helicopter Association (BHA)	No reply	
British Model Flying Association (BMFA)	No reply	
British Skydiving	No reply	
Drone Major	No reply	
General Aviation Alliance (GAA)	No reply	
Guild of Air Traffic Control Officers (GATCO)	No reply	
Honourable Company of Air Pilots (HCAP)	No reply	
Helicopter Club of Great Britain (HCGB)	No reply	
Heavy Airlines	No reply	
Iprosurv	No reply	
Isle of Man CAA	No reply	
Low Fare Airlines	No reply	
Military Aviation Authority (MAA)	No reply	
NATS	No reply	
Navy Command HQ	No reply	
PPL/IR (Europe)	No reply	
PPL/IR (Europe)	No reply	
UK Airprox Board (UKAB)	No reply	
UK Flight Safety Committee (UKFSC)	No reply	
United States Air Force Europe (3rd Air Force-Directorate of Flying (USAFE (3rd AF-DOF))	No reply	
RAF Low Flying Cell	No reply	
Oxford Gliding Club Weston on the Green	No reply	
Westcott	No reply	

9.0 Summary

Network Rail Air Operations have learnt a number of things by going through this process. To name a few:

- Make sure you share the stakeholder engagement form as a word document and not a PDF. This was an error on our behalf, however most were able to find a way of using the response form.
- That the General Aviation family is a strong group of people, that share information, and that assisted us to no end. They talk between themselves and that allowed us to engage with the smaller operators locally affected by our application.
- The Airspace team have been very helpful throughout the process, which is a new process to us in Air Operations.
- We know that the TDA approach will not be the way we progress BVLOS forwards but a stepping stone to allow us to show data collected and to ultimately positively increase safety.

Annex A

A signed copy of this will be added to V1.2 of this document.



Letter of Agreement (LoA) between Babcock Onshore (on behalf of Thames Valley Air Ambulance) and Network Rail Air Operations

(Activated on successful approval and implementation of both parties)

Times

All times in this LoA relate to Local.

Background

Network Rail are creating a temporary structure to allow a sub 7kg fixed wing unmanned aircraft to fly in a safer environment. This is a 90 day structure which Network Rail Air Operations envisage will be in use for 6 days maximum.

Thames Valley Air Ambulance (Babcock Onshore) are regular air users of the Oxfordshire/Buckinghamshire airspace to transit from their base and incident scenes along with scene to scene so the movement of their aircraft could be from any direction at various heights.

General

All departures of Network Rail Air Operations BVLOS flights will be from and to Bicester Aerodrome at all times. There is no Air to Ground radio set up at present at that airfield, nor do Network Rail Air Operations have the capability to run an air to ground system through the 90 day window.

For that reason the Accountable Manager for Network Rail Air Operations mobile phone number will be on the NOTAM and passed to any LoA holders.

Uncontrolled Airspace

The Airspace along the 20km distance that the BVLOS flight will commence is Class G throughout, with a number of small grass strips that the TVAA would already fly over.

Network Rail Air Operations responsibilities

During its hours of operation, Network Rail Air Operations Accountable Manager is to inform Thames Valley Air Ambulance (Babcock) that the TDA is active and in use. This will be via a phone call prior to the Babcock Flight Operation room on [REDACTED] along with the activation of the NOTAM more than 24 hours prior to the flight.

Thames Valley Air Ambulance responsibilities

Thames Valley Air Ambulance Duty pilot is to alert the Network Rail Air Operations Accountable Manager via the phone number published in this LoA and the NOTAM to alert them of an incoming conflict. If the TVAA Duty Pilot is unable to do this then the TVAA HEMS Desk will inform the NR Air Operations Accountable Manager of the movement.

Application of this LoA

The LoA will be applied as follows:

In an emergency, both parties will exercise discretion in their compliance with this LoA and inform the other party as soon as practicable afterwards.

Temporary deviations from this LoA can be verbally agreed between NR Air Ops Accountable Manager and Babcock Onshore on behalf of TVAA.
Permanent amendments to this LoA will be agreed by written agreement between the signatories below.

This document shall be incorporated into Remote Pilot briefings by the Network Rail Air Operations BVLOS Team prior to flight, also the Thames Valley Air Ambulance (Babcock Onshore) crew daily flight briefing prior to flights between the dates on the NOTAM.

[REDACTED]
Accountable Manager
Air Operations
Network Rail
[REDACTED]

[REDACTED]
Director of Operations
Babcock Mission Critical Services Onshore Ltd
[REDACTED]

Annex B

These will be completed and added to version 1.2 of this document.



Letter of Agreement (LoA) between Network Rail Air Operations and ****

(Activated on successful approval and implementation of both parties)

Times

All times in this LoA relate to Local.

Background

Network Rail are creating a temporary structure to allow a sub 7kg fixed wing unmanned aircraft to fly in a safer environment. This is a 90 day structure which Network Rail Air Operations envisage will be in use for 6 days maximum.

**** are regular air users of the Oxfordshire/Buckinghamshire airspace.

General

All departures of Network Rail Air Operations BVLOS flights will be from and to Bicester Aerodrome at all times. There is no Air to Ground radio set up at present at that airfield, nor do Network Rail Air Operations have the capability to run an air to ground system through the 90 day window.

For that reason the Accountable Manager for Network Rail Air Operations mobile phone number will be on the NOTAM and passed to any LoA holders.

Uncontrolled Airspace

The Airspace along the 20km distance that the BVLOS flight will commence is Class G throughout, with a number of small grass strips.

Network Rail Air Operations responsibilities

During its hours of operation, Network Rail Air Operations Accountable Manager are to inform the local air strips and BAC that the TDA is active and in use. This will be via an email to ****, along with the activation of the NOTAM more than 24 hours prior to the flight.

****** responsibilities**

**** are to alert the Network Rail Air Operations Accountable Manager via the phone number published in this LoA and the NOTAM to alert them of an incoming confliction.

Application of this LoA

The LoA will be applied as follows:

Temporary deviations from this LoA can be verbally agreed between NR Air Ops Accountable Manager and ****.

Permanent amendments to this LoA will be agreed by written agreement between the signatories below.

This document shall be incorporated into Remote Pilot briefings by the Network Rail Air Operations BVLOS Team prior to flight.

[REDACTED]
Accountable Manager
Air Operations
Network Rail
[REDACTED]

Annex C

AOG Response:

Dear Sir,

Thank you for contacting me as a member of Natmac. I sit as the representative of the Airfield Operators Group.

It was a pleasure to read your very considered proposal which appears to address a safety beneficial need. More, it seems that only that which is strictly required for the exercise is being sought. Limitations on operating heights and times are very welcome and contrast starkly with other BVLOS TDA applications that I have seen.

Thank you for contacting me; I have no comment to make other than to wish you every success with the trial. I would however be interested to know the stance that is taken by Bicester Airfield.

Best regards,

[REDACTED]

Sent from my iPhone

ARPAS Response:

The feedback should be:
ARPAS UK supports the application by Network Rail for this TDA.

Best wishes, [REDACTED]

On Tue, Jun 22, 2021 at 2:38 PM [REDACTED] wrote:
Dear Paul,

Apologies for the lateness of the reply to the TDA Stakeholder Engagement.

Name	[REDACTED]	[REDACTED]
Organisation Name	ARPAS-UK	
Position in the Organisation	Regulation Director	CEO
Email	[REDACTED]	
Phone Number	[REDACTED]	
Feedback		

If you have any further questions, please get in touch.

Best wishes,
Elena

--

[REDACTED]
OPERATIONS MANAGER



In the Office 9am-3pm Mondays-Fridays

Please follow us on Social Media:

BBAC Response

[REDACTED]
British Balloon and Airship Club
Regional Liaison Officer
[REDACTED]
[REDACTED]

Feedback:

Hot air balloon operations occur shortly after sunrise and before sunset. Although Hot Air Balloons fly low on their approach to land, and do not generally use recognised landing sites, I believe our operations will not be affected by this TDA. The BBAC therefore does not have any objections to the TDA.

[REDACTED]

Sent from [Mail](#) for Windows 10

BGA Response:**TDA approval NR-EWR BVLOS (ACP-2021-014)**

Dear Stakeholder, Network Rail Air Operations are applying for temporary airspace change application to establish a 90 day Temporary Danger Area (TDA) as per the attached stakeholder engagement document.

You have been highlighted through CAA engagement or through our own investigations as a engaged target aviation stakeholder

We would like to enable a TDA so that we can safely test a small lightweight UAS Beyond Visual Line of Site (BVLOS) during a proof of concept project to carry out track inspections to try and reduce the need for people to be in the hazardous railway environment.

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Please respond by: 17:00 on Friday 11 June 2021. All feedback provided, whether by email or completion of this form, will be uploaded to the CAA Airspace Change Portal and shared with the CAA in its original form, albeit with personal and contacts details redacted in order to protect your privacy. Many thanks in advance for taking the time to provide feedback on our proposal.

Yours faithfully

[REDACTED]

National Drone Manager - Air Operations - Network Rail

[REDACTED]

Name	[REDACTED]
Organisation name	British Gliding Association
Position in the organisation	CEO
Email	[REDACTED]
Phone	[REDACTED]

Feedback

Thanks for the engagement. One minor point – this document was supplied as a pdf, which results in slightly more onerous response than if the form had been supplied as a Word doc.

Proposed TDA impact on gliding stakeholders

There are two BGA club operations that will be impacted by this TDA proposal.

Bicester Soaring Group operates up to ten sailplanes from Bicester airfield on a weather-opportunity basis primarily from April through to September. If the weather is conducive to cross-country soaring, they will be operating, using a towplane to launch gliders which then climb in rising air and fly away from the site. They usually launch together late morning and return to the airfield at different times during the day.

MotorGlide operates a training organisation from Bicester airfield, primarily teaching student pilots to fly Touring Motor Gliders. They operate up to five aircraft on most days and can expect to be taking off and landing throughout any day when the weather is conducive. Rain and strong wind usually preclude flying training opportunities.

Both the Bicester Soaring Group and MotorGlide rely on flying income from their members to pay running costs. Being prevented from flying has a significant negative impact on ongoing viability and must be avoided.

Bicester airfield is a large space. Providing the RPAS operator is willing to engage with and co-operate with operational experts from the Bicester Soaring Group and MotorGlide, it should be possible to operate a small RPAS from the airfield without significantly impacting on gliding operations. We strongly suggest that Network Rail Air Operations engages directly with both the Bicester Soaring Group and MotorGlide, along with the Bicester Aerodrome Company, with the aim of agreeing simple procedures to ensure safe and efficient joint operations throughout the proposed period of TDA activity.

Bicester Soaring Group – [REDACTED]

MotorGlide – [REDACTED]

[REDACTED]
CEO
British Gliding Association

BHPA Response:

Dear [REDACTED]

Thank you for the email.

The BHPA has a club that may be affected by your proposal. Paragliders, hang gliders (and motorised variants - paramotors, powered hang gliders) fly at low level and your RPAS operation may pose a mid air collision risk.

I have copied in the Secretary of Dunstable Club's email address.

I have bcc'd in the BHPA Club "Dunstable Club" officials who may get in touch with you directly in order to discuss your TDA proposal.

Kind regards

[REDACTED]
[REDACTED]
BHPA Technical Officer

Tel: +44 [REDACTED]

Email: [REDACTED]

Web: www.bhpa.co.uk

British Hang Gliding and Paragliding Association (BHPA)

8 Merus Court, Meridian Business Park, Leicester, LE19 1RJ, England

Tel: 0116 289 4316

Fax: 0116 281 4949

British Hang Gliding and Paragliding Association Limited.

A company limited by guarantee and registered in England no 2618166

Registered office: 340 Melton Road, Leicester, LE4 7SL

BMMA Response:

Response from the British Microlight Aircraft Association (BMAA) to Temporary Airspace Change Proposal by National Rail. NR-EWR BVLOS (ACP-2021-014)

Introduction

I respond as the Chief Executive of the British Microlight Aircraft Association (BMAA). We have approximately 3800 members flying 1600 regulated microlights and approximately 300 unregulated microlights.

Our members largely fly for leisure, although we have around 200 flight instructors many of whom operate full time training schools. Although much of our members' flying takes place at weekends we do have many members who are able to fly during the week.

Almost all our members' microlights have radio, a growing proportion, although still a minority, carry a transponder and / or an EC device.

I am aware that individual members of the BMAA will be making their own responses and this response should not be taken to either oppose or support those of individuals.

General

I remain concerned that there appears to be little if anything being done by the UAS/Drone industry and operators to develop technical solutions to make it unnecessary for BVLOS operations to require segregated airspace. I believe that it is incumbent on that industry to develop solutions rather than rely upon other airspace users to accept disadvantage and "make way" for operations which are generally based upon financial gain. As a proposed user of segregated airspace I would like to sponsor to say how it has engaged with Detect And Avoid development.

Specific

I have discussed the proposal in detail with the sponsor and raise no objection to the TDA if in accordance with the operating limits and procedures discussed. These are:

1. That expected activation of the TDA will not exceed four days during the 90 day period
2. The TDA will only be activated on days that it is in use
3. Activation of the TDA will be by NOTAM at least 24 hours in advance
4. An activity notification service will be available on each day that the TDA is NOTAMed as active
5. The aircraft will carry and operate at a minimum ADS-B in and out
6. A Letter of Agreement between the sponsor and each operator of a locally affected airstrip enabling use of the airstrip by agreement if the TDA is active but the drone is not flying to be agreed and put in place

██████████
Chief Executive

11/06/2021

LAA Response:



TDA approval NR-EWR BVLOS (ACP-2021-014)

Dear Stakeholder, Network Rail Air Operations are applying for temporary airspace change application to establish a 90 day Temporary Danger Area (TDA) as per the attached stakeholder engagement document.

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Yours faithfully

[REDACTED]
National Drone Manager - Air Operations - Network Rail

Name	[REDACTED]
Organisation name	Light Aircraft Association
Position in the organisation	Chief Executive Officer
Email	[REDACTED]
Phone	[REDACTED]

FEEDBACK

The Light Aircraft Association is the UK's largest powered recreational flying organisation, with 7,700 members flying more than 2,700 light aircraft within the UK. These range from factory-built classic and vintage types, to microlights and amateur-built aircraft constructed by our members. The majority operate at sub-3000 feet in day-VFR conditions and therefore may be most adversely affected by future BVLOS RPAS operations.

We welcome your consultation on the proposed trials operating from Bicester. However there are a number of potential issues surrounding its impact on local flying in the area which we hope may be mitigated by implementation of some of the proposals discussed at stakeholder meetings on 25th May and 9th June 2021.

BICESTER AERODROME

There are around 24 aircraft based on Bicester Aerodrome itself and any prolonged implementation of a TDA without letters of agreement or appropriate mitigations would significantly compromise their movement in and out of their base. In addition local flights would be compromised.

As well as private owner aircraft, there are three operations at the airfield, which depend on revenues from flying to support their activities. Being prevented from flying has a significant negative impact on their ongoing viability.

Finest Hour Experiences operate a range of historic aircraft on experience flights. Bicester Soaring Group operates up to ten sailplanes from Bicester airfield on a weather-opportunity basis, using a towplane to launch gliders which then climb in rising air and fly away from the site. They usually launch together late morning and return to the airfield at different times during the day. MotorGlide operates a training organisation from Bicester airfield, primarily teaching student pilots to fly Touring Motor Gliders. They operate on most days and can expect to be taking off and landing throughout the day.

We note with interest your comments that while the TDA may be in force for an extended period that the trials themselves will be in effect for only a short period each day for three, two-day 'windows'. This therefore lends itself to letters of agreement with local operators to enable their access to the airspace when not in use, via a defined protocol whereby you 'activate' and 'deactivate' the airspace as required, perhaps via a mobile phone contact number.

EN-ROUTE AND LOCAL FLYING SITES

Between Bicester Aerodrome and Bletchley the proposed EW Rail route will pass in close proximity to a number of flying sites used by light aircraft, microlights and helicopters. These include a helipad at Marsh Gibbon, microlight sites at Granborough, Marsh Gibbon and Poundon, and a larger strip near Westcott.

As at Bicester, including the operators of these sites in letters of agreement and positive communication when the airspace is not in use RPAS trials would be a key to minimising the loss of use of these amenities.

It is noted that the RPAS operations are not scheduled to be above 400 feet agl. We therefore believed that a top limit to the TDA for BVLOS operations should not be more than 500 feet AGL. Where this to be the case the TDA would not present any significant challenges for normal en-route operations.


Further mitigation would be appropriate such as reducing the proposed 2km boundary along the route to 500m. This would be entirely appropriate given the size of the system being

operated and the intent of Network Rail to make a landing on their own property wherever possible if a malfunction were to occur.

CONCLUSION

We welcome this consultation and the initiatives proposed. If these letters of agreement were to be created and the mitigations offered can be put in place, this would remove many concerns about this TDA proposal.

Indeed we believe that the CAA should recommend these mechanisms to other RPAS operators, locations and activities in the future.


CEO
Light Aircraft Association

DATM Response:

Feedback for Airspace Change Proposal ACP-2021-014

Name	Squadron Leader [REDACTED]
Job Title / Role	DAATM Airspace Strategy Manager
Company / Organisation	MOD
E-mail address	[REDACTED]
Contact number	[REDACTED]

Feedback:

Please accept this feedback from Defence Airspace and Air Traffic Management (DAATM) which represents views from across the Ministry of Defence (MOD). The MOD wishes to thank Network Rail for their engagement on ACP-2021-014.

The MOD understands the importance and nature of the task and is committed to help provide a workable solution for all airspace users. Whilst the MOD does not object to the proposal, there are potential flight safety implications and airspace user conflicts that require addressing with the proposal as it currently stands.

With a maximum UAS operating height of 400ft AGL but no description of any buffer above the BVLOS activity, it is not clear exactly what the dimensions of the TDA will be, therefore it is difficult to fully quantify the impact, however RAF Benson, approximately 25 miles south of Bicester and where there are RAF Puma and Chinook helicopters based, has raised concern that the TDA will create a wide 'fence' that low-level VFR departures and arrivals to and from the north will need to climb over to transit past. The impact of the restriction is likely to be most severe on days with a low cloud base or low zero-degree isotherm, when VFR aircraft are unable to climb, and could affect aircraft responding to emergencies under Military Aid to Civil Authorities (MACA).

In line with the principles of flexible use of airspace, the MOD is content with the proposal that the TDA will only be activated for the times required to conduct the BVLOS activity and not for the entire day period, and is keen to understand how the hand back process will be managed and notified to other airspace users. Additionally, lateral sectorisation of the corridor, with managed activation, could provide a means to reduce the impact on transiting aircraft.

There may be occasions in extremis where military aircraft require transit through the TDA in emergency or the interests of national security. This would likely be at no-notice and is akin to how the emergency services and other Cat A flights would gain access, thus some mechanism of rapid communication with the UAS operator/TDA authority would be required. Having relevant TDA contact information on the NOTAM is one way of achieving this if a radio frequency or DAAIS are not available for other airspace users. It would also be helpful to understand how the UAS's detect and avoid system would act should a military aircraft unexpectedly pass at close range.

In summary, the MOD is keen to work with Network Rail to achieve a better understanding of tactical management of the TDA in order to allow deconfliction for military aircraft, as well as more clearly defining the TDA dimensions. This coordination will ensure that both operations can continue safely with the minimum of disruption.

Please do not hesitate to contact DAATM if you have any further questions or require MOD contacts to liaise with reference any of the content contained above.

MCA Response:

Hi [REDACTED]

My apologies for the delayed response. I have forwarded your email onto our Aviation Policy Lead, [REDACTED] who should be able to assist and will be in contact in due course.

Kind Regards

[REDACTED], Aviation Innovation and Future Technology Lead
Maritime & Coastguard Agency
Spring Place (Bay 3/27), 105, Commercial Road, Southampton, SO15 1EG



 Maritime & Coastguard Agency |  HM Coastguard

Safer Lives, Safer Ships, Cleaner Seas



NPAS Response:

From: [REDACTED]
Sent: 04 May 2021 22:18
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: TDA Stakeholder Engagement

Evening Paul,

Nice to hear from you. I hope you are well. Although I am still with NPAS I no longer am involved with drones due to an internal restructure. If your event is to affect NPAS operational delivery please contact [REDACTED] the Ops. Centre Manager who will ensure NPAS are aware in key roles and locations and if it is future4s based could you please contact [REDACTED] our Head of Compliance whose department now leads on drone development nationally. I have included both on this email.

Good luck with your plan.

Best Regards

[REDACTED]

Hollow Hill Farm Airstrip's Response:

OFFICIAL



TDA approval NR-EWR BVLOS (ACP-2021-014)

Dear Stakeholder, Network Rail Air Operations are applying for temporary airspace change application to establish a 90 day Temporary Danger Area (TDA) as per the attached stakeholder engagement document.

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Yours faithfully

[REDACTED]
National Drone Manager - Air Operations - Network Rail

Name	[REDACTED]
Organisation name	Hollow Hill Farm Air Strip Granborough
Position in the organisation	Owner
Email	[REDACTED]
Phone	[REDACTED]

Feedback:

- 1) Under the current proposal it appears that my airstrip, which has been in regular use since August 1994, is within the proposed glide clear zone, and would therefore be unavailable for take-off and landing on days when the UAV is active.
- 2) Whilst it may be possible to PLAN to depart / return when the TDA is not active, aviation frequently suffers weather delays, which would equally apply to UAV flights. This could result in my flight plan conflicting with TDA active times. For departure, this would be inconvenient, but for a return flight this could easily result in additional costs, including landing and parking fees at an alternative airfield and taxi costs from the airfield home, and return to the alternative airfield to collect my plane at a later date. Whilst Network Rail may reduce their costs by the use of a UAV, it is likely to be at the expense of others, who should be compensated accordingly.
- 3) There is an electricity sub-station and high tension power lines up to 250' agl between the East West Rail line and my strip and within the glide clear area. It seems inconceivable that a UAV could be allowed on a glide path that transits this area. Based on a glide path from 400' agl over the railway, the UAV would need to fly between or under the power lines to reach my strip. The glide clear area should therefore terminate North of the sub-station and power lines. *It is also noted that the National Grid is not listed as a stakeholder in this proposal.*
- 4) The proposal mentions ADSB technology. Many General Aviation aircraft do not have ADSB in or out capability. Many (but not all) microlights and some GA aircraft have an alternative 'Pilot Aware' system installed. This provides ADSB in, but not necessarily ADSB out, as this also requires a compatible transponder. If the UAV is transmitting ADSB out, then these aircraft will be able to 'see' it, but the UAV will not see the aircraft unless it too has a Pilot Aware system installed.
- 5) The plethora of UAV TDA's being created in class G airspace in the UK is a serious safety concern for general aviation. To safely integrate with existing class G airspace users, UAV's must be equipped with proven and dual redundancy detect and avoid systems, eliminating the need for the establishment of any danger areas.

LSFA Response:**TDA approval NR-EWR BVLOS (ACP-2021-014)**

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Yours faithfully

[REDACTED]

National Drone Manager - Air Operations - Network Rail

[REDACTED]

Name	[REDACTED]
Organisation name	Light Sport Flying Services
Position in the organisation	Owner
Email	[REDACTED]
Phone	[REDACTED]

Feedback:

I run a small but sometimes quite active flying school and maintenance facility at Marsh Gibbon. We have a grass runway east west direction and small hanger / workshop. I have aircraft flying in for maintenance and servicing.

I am also the UK agent for Galaxy Recovery Systems (GRS) these are ballistic parachutes for aircraft. I have aircraft flying in for their six year overhauls.

The airfield is known as Pear Tree Farm, it is shown on Google Earth. It has been there for many years. I rent the strip from the farmer.

I keep and operate my own aircraft the strip and plan to have a further aircraft located there later this year.

Pear Tree Farm (Strip)
Bicester Road
Marsh Gibbon
Nearest post code is OX27 0EU

I revived this notification from a friend please can you make sure i am kept informed about the situation. I am very concerned that after a year of disruption to my business due to Covid that a further 90 days of restriction will seriously affect my business.

Windrushers Gliding Centre Response:

Hi [REDACTED]

Could we please point out that the Windrushers Gliding Club Ltd T/A Bicester Gliding Centre is no longer operating from the airfield at Bicester. Bicester Heritage terminated our lease in December 2019 and we had to vacate the site by June 30th, 2020. The Club is currently in hibernation with all our equipment in storage while we are trying to find another place to fly from. So, we are not a stake holder and the mention of Bicester Gliding Centre that we have seen in the documentation is wrong. The airfield is now run by Bicester Heritage themselves under a new company called Bicester Aerodrome Company Ltd.

Kind regards

[REDACTED]

Director

Turweston Airfield Response:

Thanks for the update [REDACTED] - I don't know any of the local airspace users that were aware, we picked it up by chance really.

Please be aware that we are not against operations, we just thought it would be the natural place for discussion at the next Oxford Regional Airspace User Working Group Meeting (RAUWG), chaired by the Senior Air Traffic Controller (SATCO) at RAF Benson - If indeed we actually have another meeting before closure date for comments. If not and in the interest of safety, we can at least spread the word so local airspace users are fully aware.

Regards,

[REDACTED]
(Turweston & Hinton Airfield Representative)

Dunstable Club Response:

[REDACTED]

From: [REDACTED]
Sent: 14 May 2021 11:37
To: [REDACTED]
Subject: Fwd: Re: TDA Stakeholder Engagement
Attachments: NR-20200201-TDA-Proposal-V1.1 stakeholder response form.pdf; NR-20200201-TDA-Proposal-V1.1 stakeholder engagement strategy.pdf

Hi [REDACTED] thanks for your message below. We have discussed at a recent Dunstable Club committee meeting and have concluded that the proposed surveys are of no concern to our activities given the height and location at which you plan to operate. We will therefore simply rely on any NOTAMS that may apply at the time.

best regards

[REDACTED]
DHPC Chairman

Babcock C/O Thames Valley Air Ambulance response:**TDA approval NR-EWR BVLOS (ACP-2021-014)**

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Yours faithfully

[REDACTED]

National Drone Manager - Air Operations - Network Rail

[REDACTED]

Name	[REDACTED]
Organisation name	Babcock MCS Onshore (on behalf of Thames Valley Air Ambulance)
Position in the organisation	Chief Pilot and Head of Flight Operations
Email	[REDACTED]
Phone	[REDACTED]

Feedback:

Dear [REDACTED]

Many thanks for giving us early sight of your proposed TDA.

As you will understand HEMS operations are by their very nature unpredictable, short notice, constantly changing and reactionary. Therefore, we will be unable to provide a drone operator early notice of the need for a HEMS helicopter to land within a TDA.

However, as we have worked alongside drone operators a significant amount of times we have found that establishing a clear means of verbal communications as to activity on a daily basis as well as an agreed means of allowing HEMS activity to continue is key. This is backed by the fact that as a HEMS/ Air Ambulance operator we do not require permission to enter a TDA as our pilots only have to be content that they are fully aware of any activity taking place.

Therefore, could I ask that we establish an LOA which contains a clear means of the duty pilot receiving an update on the next days activity as well as an agreed method in which the drone pilot is informed of any inbound HEMS aircraft on a priority mission and also that the HEMS aircraft can be informed of any changes to the days activity.

Could I ask whether the drone will have lights or be ADS-B/ transponder equipped?

More than happy to discuss further should you wish.

Best wishes,

[REDACTED]

London Poundon International (LPI) response:

Hi [REDACTED],

Thank you for your input yesterday re drone ops over EWR. I think you have probably allayed most of our concerns over this TDA, and I'm sure that if Notams and telephone numbers are readily available we can make contact to ascertain your dates and times, then I can't see too many problems. Most problems occur due to lack of communication and we now have so many ways to 'talk' to each other!!

I have enclosed a Skydemon map with our strip marked on it for your information. Hope this helps and please contact me if you need any more help.

Best regards,

[REDACTED]

Airport manager,

London Poundon International. (LPI)

Unknown location 1 Response:

Hi [REDACTED]

I would like to object to this ACP 2021-014. There are an increasing number of these drone ACPs with numerous TDAs appearing all over the country, many for spurious activities using transportation of covid test samples as an excuse, but with the real objective of just getting government grant money for drone activities, while your trial has a real world reason and you aren't just doing it to get grant money, it's the same problem of "running before you can walk" with a drone that is not yet ready for BVLOS operations.

They are using uncertified drones and without autonomous detect and avoid systems, thus creating a "need" for TDAs, when really until they have a drone certified to a recognised safety standard and an approved autonomous detect and avoid system, they should only be operating in existing danger areas to do this initial testing. There are dedicated drone testing areas on Salisbury Plain and west Wales with existing danger areas. Once these tests are done then the drones should be able to operate BVLOS below 400ft with no requirement for any TDAs, TMZs or other segregated airspace, this is when trials such as yours should be taking place.

Autonomous detect and avoid systems are available and some are FAA approved as they are required for BVLOS operation in the USA, these are I understand LIDAR or radar based. As well as detecting other airspace users (and this means model aircraft, hot air balloons, hang gliders, powered parachutes and hobby drones as well as GA aircraft) these also enable detection of "unknown" fixed objects such as wires and masts which are things that are probably particularly of interest to you when operating above a construction area.

Yes, there are some drone operators who don't want to make the investment in an autonomous detect and avoid system and instead are trying to persuade the CAA to make all other airspace users buy electronic equipment, that the drone companies can detect with a cheaper solution, effectively getting other airspace users to subsidise the commercial BVLOS drone operators' profits, they want to make a segregated airspace like a TMZ that other airspace users can only enter if they pay for the required equipment. Of course one of the companies behind this idea, also makes some of the equipment they want people to buy, so double profits. This is of course unethical and immoral and hopefully will be seen through and Autonomous detect and avoid be made mandatory for BVLOS drones.

Thus you should be equipping your drone with Autonomous detect and avoid before starting this trial and not need a TDA.

An additional problem is that although drones should be flying below 400ft AGL, the TDAs are often defined as AMSL and with the ceiling heights based on 400ft above the highest points nearby, which can be a major problem when there are hills, thus making the TDA ceiling well above 400ft in many places. (perhaps not so much of a problem with your route). While the drone won't be that high as it has to keep below 400ft AGL, the airspace is and increases the likelihood of infringements of the TDA by low flying aircraft, especially if you are trying to get home in low cloud. This isn't a safety problem, just a problem with the CAA and being prosecuted for infringements, thus to keep the likelihood of infringements to a minimum, TDAs need to be minimised. Thus the TDA needs to be expressed as AGL, not AMSL with an absolute ceiling of 400ft AGL.

The width of the TDA also needs to be minimised, to avoid infringements and also to avoid picking up higher ground to either side if the ceiling is given in AMSL. As these drones are supposed to be able to navigate very accurately, I would think that the corridor ought to be able to be limited to about 100m either side of the railway line, there seems to be no requirement to go any further away. You have made your proposal based on the area the drone could glide to in case of a propulsion failure, but I don't think this failure case needs to be taken into account for the TDA.

requirement, particularly as the trajectory of the drone will be downwards away from or along the TDA. The TDA size should be based on normal operation, if it glides outside that due to a failure case, then that should be acceptable.

As the objective is to capture medium definition imagery all along the track to show change detection in lineside ground and vegetation, it would seem that even flying once a day would be excessive, thus it should be arranged that the TDA only be activated for exactly when the drone will fly and this be decided and notated the day before.

Im not sure how fast you are flying, but I would imagine you can get there and back in an hour, thus there is only need for the TDA to be activated for a one hour period each day. It is not acceptable to have the TDA active 0900-1600 when the drone isnt flying.

Given that the whole TDA isnt active at once, you should provide a Danger Area crossing service, so a frequency should be published which aircraft can call up to get crossing clearance, if there is no answer on the frequency, then it should be assumed that the TDA is not active and implicit permission be given for crossing, ideally this should be in a recorded message on the frequency. a phone number should also be provided so that airspace users without radio can call up to be given clearance to use the airspace.

You have only found one airstrip near your route, but there are at least 3 others, one west of Marsh Gibbon, one west of Poundon and another south of Winslow. there is also a helicopter operator between Bicester airfield and Poundon. Additionally there are sometimes hot air balloons operating in the area as well of course as transit traffic. The area is very busy with north-south transit aircraft being the only area clear of controlled airspace between the Weston-on-the Green Danger area and Kidlington/Brize to the west and Luton/Heathrow to the east. Most of this traffic will be well above you except a few on poor weather days. There are numerous aircraft locally based at Hinton-in-the Hedges, Turweston and Finmere that fly locally in the area.

Yes, most GA aircraft will be well above your TDA nearly all the time, but lets remember that there are many other airspace users too, thats a massive area where no one is allowed to fly a radio controlled model or hobby drone while your TDA is active, including all of the town of Winslow as well as half of Bicester.

I have no objection to your operation of a BVLOS drone equipped with Autonomous Detect and Avoid below 400ft without the need for a TDA, TMZ or any other form of segregated airspace, my objection is to the segregated airspace.

I am pleased to say that your proposal is far more professional and well thought out compared to all these grant chasing, covid excuse proposals from groups who clearly have no idea or care about other airspace users at all.

Best Regards



Unknown location 2 response:

2021-014 Network Rail – FEEDBACK. AMENDED as V2

Name: [REDACTED]
 Position: GA Pilot
 Organisation: N/A
 E-mail: [REDACTED]
 Phone: Not provided

This Feedback is provided following receipt of Network Rail document ‘Proposal for a Temporary Airspace Change NR-EWR BVLOS (ACP-2021-014)’ (called ‘Proposal’ in this Feedback), publication of the Statement of Need (SoN) & publication of the Assessment Meeting Minutes (Minutes). It does not address each document individually but considers them as a whole addressing key items arising from them as shown.

Quotes from the documents are shown in bold, italics.

Note. This is an amended version of the original feedback following publication of an AAIB report into a NR RPAS accident. Amendments are coloured blue for ease of access/reading.

Summary

This proposal and its associated documents provide a very muddled picture of the issue being addressed, the activity NR wishes to carry out, and an unclear definition of the airspace requested.

The only consistent item is that NR is not clear and agreed internally about whether BVLOS UAS might offer a solution to a problem. The ‘trial’ is being used to convince senior NR colleagues of a point of view, and there is no idea where a successful trial might lead other than to ‘a network of IDAs’.

This lack of clarity fails to meet the needs of CAP1616, the ACP manual, and fails, therefore, to permit stakeholders to make informed comment (also a requirement of the CAP).

Without much greater clarity, probably from a completely new ACP, I object to this proposal.

1. Issue/Opportunity is Unclear

Para 97 of the CAP requires “*The Statement of Need must set out clearly the identified need...*” and this is mirrored in the ‘title’ to Section 5 of the SoN, the sponsor is to provide information “*clearly explaining what issue or opportunity this proposal is seeking to address*”.

While the following para (CAP para 98) states “*The change sponsor must be explicit in what issue or opportunity it is seeking to address and what outcome it wishes to achieve without specifying solutions...*” Note, ‘issue or opportunity’ singular.

Yet in none of the documents supplied and/or published is any issue clearly identified, indeed it is extremely difficult to determine one issue from the others, as discussed in the following sub-paras.

1a. Workforce Deaths. *"Within the last four years four colleagues have tragically (sic) lost their lives whilst working in the track environment"*. With no detail or explanation of these deaths brief research with Office of Rail & Road (Rail Regulator) and Network Rail was undertaken. This research suggests that of the 4 deaths one was on the London Underground, while one was a suicide. Moreover, NR presumably has risk assessments and processes in place to ensure safe working practices. A brief examination of the Rail Accident Investigation Board reports indicate that published safe practices were not being used in these accidents.

Overall, by NR's own measure ('Lost Time Injury Frequency Rate') track safety has improved to a very low level over the past 8 years. It is disingenuous of NR to raise such an emotive topic as an 'issue', even obliquely.

1b. Increased Risk. *"UAS can play a significant role in supporting inspection methods that reduce the risk"* and *"proposed BVLOS proof of concept is driven by the need to improve safe working practices"* (both NR Proposal). But nowhere is the risk clearly identified.

1c. Capture Imagery. *"To capture medium definition imagery all along the track to show change detection in lineside ground and vegetation."* (sic) (NR Proposal). As the imagery is captured and stored on the UAS that System could be an LOS UAS as presently used; a BVLOS UAS is not necessary and nor is a TDA.

1d. NR Internal Debate. The closest specific explanation that might be considered an issue - albeit one internal to NR - is given in the SoN *"to prove the case to the companies (sic) Executive Leadership Team that it can be achieved in a safe way..."*. Surely this does not meet the requirement of the CAP for an ACP?

1e. Blanket Statements About Evidence. In the Minutes NR makes several blanket statements such as *"it is common knowledge that..."*, *"evidently there is a significant demand within the organisation..."*, etc.

If there is as NR further states *"with such a vast distance of track to capture it is evident that completing inspections on a more localised level with UAS would be invaluable."* then why is a trial required at all?

Overall, the issue or opportunity is not clearly stated and unless it is clearly stated it is difficult to see:

"whether an airspace change is a relevant option to consider" (CAP table on page 31),

Without clarity neither stakeholders, the CAA nor the change sponsor can ensure that *"proposals are received by an informed, engaged audience"* (CAP page 175).

It is equally difficult to see how - without a clear aim or issue to address - a trial or a TDA can be properly designed and carried out.

2. NR Internal Debate

Reading the Minutes it is obvious that there is NO internal agreement in NR as to the value of BVLOS or what might happen if any value is proven. *“Upon completion of the BVLOS flight Air Operations are hopeful that this will educate NR colleagues and external parties about the future capabilities of UAS and encourage others to conform”* and *“For NR it is not clear how this will progress, this is significantly dependent upon the success of the flight and how colleagues within the business wish for capabilities to advance”*

As stated by NR even if the trial goes ahead and is successful there is no internal agreement on how to proceed. Once again, a lack of the clarity the CAP requires.

So NR is asking for a large volume of Class G to - at best - convince colleagues internally that BVLOS is a good idea. Is that why only one flight is planned?

Does the use of an ACP/TDA to settle an internal debate meet the requirement of the CAP - an *“issue or opportunity this proposal is seeking to address”*?

3. Lack of Clarity about TDA Need

3a. Existing Danger Area (DA) vs TDA. In Item 3 in Minutes NR states *“Despite considering the use of existing danger areas across the UK in particular in Scotland since many of the BVLOS team are within close distance to the site this location seemed to be the most favourable and accessible to complete test flights. NR are a safety critical company and chose the location based on the level of risk, this was purposely done to show the flight can be carried out safely with the necessary procedures in place.”*

Surely an existing Danger Area (DA) is rather less risk than a TDA and, therefore, would be a better choice for *“a safety critical company”* (SoN, Proposal and Minutes)?

3b. NR Logistics. *“Despite considering the use of existing danger areas across the UK in particular in Scotland since many of the BVLOS team are within close distance to the site this location seemed to be the most favourable and accessible to complete test flights”* (Minutes Item 3).

So the reason for choosing the Oxford site over an existing DA in Scotland is because many of the team are located close to it, not from any risk or safety consideration or to meet the aim/objective of the trial.

Surely, a TDA should not be established purely because it suits the personal needs of Company personnel? How does that ‘clearly explain’ or address an issue or opportunity?

3c. TDA Dimensions. The lack of clarity extends even to the dimensions of the TDA itself; nowhere is it clearly specified. We ‘know’ it is 400ft agl and 20:1 from the rail track, but the best we are offered is a slightly odd shape at Image 4 (ESRO ARC GIS Map in Proposal) plus the 4 furthest most N, S, W & E points. It would be interesting to define that shape in words for an AIC and/or NOTAM.

While a height of 400ft is generally acceptable because GA aircraft do not routinely fly below 500ft agl the proposal assumes the whole area is not only devoid of small/farm/private strips but is also NOT used by Wing airfield or other flying schools as their ‘normal’ operating/training area for Practice Forced Landings and such. Much wider stakeholder engagement is essential - see 8 below.

4. Single flight

Presumably NR agreed and published the Minutes which refer frequently to a single flight: “a proof of concept BVLOS flight”, “This proof of concept flight”, “the BVLOS flight”, etc. Nowhere in the Minutes is more than one flight referenced, so why is a TDA needed for 90 days?

5. More TDAs

In Minutes Item 3 NR state “At this stage a possible future favourable option could be to expand a network of TDAs across the country”, while the SoN states

“Both uses cases (sic) that have been highlighted that could be carried out by UAS in a large proportion of the 20,000 miles of track...”. (SoN). Later in the SoN NR states:

“Network Rail know that UAS will not be able to access all of the 20,000 miles of track...”

Network Rail is obviously unclear - again - about how much track it could subject to work by BVLOS UAS, but expects it to be “...a large proportion of the 20,000 miles...” (SoN) accessed by “a network of TDAs across the country” (Minutes)

The large network of DAs would presumably be permanent and would amount to over 4500 cubic miles of airspace, based on the likely vertical and lateral dimensions of the proposed TDA. This equates to a volume equal to the whole of Wales covered by a DA to over 3000ft agl.

If DAs over the majority of NR track is the Company’s intention it should be clearly stated, and will be strongly resisted.

6. Increased Risk Not Reduced

Further in Item 3 NR states “It was recognised the proof of concept BVLOS flight could be useful for gathering data as the NR helicopter will be used as the DAA system”, again rather unclear (muddled?). If the drone is in a TDA why is a DAA system required? Even if the helo is inside the TDA - and that’s far from certain - adding a further air vehicle actually increases risk.

The coincident use of the helo ‘in and around the area’ is also of great concern. Will the helo be in the TDA at 400ft or below, will it be following the route above 400ft, perhaps offset to one side? Involving the helo in the trial will take some of the helo crew’s focus away from their own situational awareness, increasing the risk to other users if the helo is not in the TDA.

Could it not be argued that the presence of the helo negates the need for a TDA completely? If the RPAS operator is in the helicopter and visual with the System then segregated airspace surely isn’t required.

6a. AAIB Bulletin AAIB-27058. An RPAS weighing 1.391kg and operated by NR on a line inspection impacted the ground at c70kts just 10m from member of public, following a rotor failure. Had it hit the person the injury would have been fatal, even if the individual had been wearing a hard hat. The System was a new aircraft, purchased without a maintenance schedule and none was requested, sought or thought necessary by NR.

The accident was reported to the AAIB 9 days after it occurred, and after repairs had been completed by the manufacturer without a detailed investigation of the failure. This 9 day timescale is far in excess of the CAA/AAIB requirement of 3 days.

NR has about 80 RPAS, 40 pilots and flies about 1000 sorties pa, and has done so for a number of years. It has had the opportunity, therefore, to establish a robust database of evidence of RPAS failures. Even without such 'internal' data NR could have compiled data from published information. This data - internal and/or external - could have been used to inform NR's risk assessments and operations,

NR appears not to have had such data, apparently choosing not to do so. Even if it did have data it did not provide it to this operator.

"Neither the operator in its risk assessment...based mitigating actions on data published for UAS failure rates per flying hour". and

"The operator's initial risk score of ten (moderate) concerning the potential failure of the aircraft was not based on published failure rates for the types of UAS it operated"

What NR did was to make assumptions at the level of the operator and based solely on the operator's knowledge *"Instead, the operator had used an assumed value based on an awareness of previous UAS incidents"*

It is only to be hoped that NR does not exhibit such a cavalier attitude to its track access risk assessments as it did to its RPAS operations. NR's claim *"NR are a safety critical company"* is not supported by the evidence in this independent accident report.

7. DACS

The use of the phone line to determine if the drone is operating isn't acceptable. Flights from the N of England to the area by microlight/light aircraft, for example, could take 2+ hrs and NOTAM activity will be checked some time before take-off. Once the NOTAM is activated, then, most GA will abide by it even if it is subsequently de-activated. GA pilots are unlikely to make calls to check the NOTAM's status, and will not when airborne.

In a relatively busy aviation area surely there is some ATC unit which could offer a DACS or up-to-date DAAIS for visitors to the various aerodromes/strips and/or for transit aircraft?

8. Engagement List

The engagement list is woefully inadequate, and demonstrates a complete lack of understanding of GA. To include the Coastguard (for a proposal c70nm from the coast) whilst excluding the BMAA, LAA and others would be laughable were it not so serious. Already the BMAA has identified a number of airfields/strips that are affected by the proposal and should be consulted.

BAC Response:



TDA approval NR-EWR BVLOS (ACP-2021-014)

Dear Stakeholder, Network Rail Air Operations are applying for temporary airspace change application to establish a 90 day Temporary Danger Area (TDA) as per the attached stakeholder engagement document.

You have been highlighted through CAA engagement or through our own investigations as a engaged target aviation stakeholder

We would like to enable a TDA so that we can safely test a small lightweight UAS Beyond Visual Line of Site (BVLOS) during a proof of concept project to carry out track inspections to try and reduce the need for people to be in the hazardous railway environment.

This response form will enable you to provide feedback on our proposals detailed in the Targeted Engagement with Aviation Stakeholders document. This can be found on the CAA Airspace Change portal. How to respond Please download and save this document to your computer, completed the section below with your feedback and return the form to [REDACTED] In addition to this Word file, we will accept scanned, hand-written responses or email responses as long as they are legible. It is important that individual email responses clearly show your name and contact details; this will allow us to cross reference emails we send out. You may respond directly to CAA Airspace Regulation, who will share your feedback with Network Rail

Please respond by: 17:00 on Friday 11 June 2021. All feedback provided, whether by email or completion of this form, will be uploaded to the CAA Airspace Change Portal and shared with the CAA in its original form, albeit with personal and contacts details redacted in order to protect your privacy. Many thanks in advance for taking the time to provide feedback on our proposal.

Yours faithfully

[REDACTED]
National Drone Manager - Air Operations - Network Rail [REDACTED]

Feedback

Proposed TDA impact on Bicester Aerodrome Company Ltd (BAC).

This feedback is sent in the context of BAC also being a provider of airfield services to NR's BVLOS EWR project. These comments are intended to record BAC's view in providing services to all its customers. For clarity, BAC is supportive of the project and the following points seek to assist the project in managing the BVLOS flying and in the communication with other aviators using the airfield.

BAC has both individual and business customers that will be potentially impacted by the proposed TDA and BAC is able to act as a communications conduit to those customers. Additionally BAC is able to host general project and "important update" information on its website in support of the project if required.

Impact only on UAS flying days. While BAC keenly supports the project BAC needs to balance the needs of all the airfield users that have paid ahead to fly from Bicester. BAC would urge the project to devise a management approach with BAC that ensures that, although a TDA might be designated for a block of time, other flying is not materially affected on days when the project is not flying at Bicester.

Advance notice. BAC's experience is that if the project is able to provide dates and timings of project activity well ahead of time then the impact on the other aviators would be much reduced. For example BAC has customers that provide pilot training and introductory flights and these can be rearranged or the timing adjusted if those organisations have more than a week's notice. Clearly weather is a factor for the project but this also tends to be true for other flying from the airfield and so it is still helpful to have early visibility of the project's intended dates.

Wider learning. BAC has not shared any details of the project with other airfield users but would there be an opportunity for one of the younger members of the Bicester Model Aircraft Club, which is an airfield user, to witness one or more of the test flight days? Might this be a reasonable quid pro quo for the club not being able to operate on the days the project is flying?

Post project. One of the features of a successful outcome for the project could be the desire to fly more similar sorties from the Bicester. BAC and the airfield users at Bicester would be keen to collaborate on how this could be achieved to demonstrate how BVLOS could be moved from "Test" into "Production", especially with the advent of new technology being able to support integration of manned and unmanned systems.

Director

Bicester Aerodrome Company Ltd
Building 123, Bicester Heritage, Buckingham Road, Bicester, Oxon. OX27 8AL

Bicester Soaring Ltd Response:**TDA approval NR-EWR BVLOS (ACP-2021-014)**

Dear Stakeholder, Network Rail Air Operations are applying for temporary airspace change application to establish a 90 day Temporary Danger Area (TDA) as per the attached stakeholder engagement document.

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Please respond by: 17:00 on Friday 11 June 2021. All feedback provided, whether by email or completion of this form, will be uploaded to the CAA Airspace Change Portal and shared with the CAA in its original form, albeit with personal and contacts details redacted in order to protect your privacy. Many thanks in advance for taking the time to provide feedback on our proposal.

Yours faithfully

[REDACTED]

National Drone Manager - Air Operations - Network Rail

[REDACTED]

Name	[REDACTED]
Organisation name	Bicester Soaring Ltd
Position in the organisation	Flight safety officer
Email	[REDACTED]
Phone	[REDACTED]

Bicester Soaring Group operates up to 12 sailplanes from Bicester airfield on a weather opportunity basis primarily from March through to October 7 days per week. If the weather is conducive to cross-country soaring, we will be operating, using a tow plane to launch gliders which then climb in rising air and fly away from the site. We usually launch together late morning/ early afternoon and return to the airfield at different times during the day from multiple directions. Rain and strong wind usually preclude flying opportunities.

Bicester Soaring Group rely on flying income from our members to pay running costs. Being prevented from flying has a significant negative impact on ongoing viability and must be avoided.

Bicester airfield is a large space. Providing the RPAS operator is willing to engage with and cooperate with operational experts from the Bicester Soaring Group, it should be possible to operate a small RPAS from the airfield without significantly impacting on gliding operations while maintaining safe operating distances/separation.

We strongly suggest that Network Rail Air Operations engages directly the Bicester Soaring Group and with the Bicester Aerodrome Company, with the aim of agreeing simple procedures to ensure safe and efficient joint operations throughout the proposed period of TDA activity.

It is imperative that consideration is given to covering the legal aspects of a TDA to allow users of the group to operate with no or minimal restrictions.