Stakeholder Engagement Report, Airspace Analysis & Final Airspace Change Proposal.

ACP-2021-022

Prepared for the CAA

By

[redacted]

Foreword – Luddites and Technological Change

The industrial revolution brought significant changes to people's lives as they knew them. Hand loom weavers lost considerable amounts of their work as steam-powered looms were used as a replacement. Between 1811-1816 when textile workers in the Midlands, Yorkshire & Lancashire began to fight back against the factories and the mass change that was occurring. Groups of workers who would attack factories by burning and smashing machines which had driven them the edge of starvation. These workers were said to be following a mythical leader known as 'General Ludd' and destroyed the machinery they were employed to operate. At the Nottingham Assizes in March 1812, seven *"Luddites"* were sentenced to transportation for life; two others were acquitted. Seventeen machine-breakers were executed at York in 1812 and others transported permanently to Australia.

In 1830 when due to low wages and unemployment the 'Swing' riots began. This again was led by a mythical leader in 'Captain Swing'. Threshing machines were destroyed which were said to take away winter employment and wages. This movement only lasted a few months however as due to the experience of the Luddites attacks the government were quick in action. The actions were even more brutal with 19 death sentences carried out.

In November 1831, [redacted] was deported to Tasmania for Swing Rioting.

We believe that the current resistance to change, insofar as the disproportional response from the British Microlight Aircraft Association, with regards the potential to share airspace with Remote Piloted Aircraft Systems, is in line with Luditism and Swing rioting.

Electric Aviation Limited.

Executive Summary

We present this report to the CAA to highlight the depth of our stakeholder engagement activities in line with CAP1616 for the Airspace Change Proposal ACP-2021-22, also known as the Morecambe Bay RPAS Transit Route.

We have undertaken a period of 6 weeks of intensive stakeholder engagement, using a Top-down/Bottom-up" approach. This has allowed us to go out to the aviation community in a structured manner and to receive feedback in a logical and focussed way, allowing us to prepare the final proposal which can be found at the end of this report.

It has been a great learning experience for us both individually as well as commercially. Understanding the activities of airspace users, where they fly, what they fly, even how they fly, has allowed us to generate a detailed map of activities of the local area, within which we aim to operate RPAS vehicles.

It has not been without issue. There are those in the community who are so closed minded to technological change that they will go to extreme lengths to confound the issue and de-rail the stakeholder engagement process.

We have been subjected to personal and corporate abuse in person and online. Fortunately such people are limited in number and to one fraternity of aviation, and even within this fraternity we do not believe their actions are representative of their wider cohort. We have issued barristers letters to one individual who continued to populate defamatory statements about the company.

We have sought and obtained support for this Airspace Change Proposals from all three main licensed aerodromes in the vicinity of operations. We are supported by an ATC unit providing us with communications protocol for operating next to their ATZ.

We have secured the potential provision of a DACS service.

We have received positive support from the two parachute drop zones and from the operators of R444. We have spoken with air training organisations, NPAS, HEMS, GA pilots, paragliders, gliders, model aircraft clubs, kite flying clubs, Bay Rescue, The Duchy of Lancaster, Network Rail and National Grid.

We have proactively sought the views and opinions of the aviation community such that we may make informed choices with regards the selection of routes that will cause the least impact to the airspace. Thus we present this report to the CAA, such that they may consider the final proposal for airspace change.

We believe we have undertaken a thorough stakeholder engagement exercise and as a whole we have the majority of the aviation communities backing for the requisite airspace change proposal.

ELECTRIC AVIATION LIMITED

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Stakeholder Engagement

Section 1: Stakeholder Engagement

1.1 Introduction

In-line with CAP1616 . In contemplating any airspace change proposal, Electric Aviation Limited must consider the impacts on others and the implications those impacts may have, and engage with them appropriately.

CAP1616 informs us that depending on the level of the change, this may include the general public, their elected representatives, community leaders, airport consultative committees, government organisations and industry/environmental representative groups; other airspace users; airport operators; and air navigation service providers. All materials must be made available in a manner which is clear and accessible to stakeholders.

We have chosen to undertake stakeholder engagement based on a number of routes that could potentially be utilised by the three hospitals that currently share pathology services and associated land logistics.

Our stakeholder analysis has been based on a top-down/bottom-up approach working predominantly with other aviation stakeholders. Working out, who flies, what and where has allowed us to create a landscape picture of the aviation environment for Morecambe Bay. This has then allowed us to reflect on the proposed routes and identify the routes that will have least significant effect on fellow airspace users. Once this process is completed, we turn our attention to the environmental aspects of the local area, producing what we believe to be the least impactful routing proposal.

1.2 Statement of Need

The following statement of need was published on the Airspace Change Portal under the document heading of DAP1916V2-Updated-ACP-2021-022-Redacted (8).pdf on the 14th of May 2021.

Electric Aviation Limited are undertaking a 12-week trial on behalf of University Hospitals Morecambe Bay NHS Trust to transport packages containing pathology samples, blood plasma, patient records and chemotherapy drugs between Lancaster Royal Infirmary, Furness General and Westmorland General Hospitals. COVID-19 is directly disrupting the ability of University Hospitals Morecambe Bay NHS Trust to exchange medical goods, samples and data between hospital sites. This is primarily due to the geographic locations of the main hospital sites and the effect of the different tiers that the hospital sites have found themselves placed within.

Currently the trust employ a number of different transport systems that provide round-robin, direct route and on-demand transport services. The round robin service routes Lancaster Royal Infirmary, Westmorland Hospital, Furness General Hospital, Westmoreland Hospital and back to Lancaster Royal Infirmary and it undertakes this routing three times a day Monday to Friday. This round robin route drives 321 miles a day with an estimated operational driving time of 7 hours 20 minutes.

The geographic location of Morecambe Bay is the cause of this extremely taxing driving schedule and the bay significantly impacts the trusts ability to perform with regards efficient chemotherapy drug supplies. Chemotherapy drugs have a short shelf-life (8-24 hours) and such drugs can only be manufactured once the patient is able to attend or receive the

treatment. Dependent upon where the round robin transport service is at the time of manufacture it can take anything between 40 minutes and 17 hours to get the drugs transported to the right hospital for dispensing. Pathology samples moving between hospitals suffer a similar fate as do patient records.

COVID-19 has compounded the issues with drivers continually moving between hospitals located in different Tiers. This has led to confusion between drivers, a reduction in available driver numbers as well as an increased risk of COVID-19 transmission between sites. Considerable staff time is current lost arranging inter-hospital transport. This is during a pandemic when staff time has only become more valuable.

Cutting the round robin service time to 28 minutes from 1 hour, 21 minutes (LRI-WGH-FGH), by flying direct across the bay between sites yields obvious benefits, coupled with the ability for the service to be run constantly during the day. Moreover, using an unmanned aircraft can eliminate unnecessary patient and staff travel that would otherwise put vulnerable individuals and NHS staff at risk during the pandemic. As recent research has shown that the coronavirus can survive for up to 72 hours on common clothing, including three of the most commonly used textiles in healthcare, it is paramount that unnecessary travel is reduced.

To these ends, beyond visual line of sight unmanned aircraft operations will be required and, in accordance with CAP 1915, such operations must be conducted within segregated airspace. CAP 1915 states that the primary method for achieving this airspace is by application for a Temporary Danger Area (TDA). Electric Aviation Limited therefore requests the establishment of a TDA to segregate their operations accordingly.

1.3 Rationale for Selecting Stakeholders

Electric Aviation decided on an all-inclusive approach to selecting stakeholders with whom to engage. Whilst as an organisation we have first-hand experience of GA activities within the bay, we could not, at the outset, realise the full impact that all airspace users may have on the geographic location, to which the Airspace Change Proposal may have.

1.4 Engagement Methodology

To provide an all-inclusive stakeholder engagement, we decided to embark on a Top-down/Bottom-up approach.

1.4.1 Top Down/Bottom Up approach

Electric Aviation Limited embarked on a Top-down/Bottom-up approach to the stakeholder engagement. Drawing on practises from the investment community and adapting them to the aviation world.

The company utilised a top-down approach to identify the controlling authorities, the airfields, air traffic services, restricted zone operators, etc. those with whom structured conversations would be required based around the specific regulatory systems in place that govern the safe and effective operation of airspace and aviation movements.

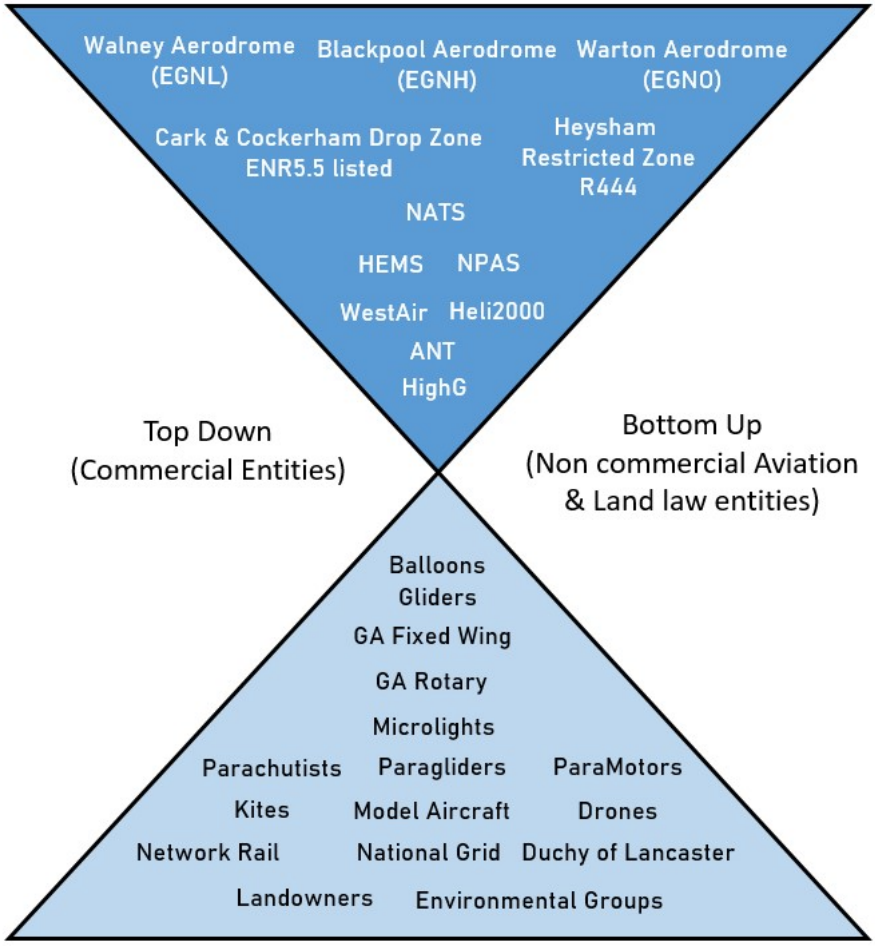
Establishing communications with these entities and working through how such an RPAS transit route may operate within these regulatory confines has allowed Electric Aviation

Limited to understand the regulatory nuances that may affect the operation of the RPAS service.

This is akin to understanding the needs of the "controllers" be they licensed airfield operators providing procedural services, through to airfield operators providing services to military and civilian operators alike, through to nuclear installation operators and service providers. By working through the regulatory operators we have ensured that we have the support of the entities who may procedurally restrict operations.

Contemporaneously, working with the entities from the Bottom-up allows us to understand the views, activities and actions of the local airspace users, many of whom are amateur pilots and members of the public involved in sporting activity.

The Top-down/Bottom-up approach for this stakeholder engagement can be visualised as such:



We started initial conversations with British Aerospace at Warton on the 28th of April 2021 with regards the potential provision of a DACS to support the Airspace Change Proposal. At and around the same time we started conversations with Westair, a commercial services provider based at Blackpool Airport with regards the impact that the TDA may have to local aviation, through Westair we established communication routes with both Walney Island and Blackpool Airport.

1.4.2 Engagement Duration

The engagement duration was advised by the CAA Airspace team to be a six-week engagement and was duly operated between the 28th of June and the 14th of August 2021.

1.4.3 List of Targeted Stakeholders

We contacted the entire NATMAC list as supplied by the CAA. This was achieved through sending three emails to multiple recipients using the Blind Carbon Copy process. This ensured that all entities were contacted on the same day and at the same time and subsequent responses from one entity proved that the engagement had been commenced for all entities simultaneously.

We present the email header of one such submission.

1.4.4 NATMAC Distribution

The full NATMAC list, plus other local entities that were contacted at the same time, plus response indication can be found below.

NATMAC Organisations Contacted	Contacted	Response	Local Contact	Favourable?
Airlines UK	27/06/21	X	X	Assumed Impartial
Airspace4All	27/06/21	X	X	Assumed Impartial
Airport Operators Association (AOA)	27/06/21	X	X	Assumed Impartial
Airfield Operators Group (AOG)	27/06/21	X	X	Assumed Impartial
Aircraft Owners and Pilots Association (AOPA)	27/06/21	X	X	Assumed Impartial
Airspace Change Organising Group (ACOG)	27/06/21	30/07/21		Positive
Association of Remotely Piloted Aircraft Systems UK (ARPAS-UK)	27/06/21	01/08/21		Positive
Aviation Environment Federation (AEF)	27/06/21	X	X	Assumed Impartial
British Airways (BA)	27/06/21	X	X	Assumed Impartial
BAe Systems	27/06/21	Prior	✓	Positive
British Airline Pilots Association (BALPA)	27/06/21	06/08/21	X	Positive
British Balloon and Airship Club	27/06/21	X	✓	Positive
British Business and General Aviation Association (BBGA)	27/06/21	30/7/21	✓	Positive
British Gliding Association (BGA)	27/06/21	06/07/21	✓	Positive
British Helicopter Association (BHA)	27/06/21	29/07/21		Positive
British Hang Gliding and Paragliding Association (BHPA	27/06/21	03/08/21	✓	Positive
British Microlight Aircraft Association (BMAA) / General Aviation Safety Council (GASCo)	27/06/21	15/07/21	✓	Negative
British Model Flying Association (BMFA)	27/06/21	X	✓	Positive
British Skydiving	27/06/21	X	✓	Positive
Drone Major	27/06/21	X	X	Assumed Impartial
General Aviation Alliance (GAA)	27/06/21	X	X	Assumed Impartial

Guild of Air Traffic Control Officers (GATCO)	27/06/21	X	X	Assumed Impartial
Honourable Company of Air Pilots (HCAP)	27/06/21	X	X	Assumed Impartial
Helicopter Club of Great Britain (HCGB)	27/06/21	X	X	Assumed Impartial
Heavy Airlines	27/06/21	19/08/21	X	Positive
Iprosurv	27/06/21	X	X	Assumed Impartial
Isle of Man CAA	27/06/21	30/7/21	X	Positive
Light Aircraft Association (LAA)	27/06/21	X	X	Assumed Impartial
Low Fare Airlines	27/06/21	X	X	Assumed Impartial
Military Aviation Authority (MAA)	27/06/21	X	X	Assumed Impartial
MoD DAATM)	27/06/21	06/08/21	X	Positive
NATS	27/06/21	28/06/21	X	Positive
Navy Command HQ	27/06/21	X	X	Assumed Impartial
PPL/IR (Europe)	27/06/21	X	X	Assumed Impartial
UK Airprox Board (UKAB)	27/06/21	X	X	Assumed Impartial
UK Flight Safety Committee (UKFSC)	27/06/21	X	X	Assumed Impartial
United States Air Force Europe (3rd Air Force-Directorate of Flying (USAFE (3rd AF-DOF))	27/06/21	X	X	Assumed Impartial

1.4.5 Local stakeholders contacted

The list of local entities contacted may be found below:

Local Entities Contacted	Contacted	Resp	Favourable?
Blackpool Airport	27/06/21	✓	Positive
Blackpool ATC	27/06/21	✓	Positive
Westair	27/06/21	✓	Positive
ANT	27/06/21	✓	Positive
High G	27/06/21	X	Assumed Impartial
Heli2000	27/06/21	X	Assumed Impartial
Northern Microlights	27/06/21	X	Assumed Impartial
Bickerstaffe Aviation	27/06/21	X	Believed Defunct
Attitude Airsports	27/06/21	X	Positive
Flightpath Blackpool	27/06/21	X	Assumed Impartial
ATC aviation	27/06/21	X	Assumed Impartial
Warton ATC Bae	27/06/21	✓	Positive
Carlisle Flight Training	27/06/21	X	Assumed Impartial
Cumbria Microlight Training	27/06/21	X	Assumed Impartial
Skydive Northwest	27/06/21	✓	Positive
Cark Private Pilots	27/06/21	✓	Positive
Cockerham Parachutes (Black Knights)	27/06/21	✓	Positive
West Lancashire Microlight School	27/06/21	X	Assumed Impartial
North West Kite Club	27/06/21	✓	Positive
NWAA	27/06/21	X	Assumed Impartial
Lancs Aero Club	27/06/21	X	Assumed Impartial
RAF Valley direct	27/06/21	X	Positive (DAATM)
Queens Guide to the sands	28/06/21	✓	Positive
Bay Search & Rescue	28/06/21	✓	Positive
Network Rail	07/07/21	✓	Positive
National Police Air Service	07/07/21	✓	Positive
Active Edge Paramotors	22/07/21	✓	Positive
EDF Energy Heysham	Prior	✓	Positive
Lakes Gliding Club Walney	22/07/21	✓	Positive
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	22/07/21	X	Assumed Impartial
LakedistrictGyroPlanes	22/07/21	X	Assumed Impartial

1.4.6 Stakeholders who contacted Electric Aviation

Portal Responses		
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
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[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	13/08/21	Positive

1.4.7 Other public direct correspondence regarding ACP 2021-022

Direct Email Responses	Date	Positive?
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]/21	Positive
National Trust	16/08/21	Positive

1.4.8 Other Agency or corporation direct correspondence regarding ACP 2021-022

[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	26/08/21	Positive
[redacted]	13/08/21	Positive

1.5 Summary Responses from Stakeholders

We believe we have established a good local and national stakeholder response. The use of the website (www.morecambebaydrones.com) has enabled the majority of airspace users to understand where the routes are likely to be and how this will impact their operations.

We have received support from both British Aerospace Systems (Submarines) [Walney Island] and British Aerospace (aircraft) [Warton] for this Airspace Change Proposal.

- BAe Systems Submarines have agreed in principle to work to establish Air Traffic Control protocol for the RPAS to operate near the extremities of the Walney ATZ when approaching Furness General Hospital.

- BAe Warton have offered to work with us to provide a DACS service for the flight campaign.

- Blackpool Airport have agreed there is nothing to affect their operations and are supportive of the project.

- Cark and Cockerham parachute Drop Zones have agreed that our proposed routes will not affect them and have given us some excellent feedback regarding aircraft operations across the bay area.

- EDF Energy are supportive of the project at Chief Executive Level and have agreed to work with Electric Aviation to develop a protocol to allow RPAS to enter and operate within the Heysham R444 zone in accordance with Office for Nuclear Regulation (ONR) policy.

- The Ministry of Defence have responded that they have no grounds to object, but that some routes for low flying aircraft will be affected. Concern was also raised should no DACS service be available, which we have worked to resolve, courtesy of British Aerospace at Warton.

Generally the GA community, the gliders, paragliders, model aircraft, hot air balloons and the kite flyers all have been extremely accommodating and keen to not only support us on this project but look to see how we can all co-exist and share the airspace in a community manner.

The only negative responses have been from a few well known voices within the microlight community and the Chief Exec of the BMAA, apparently speaking without regard for his own organisations Airspace team. Finally we received disparaging remarks in social media from one member of the GA community who is known for his dislike of unmanned aviation.

1.6 Evidence of Engagement

The text of the emails sent is presented below:

Dear Stakeholder

Electric Aviation Limited, working with University Hospitals Morecambe Bay NHS Trust are planning on developing a Remote Piloted Aircraft Solution to ferry pathology samples between Lancaster Royal Infirmary, Westmorland General and Furness General Hospitals, across Morecambe Bay. Once all the relevant approvals are in place, we plan to conduct BVLOS (Beyond Visual Line Of Sight) flying operation between the above-mentioned sites.

The CAA have determined that this project is in scope of the airspace change process and that a Temporary Danger Area (TDA) will be required for the route to segregate our operation. To that end, we are required to formally engage fellow airspace users who will potentially be affected by the proposed TDA. Details of the proposed TDA, subject to approval by the CAA, can be found at:
www.morecambebaydrones.com

The Airspace Change Proposal reference is ACP-2021- 022 and all documentation associated with this proposal is available via the link on the above website. We wish to create minimal impact to the operations of other airspace users while avoiding overflight of inhabited areas where possible. Our aim is to be as VFR friendly as possible and to work with other airspace users to ensure safe operations.
We would appreciate it therefore if you could review the proposed TDA, completing any comments you may have regarding this proposal from an aviation perspective using the comments form on the website by 1700 hours on Saturday 14th August 2021.

If you do wish to speak on the phone, please send a comment through the website so that we can arrange a mutually convenient date and time. For reasons of transparency, we must upload all feedback to the Airspace Change Portal. We will share feedback with the CAA in its original form, but published feedback will be redacted to remove personal details.

We appreciate your feedback on this proposal, and we would like to thank you in advance for taking the time to respond. However, if you do not feel that your organisation is affected by the proposed TDA then there is no need to respond. If we do not receive a response from you, we will assume that you have no objection to the Airspace Change Proposal as published.

Electric Aviation Limited

1.7 Engagement Materials

We decided to utilise a website approach to stakeholder engagement such that all information about the project may be imparted for all to find and share alike.

The website would mirror the minimum information that was required to be held on the Airspace Change Portal as well as providing extra imagery to support

Once published we engaged the services of [redacted] to review the website. [redacted] has over 35 years' experience in the field of general aviation, and is an active and current GA pilot, Head of Training for an ATO, Instructor, Examiner (Flight and Theory), and Display Pilot. With over 6,500 hours (all on GA aircraft), he has additional ratings that include FI, GR, IRI, IR, IRR, Night, Aerobatics, Formation, Towing (gliders) and a Display Authorisation.

Well known to the [redacted] re-trains pilots at the request of the authority for a variety of reasons (usually as a result of an infringement incident). He also is well versed in the processes and procedures associated with the GA sector [redacted] developed, owns and runs a successful online "Pilot Ground School" system covering all the required theoretical knowledge subjects enabling pilots to study for and pass the required official examinations for the issue of a Private Pilot's Licence. This also includes courses for existing pilots covering a further range of subjects for post-licence courses. Consequently, a detailed understanding of the ANO, AIP, SERA, and UK Retained EU law (ex EASA regulations), and EASA regulations are held.

[redacted] asked to undertake various consultancy roles within the aviation sector (particularly GA) and has done so on numerous occasions for a variety of agencies within the areas of solar farm and wind turbine planning and consultancy, and RPAS.

Nigel made the following suggestions for the website content which were then actioned:

Observations, Comments and Recommendations

The following observations, comments and recommendations are applicable to the website. Key items to consider which have a major impact on the proposal or understanding of the proposal are highlighted in red.

1. Some abbreviations are not defined on website. Some readers will not be aware of what they stand for nor the organisations concerned;
    a. RPAS
    b. CAA
    c. HEMS
    d. GA
    e. BVLOS
    f. VLOS
    g. RPA

2. Some terms are not defined on the website sufficiently within their context. Some readers will not understand the meaning or implication of the following terms;
    a. Beyond Visual Line of Sight operations
    b. segregate our operation (from what?)

3. Initially the website does not detail the “problem” the proposed solution is designed to “fix” other than high level language such as “evaluate the potential performance gains” and “transfer pathology samples and medications between the hospitals in a more efficient manner, providing optimised healthcare.” What are the REAL tangible benefits to a real person?

    a. Perhaps the [redacted] The NHS Long Term Plan is bringing new technologies into the NHS to improve patient care and save lives." is relevant here and should be more prominent at the beginning of the site.
    b. Consider setting the scene first with the information that is currently at the end of the website (carbon efficiency, time, money, saving lives etc).

4. The initial impression of the proposal gives rise to an immediate escalated concern that the proposal is to create a TDA covering the whole of Morecambe Bay in a huge triangle between the three hospital sites with no mention (initially) of the altitude to which the TDA will extend. This will cause an unnecessary number of negative responses by users who will not see past this incorrect assumption. Most airspace users associate TDA’s as a huge wedge of airspace (based on the historical use of TDA’s). Consideration should be given to:

    a. Not INITALLY using the term “TDA” on the website, but instead, talk about the ROUTES which are being proposed (with their dimensions) and THEN stating that these routes will be implemented AS a TDA later on.

    b. Specially rewording the sentence “The area within which we are proposing to establish a Temporary Danger Area to enable the RPAS to operate in segregated airspace is a triangle across Morecambe Bay between Lancaster, Furness and Westmorland Hospitals.” to be more precise of the dimensions of any TDA (route) – see point (a) above.

5. Airspace location map. The over-laid google earth image map used is confusing at first sight The actual three hospital locations get “lost” amongst the other airspace overlays and labels used on the map. This map is not actually helping the cause here.
6.
    a. Perhaps just show the locations of the hospitals on the map (with no other airspace shown) as part of an introduction to the area. See also comments in (4) above regarding the introductory text associated with this map.

7. Route (text).
    a. Vital missing information here (as a very first bullet point) is the ALTITUDE and WIDTH of the ROUTES.

    b. Only information generic to all routes should be in this section. Specific information about each route should be on the map for that route (see below).

    c. Missing information
        i. Specifically, all other “stake holder airspace users” should be listed and shown on a map to show that you have considered them and value their input – transparent, open, and honest. Again, a separate map for this would be good to show (without any other route overlays). In particular, include those out-laying stake holders such as Para Cockerham, Tarn Farm, Brook Farm, St Michaels (who all may make use of the Bay area).

ii. The REASON why there are so many different route proposals (there are actually a total of 7 routes defined on the website) is missing. Why is there a need (for example) to have two different generic routes, and why can't you always use (for example) Purple Route 4? Why also can't you use an overland route north-west bound from Westmoreland to Furness? (Rational for the route selection will empower the reader to understand your reasoning).

8. Route maps (in general)

    a. The altitude and width of the route on each map are easily missed since it is only in small white print on the map itself. This is a KEY piece of information that readers will miss and assume that the TDA will be much bigger. This information needs to be much more prominent (and repeated on each map).

    b. Consider bringing all of the information for a route together in one location (at the moment more detailed information is only shown further down the page).

9. General Comments and Observations

    a. "All flights will be as required by University Hospitals Morecambe Bay NHS Trust to achieve the goals of the trial." What are the goals of the trial? These are not stated on the website.

    b. The proposal does not state if the proposed RPA flights will be VFR or IFR capable, and if not, what the minimum VMC will be for flight to take place if greater then the SERA standard for Class G airspace. This will ensure other airspace users do not have undue concerns over an airprox in poor weather.

    c. The RPAS is ADSB OUT and Mode S enabled. What is the possibility of doing telemetry for ADSB IN to the RPAS that then gives the RPAS pilot awareness of other traffic? This would also provide extra mitigation to support this and future proposals.

    d. Communicating with other airspace users states ATDs and ETAs are possible by text. The vast majority of airspace users make use of SkyDemon (moving map display). A conversation with SkyDemon (small dynamic responsive UK company) may yield further USP's if the ATD and ETA information can be sent to SkyDemon for incorporation as supplemental information to the NOTAM's TDA.

    e. Safety and Contingency. Whilst there is some mention about the RPAS (and a nice picture) there is no information about the safety record of this system, nor of any contingency action that the aircraft may take in the event of a failure of any of its systems. In addition, if samples are being carried, what form of Search and Rescue capability is enabled for the aircraft to be located and retrieved safely by other means?

    f. There is no mention of the required involvement of "Community Stake Holders" being notified or being party to the information presented on the website. It is believed this is a requirement from the CAA to inform and provide an impact analysis for these particular stake holders (non-aviation related, but affected by over-flight).

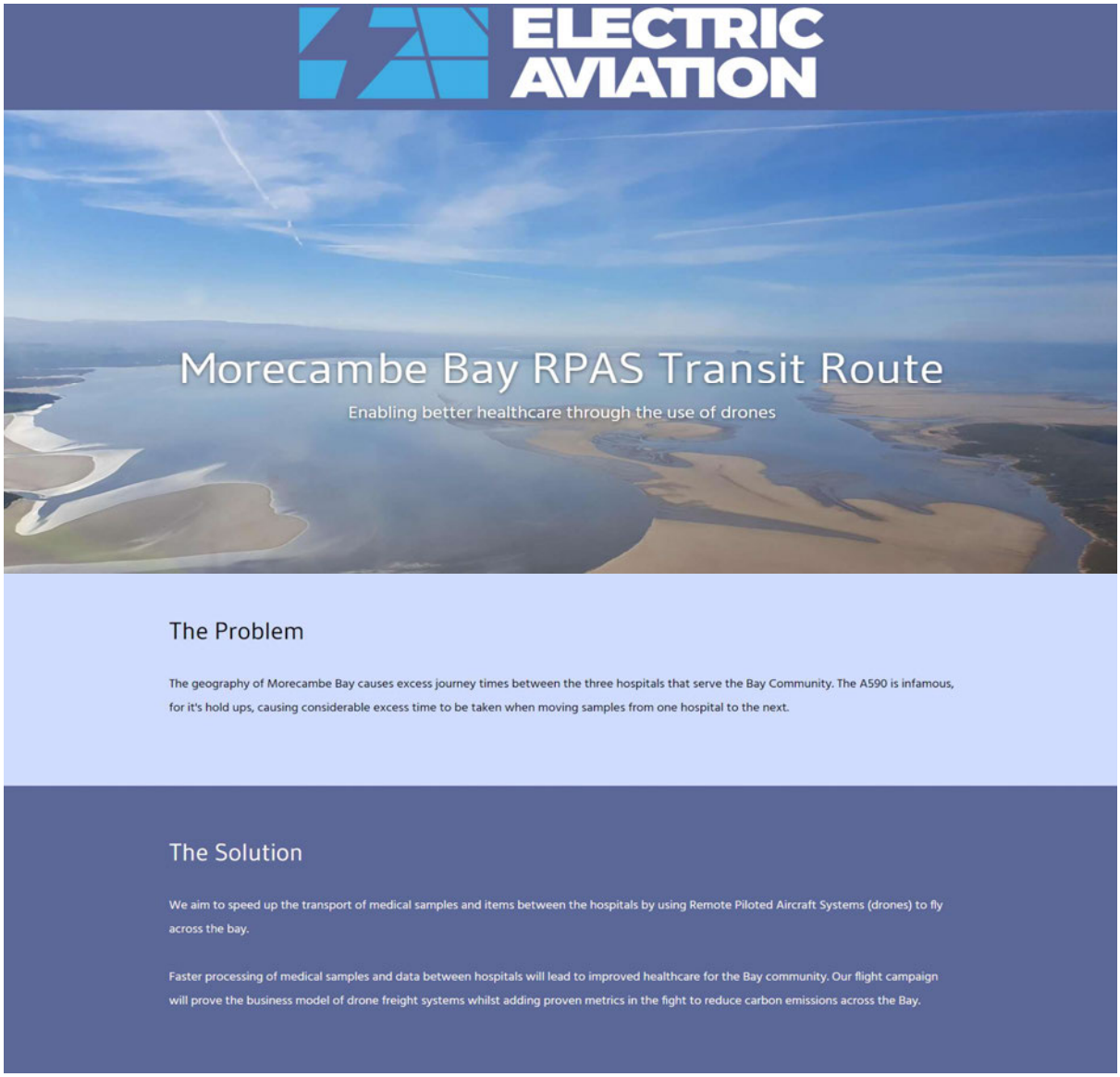
g. There is no specific mention of the Instrument Approach Procedures that may be impacted (associated safety areas for the procedure to be established) at Barrow/Walney Island, even though this is Class G airspace.

h. There may be a need to address other environmental dangers to the RPAS such as airborne wildlife and the mitigation measures in place to avoid potential conflict endangering the RPAS.

Summary

It is recommended that the comments and opportunities detailed within this document are addressed as a matter of priority on the website to negate further misinformed or pre-conceived comments arising from stake holders who have yet to provide their input.

Upon receipt of this review, Electric Aviation moved to ensure that these items were actioned. The final website was made live.



"The NHS Long Term Plan is bringing new technologies into the NHS to improve patient care and save lives."[1]

Professor Tony Young. NHS National Clinical Lead for Innovation

https://newscentre.vodafone.co.uk/news/drones-to-deliver-covid-19-medical-supplies-in-scotland-using-4g/

This site is designed to provide accompanying information for Electric Aviation's Airspace Change Proposal (ACP-2021-22) for the duration of the Stakeholder Engagement Phase. Please use this link for the proposal on the CAA's Airspace Change Portal.

https://airspacechange.caa.co.uk/PublicProposalArea?pID=371

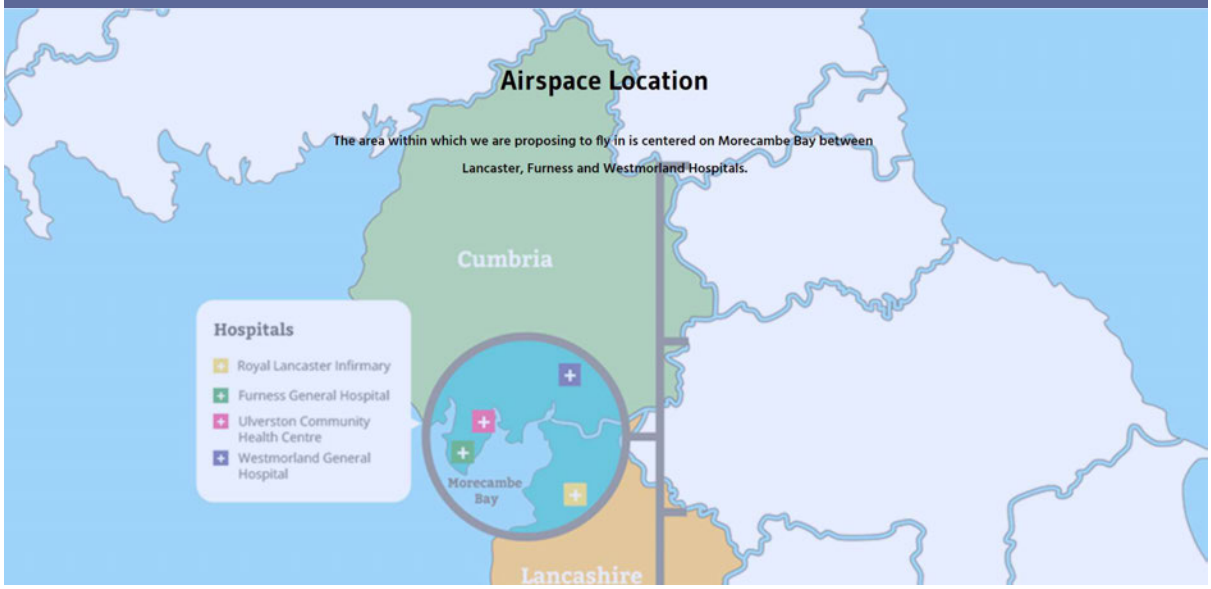
Morecambe Bay RPAS Transit Route is designed to support:

NHS University Hospitals of Morecambe Bay NHS Foundation Trust

About Morecambe Bay RPAS Transit Route

Morecambe Bay RPAS Transit Route is designed to evaluate the potential performance gains for University Hospitals Morecambe Bay NHS Trust, by flying Remotely Piloted Aircraft Systems between the Lancaster Royal Infirmary, Furness General Hospital (Barrow) and Westmoreland General Hospital in Kendal.

The aim of these flights is to transfer pathology samples and medications between the hospitals in a more efficient manner, providing optimised healthcare to the Morecambe Bay population. With the relevant approvals in place, we plan to conduct Beyond Visual Line of Sight operations between the above-mentioned sites.



Routes

ALL THE ROUTES ARE 800' WIDE AND 400' HIGH AGL

We are considering two routes shown below, in Purple and in Blue, between the three hospital sites.

We have opted for two waypoints overhead Morecambe Bay, to maintain a simple T shape which we hope will enable other airspace users to remember the location of our routes.

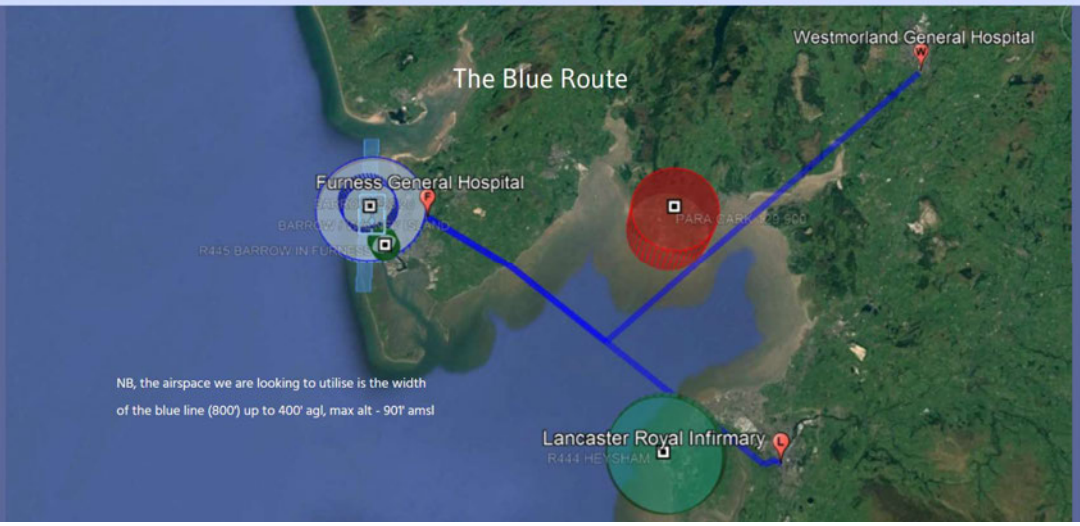
The Blue route forms a simple "T" route between the hospitals.

The Purple route has a departure from Lancaster Hospital to the south before joining the Bay at Hest Bank.

We have also included a leg of the Purple route, overland from Lancaster to Westmorland hospitals.

We welcome your feedback on all routing proposals.

The exact longitude and latitude for the routes and their associated volumetric airspace can be found below the comments section of this website.

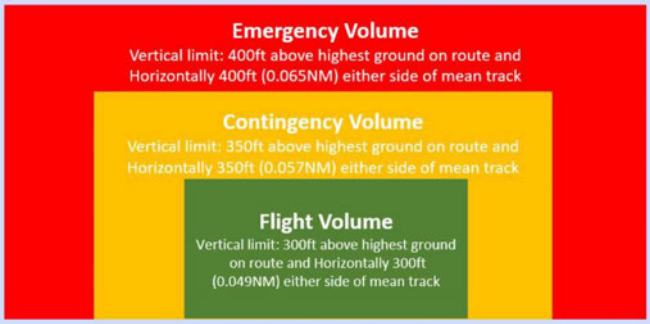


The CAA have determined that this project is in scope of the airspace change process and that a Temporary Danger Area (TDA) will be required for the route to segregate our operation. To that end, we are required to formally engage fellow airspace users who will potentially be affected by the proposed TDA.

The routes we have illustrated above, (and detail further below) are there to help us with the stakeholder engagement phase. They are there such that we can receive feedback from other airspace users to understand the impact that our routes may have on their aviation activities.

Post receiving your feedback we can then decide on a final route which will form our TDA proposal to the CAA.

We would appreciate it, therefore, if you could send us any aviation feedback, using the form below, by 17:00 hours on Saturday 14th of August 2021.



TDA Volume & Operating Height

The RPAS will operate at 250' above Ground Level and will operate in a flight volume of 300' x 600' surrounded by Contingency and Emergency Volumes.

The airspace total volume will thus be 400' vertically by 800' horizontally.

About the Aircraft

For the Morecambe Bay RPAS Transit Routes we will be using our SLT (Separate Lift and Thrust) Remote Operated Aircraft. This is a 4.4m wingspan VTOL aircraft capable of carrying a useful payload across the Bay.

We communicate with the the aircraft using 4/5G plus dedicated 5GHz as well as Satcom.

The aircraft operates around 40 knots IAS.

Communicating with other Airspace users

We will utilise the NOTAM system to inform other airspace users as to our operations and will provide this 24 hours before activation. We will split the TDA into route sections and we will only activate the minimum routes required. We will issue a single NOTAM that details all of the operations.

We have a comprehensive communication system in place, which can automatically text, for example, ATDs and ETAs to anyone that requires that information, and we can also provide Pre-Flight Information for the TDA via a dedicated telephone number.

In the event of the emergency services requiring access to the airspace within a TDA, they will be given priority over RPA traffic and we can collapse the TDA very quickly if necessary.

Our RPA is equipped with ADS-B and a Mode S Transponder for electronic conspicuity.

We will share operational and location information with various ATC providers locally and aim to secure a Danger Area Crossing or Information Service prior to operations.

We can also GeoFence the RPA's Flight Volume (see CAP 1915 for more information regarding this term) so that the aircraft remains within the confines of the TDA.

During the trial, the expected operating hours of the TDA will be five days per week, predominantly in daylight hours, and the TDA will be activated by NOTAM with at least 24 hours' notice.

We anticipate at least two round the bay flights per day during the week but there may be the occasional night flight or flight at the weekend.

Please remember we operate at 250' agl but the TDA extends up to a maximum of 400' agl.

All flights will be as required by University Hospitals Morecambe Bay NHS Trust to achieve the goals of the trial.

The schedule

We are working through the Airspace Change Process in accordance with CAP1616. We anticipate flying at the end of November 2021, for a period of 90 days, subject to all regulatory approvals.

This time of year traditionally sees the lowest use of the airspace by recreational users and fits between the winter arrival and spring migration of birds who winter on our shores.

Our aim is to operate a daily service, serving all three hospitals in the Bay area.

Our intended hours of operation will be established through stakeholder consultation with other airspace users and facilities within the Morecambe Bay Area.

"As the largest employer in Britain, responsible for around 4% of the nation's carbon emissions, if this country is to succeed in its overarching climate goals, the NHS has to be a major part of the solution. It is for this reason that we are committing to tackle climate change by reducing our emissions to 'Net-Zero'."

Sir Simon Stevens, Chief Executive, NHS England - P3. Delivering a 'Net-Zero' National Health Service. Oct 2020

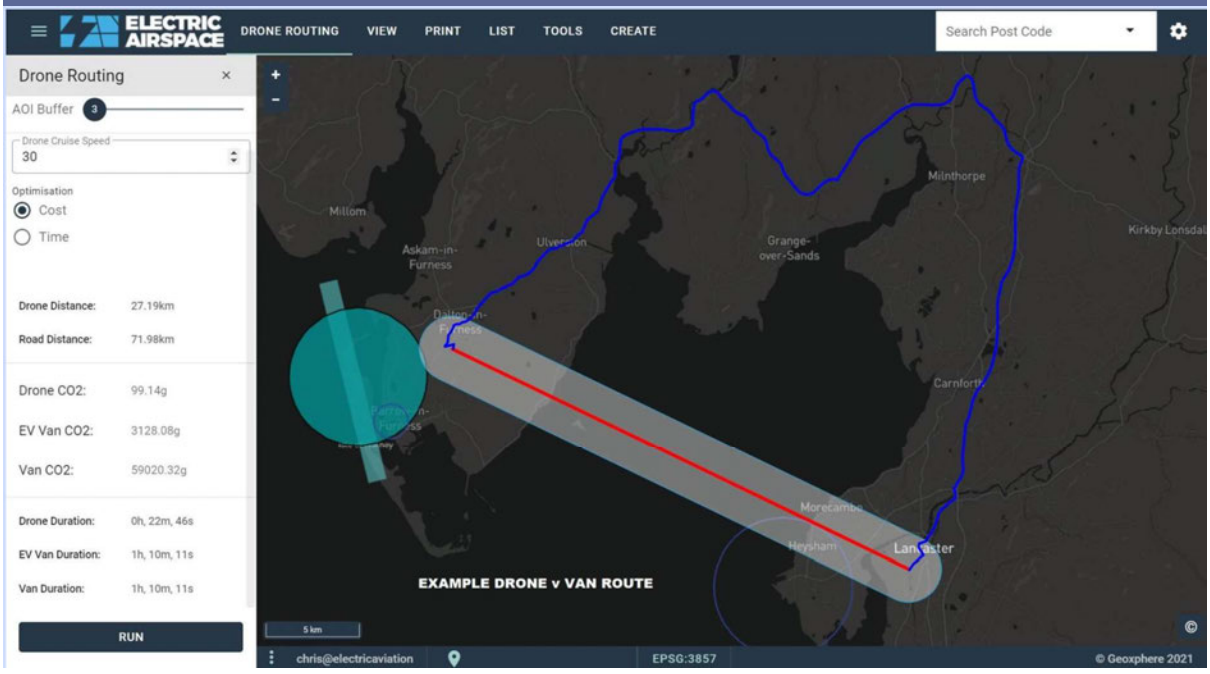
Working with HEMS & the GA community

Electric Aviation have already operated Remotely Piloted Aircraft Systems within Restricted Airspace and have successfully co-ordinated flights with live operational GA and HEMS traffic to date.
Flights have been conducted both BVLOS and VLOS at multiple UK sites. Key to these flights has been our engagement works with the GA, commercial and military communities, allowing us to operate in complex environments and to establish operating procedures based on successful stakeholder risk assessments.

Why not send a van?

As with most technological changes, the key enabler is an effective business model. Unlike other RPAS activities, we are not grabbing headlines. Working with the Hospital Trust we are focused on evaluating the effects of RPAS operations across the Bay to enable greater service efficiencies within the NHS.

Providing a faster transfer service allows the three hospitals to operate more efficiently, in a cheaper manner and, most importantly moving forward, reduce the Trust's carbon footprint. Our initial calculations show that replacing one of the daily round-robin vans that move samples, records and medications between hospitals could save over 15 tonnes of Carbon annually. But Carbon savings are only one area we aim to improve. Optimising the pathology service will lead to immediate healthcare gains across the Bay community.



Calculating Carbon

Electric Aviation work closely with Lancaster based Miralis Data Limited. We calculate CO2 savings based on the difference between the tailpipe emissions of an internal combustion engine vehicle versus the CO2 produced by the power stations when generating the electricity to charge the drone. The important figures used within our calculations are:

1) CO2 emissions for a Diesel Van – in this case a 2012 Mercedes Sprinter Van – 820g per KM

2) The average UK CO2g per KWh for power generation – 233.4g

To compare these figures we simply multiply the calculated travel distance for the Van with the g per KM measure above. For the drone, we calculate the operation time of the drone in minutes, divide that by the drones max operation time, to create a ratio of battery usage, and use this ratio to multiply by the power generation and the battery size. E.g. Van journey = 20.3 KM Van CO2 = 20.3 * 0.820 = 16.646 Kg versus Drone Journey 20 mins Max flight time = 1hr Battery size = 2KWh Drone CO2 = 20/60 * 2 * 0.2334 = 0.155Kg.

Please note we have not calculated the carbon expenditure of other airspace users diverting around the proposed TDA routes as we believe there should be no diversions required.

Send us your thoughts

Name

Email

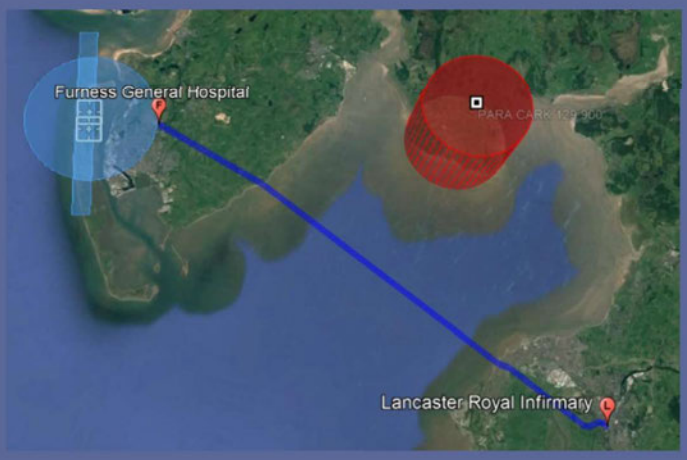
Phone number

Enter your feedback here

Send Message

As part of our stakeholder engagement we are actively seeking the thoughts and views of other airspace users who operate within the local area.

Please do send us your views.



Blue Route 1

Airspace volume to follow track:

54° 02′ 30.28" -2° 48′ 02.66"

54° 02′ 25.33" -2° 48′ 27.59"

54° 02′ 13.29" -2° 48′ 44.43"

54° 03′ 27.41" -2° 53′ 00.83"

54° 03′ 29.12" -2° 53′ 32.02"

54° 04′ 55.34" -2° 58′ 56.55"

54° 07′ 03.55" -3° 06′ 30.95"

54° 08′ 07.68" -3° 12′ 21.23"

and to form a corridor 400′ either side of this track

and extending vertically 400′ agl

Highest point on route 300′

thus TDA reaches 700′ amsl

Blue Route 2

Airspace volume to follow track:

54° 18′ 20.41" -2° 44′ 00.89"

54° 08′ 03.91" -2° 56′ 18.03"

54° 04′ 55.34" -2° 58′ 56.55"

54° 03′ 29.12" -2° 53′ 32.02"

54° 03′ 27.41" -2° 53′ 00.83"

54° 02'13.29" -2° 48′ 44.43"

54° 02′ 25.33" -2° 48′ 27.59"

54° 02′ 30.28" -2° 48′ 02.66"

and to form a corridor 400' either side of this track

and extending vertically 400' agl

Blue Route 3

Airspace volume to follow track:

54° 08′ 07.68" -3° 12′ 21.23"

54° 07′ 03.55" -3° 06′ 30.95"

54° 04′ 55.34" -2° 58′ 56.55"

54° 08′ 03.91" -2° 56′ 18.03"

54° 18′ 20.41" -2° 44′ 00.89"

and to form a corridor 400' either side of this track

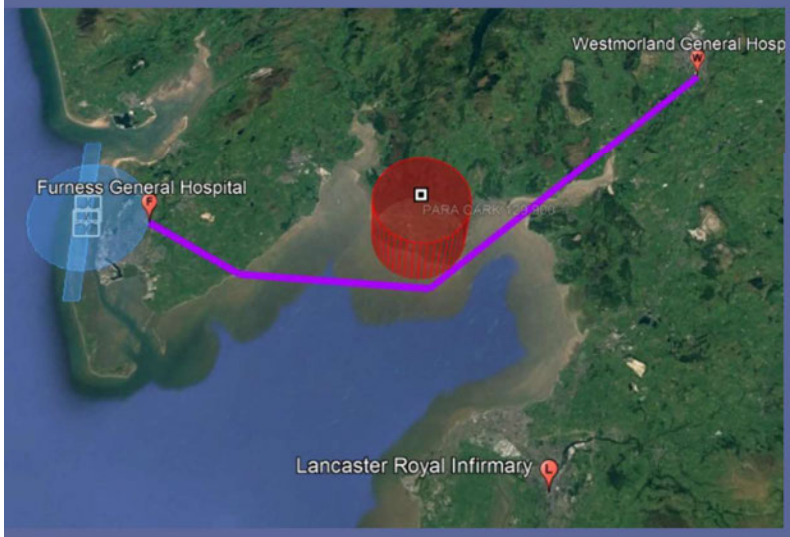
and extending vertically 400' agl

Purple Route 1

Airspace volume to follow track:

54° 02' 30.28" -2° 48' 02.66"
54° 02' 25.33" -2° 48' 27.59"
54° 02' 13.29" -2° 48' 44.43"
54° 01' 20.29" -2° 48' 41.11"
54° 01' 50.06" -2° 47' 38.10"
54° 01' 08.94" -2° 46' 42.16"
54° 02' 37.57" -2° 45' 10.08"
54° 04' 20.50" -2° 45' 50.84"
54° 04' 29.53" -2° 48' 32.83"
54° 05' 11.43" -2° 49' 29.46"
54° 08' 03.91" -2° 56' 18.03"
54° 07' 03.55" -3° 06' 35.68"
54° 08' 07.68" -3° 12' 21.23"

and to form a corridor 400' either side of this track
and extending vertically 400' agl



Purple Route 2

Airspace volume to follow track:

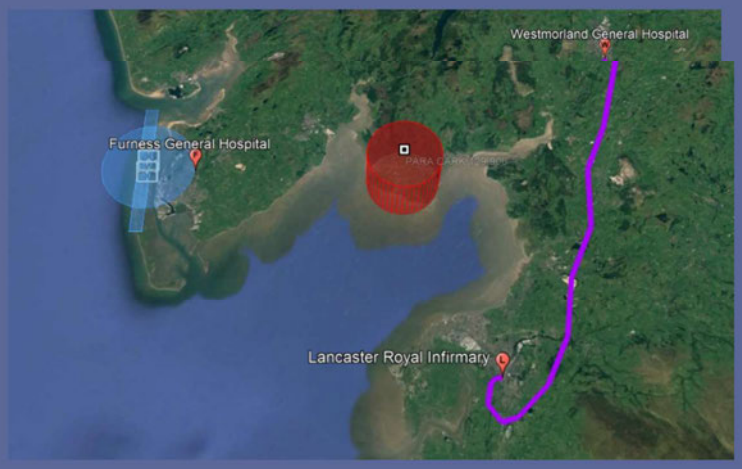
54° 08' 07.68" -3° 12' 21.23"
54° 07' 03.55" -3° 06' 30.95"
54° 08' 03.91" -2° 56' 18.03"
54° 18' 20.41" -2° 44' 00.89"

and to form a corridor 400' either side of this track
and extending vertically 400' agl

Purple Route 3

Airspace volume to follow track:

54° 18' 20.41" -2° 44' 00.89"
54° 08' 03.91" -2° 56' 18.03"
54° 05' 14.35" -2° 49' 15.52"
54° 04' 20.50" -2° 45' 50.84"
54° 02' 37.57" -2° 45' 10.08"
54° 01' 08.94" -2° 46' 42.16"
54° 00' 50.63" -2° 47' 38.10"
54° 01' 20.29" -2° 48' 41.11"
54° 02' 13.29" -2° 48' 44.43"
54° 02' 25.33" -2° 48' 27.59"
54° 02' 30.28" -2° 48' 02.66"
and to form a corridor 400' either side of this track
and extending vertically 400' agl



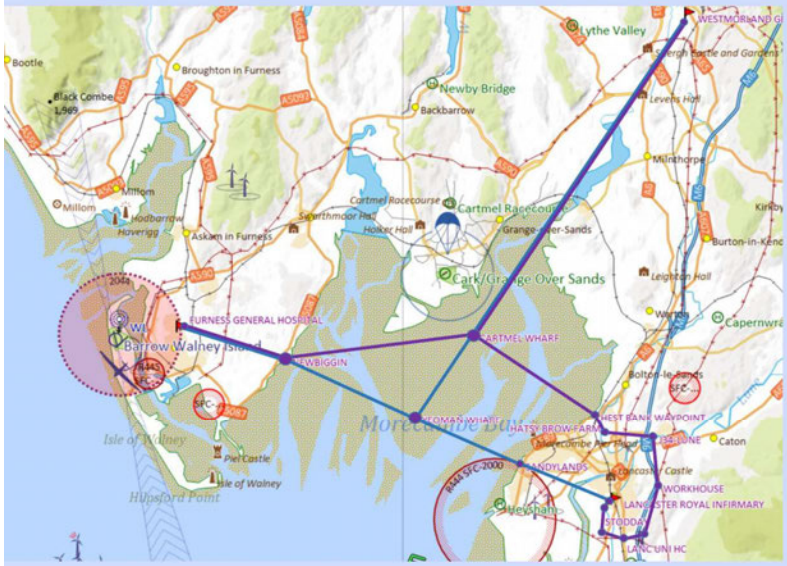
Purple Route 4

Airspace volume to follow track:

54° 02' 30.28" -2° 48' 02.66"
54° 02' 25.33" -2° 48' 27.59"
54° 02' 13.29" -2° 48' 44.43"
54° 01' 20.29" -2° 48' 41.11"
54° 00' 50.63" -2° 47' 38.10"
54° 01' 08.94" -2° 46' 42.16"
54° 02' 37.57" -2° 45' 10.08"
54° 04' 20.50" -2° 45' 50.84"
54° 04' 38.82" -2° 46' 57.98"
54° 07' 08.92" -2° 46' 57.98"
54° 09' 36.02" -2° 43' 40.04"
54° 12' 19.16" -2° 44' 48.46"
54° 14' 38.47" -2° 44' 10.38"
54° 18' 20.41" -2° 44' 00.89"
and to form a corridor 400' either side of this track
and extending vertically 400' agl

The Purple Route on a CAA 1:250,000 chart

The Blue Route on a CAA 1,250,000 chart



Underlying chart provided by SkyDemon with their permission. Annotated routes by Electric Aviation Limited.

Who are Electric Aviation?

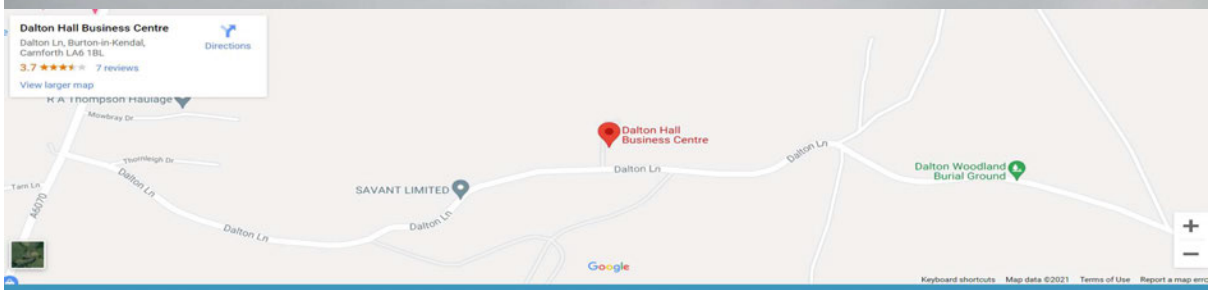
We are a Cumbria based company specialising in the technologies and infrastructures of Remote Piloted Vehicles.

We hold CAA Operational Authorisation for the operation of Unmanned Aircraft.
Registration: GBR-OP-K8XSTWLDDJR8 UAS 13459

ELECTRIC AVIATION

Electric Aviation Ltd.

Unit 2, The Stables Block,
Dalton Hall Business Centre,
Dalton Lane, Burton in Kendal,
Cumbria. LA6 1BL. UK
www.electricaviation.aero

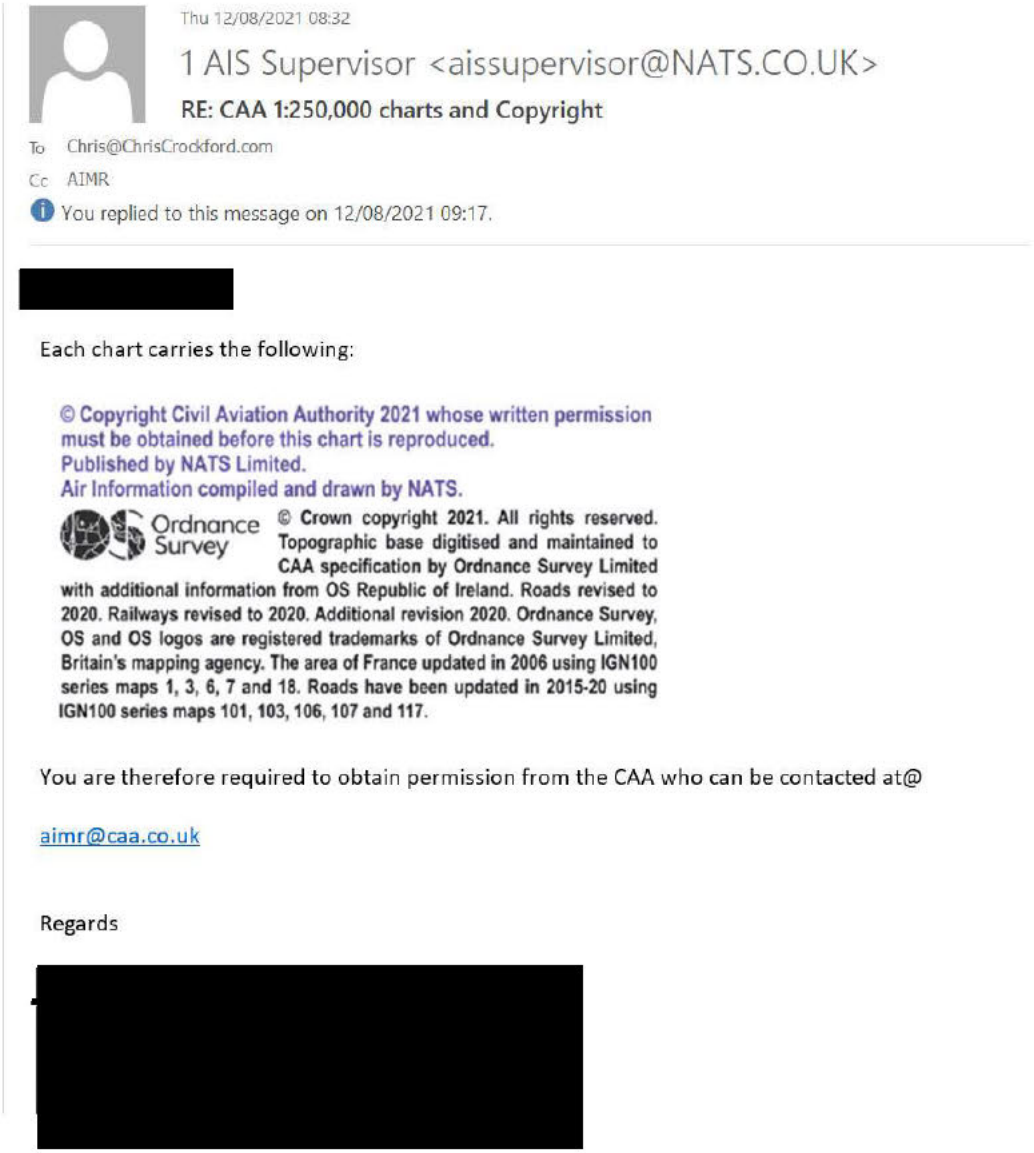


1.8 The Stakeholder Experience

The main aim of the website was to provide the user with an informative review of the projects aims, objectives and the obvious airspace change request. We provided the user with multiple route options for them to comment on and this was found to be very useful, with specific aviation stakeholders commenting on particular routes that they found problematic over those that they had no issues with.

We received much gripe from the microlight community, that we had not provided the routes on a CAA 1:250,000 chart.

Post correspondence with our IP attorneys and [redacted], Head of Aeronautical Information Management, AIM/AIS at NATS regarding the copyright of CAA charts, we drew the route out as best we could, (bearing in mind it is not possible to draw a rectangle 800' wide on a CAA 1:250,000 chart, a fact lost on the microlight protagonists) and took a photograph of the chart so as not to breach copyright.



Thu 12/08/2021 08:32

1 AIS Supervisor <aissupervisor@NATS.CO.UK>

RE: CAA 1:250,000 charts and Copyright

To Chris@ChrisCrockford.com

Cc AIMR

You replied to this message on 12/08/2021 09:17.

[redacted]

Each chart carries the following:

© Copyright Civil Aviation Authority 2021 whose written permission must be obtained before this chart is reproduced.
Published by NATS Limited.
Air Information compiled and drawn by NATS.

Ordnance Survey © Crown copyright 2021. All rights reserved. Topographic base digitised and maintained to CAA specification by Ordnance Survey Limited with additional information from OS Republic of Ireland. Roads revised to 2020. Railways revised to 2020. Additional revision 2020. Ordnance Survey, OS and OS logos are registered trademarks of Ordnance Survey Limited, Britain's mapping agency. The area of France updated in 2006 using IGN100 series maps 1, 3, 6, 7 and 18. Roads have been updated in 2015-20 using IGN100 series maps 101, 103, 106, 107 and 117.

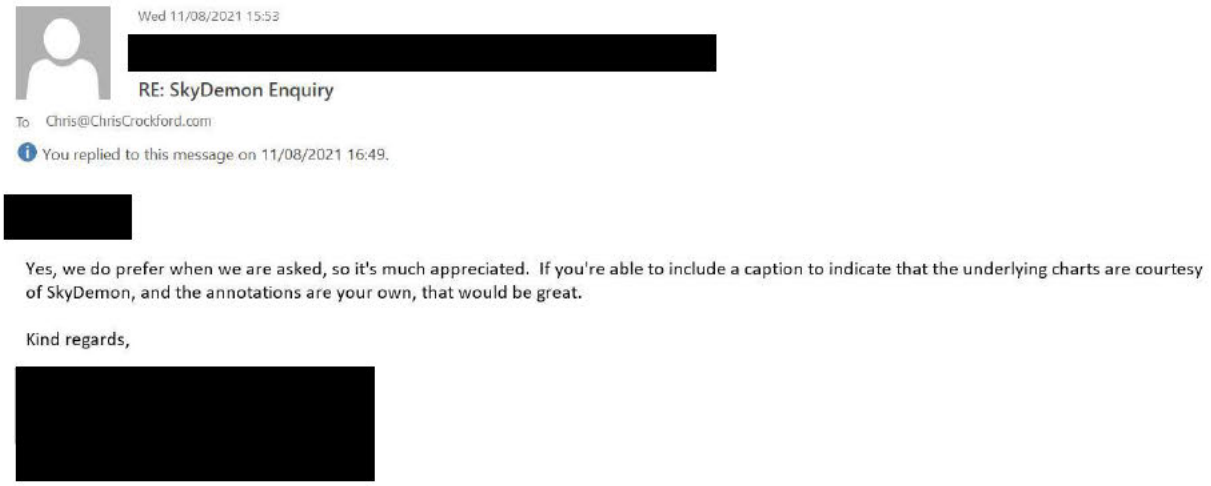
You are therefore required to obtain permission from the CAA who can be contacted at@

aimr@caa.co.uk

Regards

[redacted]

We also sought the permissions of SkyDemon to reproduce a screen grab of their software with our routes plotted within and published this image to the website as well.



Wed 11/08/2021 15:53

[redacted]

RE: SkyDemon Enquiry

To Chris@ChrisCrockford.com

You replied to this message on 11/08/2021 16:49.

[redacted]

Yes, we do prefer when we are asked, so it's much appreciated. If you're able to include a caption to indicate that the underlying charts are courtesy of SkyDemon, and the annotations are your own, that would be great.

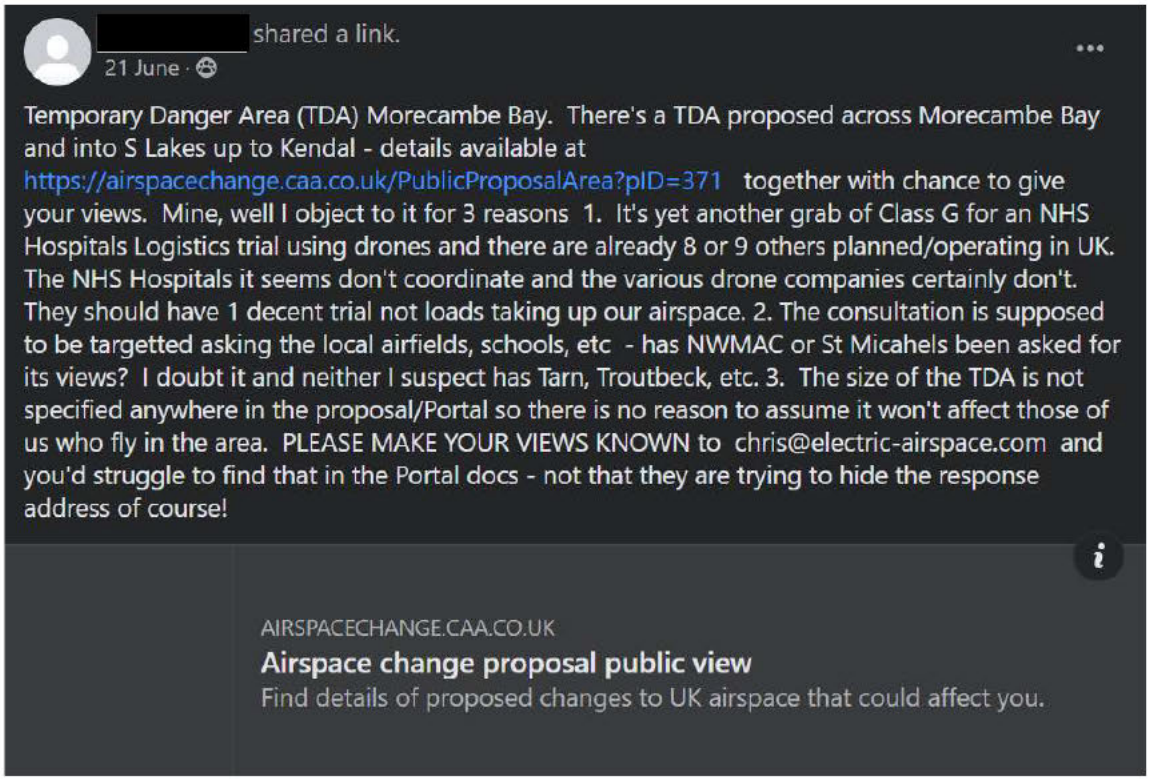
Kind regards,

[redacted]

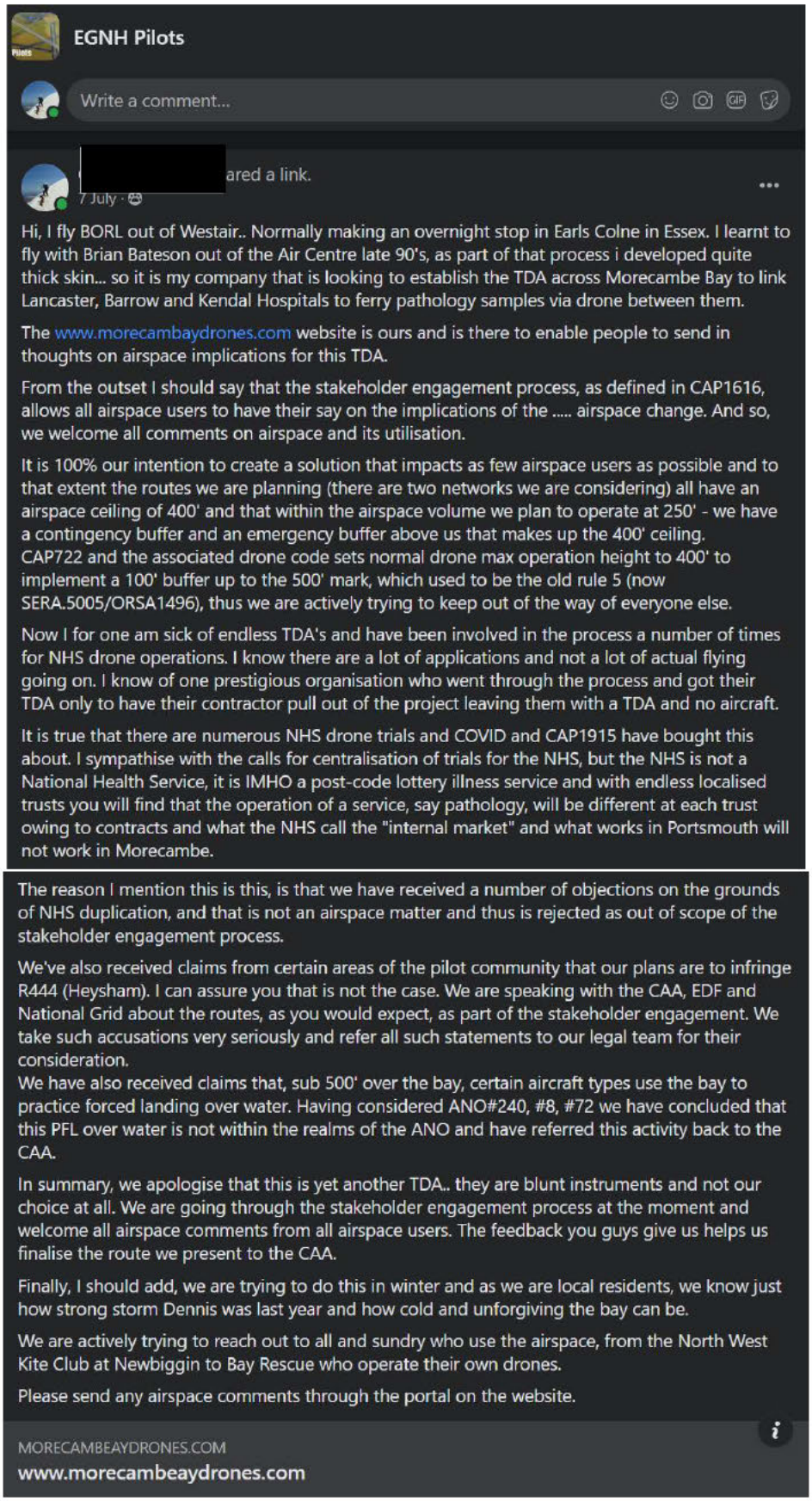
1.9 Stakeholder Responses

The stakeholder response to the website was on the whole positive. Network Rail commented (EMAIL3) that: *"I wish we had thought about creating a website approach for Stakeholder engagement that is such a great way of answering peoples questions."*

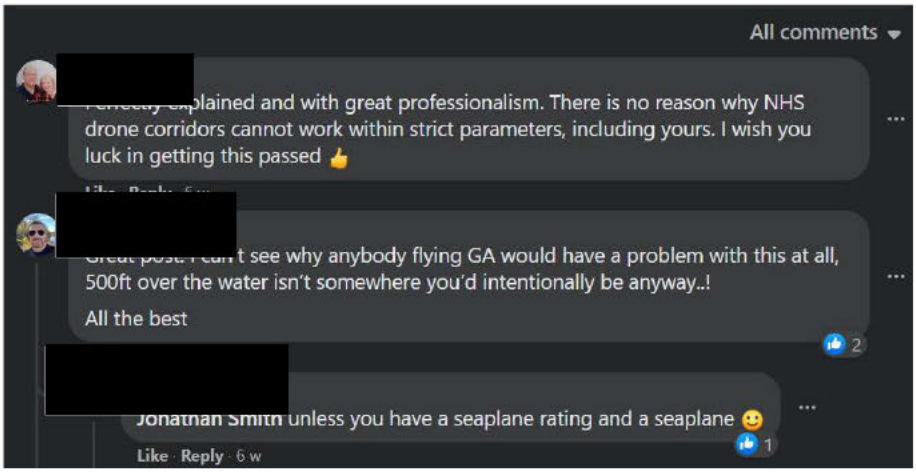
We also spoke with Flyer magazine about some coverage for the website as they had originally covered the Airspace Change Proposal. This enabled readers to go straight to the website and leave comments accordingly. Upon reviewing the Facebook Group page entitled "EGNH Pilots" (EGNH:Blackpool) we came across several posts regarding this Airspace Change:



As such we deposited a post inviting people to review the website:


EGNH Pilots
Write a comment...
[redacted] ared a link.
7 July ·
Hi, I fly BORL out of Westair.. Normally making an overnight stop in Earls Colne in Essex. I learnt to fly with Brian Bateson out of the Air Centre late 90's, as part of that process i developed quite thick skin... so it is my company that is looking to establish the TDA across Morecambe Bay to link Lancaster, Barrow and Kendal Hospitals to ferry pathology samples via drone between them.
The www.morecambaydrones.com website is ours and is there to enable people to send in thoughts on airspace implications for this TDA.
From the outset I should say that the stakeholder engagement process, as defined in CAP1616, allows all airspace users to have their say on the implications of the ..... airspace change. And so, we welcome all comments on airspace and its utilisation.
It is 100% our intention to create a solution that impacts as few airspace users as possible and to that extent the routes we are planning (there are two networks we are considering) all have an airspace ceiling of 400' and that within the airspace volume we plan to operate at 250' - we have a contingency buffer and an emergency buffer above us that makes up the 400' ceiling.
CAP722 and the associated drone code sets normal drone max operation height to 400' to implement a 100' buffer up to the 500' mark, which used to be the old rule 5 (now SERA.5005/ORSA1496), thus we are actively trying to keep out of the way of everyone else.
Now I for one am sick of endless TDA's and have been involved in the process a number of times for NHS drone operations. I know there are a lot of applications and not a lot of actual flying going on. I know of one prestigious organisation who went through the process and got their TDA only to have their contractor pull out of the project leaving them with a TDA and no aircraft.
It is true that there are numerous NHS drone trials and COVID and CAP1915 have bought this about. I sympathise with the calls for centralisation of trials for the NHS, but the NHS is not a National Health Service, it is IMHO a post-code lottery illness service and with endless localised trusts you will find that the operation of a service, say pathology, will be different at each trust owing to contracts and what the NHS call the "internal market" and what works in Portsmouth will not work in Morecambe.
The reason I mention this is this, is that we have received a number of objections on the grounds of NHS duplication, and that is not an airspace matter and thus is rejected as out of scope of the stakeholder engagement process.
We've also received claims from certain areas of the pilot community that our plans are to infringe R444 (Heysham). I can assure you that is not the case. We are speaking with the CAA, EDF and National Grid about the routes, as you would expect, as part of the stakeholder engagement. We take such accusations very seriously and refer all such statements to our legal team for their consideration.
We have also received claims that, sub 500' over the bay, certain aircraft types use the bay to practice forced landing over water. Having considered ANO#240, #8, #72 we have concluded that this PFL over water is not within the realms of the ANO and have referred this activity back to the CAA.
In summary, we apologise that this is yet another TDA.. they are blunt instruments and not our choice at all. We are going through the stakeholder engagement process at the moment and welcome all airspace comments from all airspace users. The feedback you guys give us helps us finalise the route we present to the CAA.
Finally, I should add, we are trying to do this in winter and as we are local residents, we know just how strong storm Dennis was last year and how cold and unforgiving the bay can be.
We are actively trying to reach out to all and sundry who use the airspace, from the North West Kite Club at Newbiggin to Bay Rescue who operate their own drones.
Please send any airspace comments through the portal on the website.
MORECAMBEAYDRONES.COM
www.morecambeaydrones.com

We received some encouraging replies:



And we did after this post see an increase in the number of responses through the web portal. In all we believe that utilising a dedicated website has enabled much more correspondence with the aviation community.

We have had plenty of luddite comments from the ill-informed and ignorant and some abuse through social media, but those that have taken the time to respond, generally have been constructive and positive.

1.10 The Top Down Approach

As detailed in section 1.41, we undertook both a Top-down and a Bottom-up approach to stakeholder engagement, ensuring we liaised and sought the views of both the professional and regulated members of the aviation community as well as the amateur and land law based members of the community.

1.11 BAe Warton

We started our stakeholder engagement by establishing communications with BAe Warton. In 2020 BAe had, with Skylift UAV, test flown a Mugin RPAS vehicle in the TDA acquired through ACP-2020-031.

Initial communications were started on the 28th April 2021, between Electric Aviation and ATC at British Aerospace Warton and the request was made to Chris Birkett, Manager of Air Traffic Services, BAE Systems (Warton) for DACS provision.

summary telephone call was arranged between Electric Aviation Limited and Chris Birkett of BAe on the 12th August at 16:02. In the call Mr Birkett confirmed that there were no concerns regarding the Airspace Change Proposal from BAe's perspective, nor any grounds for objection, furthermore that they were keen to support to incentive. BAe requested further information regarding the RPAS EC and anticipated flight campaign timings, which Electric Aviation were happy to provide. BAe indicated that they would be pleased to work with Electric Aviation to provide a DACS service.

Obviously there are many aspects of providing a DACS service especially considering the requirements to understand and know the location of an RPAS, which despite being Mode S equipped, may well not be visible on Warton's radar owing to the cross section of the RPAS and the height being flown. ADS-B provides opportunities, but these are limited with regards the official acceptance of the equipment used to provide ATC the ADS-B location instantaneously.

For the Morecambe Bay RPAS Transit Route, we will be using new Air-Ground Radio technology on the RPAS aircraft, thus we can communicate with ATC, but yet again this protocol for communication, bearing in mind the CAA's reluctance to issue "G" prefix registrations to RPAS, will need to be finalised.

We have agreed with BAe Warton that:

- We have some improved remote comms systems which allow a/g transmission from the aircraft.
- We will aim to work with BAe to provide more information on the EC capabilities and to work with BAe regarding how Electric Aviation can report out instantaneous location to you in an appropriate manner.
- We will also provide BAe with more information with regards our planned flight campaign once our weather analysis is completed.
- We are pleased that BAe have indicated that they have few grounds for objection to the proposed airspace change, and that subject to the above information on EC, location reporting and flight campaign, that in principle BAe can provide the project with a DACS service.
- We acknowledge the need to work with BAe to provide the information such that the change management process may be instigated to create the appropriate controller protocols for operating the DACS.

We have agreement of the above points and we evidence this through the following email.

From: [redacted]
Sent: [redacted]
To: Chris@ChrisCrockford.com
Subject: RE: Morecambe Bay TDA DACS

[redacted]

I'm happy with the summary of discussion and happy to confirm we will proceed on that basis.

Thanks again,

[redacted]

Sent from my Galaxy

[redacted]

PHISHING ALERT
This email has been sent from an account outside of the BAE Systems network.

Please treat the email with caution, especially if you are requested to click on a link or open an attachment.
For further information on how to spot and report a phishing email please access the Global Intranet then select <Functions> / <IT>.
If you think this is a phishing email, please report it by using the "Report Phishing" button in Outlook.

[redacted]

My thanks for your time on the phone this afternoon.

To summarise our call.

The aircraft is an upgraded Mugin as flown by Skylift UAV Limited, previously within the Warton TDA.

We have some improved remote comms systems which allow a/g transmission from the aircraft.

We will aim to work with you to provide more information on the EC capabilities and to work with you regarding how we can report out instantaneous location to you in an appropriate manner.

We will also provide you with more information with regards our planned flight campaign once our weather analysis is completed.

We are pleased that you have indicated that you have few grounds for objection to the proposed airspace change, and that subject to the above information on EC, location reporting and flight campaign, that in principle BAe can provide the project with a DACS service.

We acknowledge the need to work with you to provide the information such that the change management process may be instigated to create the appropriate controller protocols for operating the DACS.

We believe the above represents a fair and accurate analysis of our conversations to date.

Should you have any comments or thoughts on the above, please do not hesitate to contact me.

With Best Regards,

[redacted]

1.12 BAe Walney

We were initially pointed to the ATC unit at Walney Airfield by [redacted] (Blackpool), who is also a commercial pilot, instructor and examiner for BAe at Walney Island airfield.

Contemporaneously, Flyer magazine had published their article on the airspace change request for the Morecambe Bay RPAS Transit Route and this had been spotted by [redacted] out to Electric Aviation through the website portal on the 23rd of June 20201 as is evidenced below.

[redacted]

[redacted]

message

Good Afternoon,
I am the Aerodrome Manager at Walney Airfield, we have just come across your proposed airspace change after reading an article in Flyer.
As you will hopefully be aware, our Aerodrome operates a fleet of Beechcraft Kingair 250s in support of BAE Systems and the UK Submarine programme, we also operate a number of SUAS. I would like to propose a call to enable us to discuss your project further, as we have identified a number of initial concerns. If you could message back with your details that would be great.

Many thanks,

[redacted]

Submitted 02:16 PM - 23 June 2021

Mark as spam

Formspree

A subsequent meeting was arranged with [redacted] attending Walney Island Airfield.

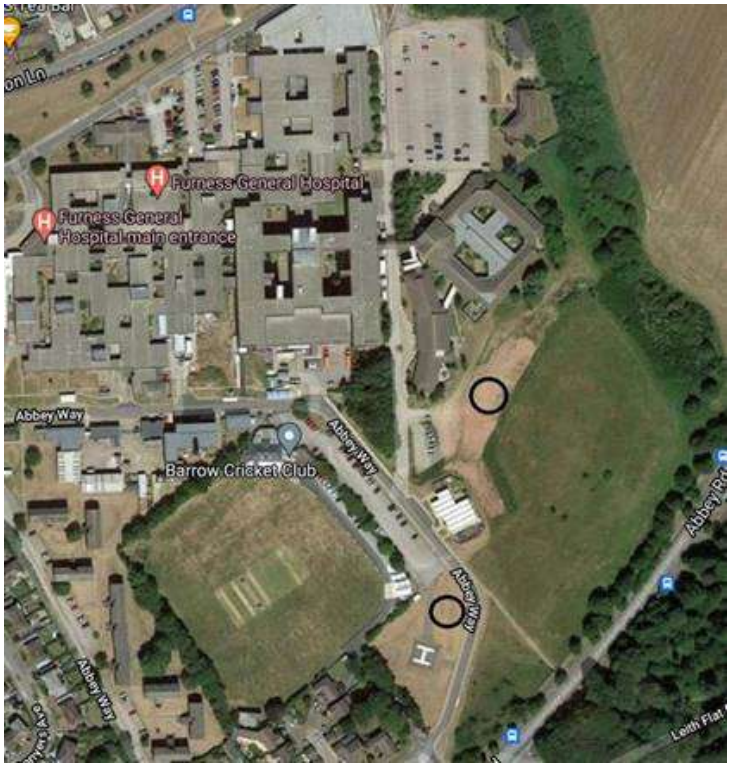
This was a protracted affair as a COVID-19 negative test was required before access to the site could be granted. Electric Aviation, thus attended a meeting with BAe Systems (Submarines) at Walney Island on the 14th of July 2021.

The meeting was attended by two pilots, and three ATC staff members.

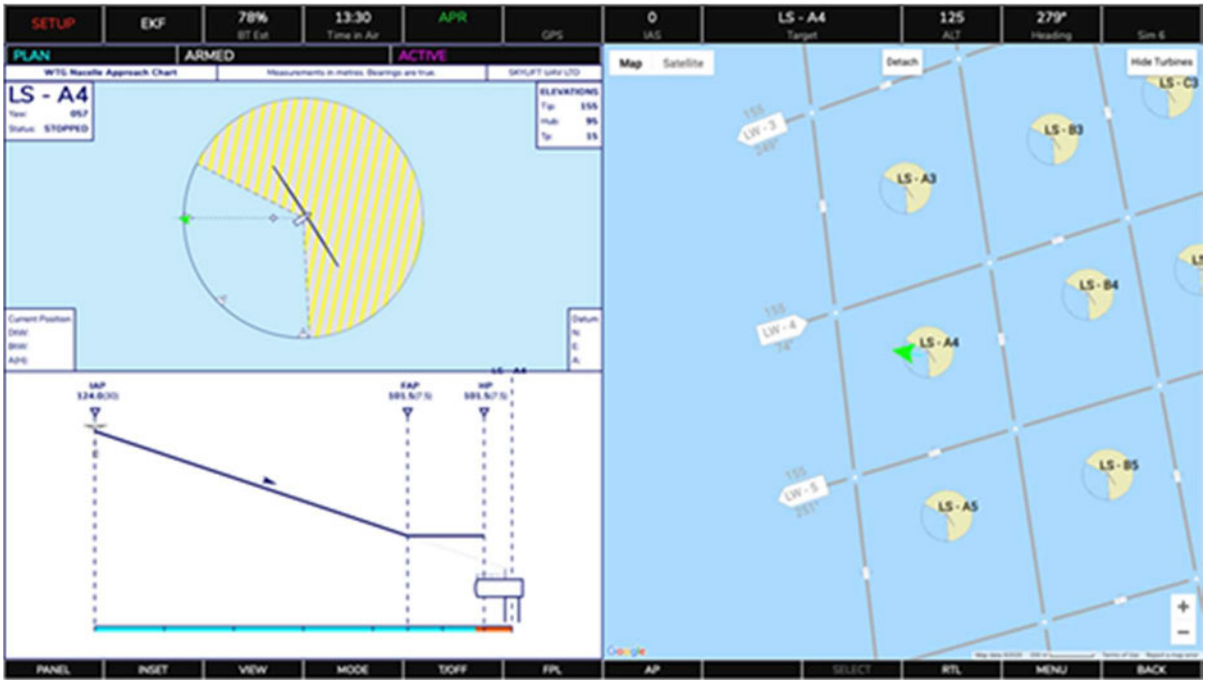
It was an agreeable meeting and both parties agreed that we should operate such that from day 1 that Furness General Hospital will be assumed to be 100% within the FRZ and both parties will work to create procedures to enter FRZ make logical sense from a safety perspective.

BAe asked for clarification on the following items: (Electric Aviation responses are detailed in Blue)

1. Landing location at Furness - We anticipate utilising the grass to the side of the Helipad or the grass area located within the second black circle.



2. How will approach be achieved - We will develop an approach plate for each hospital. SkyliftUAV our flight partner will generate this in a manner similar to their standard approach plate, an example is shown below with regards an approach to a windfarm.



3. How will failure be managed - Failure is managed through multiple redundant [redacted] which has been approved for OA by the CAA. I suggest that we review this with [redacted] prior to flight campaign.

4. What does the operation at Furness General look like - We would expect to send two 20' insulated and heated containers. 1 Hangar and 1 flight ops. These would be located at either one of the hospitals or at a midway staging post. Previously we have built landing pads within hospital confines, adhering to CAP1264, such as is shown below.

5. R445 fly away and drift and how we prevent this - The aircraft will be on autopilot following a flight plan unless the aircraft encounters weather in which case the pilot will route round. If the Autopilot drops out the pilot can fly via a controller or keyboard with ref to the moving map and pilot cam or synthetic vision.
   If we lose the primary C2 link there is a Sat backup. If we lose GPS the pilot can still fly via the pilot cam. If all else fails we can deploy the chute or it will be triggered automatically if it detects un-commanded loss of height or a tumble. We don't really get drift. We have two independent RTK equipped, multi-constellation, dual frequency GPS units that can see on average 37 SATs. We fly to +/- .2m

6. 30m/s operating speed in mph - 67mph is 30m/s operating speed.

7. What is descent rate with chute deployed - The descent rate is rated at 20fps for a 204lbs aircraft (92kg). Our aircraft is 90kg MTOW

8. ADSB how does it appear on FR24 etc. - We will appear as an 8 digit alphanumeric code, such as NHSUAV01

9. Sight of Briefing note sent out to LCC/UMBHT - Please find attached.

We have agreed to operate with a Letter of Agreement between BAe Systems (Submarines) at Walney Island, such that we will utilise their ATC services to ensure co-ordinated operations at the extremities of their ATZ and outside, in such a manner to ensure that the operation of the ILS is not affected and that the RPAS operations do not affect departing traffic on runway 05.

We noted that there is no RPZ on the 05-23 runway at present, but that this may be implemented shortly.

BAe commented that there was an incentive between BAe Systems and Cumbria Police regarding drone operations in the area. Both parties agreed this project may well assist such an operation. Electric Aviation noted BAe's offer of assistance with regards various entities responsible for the operation of Britain's nuclear deterrent in the local environment.

The proposed letter of agreement, which is with BAe for service at the time of writing can be found overleaf:

Letter of Agreement between Electric Aviation Limited and British Aerospace Walney Aerodrome Regarding Temporary Danger Areas for ACP-2021-022

British Aerospace Systems Submarines operate Walney Island Aerodrome and provide Air Traffic Control services as well as flight operations for Uncrewed Aerial Vehicles as well as fixed and Rotary Aircraft in the vicinity of Walney Island Aerodrome and the surround airspace.

Electric Aviation Limited seek to operate Remotely Piloted Aircraft Systems across Morecambe Bay on behalf of University Morecambe Bay Hospital NHS Trust.

Electric Aviation and British Aerospace Systems Submarines (Walney Island Aerodrome) are hereafter referred to as the parties:

The overall principle of this Letter of Agreement (LOA) is to enable safe and de-conflicted operations of the Electric Aviation Limited, Remote Piloted Aircraft Systems in and around the Aerodrome Traffic Zone at Walney Island.

The parties also seek the agree Walney Island Aerodrome traffic access to the Temporary Danger Areas (TDAs) implemented under ACP-2021-022. Electric Aviation is the Danger Area Authority for the TDAs.

For the purpose of this agreement, both parties agree that the Walney Island Aerodrome Traffic Zone envelopes the entire estate of Furness General Hospital.

Walney Island Aerodrome agree to use their best endeavours to provide Electric Aviation with a call sign on the Defence Register for the purpose of communications.

Contemporaneously Electric Aviation, agree to provide operational air-ground radio calls, using said call sign, to Walney Air Traffic Control, upon “coasting in” at Newbiggin, or where a RPAS is set to depart Furness General Hospital will call for departure clearance and report “coasting out”.

The parties agree to use their best endeavours to provide co-ordinated service updates to a third party ATCU who may be providing a DAIS/DACS to other ATC units in the vicinity.

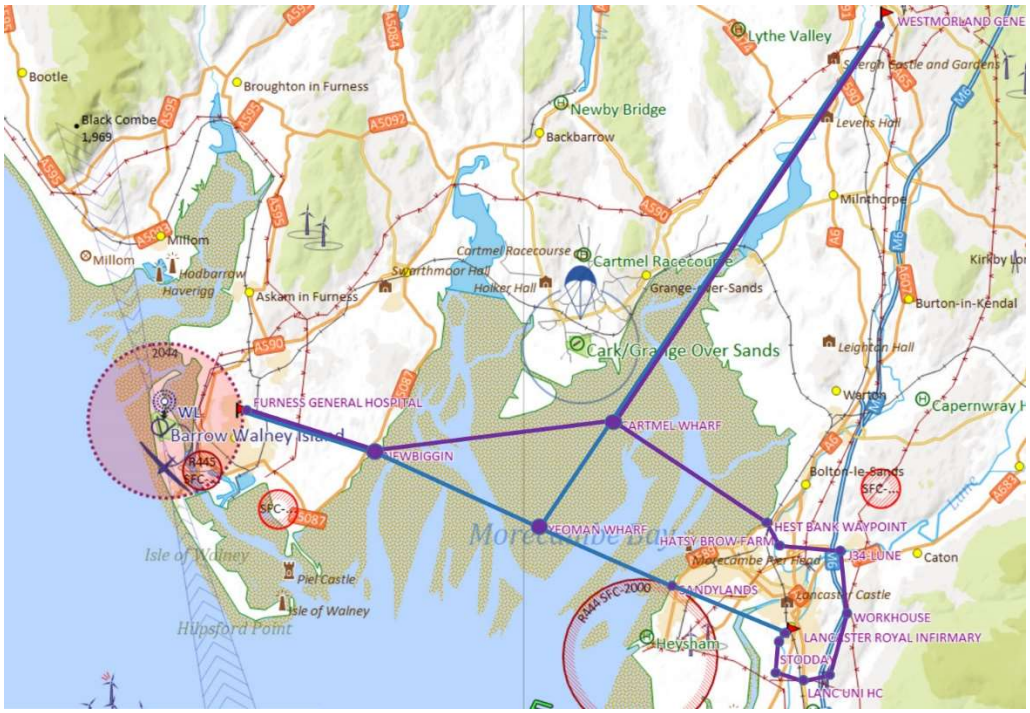
Walney Island Aerodrome agree to use their best endeavours to promulgate the RPAS flights and activity within the wider British Aerospace Systems Submarines community.

It is understood by both parties that access to the TDA by Walney Aerodrome aircraft and systems will be granted throughout the operation of the TDA subject to suitable prior notice. It is also noted that emergency services aircraft will always be given priority over RPA operations, which will be immediately suspended.

However, Walney Aerodrome aircraft captains or Pilots in Command of Uncrewed Aerial Vehicles must be content that they have sufficient information about TDA activity to allow them to penetrate the TDA safely. Electric Aviation Limited will ensure that effective communication systems are in place for Walney Aerodrome Aircraft Captains or Pilots in Command of Uncrewed Aerial Vehicles to seek clarification of the location of the RPAS operating within the TDA at any time.

The TDA complex routes, implemented under ACP-2021-022 are depicted in Figure 1 below, with lateral extents to 400' either side of the track and a vertical extent to 400' agl.

The final routes will be confirmed between Walney Island Aerodrome and Electric Aviation as the Airspace Change Request proceeds. It is anticipated that the number of routes depicted below will decline in numbers as the final route is agreed upon.



Recreated with the permission of SkyDemon

Agreed TDA access and deconfliction procedures

Electric Aviation Ltd will inform Walney Aerodrome ATC by e-mail of intended RPA operations by 1700L the previous day. This information will be forwarded by Walney Island Aerodrome Operations department to the duty pilots operating in the area affected by the TDAs.

The Walney Island Aerodrome ATC contact number has been added to the Skylift UAV Ltd Operations Manual (flying on behalf of Electric Aviation) and will be available to the remote pilots in SkyFleet (the remote pilot station).

Electric Aviation Ltd will provide Pre-Flight Information via a telephone number as per the NOTAM activating the TDAs. The number will be manned from 30 minutes before until 30 minutes after the notified hours of operation of the TDAs.

If a Walney Island Aerodrome aircraft requires access to an active TDA, Walney Island Aerodrome will call the notified Pre-Flight Information telephone number referenced above. Electric Aviation will provide the location of the RPA and request the position and intentions of the Walney Island Aerodrome aircraft.

The remote pilot will decide the best course of action to immediately de-conflict the RPA from the Walney Island Aerodrome aircraft: stay on the ground; continue to destination; return to take-off point, return to Rally Point and loiter or, worst-case, land at the Rally Point.

Once a decision has been made, the remote pilot will inform Walney Island Aerodrome of the RPA's intentions. When the RPA is on the ground, the TDA will be declared inactive and will remain inactive until such time as the Walney Island Aerodrome aircraft positively confirms to Electric Aviation Ltd that their operations are complete and that their aircraft are clear of the TDA.

Electric Aviation Ltd and their remote pilots will maintain a listening watch on SAFETYCOM (135.480 MHz) as well as active communications with Walney Island Aerodrome on 123.205 MHz

For conspicuity, the RPAS is equipped with ADS-B, a Mode S transponder, standard aircraft navigation lights and anti-collision beacons.

[redacted]

Signature [redacted] Signature

Name [redacted]

1.13 Blackpool ATC

Blackpool ATC responded to the initial stakeholder engagement email by arranging a meeting towards the end of the stakeholder engagement period.

A meeting was held at the airport administration offices at 14:00 hours on Friday the 13th of August 2021. The meeting was held between [redacted]

During the meeting Blackpool ATC indicated that they had no reason to object to the Airspace Change Proposal and that they could see no reason why it should affect the airport or its operations.

Blackpool did however comment that they did not want to see any increase in their controller workloads caused by this project.

Electric Aviation reassured them that it was the intention that BAe Warton would be providing a DACS crossing service to support the project.

[redacted]

[redacted]

New form submission

Someone just submitted a form using formspree.io. Woo!

name

[redacted]

message

Blackpool ATC have no issues regarding the proposed TDA.
It remains outside of our ATZ and does not affect any of our local VRPs.

Submitted 01:49 PM - 13 August 2021

Mark as spam

Formspree

1.14 Cark and Cockerham Drop Zones

One of the first to respond through the website portal was [redacted] he resident operator at Cark airfield. Cark is an unlicensed airfield at the top of the bay protected by a parachute jumping drop zone (a circle, SFC-FL145 1.5 NM radius, centred at 540946N 0025737W) SkyDive NorthWest commented through the website portal on the 23rd of June that:

[redacted]

New form submission

Someone just submitted a form using formspree.io. Woo!

name

[redacted]

message

SDNW has operated from Cark airfield for 49 years, I can't see any references to SDNW in the engagement process, I may have missed it, it would appear there is no impact on our operations, if that remains the case we have no objections to the drone operation.

Director/ Chief pilot

Submitted 05:31 PM - 23 June 2021

Mark as spam

Formspree

Electric Aviation Limited followed this up with a telephone call on the 12th of August at 16:21 inviting SkyDive NorthWest to the meeting with Bay Rescue on Monday 16th August. Mike Carruthers re-affirmed he was happy that the RPAS would route far enough away from the Drop Zone so as not to be an issue. Electric Aviation replied that from their calculations any parachutists at 400' in the proposed TDA would end up landing on the sand or in the sea.

With regards to the Cockerham Drop Zone, this is a circle, 1.5 NM radius, centred at 535744N 0025007W overhead the Black Knights Parachute centre at Cockerham. After leaving a message with Black Knights reception, [redacted] via telephone at 16:46 on the 9th of August. Mr Yeoman confirmed that he had no objection to the Airspace Change Proposal and it would not affect his operations.

[redacted] that he did not operate between the 30th of November and the 1st of February. When asked regarding the proximity of the Rossall Field, microlight airfield, he commented that he was regularly finding them on the end of his runway. Electric Aviation have thus concluded that there are no objections to the Airspace Change Proposal from the parachute centres at Cark or Cockerham.

1.15 NATS

Post the initial NATMAC distribution list email mail out, NATS responded on the 28th of June, 2021 at 15:46, with [redacted] NATS Operational Policy, commenting that:

If the TDA remains below 400ft then the proposed TDA has 'no impact' on NERL plc Operations.

This is evidenced below:

[redacted]

Chris

Thanks for the clarification. If the TDA remains below 400ft then the proposed TDA has 'no impact' on NERL plc Operations.

Regards

[redacted]

1.16 MOD

Post the initial NATMAC distribution list email mail out, a prolonged silence was experienced until on the 6th of August 2021 at [redacted] Airspace and Air Traffic Management, responded via email and submitted the same text through the web portal which is evidenced below:

New form submission

Someone just submitted a form using formspree.io. Woo!

[redacted]

I am writing to you to provide the consoldated MOD response to ACP-2021-22. The MOD has no grounds to object to the TDA proposal, a summary of responses is detailed in the following paragraphs:

It has been identified that, when active, the TDA will block off an area that is routinely used to enter the UK Low Flying System, in particular for Hawk and Texan aircraft based at RAF Valley, which would have a minor impact to training and currency sorties. As a result, aircraft would have to transit at 1000ft until clear of the TDA before descending to low-level. The area is also routinely used for transits and refuelling at Barrow-in-Furness by transiting rotary wing aircraft, activation of the TDA will limit available routes through the area during poor (winter) weather, as rotary wing aircraft will not be able to fly low-level without conflicting with the TDA.

Military airspace users raised concern that if there is no DACS/DAAIS available, blanket NOTAM application would effectively prevent other airspace users from utilising the airspace, which is not in accordance with flexible use principles. A DACS would help to increase flexibility and for rotary wing to transit through the area when the UAS is not airborne, a DAAIS will at least allow airspace users to verify activity when airborne. Considering the ~2 flights per day specified in the proposal, all day activation of the TDA with no means of shared airspace usage would limit military airspace usage; minimal activation i.e. only when the UAS will be planned to fly, should allow some of the activities to continue when the TDA is not active. National standby assets also requested that processes/procedures be put in place for access to Furness General Hospital, Royal Lancaster Hospital and Halton Training Camp (Lancaster).

Thank you for your engagement and the opportunity to respond to your proposal.

Submitted 09:05 AM - 06 August 2021

Mark as spam

Formspree

We refer the reader to section 1.11 regarding the provision of a DACS service.

We are thus of the opinion that the MOD do not object to this Airspace Change Proposal.

1.17 NPAS

Electric Aviation reached out to [redacted], who put them in touch with [redacted]. Having explained the concept of the airspace change and its associated flight ambitions [redacted]

"This is not likely too cause many issues for us and I am more than happy to discuss the details"

A telephone conference was set up between Electric Aviation, [redacted]. The telephone conference took place on Tuesday July 27th at 15:00pm and discussed a wide range of issues for both ACP-2021-022 as well as ACP-2021-02.

Throughout the conversation, collaboration between parties was seen as paramount. [redacted]

[redacted] the engagement with NPAS below:

[redacted]

Suggested Meetings + Get more a

[redacted]se many issues for us and I am more than happy to discuss the details with you. I am on leave next week but am available pm

[redacted]

1.18 HEMS

North West Air Ambulance serve the majority of Morecambe Bay area incidents.

Electric Aviation reached out through a mutual contact to [redacted].

We are grateful to [redacted].

1.18.1 Babcock Inshore

[redacted] to the introductory email as evidenced below:

[redacted]

I am the Chief Pilot for Babcock Onshore and I have been passed your details in regards to the above proposed operation. As the operator of a number of air Ambulance helicopters in the area could I ask that once you are able to release the detail it be forwarded direct to myself so that we can safely de-conflict our HEMS operations with your drone ones.

Many thanks,

[redacted]

babcock™

Please consider the environment before printing this email

A teams meeting was arranged for the 15th of July between [redacted] During the meeting it was discussed that the RPAS would operate with Mode 'S' and ADSB and should be visible through TCAS to the HEMS aircraft.

Babcock agreed that communications were key and that a Letter of Agreement should be exchanged between parties agreeing a protocol for the RPAS to keep out of the way of the HEMS aircraft and for the operator to collapse the TDA if required.

The Letter of Agreement, which is with Babcock for execution can be found overleaf:

Letter of Agreement between
Electric Aviation Limited and Babcock Onshore
Regarding Temporary Danger Areas
for ACP-2021-022

Babcock Onshore operate numerous Air Ambulance helicopters on behalf of Air Ambulance charities in the North West of England.

The overall principle of this Letter of Agreement (LOA) is to enable Air Ambulance access to the Temporary Danger Areas (TDAs) implemented under ACP-2021-022 and to deconflict with Electric Aviation Remotely Piloted Aircraft Systems (RPAS) operated by Skylift UAV Ltd in the TDAs. Electric Aviation Ltd is the Danger Area Authority for the TDAs.

It is understood by both parties that access to the TDA by emergency services aircraft will always be given priority over RPAS operations, which will be immediately suspended. However, the Helicopter Emergency Medical Service (HEMS) aircraft captain must be content that they have sufficient information about TDA activity to allow them to penetrate the TDA safely.

The TDA complex implemented under ACP-2021-022 is depicted in Figure 1 below, as being some or all of the routes indicated with TDA dimensions of width 400' either side of track and height 400' agl. Across all routes the maximum elevation is 505' giving a total max altitude of 905' amsl.

The final routes chosen and approved will be notified to Babcock Onshore at a later date but prior to flight operations.

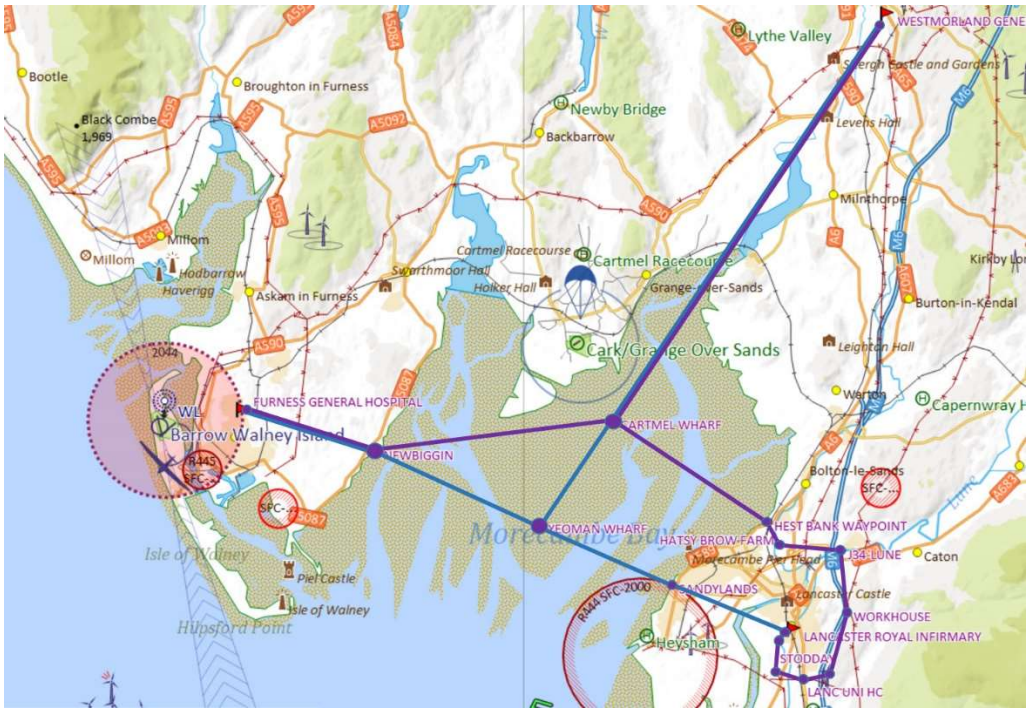


Figure 1: The proposed routes for ACP-2021-22

Reproduced with the permissions of SkyDemon.

Agreed TDA access and deconfliction procedures

- [redacted] International operations department by e-mail of intended RPA operations by 1700L the previous day. This information will be forwarded by Babcock International operations department to the duty pilots operating in the area affected by the TDAs.

- The HEMS Desk contact number has been added to the Electric Aviation/[redacted] remote pilot station).

- [redacted] will provide Pre-Flight Information via a telephone number as per the NOTAM activating the TDAs. The number will be manned from 30 minutes before until 30 minutes after the notified hours of operation of the TDAs.

- On behalf of Electric Aviation Limited, [redacted] contains procedures to facilitate emergency services aircraft access to active TDAs.

- If a HEMS aircraft requires access to an active TDA, the HEMS Desk will call the notified Pre-Flight Information telephone number referenced above. [redacted] Ltd remote pilot will provide the location of the RPA and request the position and intentions of the HEMS aircraft.

- The remote pilot will decide the best course of action to immediately deconflict the RPA from the HEMS aircraft: stay on the ground; continue to destination; return to take-off point; or proceed to an appropriate Rally Point and loiter or, worst-case, land at the Rally Point.

- Once a decision has been made, the remote pilot will inform the HEMS Desk of the RPA's intentions. When the RPA is on the ground, the TDA will be declared inactive and will remain inactive until such time as the HEMS Desk positively confirms to [redacted] that their operations are complete and that their aircraft are clear of the TDA.

- [redacted] pilots will maintain a listening watch on SAFETYCOM (135.480 MHz).

- For conspicuity, the [redacted] is equipped with ADS-B, a Mode S transponder, standard aircraft navigation lights and anti-collision beacons

Helipad deconfliction

- In cases where the HEMS Desk have called the Pre-Flight Information telephone number referenced above and have ascertained that the [redacted] Ltd RPA is occupying a hospital helipad where a HEMS aircraft is tasked to land at short notice, the following deconfliction procedures will apply.

- The [redacted] RPAS will be moved or will depart immediately to the pre-identified secondary landing site climbing not above 250' agl.

- The secondary landing sites will be agreed with Babcock prior to operational activity.

- The Babcock Onshore HEMS pilot will make a blind call on SAFETYCOM (135.480 MHz) when 2 minutes out from the helipad

Signatories to the Letter of Agreement

1.18.2 Air Ambulance

Following on from the discussions with Walney Island ATC it was mentioned that Great North Air Ambulance are not operated by Babcock and as such were on Electric Aviation's target list of stakeholders with whom to engage.

Direct engagement initially was problematic, however at an Emergency Services Committee meeting, [redacted]

A follow up telephone conversation was arranged with [redacted]t, Great North Air Ambulance and a similar Letter of Agreement with Great North was drafted by Electric Aviation and sent to Great North Air Ambulance for their service.

The telephone call with Great North's Chief Pilot revealed many local matters that we're unknown to Electric Aviation such as operating procedures at the different hospitals and the pads in use etc. This was exceptionally useful feedback.

A copy of the Letter of Agreement sent to Great North Air Ambulance is attached overleaf:

Letter of Agreement between
Electric Aviation Limited and Great North Air Ambulance
Regarding Temporary Danger Areas
for ACP-2021-022

Great North Air Ambulance Service are a charity providing an air ambulance service to the North of England.

The overall principle of this Letter of Agreement (LOA) is to enable Air Ambulance access to the Temporary Danger Areas (TDAs) implemented under ACP-2021-022 and to deconflict with Electric Aviation Remotely Piloted Aircraft Systems (RPAS) operated by Skylift UAV Ltd in the TDAs. Electric Aviation Ltd is the Danger Area Authority for the TDAs.

It is understood by both parties that access to the TDA by emergency services aircraft will always be given priority over RPAS operations, which will be immediately suspended. However, the Helicopter Emergency Medical Service (HEMS) aircraft captain must be content that they have sufficient information about TDA activity to allow them to penetrate the TDA safely.

The TDA complex implemented under ACP-2021-022 is depicted in Figure 1 below, as being some or all of the routes indicated with TDA dimensions of width 400' either side of track and height 400' agl. Across all routes the maximum elevation is 505' giving a total max altitude of 905' amsl.

The final routes chosen and approved will be notified to Great North Air Ambulance Service at a later date but prior to flight operations.

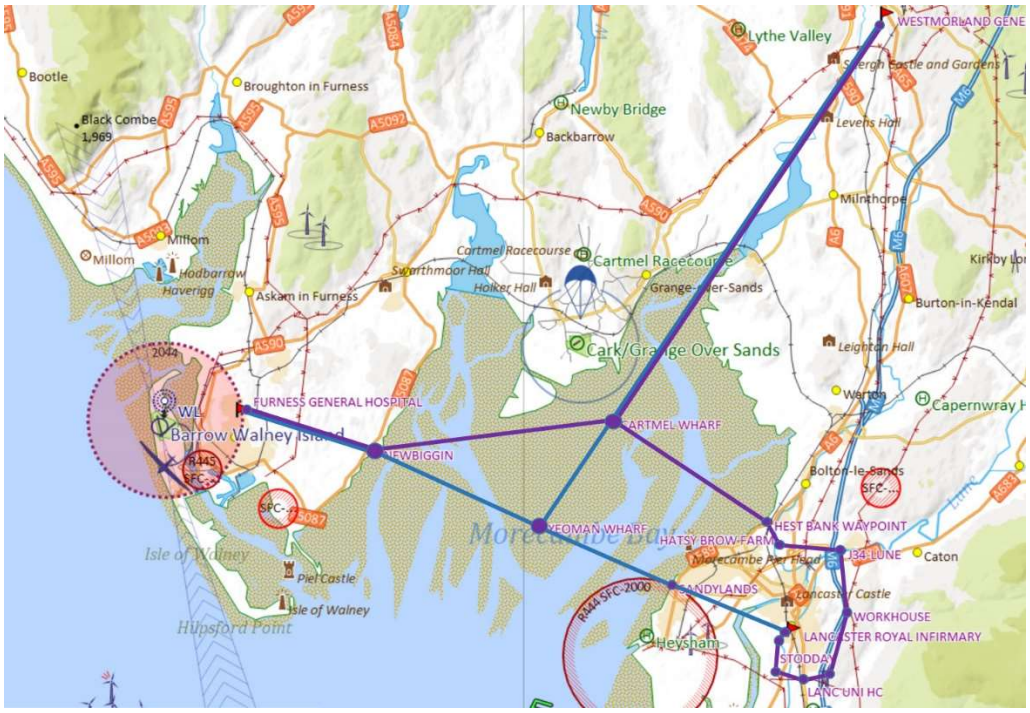


Figure 1: The proposed routes for ACP-2021-22

Reproduced with the permissions of SkyDemon.

Agreed TDA access and deconfliction procedures

- Electric Aviation Limited and their operators [redacted] will inform Great North Air Ambulance operations department by e-mail of intended RPA operations by 1700L the previous day. This information will be forwarded by Great North Air Ambulance operations department to the duty pilots operating in the area affected by the TDAs.

- The HEMS Desk contact number has been added to the Electric [redacted] Ltd Operations Manual and will be available to the remote pilots in SkyFleet (the remote pilot station).

- Electric Aviation [redacted] Ltd will provide Pre-Flight Information via a telephone number as per the NOTAM activating the TDAs. The number will be manned from 30 minutes before until 30 minutes after the notified hours of operation of the TDAs.

- On behalf of Electric Aviation [redacted] Operations Manual contains procedures to facilitate emergency services aircraft access to active TDAs.

- If a HEMS aircraft requires access to an active TDA, the HEMS Desk will call the notified Pre-Flight Information telephone number referenced above. The Electric Aviation [redacted] remote pilot will provide the location of the RPA and request the position and intentions of the HEMS aircraft.

- The remote pilot will decide the best course of action to immediately deconflict the RPA from the HEMS aircraft: stay on the ground; continue to destination; return to take-off point, or proceed to an appropriate Rally Point and loiter or, worst-case, land at the Rally Point.

- Once a decision has been made, the remote pilot will inform the HEMS Desk of the RPA's intentions. When the RPA is on the ground, the TDA will be declared inactive and will remain inactive until such time as the HEMS Desk positively confirms to Electric Aviation Limited/Skylift UAV Ltd that their operations are complete and that their aircraft are clear of the TDA.

- Electric Aviation Limited/Skylift UAV Ltd remote pilots will maintain a listening watch on SAFETYCOM (135.480 MHz).

- For conspicuity, [redacted] RPA is equipped with ADS-B, a Mode S transponder, standard aircraft navigation lights and anti-collision beacons

Helipad deconfliction

- In cases where the HEMS Desk have called the Pre-Flight Information telephone number referenced above and have ascertained that the Electric Aviation/Skylift UAV Ltd RPA is occupying a hospital helipad where a HEMS aircraft is tasked to land at short notice, the following deconfliction procedures will apply.

- The Electric Aviation/[redacted] will be moved or will depart immediately to the pre-identified secondary landing site climbing not above 250' agl.

- The secondary landing sites will be agreed with Great North Air Ambulance prior to operational activity.

- The Great North Air Ambulance Service HEMS pilot will make a blind call on SAFETYCOM (135.480 MHz) when 2 minutes out from the helipad

Signatories to the Letter of Agreement

Signature		Signature	[redacted]
Name		Name	Chris Crockford
Date	11/08/21	Date	
Position	Director of Operations Great North Air Ambulance Address Address Address Address Address	Position	Director Electric Aviation Limited Unit 2, The Stables Block, Dalton Hall Business Centre, Dalton Lane, Burton in Kendal LA6 1BL

1.19 The Bottom Up approach

As discussed in section 1.4.1 the bottom up approach allows us to cover the stakeholders who are amateur pilots operating within the geographic area of Morecambe Bay as well as other stakeholders who are more concerned with relevant land laws.

1.20 Network Rail

As some of the proposed routes overfly Network Rail's track-bed, Electric Aviation saw it as courtesy to reach out to Network Rail and discuss the planned overflight by the RPAS with them.

We received correspondence [redacted] National Drone Manager, Air Operations, Route Services, Network Rail on the 9th of July 2021 asking:

"Do you have a map already of where the tracks/paths will pass over the tracks at all? Also please confirm when it is in flight, will it be at around 300 feet as it passes over the track?"

Evidenced below:

RE: Morecambe Bay TDA - Stakeholder Engagement

From [redacted]

Details

OFFICIAL

Hi Chris,

Many thanks for this. I wish we had thought about creating a website approach for Stakeholder engagement that is such a great way of answering peoples questions.

Will you be sharing a feedback form that you need something in writing on so that you can upload it to the CAA Airspace portal?

Do you have a map already of where the tracks/paths will pass over the tracks at all? Also please confirm when it is in flight, will it be at around 300 feet as it passes over the track?

Many thanks,

[redacted]

Electric Aviation responded by supplying the following information to Network Rail.

Morecambe Bay TDA

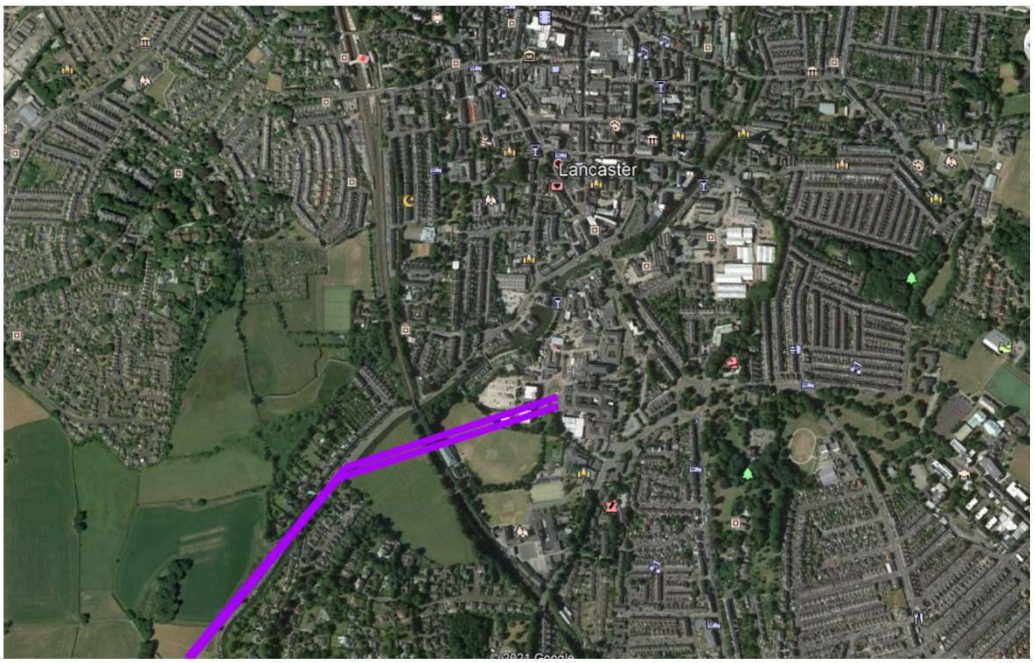
Electric Aviation
for University Hospitals NHS Morecambe Bay

Network Rail Crossing Points

chris@electric-airspace.com

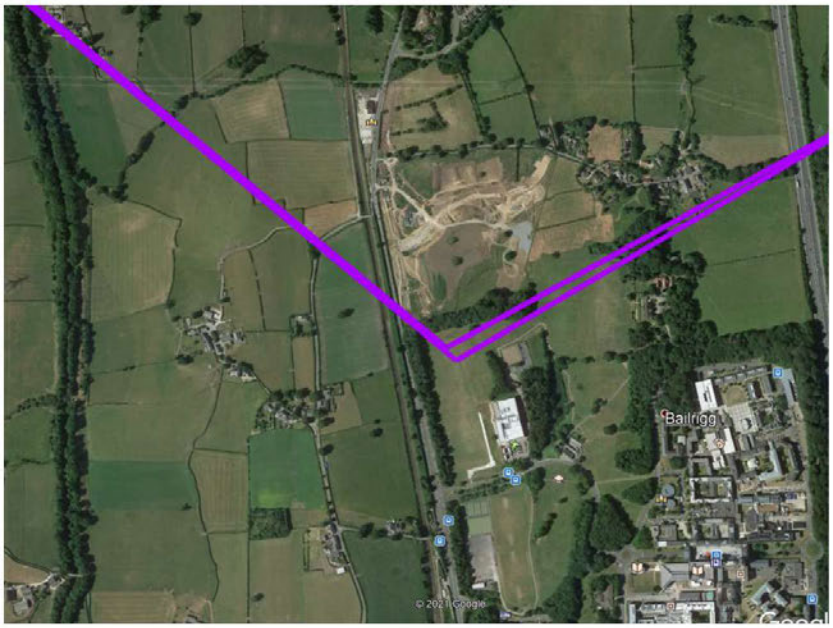
1

Lancaster South West N 54 02 28.98 W -2 48 18.94
NW Main Line



2

Lancaster University N 54 00 55.18 W -2 47 46.50
NW Main Line



ELECTRIC AVIATION

3

Lancaster North (Hest Bank) N 54 05 14.89 W -2 49 07.77
NW Main Line

ELECTRIC AVIATION

4

Furness Abbey N 54 07 58.25 W -3 11 23.07
Lancaster to Barrow Line

ELECTRIC AVIATION

5

Arnside Viaduct West N 54 12 21.80 W -2 50 48.36
Lancaster to Barrow Line

ELECTRIC AVIATION

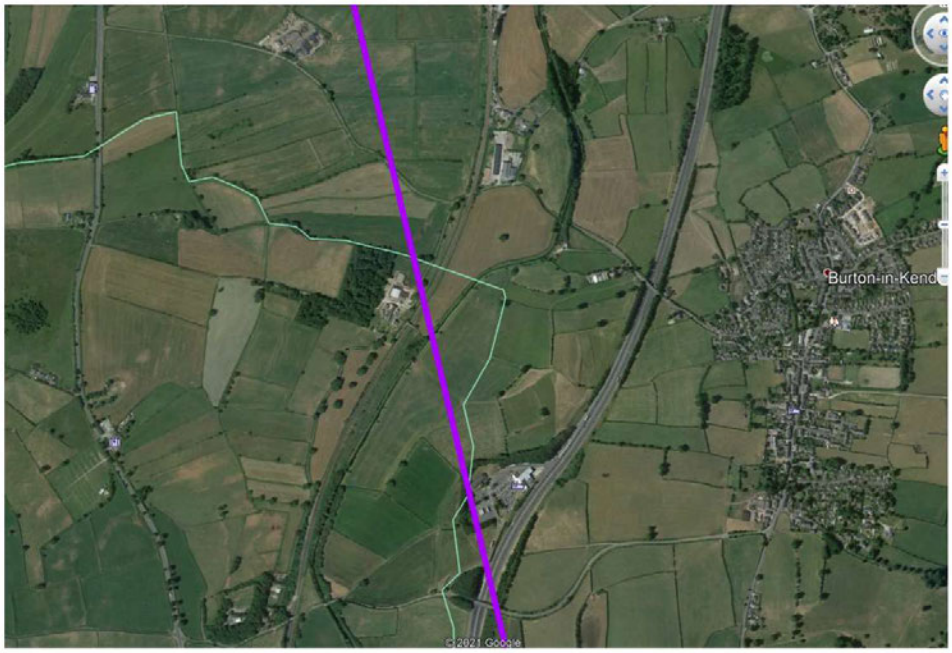
6

Holme North West N 54 12 50.58 W -2 44 39.79
NW Coast Main Line

ELECTRIC AVIATION

7

Burton In Kendal West N 54 11 02.06 -2 44 16.09
NW Coast Main Line



ELECTRIC AVIATION

8

Network Rail responded:

"In that case, as long as the aircraft is at a safe height as it transitions over the track and is at cruising speed and not transitioning from take-off to forward flight as it passes over the track I do not see a safety issue. As it will be flown in a TDA we will be able to work with that if we have the need to carry out our own UAS flights to inspect our assets. With this in mind, could we possibly be considered for a LoA so that we have a means to contact the controlling authority to gain access when you are not flying."

Electric Aviation responded by agreeing to submit a Letter of Agreement regarding granting access for Network Rail. We evidence this Letter of Agreement, which is with Network Rail for service.

Letter of Agreement between
Electric Aviation Limited and Network Rail
Regarding Temporary Danger Areas
for ACP-2021-022

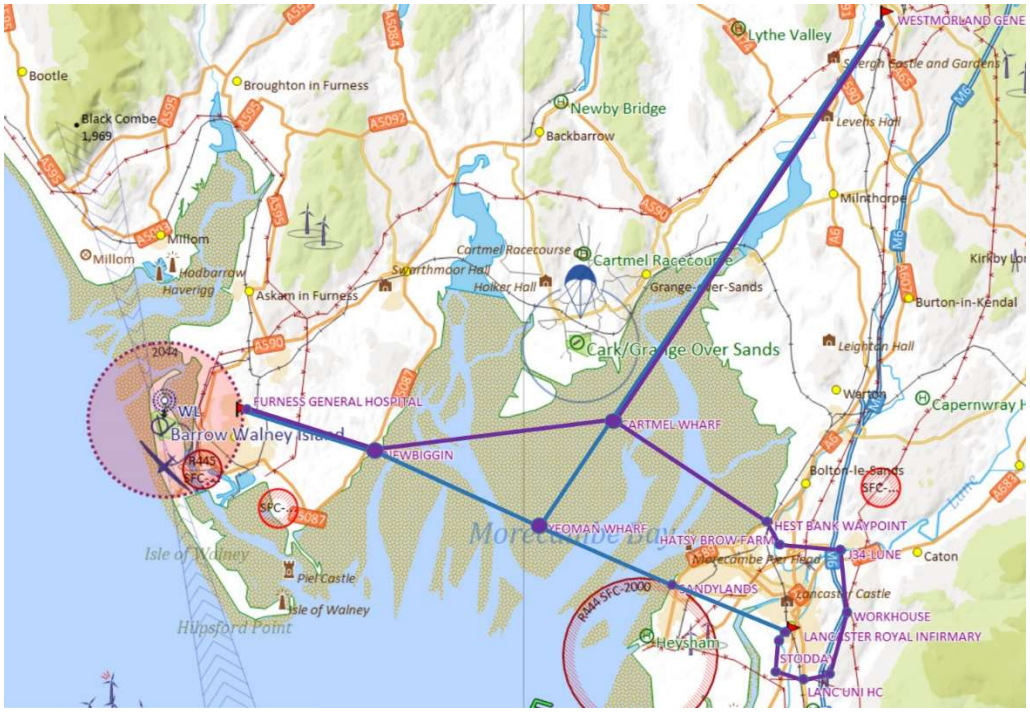
Network Rail operate both Uncrewed Aerial Vehicles and Rotary Aircraft in the vicinity of Network Rail infrastructure.

The overall principle of this Letter of Agreement (LOA) is to enable Network Rail access to the Temporary Danger Areas (TDAs) implemented under ACP-2021-022 and to de-conflict with Remotely Piloted Aircraft Systems operated for an on behalf of Electric Aviation Limited. Electric Aviation is the Danger Area Authority for the TDAs.

It is understood by both parties that access to the TDA by Network Rail aircraft and systems will be granted throughout the operation of the TDA subject to suitable prior notice. It is also noted that emergency services aircraft will always be given priority over RPA operations, which will be immediately suspended.

However, Network Rail aircraft captains or Pilots in Command of Uncrewed Aerial Vehicles must be content that they have sufficient information about TDA activity to allow them to penetrate the TDA safely. Electric Aviation Limited will ensure that effective communication systems are in place for Network Rail Aircraft Captains or Pilots in Command of Uncrewed Aerial Vehicles to seek clarification of the location of the RPAS operating within the TDA at any time.

The TDA complex routes, implemented under ACP-2021-022 are depicted in Figure 1 below, with lateral extents to 400' either side of the track and a vertical extent to 400' agl. The final routes will be confirmed between Network Rail and Electric Aviation as the Airspace Change Request proceeds. It is anticipated that the number of routes will decline in numbers before activation.



Agreed TDA access and deconfliction procedures

Electric Aviation Ltd will inform the Network Rail National Drone Operations department by e-mail of intended RPA operations by 1700L the previous day. This information will be forwarded by Network Rail Drone Operations department to the duty pilots operating in the area affected by the TDAs.

The Network Rail Drone Operations Department contact number has been added to the Skylift UAV Ltd Operations Manual (flying on behalf of Electric Aviation) and will be available to the remote pilots in SkyFleet (the remote pilot station).

Electric Aviation Ltd will provide Pre-Flight Information via a telephone number as per the NOTAM activating the TDAs. The number will be manned from 30 minutes before until 30 minutes after the notified hours of operation of the TDAs.

If a Network Rail aircraft requires access to an active TDA, Network Rail will call the notified Pre-Flight Information telephone number referenced above. Electric Aviation will provide the location of the RPA and request the position and intentions of the Network Rail aircraft.

The remote pilot will decide the best course of action to immediately de-conflict the RPA from the Network Rail aircraft: stay on the ground; continue to destination; return to take-off point, return to Rally Point and loiter or, worst-case, land at the Rally Point.

Once a decision has been made, the remote pilot will inform Network Rail of the RPA's intentions. When the RPA is on the ground, the TDA will be declared inactive and will remain inactive until such time as Network Rail positively confirms to Electric Aviation Ltd that their operations are complete and that their aircraft are clear of the TDA.

Electric Aviation Ltd and their remote pilots will maintain a listening watch on SAFETYCOM (135.480 MHz).

For conspicuity, the RPAS is equipped with ADS-B, a Mode S transponder, standard aircraft navigation lights and anti-collision beacons.

Signatories to the Letter of Agreement

Signature [redacted]

Name [redacted]

Signature [redacted]

1.21 National Grid

Electric Aviation Limited reached out to [redacted] at National Grid, who passed them on to Group Chief Engineer, [redacted] who then passed them on to [redacted] Asset Operations – Engineering Services, Condition Monitoring Manager, responsible for their UAS operations.

[redacted]

[redacted]

Drone Flight over National Grid Infrastructure

To [redacted]

You replied to this message on 16/07/2021 11:38.

Suggested Meetings + Get more apps

Hi Chris,

Many thanks for considering us in your stakeholder engagement. I am responsible for our UAV activities, and am happy to discuss this with you. Your suggestion in respect of the Temporary Danger Area seems eminently sensible to me, shall we arrange a call to discuss the details?

Regards,

[redacted]

A Teams call followed at 15:00 on the 22nd of July and the project was explained. National Grid were positive about the project and agreed to receive further information about the routes which was provided by Electric Aviation Limited as can be found overleaf:

Morecambe Bay TDA

Electric Aviation
for University Hospitals NHS Morecambe Bay

National Grid Crossing Points

chris@electric-airspace.com

1

We are currently working through the CAA Airspace Change Procedure to establish a Temporary Danger Area across Morecambe bay between Lancaster, Furness and Westmorland Hospitals. We are considering two routes shown in Purple and Blue below.
We have identified seven places where we overfly National Grid Pylons indicated as NG1-NG7
We would like to receive some feedback, advice re overflight and ideally agreement to create a Letter of Agreement between NG and EA such that we agree that should NG need access to the TDA when established for line inspection, that EA agree to facilitate this.

2

The pylons we might overfly are located at:

NG1	54° 1'9.88"N	- 2°48'16.51"W
NG2	54° 1'5.13"N	- 2°46'51.61"W
NG3	54° 2'18.67"N	- 2°45'28.30"W
NG4	54° 3'33.36"N	- 2°45'30.91"W
NG5	54° 4'48.91"N	- 2°47'32.97"W
NG6	54° 7'40.56"N	- 3° 9'56.79"W
NG7	54°17'25.68"N	2°44'1.32"W

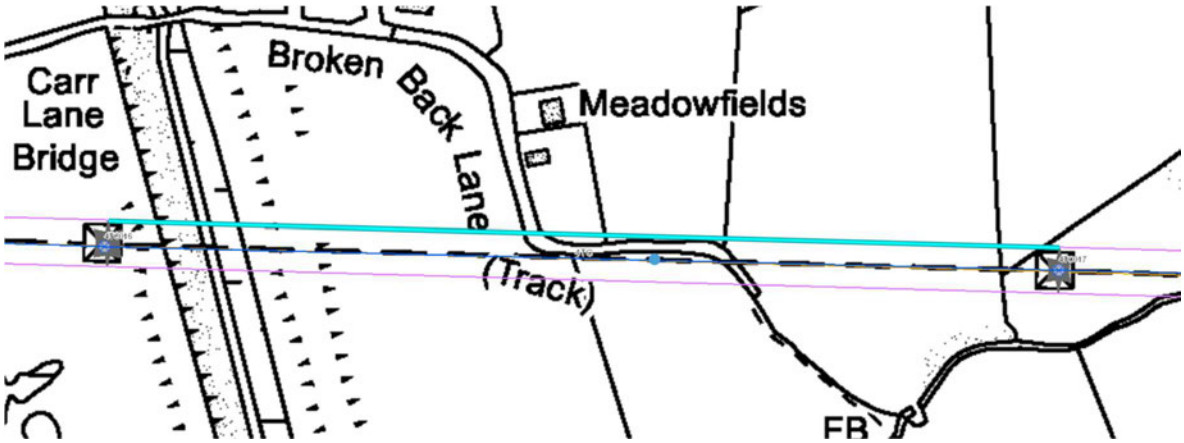
If there is anything that you can tell us re these pylons, such as type, height, numbers, etc
This would be really appreciated.

ELECTRIC AVIATION

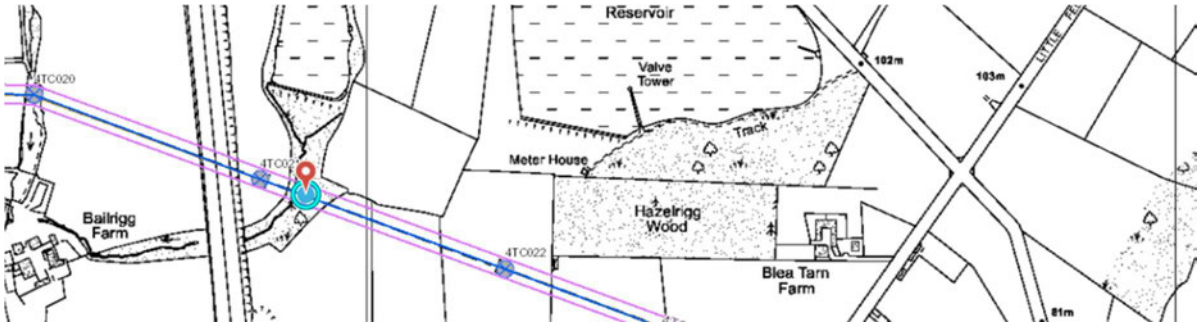
3

National Grid then responded with the following information:

NG1 – Coordinates cross between 4TC016 to the east and 4TC017 to the west.
The circuits involved are the Heysham – Hutton - Penwortham 1 & 2 north and south respectively. The towers will be around 55m AGL at the peak.

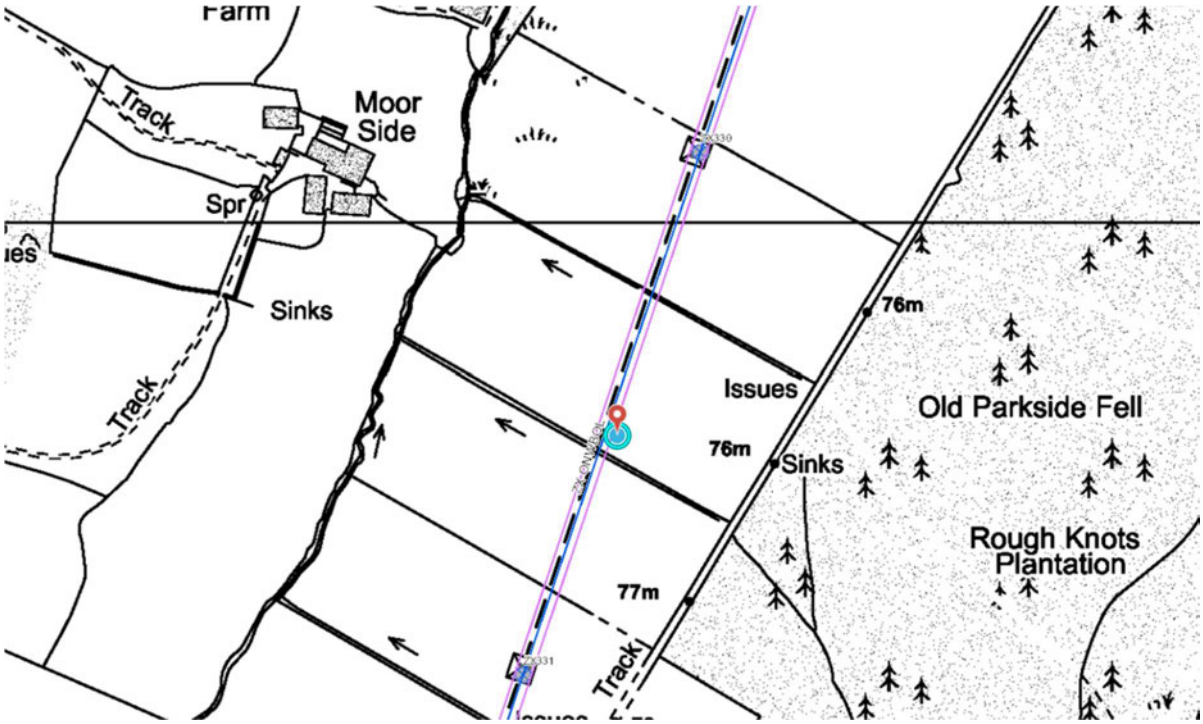


NG2 – this is 4TC021, circuit information same as above, tower height same as above



NG3 – This is the ZX Route, between towers ZX337 to the north and ZX338 to the south. The circuits are Heysham – Hutton – Penwortham 2 to the east and Heysham – Hutton Penwortham 1 to the west. These towers are a different design and could be slightly smaller but I'd still use 55m as the height.

NG4 – This is the ZX Route between ZX330 to the north and ZX331 to the south, the circuits are as NG3 and the tower heights will be 55m.



NG5, NG6 & NG7 – Not National Grid Assets, they belong to Electricity North West we believe.

I'm happy with a letter of agreement. Neither of these routes is on our inspection programme for this year, though they would be included in the annual, national IR patrol. That takes place between November and March so we'd need access at some point during that time.

Other than that, access would only be required in an emergency scenario. Have you got a draft Letter of Agreement with Network Rail? It would be good to understand the proposed procedure and run through it with our Helicopter Unit Chief Pilot as well.

The above email is evidenced as EMAIL

Electric Aviation have submitted a draft Letter of Agreement to National Grid for their service. A copy of which is shown overleaf.

Letter of Agreement between
Electric Aviation Limited and National Grid
Regarding Temporary Danger Areas
for ACP-2021-022

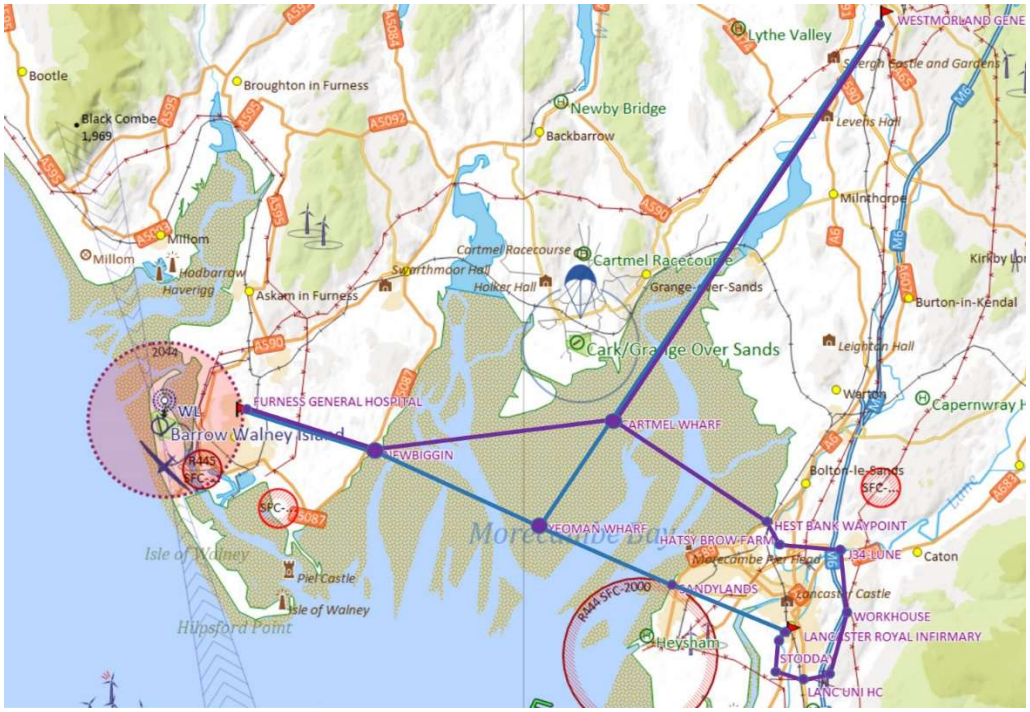
National Grid operate both Uncrewed Aerial Vehicles and Rotary Aircraft in the vicinity of National Grid infrastructure.

The overall principle of this Letter of Agreement (LOA) is to enable National Grid access to the Temporary Danger Areas (TDAs) implemented under ACP-2021-022 and to de-conflict with Remotely Piloted Aircraft Systems operated for an on behalf of Electric Aviation Limited. Electric Aviation is the Danger Area Authority for the TDAs.

It is understood by both parties that access to the TDA by National Grid aircraft and systems will be granted throughout the operation of the TDA subject to suitable prior notice. It is also noted that emergency services aircraft will always be given priority over RPA operations, which will be immediately suspended.

However, National Grid aircraft captains or Pilots in Command of Uncrewed Aerial Vehicles must be content that they have sufficient information about TDA activity to allow them to penetrate the TDA safely. Electric Aviation Limited will ensure that effective communication systems are in place for National Grid Aircraft Captains or Pilots in Command of Uncrewed Aerial Vehicles to seek clarification of the location of the RPAS operating within the TDA at any time.

The TDA complex routes, implemented under ACP-2021-022 are depicted in Figure 1 below, with lateral extents to 400' either side of the track and a vertical extent to 400' agl. The final routes will be confirmed between National Grid and Electric Aviation as the Airspace Change Request proceeds. It is anticipated that the number of routes will decline in numbers before activation.



Agreed TDA access and deconfliction procedures

Electric Aviation Ltd will inform the National Grid Asset Operations – Engineering Services department by e-mail of intended RPA operations by 1700L the previous day. This information will be forwarded by National Grid Asset Operations department to the duty pilots operating in the area affected by the TDAs.

The National Grid Asset Operations Department contact number has been added to the [redacted] UAV Ltd Operations Manual (flying on behalf of Electric Aviation) and will be available to the remote pilots in [redacted] (the remote pilot station).

Electric Aviation Ltd will provide Pre-Flight Information via a telephone number as per the NOTAM activating the TDAs. The number will be manned from 30 minutes before until 30 minutes after the notified hours of operation of the TDAs.

If a National Grid aircraft requires access to an active TDA, National Grid will call the notified Pre-Flight Information telephone number referenced above. Electric Aviation will provide the location of the RPA and request the position and intentions of the National Grid aircraft.

The remote pilot will decide the best course of action to immediately de-conflict the RPA from the National Grid aircraft: stay on the ground; continue to destination; return to take-off point, return to Rally Point and loiter or, worst-case, land at the Rally Point.

Once a decision has been made, the remote pilot will inform National Grid of the RPA's intentions. When the RPA is on the ground, the TDA will be declared inactive and will remain inactive until such time as National Grid positively confirms to Electric Aviation Ltd that their operations are complete and that their aircraft are clear of the TDA.

Electric Aviation Ltd and their remote pilots will maintain a listening watch on SAFETYCOM (135.480 MHz).

For conspicuity, the RPAS is equipped with ADS-B, a Mode S transponder, standard aircraft navigation lights and anti-collision beacons.

Signatories to the Letter of Agreement

Signature	[redacted]	Signature	
Name	[redacted]	[redacted]	[redacted]

1.20 Bay Search and Rescue

Since 1999 Bay Search and Rescue a volunteer team and charity based in Flookburgh, have been working away very quietly, but very hard, solving some of the problems faced by Rescuers when trying to safely navigate the unpredictable sands of Morecambe Bay. And then once navigated how to best extract those unfortunate men, women, children, animals and vehicles trapped by the notorious sands, before the next tide!

These logistic and technical rescue abilities are unique to the team, who over the last few years have made a great effort to share them with the rest of the rescue world, and have been published in 'Technical Rescue', an Internationally respected and renowned rescue services magazine, The Emergency Services Times, and presented to various Fire Services, USAR, Resilience Groups, SAR teams, Police Forces and in 2011 at the International Search and Rescue conference and the Military Search and Rescue Conference at RAF Valley.

Electric Aviation contacted Bay Search and Rescue as part of the stakeholder engagement as it was known they previously utilised hovercraft and it was assumed that they also operated drones.

Communication was established with [redacted] Manager and a meeting set up such that Bay Rescue would visit Electric Aviation. Evidenced through the email below:

Re: [External] Fwd: NHS Drones over Morecambe Bay

From [redacted] on 2021-06-28 18:08

Details Plain text

Hi Chris,
We would also like to meet up and run through plans, exchange ideas etc

I could come for a day time weekday meeting at your Burton office if you are free next week any days?

Thanks

[redacted]

During the meeting it was discussed how and when Bay Search and Rescue operate drones in support of their activities. It was agreed that a Letter of Agreement would be beneficial such that should Bay Search and Rescue be called out when the TDA is operational, that they may be able to operate their drones within the TDA airspace.

This LOA is evidenced at the end of this section and is with Bay Rescue for service.

During discussions with Bay Search and Rescue the subject of microlight aircraft came up. In correspondence with [redacted], he stated that:

In the last twelve months we have had just one call out to a microlight incident, which in the end turned out to be a rather acrobatic desert onto the shore we think near Silverdale. However it was reported to the Police and CG by a member of the public as an out of control microlight which had crashed in the trees near far Arnside.

This initiated a full scale search over about three hours until another member of the public produced some video footage of him actually landing safely.

Now and again we get them landing on the shore around the bay normally near a pub and then taking off again, but these numbers are limited to around one or two a year that we get to know about.

I would strongly advice that they shouldn't attempt to land on the sands, without having walked the landing area first to make sure it's hard enough.

A copy of the Letter of Agreement which is with Bay Rescue for service is now presented.

Letter of Agreement between
Electric Aviation Limited and the Bay Search & Rescue
Regarding Temporary Danger Areas
for ACP-2021-022

Bay Search and Rescue are a charity organisation (Registered Charity No: 1090880)

Electric Aviation Limited are a technology development company focused on flying Remote Piloted Aircraft Systems.

Both organisations operate RPAS systems.

- Electric Aviation for and on behalf of University Morecambe Bay NHS Foundation Trust as well as commercially for other clients.
- Bay Rescue operate RPAS as part of their Search and Rescue operations.

The overall principle of this Letter of Agreement (LOA) is to enable Bay Search and Rescue RPAS access to the Temporary Danger Areas (TDAs) implemented under ACP-2021-022 and to deconflict with Electric Aviation Remotely Piloted Aircraft Systems (RPAS) operated by Skylift UAV Ltd in the TDAs.

Electric Aviation Ltd is the Danger Area Authority for the TDAs.

The TDA complex implemented under ACP-2021-022 is depicted in Figure 1 below, as being some or all of the routes indicated with TDA dimensions of width 400' either side of track and height 400' agl. Across all routes the maximum elevation is 505' giving a total max altitude of 905' amsl. The final routes chosen and approved will be notified to Bay Search and Rescue at a later date but prior to flight operations.

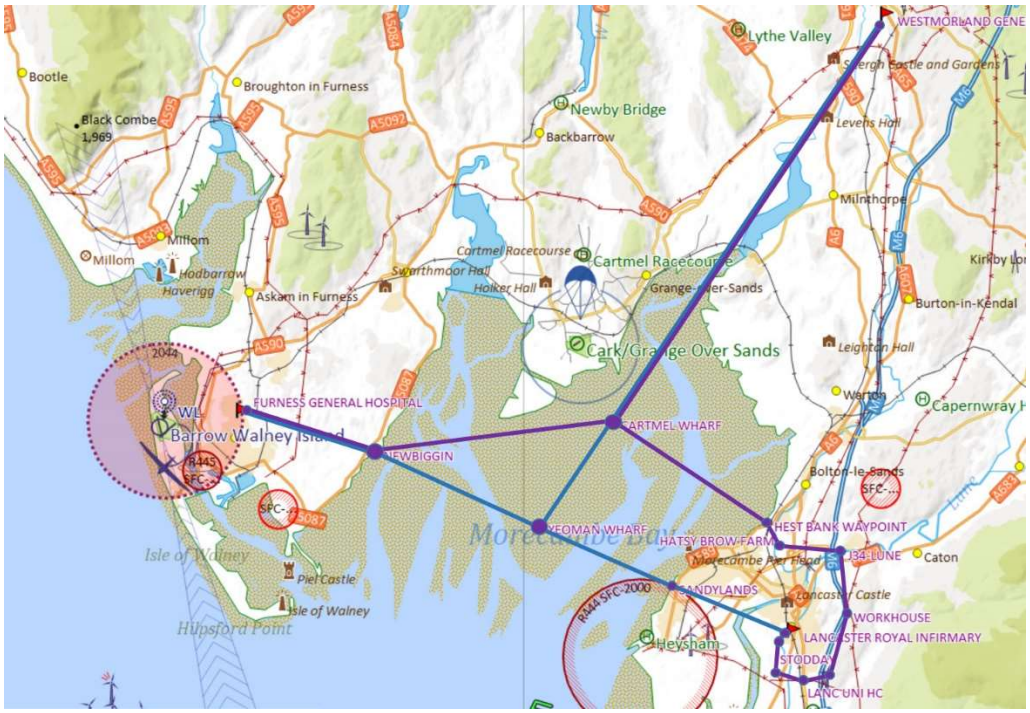


Figure 1: The proposed routes for ACP-2021-22

Reproduced with the permissions of SkyDemon.

[redacted]

[redacted]

[redacted] [redacted]

[redacted] [redacted]

[redacted] [redacted]

[redacted] [redacted]

[redacted] [redacted]

[redacted] [redacted] [redacted]

[redacted] [redacted]

[redacted] [redacted]

[redacted] [redacted] and anti-collision beacons

[redacted]

Signature	Signature [redacted]
Name	Name [redacted]
Date 20/08/21	Date

Position [redacted] iation Limited
[redacted] Stables Block,
[redacted] l Business Centre,
[redacted] e,
[redacted] Kendal

1.23 EDF

Heysham nuclear power station is operated by EDF Energy in Heysham, Lancashire, England. The site is divided into two separately-managed nuclear power stations, Heysham 1 and Heysham 2, both with two reactors of the advanced gas-cooled reactor (AGR) type. The EDF Heysham Site is surrounded and protected by Restricted Zone R444.

The AIS entry for R444 depicts is a circle, 2 NM radius, centred at 540147N 0025452W with an upper limit: 2000 FT ALT and a Lower limit: SFC. Flight permitted for the purpose of landing at or taking off from the helicopter landing area at Heysham, with the permission of the person in charge of the installation and in accordance with any conditions to which that permission is subject.

Electric Aviation reached out to the security contacts provided by the ACP appointed Airspace Regulator for Airspace, ATM & Aerodromes, but such contacts initially proved very negative and then went silent when followed up with.

Electric Aviation made contact with the CEO of EDF's office. [redacted] Managing Director for Generation commented on the 13th of August at 13:32:

Thank you for your letter of 21 July to [redacted] which has been passed to Matt. Matt wanted to let you know we are in the process of stepping through it to see if we can accommodate and will be touch in a couple of weeks.

We evidence this email below:

Fri 13/08/2021 13:32

[redacted]

To Chris@ChrisCrockford.com

You replied to this message on 22/08/2021 17:12.

[redacted]

Thank you for your letter of 21 July to Simone Rossi which has been passed to Matt.

Matt wanted to let you know we are in the process of stepping through it to see if we can accommodate and will be touch in a couple of weeks.

Kind regards

[redacted]

EDF Energy

edfenergy.com

Proud sponsors of Prostate Cancer UK
prostatecanceruk.org

Since this email Electric Aviation Limited have visited Heysham Power Startion and discussed a proposal for routing RPAS vehicles through R444 such that they may climb to 1500' agl to overfly the small number of properties at Sandylands in Morecambe, before descending down within R444, over the sea to the proposed cruising height of 250' agl, before continuing their onward journey over the bay.

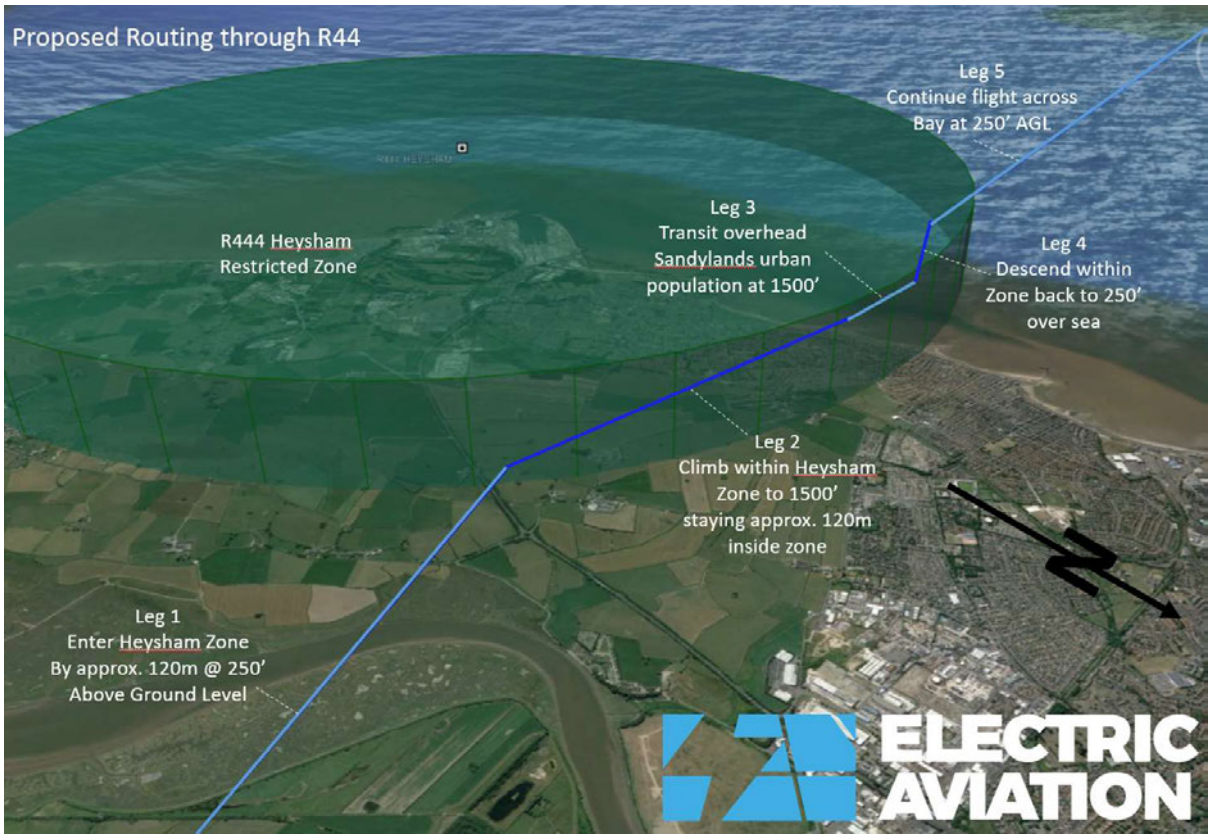
The illustration below was used as an engagement tool to propose the routing to the Heysham EDF staff.

The discussions were fruitful with EDF agreeing to pursue how they might support the initiative internally. It was stated from the outset, by EDF, that any such operations would have to be conducted in accordance with Office for Nuclear Regulations. (ONR). The ONR's mission is to protect society by securing safe nuclear operations.

It was discussed that there was support from EDF for the Morecambe Bay RPAS Transit Route at board level.

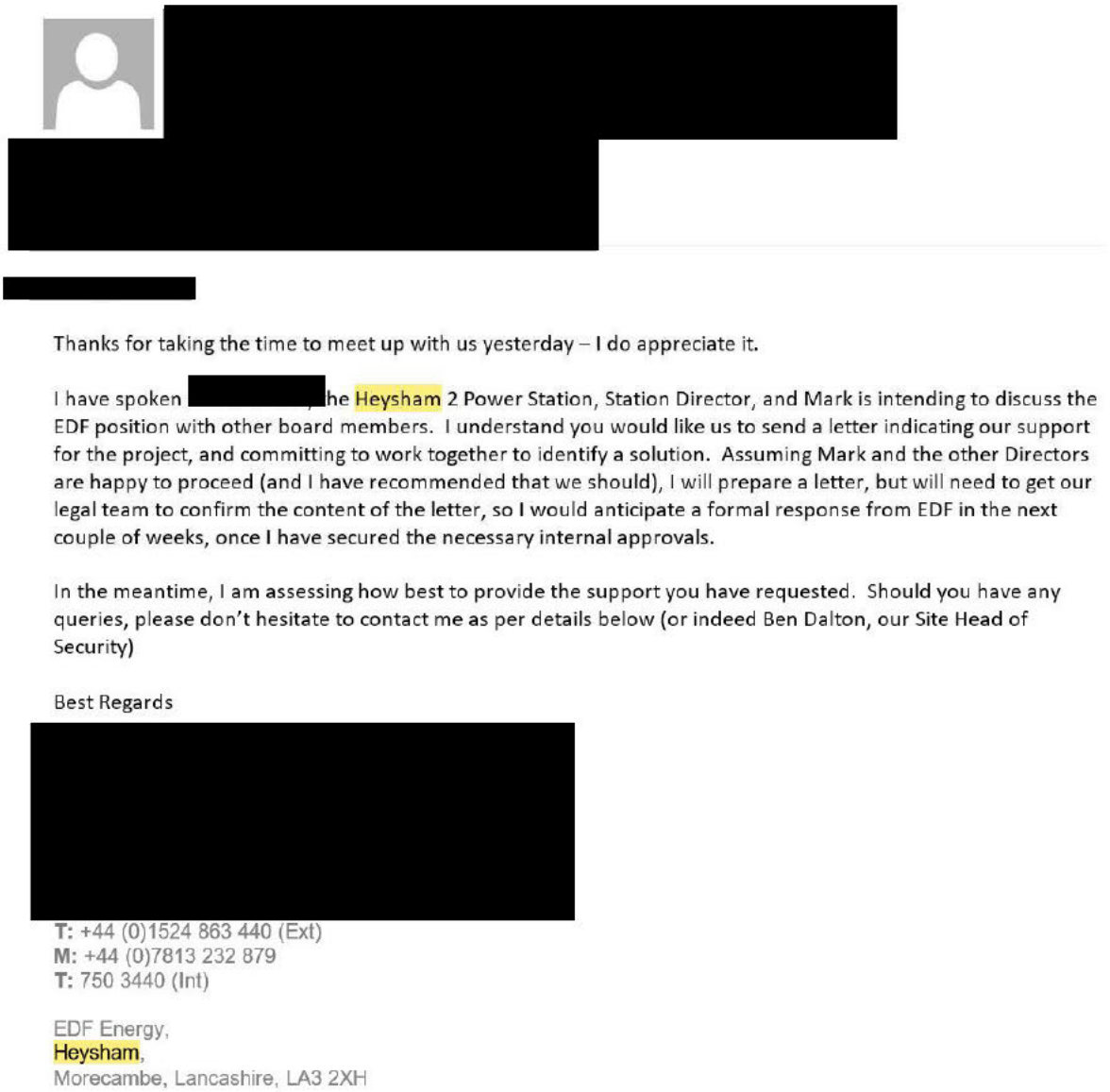
It was thus proposed that Electric Aviation submit an appropriate routing to the CAA's Airspace Regulation team for discussion and should this be deemed favourable, then EDF will work to align the nuclear regulatory piece with the CAA's airspace piece.

Electric Aviation realise that currently a Request for Exemption from the Air Navigation Regulation (Restriction of Flying) (Nuclear Installations) 2016 form will be required for each sortie flown through R444.



At the time of submission Electric Aviation are continuing conversations and both parties have agreed to work together upon indication from the CAA that the proposed routing through R444 is an acceptable proposal.

We evidence this with the following email from EDF:



[redacted]

Thanks for taking the time to meet up with us yesterday – I do appreciate it.

I have spoken [redacted] the Heysham 2 Power Station, Station Director, and Mark is intending to discuss the EDF position with other board members. I understand you would like us to send a letter indicating our support for the project, and committing to work together to identify a solution. Assuming Mark and the other Directors are happy to proceed (and I have recommended that we should), I will prepare a letter, but will need to get our legal team to confirm the content of the letter, so I would anticipate a formal response from EDF in the next couple of weeks, once I have secured the necessary internal approvals.

In the meantime, I am assessing how best to provide the support you have requested. Should you have any queries, please don't hesitate to contact me as per details below (or indeed Ben Dalton, our Site Head of Security)

Best Regards

[redacted]

T: +44 (0)1524 863 440 (Ext)
M: +44 (0)7813 232 879
T: 750 3440 (Int)

EDF Energy,
Heysham,
Morecambe, Lancashire, LA3 2XH

Electric Aviation believe that the utilisation of R444, to climb to height makes logical sense as it does not require any additional airspace change, whilst permitting the RPAS to transit through the restricted zone, effectively using segregated airspace to reduce the environmental factors of the RPAS passing over people's houses, contemporaneously reducing risk and allowing the RPAS to glide clear should it be subject to both primary and secondary power-plant failure.

The Government's Air Navigation Guidance states that below 7,000 feet is the maximum height at which noise is a priority for consideration, thus we believe that utilising R444 will be a Level 0 change that goes a long way to furthering UAS operations in urban environments, respecting the residents right to peace and quiet overhead.

It should also be noted that Electric Aviation also realise that creating policy with EDF in line with the ONR's methodology may well take considerable time and resources, but that such effort may well lead to policy change to support UAS operations in restricted airspace near to nuclear facilities and with their blessing.

1.24 Gliders

As a result of the NATMAC mailing campaign at the beginning of the Stakeholder Engagement phase, Electric Aviation Limited received a response from Peter Stratten of the British Gliding Association on the 6th of July at 10:53 via email:

RE: Morecambe Bay TDA - Stakeholder Engagement

From [redacted] on 2021-07-06 10:53

Details

Thanks for your engagement.
The BGA believes that TDA's are a blunt and unsustainable response to the operating needs of BVLOS RPAS and integration with other airspace users.
In respect of this proposed TDA, we ask that you engage directly with the gliding club that operates at the nearby Walney airfield to establish operating protocols that do not negatively impact their operations.

[redacted]

[redacted]

As part of the discussions with BAe Systems Submarines at Walney Island (See section 1.12) Lakes Gliding Club, who operate at the weekends out of Walney had been mooted as a potential Gliding stakeholder.

On Thursday the 22nd of July at 21:46, Electric Aviation Limited wrote to Lakes Gliding Club and informed them of the Stakeholder Engagement process for this airspace change and invited them to comment.

[redacted] secretary replied on the 29th of July 2021 at 08:57 asking subsequent questions:

Re: Fwd: RE: Morecambe Bay TDA - Stakeholder Engagement

From Roger Copley on 2021-07-29 08:57

Details Plain text

[redacted]

Thankyou for your information.

Can you advise as to how often you might operate at weekends, as we run a weekend only activity at the Lakes Gliding Club.

Out of interest, do you decelerate the drone at cruise height and then land vertically?
Is the hospital airspace a 300ft radius circle centred on the hospital helipad up to 400ft AGL.

This being the case, I doubt whether you will have any impact on our activities (no pun intended). Assuming Furness General is approx. 100ft AMSL your max altitude will be well below our aerotow flight envelope.

Are there any intentions to run north to Carlisle hospital if the trial is a success?

[redacted]

These were then replied to by Electric Aviation on the 29th July 2021 at 10:54. The LGC secretary then concluded a further email of the 5th of August 2021 at 11:56 during which he wrote:

Thank you for your comprehensive communique. After circulating this and subsequent discussions, we have no strong objections to your proposals, but we would be grateful if you would furnish us with an LOA to cover the potential future option of weekend drone flight operations.

Again I'm sure our activities can co-exist without problem but in the interest of situational awareness we think this a good idea.

We have subsequently sent LGC a Letter of Agreement, agreeing to inform them in advance of any weekend hours operations. This letter is evidenced overleaf:

This was perhaps one of the most professional exchanges during the stakeholder engagement phase, showing how from NATMAC local stakeholders were identified and suitable mitigation of airspace operations was effected.

This was in stark contrast to the Microlight pilots and their scattergun approach.

Letter of Agreement between Electric Aviation Limited and Lakes Gliding Club Regarding Temporary Danger Areas for ACP-2021-022

Lakes Gliding Club operate from Walney Island Aerodrome and provide glider flight operations from Walney Island Aerodrome and the surround airspace.

Electric Aviation Limited seek to operate Remotely Piloted Aircraft Systems across Morecambe Bay on behalf of University Morecambe Bay Hospital NHS Trust.

Electric Aviation and Lakes Gliding Club are hereafter referred to as the parties:

The overall principle of this Letter of Agreement (LOA) is to enable safe and de-conflicted operations of the Electric Aviation Limited, Remote Piloted Aircraft Systems from gliders operated by Lakes Gliding Club in and around the Aerodrome Traffic Zone at Walney Island.

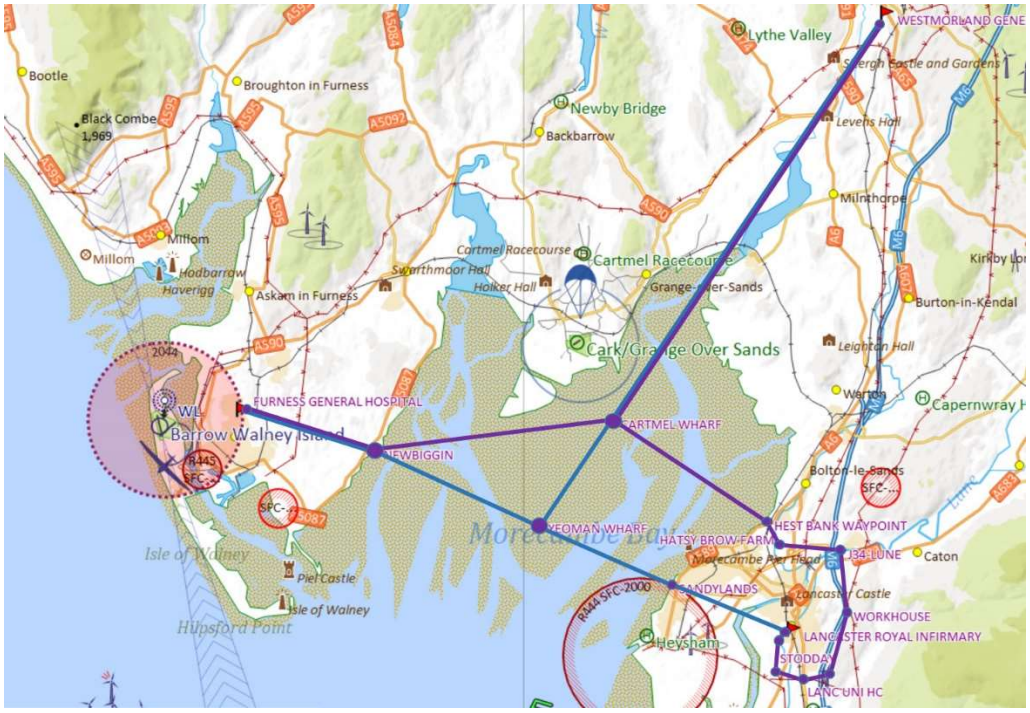
It is understood by both parties that access to the TDA by Lakes Gliding Club aircraft will be granted throughout the operation of the TDA subject to suitable prior notice. It is also noted that emergency services aircraft will always be given priority over RPA operations, which will be immediately suspended.

However, Lakes Gliding Club aircraft captains must be content that they have sufficient information about TDA activity to allow them to penetrate the TDA safely.

Lakes Gliding Club operate solely at the weekends and Electric Aviation's RPAS operations are planned to operate weekdays only. However, should Electric Aviation need to deploy RPAS operations at the weekend, Electric Aviation Limited will ensure that effective communication systems are in place for Lakes Gliding Club to seek clarification of the location of the RPAS operating within the TDA at any time.

The TDA complex routes, implemented under ACP-2021-022 are depicted in Figure 1 below, with lateral extents to 400' either side of the track and a vertical extent to 400' agl.

The final routes will be confirmed between Lakes Gliding Club and Electric Aviation as the Airspace Change Request proceeds. It is anticipated that the number of routes depicted below will decline in numbers as the final route is agreed upon.



Agreed TDA access and deconfliction procedures

Should Electric Aviation Limited need to operate the RPAS at a weekend where Lakes Gliding Club may be operational, Electric Aviation Ltd will inform Lakes Gliding Club by e-mail of intended RPA operations by 1700L the previous day.

The Lakes Gliding Clube contact number has been added to the Skylift UAV Ltd Operations Manual (flying on behalf of Electric Aviation) and will be available to the remote pilots in SkyFleet (the remote pilot station) should weekend sorties be required.

Electric Aviation Ltd will provide Pre-Flight Information via a telephone number as per the NOTAM activating the TDAs. The number will be manned from 30 minutes before until 30 minutes after the notified hours of operation of the TDAs.

If a Lakes Gliding Club aircraft requires access to an active TDA, Lakes Gliding Club will call the notified Pre-Flight Information telephone number referenced above. Electric Aviation will provide the location of the RPA and request the position and intentions of the Walney Island Aerodrome aircraft.

The remote pilot will decide the best course of action to immediately de-conflict the RPA from the Walney Island Aerodrome aircraft: stay on the ground; continue to destination; return to take-off point, return to Rally Point and loiter or, worst-case, land at the Rally Point.

Once a decision has been made, the remote pilot will inform Lakes Gliding Club of the RPA's intentions. When the RPA is on the ground, the TDA will be declared inactive and will remain inactive until such time as Lakes Gliding Club aircraft positively confirms to Electric Aviation Ltd that their operations are complete and that their aircraft are clear of the TDA.

Electric Aviation Ltd and their remote pilots will maintain a listening watch on SAFETYCOM (135.480 MHz) as well as active communications with Walney Island Aerodrome on 123.205 MHz

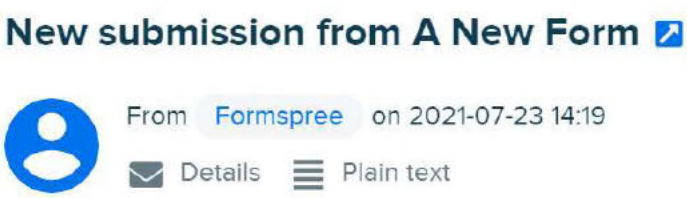
For conspicuity, the RPAS is equipped with ADS-B, a Mode S transponder, standard aircraft navigation lights and anti-collision beacons.

Signatories to the Letter of Agreement

Signature	[redacted]	Signature
Name Date Position	[redacted]	

1.25 Paragliders and Paramotors

Our first correspondence with the Paraglider community was on the 23rd of July 2021 at 14:19 when [redacted] wrote through the portal:



New form submission

Someone just submitted a form using formspree.io. Woo!

[redacted]

message

Hi,

I am a Sites Officer for the CUMBRIA SOARING CLUB flying paragliders.
Several of your routes appear to pass close to Humphrey Head at Map Ref NY392732.
This is one of our flying sites, see
http://www.cumbriasoaringclub.co.uk/SiteManagement/CSC_Specific_Site.php?site=HYH
pleae could you let me know the distance between your flight corridor and Humphrey Head?
Kind regards,

[redacted]

Electric Aviation responded to this accordingly:

Re: New submission from A New Form

[redacted]

Details Plain text

[redacted]

Thanks for getting in touch. I regularly walk in the area of Humphrey Head, Arnside etc and have seen many paragliders about, so it is incredibly important for us to establish communications with you guys.

We are in the stakeholder engagement phase at the moment and your input is really appreciated, not to mention important.

I have looked at the proposed distance from Humphrey Head as asked and from our measurements we conclude that we are 1400m away from the point at Humphrey Head. Is this enough for your colleagues? This is illustrated below.

Please do let me know your thoughts and if you know of any other paragliders that we should be engaging with around the bay, please do let us know.

I will conclude by saying that the TDA is proposed to be in operation between November and February and is designed to be operated during weekday working hours predominantly, as such we believe this to be the most opportune time to fly without inconveniencing other airspace users.

With Best Regards.

[redacted]

ELECTRIC AVIATION LTD.

We also received communications from [redacted] who provided us with some excellent route choice feedback from a paragliding perspective.

New submission from A New Form

From Formspree on 2021-07-30 15:04

Details Plain text

New form submission

Someone just submitted a form using formspree.io. Woo!

[redacted]

message

I'm a local paraglider pilot.

I really don't like your purple route 4 as it's through an area we would sometimes be flying low / landing in (following downwind flights from the Dales and Bowland Fells).

The scheduling of your flights (most days and at differing times) would mean in practice we'd end up treating any corridor as a full time no-go area.

Your blue route, though still a compromise, is much more preferable.

Submitted 02:04 PM - 30 July 2021

Mark as spam

We took on board [redacted] comments and relied this to him. He responded in a later email:

[redacted]

As paragliders we fly all over the place because we're following the available natual lift. Our flights are always over land (with the exception of short crossings e.g. over the Kent Estuary for example), but we'd never choose to fly low over water. So the more you can minimise the length of your corridor over land the better. A single route that roughly follows the estuary up to Kendal would minimise the drone's path over land and so would cause us the least concern.

I understand a fellow paraglider pilot, Ed Cleasby, is seeing you soon. He's got great experience and judgement. I'll leave you to speak to him for now.

Cheers, [redacted]

At around the same time we had emailed all the paragliding clubs in the local area, as we had not heard back from the BHPA at this point in time. This action paid dividends as a local paraglider, [redacted] a lot of experience of the local area came forward,

From Ed Cleasby on 2021-07-28 18:37

Details Plain text

[redacted]

[redacted] passed on your message re drone operating routes.

If I can be of any help let me know and I'll be happy to assist. Briefly, I have 40 years of flying (power and unpowered) and a lot of that in the South Lakes. I used to regularly cross the Bay when I was living in Furness but instructing on east side of the Bay. I write, do talks and have a role in organising flying events. I'm a member of both the Cumbrian and Dales clubs, Advance Pilot rated and a senior coach.

You can get some background via my website.

[redacted]

Anyway, if I can help, let me know.

[redacted]

Electric Aviation responded favourably to his offer of help (something never forthcoming from the microlight fraternity). [redacted] reviewed the web portal and responded:

Re: Drone

From Ed Cleasby on 2021-07-29 09:54

Details Plain text

[redacted] had good look over the proposals and can't see any real issues from the free fliers point of view. It may be useful for you to be aware of all sites in or near the proposed TDA's. All these sites are fully detailed out and online, we can provide details of their levels of use and area of operation. For each we use the CANP system midweek to inform other air users (notably the military). Although some lie adjacent to the proposed TDA's it would really have any impact on us. If classified as a D area it would - as we'd be on breach of Air Law ...if we entered say on take off or landing approach when active. We could look at the possible three sites effected but at first glance it looks OK.

I'm happy to chat and provide background but I'd need to pass this on to the Chairperson of the three controlling Club's (Cumbria, Dales and Pennine) for consideration. It really only effects Cumbria ...but the others sit on our National exec ....one [redacted] UK Sites Officer.

Whilst I see very few problems and looks a good idea I guess one growing issue with the use of drones from our (safety/access) perspective is they are springing up everywhere. One only has to look at what Amazon and other retailers are proposing. Currently, we have fought off the LBA ext ....but I foresee the proliferation of drone use having the potential to seriously curtail our flying.

All that said ... your proposal is one I'd personally support.

I live in Ingleton and can best be reached on my home number. 01524242202

I tend to be in and out depending on the weather and work. But you'll catch me most of the time.

Regards
Ed

A follow up call was planned and undertaken with the following summary information being noted by Electric Aviation Limited.

There are two main paragliding clubs in the region:

- Cumbria Soaring Club (Richard Jennings Sec.)
- Yorkshire Dales Club (Martin Baxter)

In the middle, east of the M6 there is a swathe of land running to Settle where Mr Dean Crosby runs ActiveEdge, an unaffiliated school. In [redacted] personal opinion there was little to impact paragliding in the local area with the routes mainly clearing the sites of Farleton Moss and Bridsteer. [redacted] Electric Aviation understand a lot more about the sport and also the local go to people in the area.

Post the NATMAC distribution list mail out, [redacted], BHPA Senior Technical Officer emailed on 2021-08-03 16:44 to say that:

Thank you for your email. I forwarded your information to various clubs and schools in the vicinity that may be affected by the proposals. The Cumbria Soaring Club and the Pennine Soaring Club manage flying sites that may be affected by a TDA. There are three schools that train beginners to fly, who may also be affected. The BHPA does not hold details on the location of every site used by its members.

This was followed by a statement regarding general information on hang gliders and paragliders. We evidence this email below.

From [redacted] on 2021-08-03 16:44

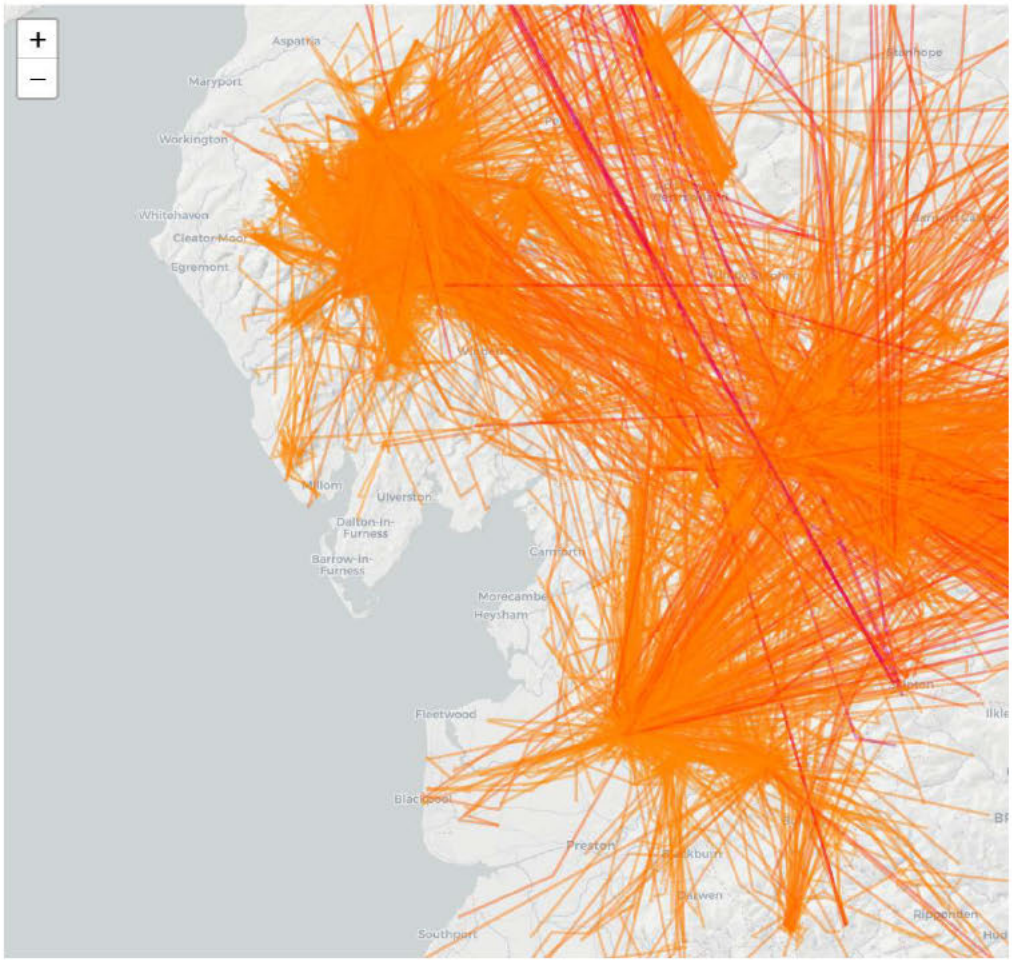
Details Plain text

[redacted]

Thank you for your email. I forwarded your information to various clubs and schools in the vicinity that may be affected by the proposals.

The Cumbria Soaring Club and the Pennine Soaring Club manage flying sites that may be affected by a TDA. There are three schools that train beginners to fly, who may also be affected. The BHPA does not hold details on the location of every site used by its members.

Post the call with [redacted] and the contact with the BHPA, further correspondence was entered into with [redacted], Sites Officer for the Cumbria. Working with [redacted], Electric Aviation were able to access Hilltop Analytics Wingman[1] online visualisation tool, which allowed Electric Aviation to plot the recorded flights of paragliders for the last ten years.



[1] http://apps.hilltop-analytics.com/wingman/

Of note is that, obviously paragliders do not cross Morecambe Bay, but they do operate from around the south of Kendal, where Westmorland General Hospital is located, thus care must be taken to ensure that routing consideration is paid to Cumbria Soaring Club launch sites.

The engagement with the paragliding community was excellent and Electric Aviation are grateful to the members of the Cumbria Soaring Club who took time to explain the nuances of their sport.

We have conducted research to find out the activity levels of Paramotors in the area as we had witnessed their operation first hand around the Warton Crag area at the top of Morecambe Bay.

There are no clubs operating in the Lancashire area at the moment. Individual paramotors do exist but post a fatal accident on Saturday 22nd October 2016 in a field at Piling, Lancashire, structured activity is non-existent.

1.26 Hot Air Balloons

Despite contacting the British Balloon and Airship Club through the NATMAC list, we received no response.

We did however, on the 23rd of July 2021 at 21:26 receive the following submission:

New form submission

Someone just submitted a form using formspree.io. Woo!

name

[redacted]

message

As a recreational hot air balloon pilot living and flying in South Cumbria I an concerned that there has apparently been no contact from you with the North West Balloon and Airship Club, the regional component of the British Balloon and Airship Club. I only found out about your 'consultation period' in the July issue of Pilot Magazine.
I have been tasked by the NWBAC to approach other light aviation groups in the area to discover their views on your proposal.
Please will you let me know which such groups have been approached or have commented on this 'temporary' airspace proposal.
Thanks

[redacted]

Submitted 08:26 PM - 23 July 2021

Mark as spam

Formspree

We subsequently replied on the 24th of July, 2021 at 12:36

Subject: Re: New submission from A New Form

Date:2021-07-24 12:36

[redacted]

[redacted] for your taking the time out to contribute to the comments portal on the website at www.morecambebaydrones.com.

As a local resident and GA pilot I regularly see Hot air balloons out and your timing of communications is perfect.

Mike Gunston was contacted at The British Balloon and Airship Club, as he is the dedicated contact detailed on the NATMAC list. Mike was contacted on the 27th of June but as such we have not heard anything back from him. As three weeks have thus passed, Hot Air Balloon clubs, rather than their association bodies are down to be contacted directly.

We welcome all comments on the proposed airspace change from NWBAC and if there are other clubs that you think we should be engaging with, please do let us know.

As to the other groups we have engaged with to date, these include:

- Numerous microlight clubs and individuals in the Area
- Cark and Cockerham Parachuting sites
- Gliding clubs at Walney
- Model Aircraft Clubs in the Bay Area
- Paragliding clubs in the Bay Area
- Other Drone operators such as BAe and Bay Rescue
- Flying schools at Blackpool and Carlisle
- Kite flying clubs in the Bay Area
- BAe at Warton and Barrow

Once again, if there are other aviation groups that you believe we should engage with, that we have not covered on the above list then, please do let us know and we will happily engage.

The TDA is for a three month period November '21 through to February '22 and we are consulting with other airspace users such that we can erect segregated airspace in a manner that has the least effect on airspace users in the Bay area. Our TDA's are planned to rise to 400' agl and have a width of 800'.

From my observation of Hot Air Balloon activities in the local area - and please remember I am a GA pilot with zero balloon operations experience, I would suspect that

Purple Route 4 as detailed at the bottom of Morecambebaydrones.com may be the route that might cause issues for balloons that I have seen operating in that area.

We would welcome any thoughts on how to collaborate - bearing in mind the weather window of November through February, such that we could find a way to automatically grant your balloons access to the TDA routes, such that should they be flying over winter in the region there would be a collaborative solution.

We have ADSB on the aircraft as well as Mode S, we also operate with AG Radio and we are looking to operate a DACS service, however, with no Ballooning experience, I have no idea if you operate with a radio etc.

For other airspace operators, such as the drone teams from National Grid and Network Rail we have arranged Letters of Agreement with them, such that if they need to transit through the TDA corridors, they can do this with prior notification to us. We also have similar operational arrangements with NPAS and the HEMS services such that our TDA's do not hamper their operations. We would be keen to explore how a collaborative solution can be achieved with the Ballooning community.

Should you have any further questions, or can help us with the above, please do not hesitate to contact me.

With Best Regards,

[redacted]

ELECTRIC AIRSPACE LTD.

On the 9th of August at 08:44 we received the following submission from the North West Balloon & Airship Club Committee:

New form submission

Someone just submitted a form using formspree.io. Woo!

name

North West Balloon & Airship Club

[redacted]

On your Proposal and Website you are "actively seeking our thoughts and views" and "appreciating our feedback" so please accept this feedback from the North West Balloon and Airship Club.

As users of the airspace in question we are surprised not to have been consulted directly, as promised in your literature. We do form a part of the wider GA community operating in the vicinity of the proposed changes. As a result we are very close to the end of the engagement period and our submission is necessarily short as we are unable to spend more time assessing it.

We wish to start by registering our support for the NHS, and appreciate these efforts to increase efficiency of operations. However, there is insufficient information available to

enable us to determine the extent of potential impact on the safe operation of our members who use the class G airspace in which the drones are intended to operate. A drone related accident would certainly not be to the benefit of either the NHS or our members. We have attached a series of questions that would enable us to better understand the potential impacts of your proposal on our activities. We also explain some of the principles of operating a hot air balloon, and suggest how the airspace might be shared by drones and balloons without detriment to either. Nonetheless, we give notice of our objections, unless and until we can be assured that our members will still be able to fly safely and at will in the area.

We are regular and active users of the overland portions of the airspace, from Lancaster to Kendal and across the S Lakes and your TDAs will have a significant and detrimental impact on our operations. Unlike much of the GA community we do not take off and land at fixed, known locations (airfields), meaning that we can be in take-off or landing phase (ie below 500ft) at almost any location.

Please remember that , unlike powered aircraft, we are at the mercy of the wind and weather and can only dictate our route and landing areas to a limited extent, by changing the altitude to find different wind directions (if available). We can and will operate below 400ft for steerage and landing. Most of our available landing zones in this area are close to your proposed routes. This means your routes will effectively lead to us being unable to operate if we are required to avoid them. We fly VFR and do not carry electronic means of transmitting our position or identity nor do we carry electronic means to receive such transmissions from other airspace users. Most pilots carry a handheld airband radio which has limited range, but when flying in class G airspace even this is not mandatory. The rules of the air state that powered aircraft must give way to balloons, but we are concerned that the drones would not be able to comply with this directive (see queries attached).

In addition our balloons are large and fragile and even a small drone can penetrate the envelope with potentially fatal consequences. There are professional commercial pilots who use the airspace covered by your proposed routes, frequently carrying members of the public in large balloons. Recognition of this potential impact on their livelihood would be appreciated. Hobby drone operators have sight of their craft and thus of us and can avoid us, but as far as we understand, yours will have no such means of avoidance. We cannot imagine any way of mitigating this risk during our landing phase and the avoidance of risk would severely curtail our operations.

We do note that the parts of the proposed routes over water (Morecambe Bay) are not a concern as we would not be taking off or landing over water. Furthermore, we fly when the atmosphere is most stable, that is in the hours after sunrise and before sunset. For much of the year this means that we would not be airborne in the central hours of the day, around noon. Nor do we fly at night. If drone operations could be restricted to hours of darkness then they would avoid the vast majority of all GA activities, not just balloons. From a ballooning perspective, mid-day flights would also be a little problem (with the possible exception of the months in the middle of winter).

We note the operation of drones and that TDAs will be disseminated via NOTAM 24 hours prior to activity (and are therefore for routine rather than emergency use), but that drone flights might also take place daily. Our questions are:

1. What are the safety controls for the drone? Is there line of sight control at all stages of the flight so that obstacle avoidance is assures? This is not only for balloon safety – we consider what might happen should the drone collide with a flock of birds and be damaged or knocked off course. A rogue drone of the size and speed intended is a clear public hazard if there is no fail safe mechanism for collision avoidance, route security and safe landing in event of a

problem.
2. How many times per day will the drones fly, and when? Or, more precisely, will the TDAs be active for only an hour or two each day, or will they become effectively permanent TDAs for the duration of the trail?
If the TDA was active for an hour only in the middle of the day (or night) then we have little objection. If it is effectively a permanent TDA than we object strongly to this infringement on the freedom to use a large area of class G airspace.
3. Will the drones indeed operate every day of the week, only Monday – Friday, or spasmodically during the 90 day trial?
4. If the trial is successful would frequency or operation (and activation of the TDA) further increase thereafter?
5. Could the drone part of the sample transport be limited to the routes over Morecambe Bay (ie coast to coast), with motor transport to the coast, thus increasing public safety over land areas and greatly limiting the restrictions to class G airspace used by GA?

We would welcome the opportunity to hold a constructive conversation, based on our questions and safety related suggestions for the proposed activities.
Please acknowledge receipt of this communication.

North West Balloon & Airship Club Committee
Submitted 08:44 AM - 09 August 2021

We responded to this submission on the 9th of August at 10:50 as follows:

On Mon, 9 Aug 2021 at 10:50, <chris@electric-airspace.com> wrote:

Dear Sirs/Madam,

Thank you for taking the time to submit feedback through the Morecambe Bay RPAS transit route website. It is genuinely appreciated.

As per CAP1616 (Airspace Change) we are required to undertake stakeholder engagement and as noted we are coming to the end of the period for feedback from other airspace users. Initially we did email out to the entire NATMAC (National Air Traffic Management Advisory Committee) and around 20 further local organisations.

We apologise that we did not reach out earlier to the North West Balloon and Airship Club Committee.

In our defence we did contact Mike Gunston at the British Balloon and Airship Club, at the commencement of the stakeholder engagement and ask that such members be notified.

It is absolutely not our intention to hinder or affect any other airspace user and we are actively working with other such airspace users to ensure everyone will still be able to fly safely and at will in the area.

Our offices are at Dalton Hall Business Centre (Burton in Kendal) and as such we regularly see Balloons early in the morning over the hills and as such we are really pleased you have written in, but also see this as a great opportunity to co-operate to everyone's gain.

We recognise the risk to the envelope that small rotor craft present. We do have forward looking cameras as well as 360 degree camera systems on board the RPAS aircraft, thus the remote pilot is able to see the operating environment and to take avoiding action in real time.

We take on board your comments regarding the timing of flights, especially through the winter months.

Turning now to your questions. *Please find our answers in italics.*

1. What are the safety controls for the drone? Is there line of sight control at all stages of the flight so that obstacle avoidance is assures? This is not only for balloon safety – we consider what might happen should the drone collide with a flock of birds and be damaged or knocked off course. A rogue drone of the size and speed intended is a clear public hazard if there is no fail safe mechanism for collision avoidance, route security and safe landing in event of a problem.

The RPAS has in effect a dual powerplant flight system and is capable of Vertical Flight as well as Horizontal flight, from two different powerplants, thus the system has built in redundancy. There is line of sight control at all stages of the UAV's operation. The remote pilot has relayed vision from the RPAS as well as a Detect and Avoid optical algorithm that is actively spotting other airborne hazards. Your comment re flock of birds is noted and we consider this a serious risk bearing in mind the large propensity for murmurations of starlings and rooks in the bay area. One thing to note here is that should the pilot observe other airspace users in the flight path, they have the ability to transition into vertical flight from forward flight and thus can stop and hover and evaluate the safest way to proceed.

2. How many times per day will the drones fly, and when? Or, more precisely, will the TDAs be active for only an hour or two each day, or will they become effectively permanent TDAs for the duration of the trail?
If the TDA was active for an hour only in the middle of the day (or night) then we have little objection. If it is effectively a permanent TDA than we object strongly to this infringement on the freedom to use a large area of class G airspace.

The current flight campaign sees the drone complete the triangular route from Lancaster to Barrow and onto Kendal and then back to Lancaster twice a day to fit in with the optimisation of pathology samples transfer between the hospitals. The TDA's will only be activated for the durations of the flights and thus will not blanket block out the airspace. We are negotiating a DAAIS/DACS service at the moment, but this will not solve non AG radio craft. As such the NOTAM will offer a phone number where updates can be obtained re the flight campaign's progress.

3. Will the drones indeed operate every day of the week, only Monday – Friday, or spasmodically during the 90 day trial?

We aim to operate only Monday to Friday through the winter months for the two round robin flights per day. Excessive weather may limit the flights. There is the potential to operate at night and should the NHS dictate, at the weekends, although at this stage we think this extremely unlikely.

We have arranged a Letter of Agreement, between ourselves and other airspace users, such as the Lakes Gliding Club at Walney, such that should we operate at the weekends we will contact the dedicated point of contact at Lakes Gliding Club and talk through our weekend plans with them, such that if we cause no hindrance to their planned operations we may fly. We would be happy to offer the North West Balloon and Airship Club the same Letter of Agreement, such that we would check with yourselves any planned operations and ensure that we do not conflict at weekends etc. As we have stated

earlier, it is absolutely not our intention to hinder anyone's flying activities and the Letter of Agreement works as an excellent protocol for communications between our organisations.

4. If the trial is successful would frequency or operation (and activation of the TDA) further increase thereafter?

The CAA only permit the TDA to be in place for 90 days and do not look favourably on extending it. At present we have no vision from the CAA regarding what comes next. The trial is there to educate the business model for the NHS and to look at how to optimise pathology sample analysis.

5. Could the drone part of the sample transport be limited to the routes over Morecambe Bay (ie coast to coast), with motor transport to the coast, thus increasing public safety over land areas and greatly limiting the restrictions to class G airspace used by GA?

We did look at this originally and took some evidence from another RPAS trial between Lee on Solent airfields and a private strip near Ryde on the Isle of Wight. That specific trial concluded that the time to drive to the airfield, and time to gain access and to load and unload meant that the RPAS flight time became similar to that of driving sadly. Originally we looked at sites at Hest Bank and at Newbiggin and to literally coast to coast fly, however, even this has implications as the Bay is a low level route for the Hawks out of Valley. The microlight community also claim that they fly below 500' over the bay and practice forced landings over water, which we deem to be at worst, a breach of the ANO and at best reckless. They have not provided any evidence that this activity really takes place.

We would be very keen to explore further how we can work together to ensure safe flight operations for Balloons in the area working collaboratively with our RPAS aircraft.

We would propose establishing a Letter of Agreement in the first instance, insofar that we are obliged to contact your nominated person should the NHS deem a weekend flight be required.

Establishing good communications at this stage in proceeding's is of paramount importance to us.

We welcome your continued dialogue.

With Best Regards,

Chris

[redacted]

On the 18th of August, 2021 at 09:08 we received the following letter:

www.nwbac.co

North West Balloon & Airship Club

Dear Chris,

Thank you for your swift response to the concerns of the local hot air balloon community regarding the proposed trial of drone activity between hospitals around the Morecambe bay area, and for your answers to all our queries.

We are reassured by the line of sight control at all stages of operation, and the dual powerplant flight system that allows vertical flight and hovering. From our personal perspective we expect that we would be big enough and slow enough to be avoided by such a UAV, though we would prefer that there is no need for avoidance in the first place.

The lack of a permanent TDA, operation only Monday to Friday and just twice a day is also less restrictive than we might otherwise have feared. This will limit some of the impact on our sport flying members, but may still be of concern to commercial balloon pilots. If they are aware of the NOTAM service then that will aid them in flight decisions, albeit that they may still be inconvenienced under certain weather conditions. A limited 90 day trail is also something that we feel we should work with you to accommodate, anticipating that there will be no further airspace restrictions of this nature for a considerable time.

We would certainly consider a Letter of Agreement with Electric Aviation Ltd, on the basis that this would enable us all to share the airspace safely and considerately for the limited duration of this trial. Please could you provide us with a copy of such an agreement so that we can give it our full consideration.

Yours faithfully,
NWBAC Committee

We then proceeded to execute a Letter of Agreement with North West Balloon and Airship club and this can be found below. It is currently awaiting execution by the club.

The engagement with the North West Balloon club was excellent, amicable and co-operative towards the mutual goal of shared airspace.

Letter of Agreement between Electric Aviation Limited and North West Balloon and Airship Club Regarding Temporary Danger Areas for ACP-2021-022

North West Balloon and Airship Club operate Hot Air Balloon aircraft in the North West of England.

Electric Aviation Limited seek to operate Remotely Piloted Aircraft Systems across Morecambe Bay on behalf of University Morecambe Bay Hospital NHS Trust.

Electric Aviation and North West Balloon and Airship Club are hereafter referred to as the parties:

The overall principle of this Letter of Agreement (LOA) is to enable safe and de-conflicted operations of the Electric Aviation Limited, Remote Piloted Aircraft Systems from Balloons and Airships operated by North West Balloon and Airship Club in and around the Morecambe Bay area.

It is understood by both parties that access to the TDA by North West Balloon and Airship Club aircraft will be granted throughout the operation of the TDA subject to suitable prior notice. It is also noted that emergency services aircraft will always be given priority over RPA operations, which will be immediately suspended.

However, North West Balloon and Airship Club aircraft captains must be content that they have sufficient information about TDA activity to allow them to penetrate the TDA safely.

North West Balloon and Airship Club aircraft operate throughout the week, whenever weather permits, predominantly when the atmosphere is most stable, in the hours after sunrise and before sunset.

Electric Aviation, will endeavour to operate their RPAS flights around the middle of the day, but may be requested by the NHS to fly earlier and later.

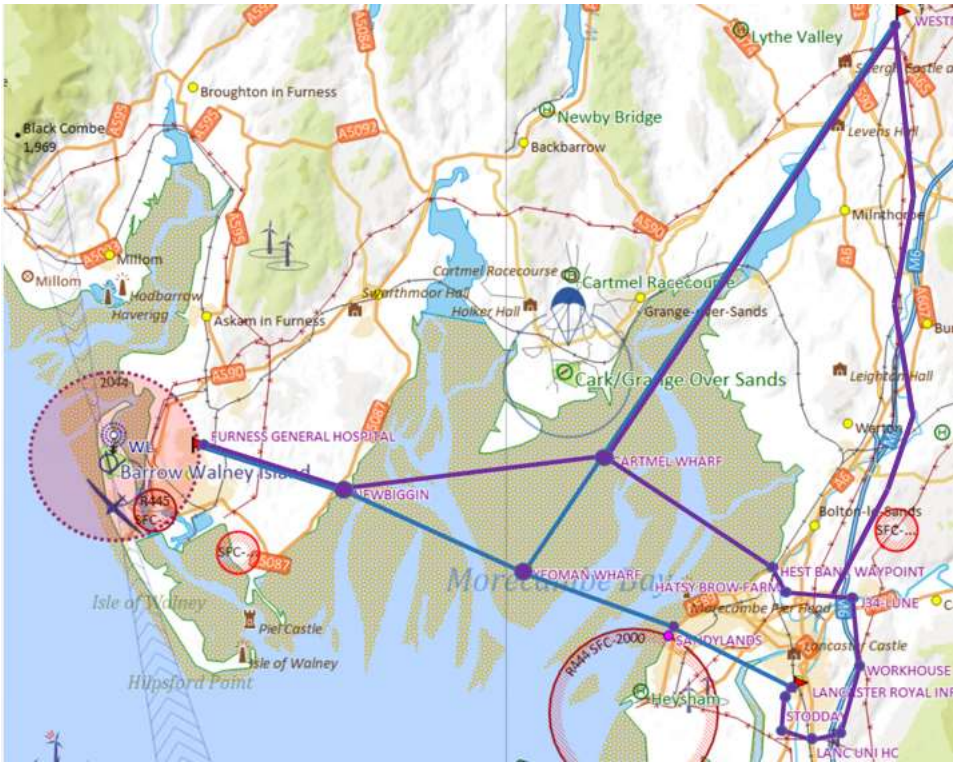
Electric Aviation RPAS flights are predominantly planned for Monday to Friday operation, but weekend operations and night flying may also be requested by the NHS.

Electric Aviation Limited will ensure that effective communication systems are in place for North West Balloon and Airship Club pilots to seek clarification of the location of the RPAS operating within the TDA at any time.

Electric Aviation Limited will also provide an emailed weekly update, issued on the Sunday evening afore the following weeks flying, detailing the planned sorties, routes and times, updated and based on the weather. North West Balloon and Airship Club will be copied in to this email circular.

The proposed TDA complex routes, implemented under ACP-2021-022 are depicted in Figure 1 below, with lateral extents to 400' either side of the track and a vertical extent to 400' agl.

The final routes will be confirmed between the parties as the Airspace Change Request proceeds. It is anticipated that the number of routes depicted below will decline in numbers as the final route is agreed upon.



Agreed TDA access and deconfliction procedures

Should Electric Aviation Limited need to operate the RPAS at a weekend where North West Balloon and Airship club may be operational, Electric Aviation Ltd will inform North West Balloon and Airship club by e-mail of intended RPA operations 72 hours ahead of the proposed weekend operations.

The North West Balloon and Airship Club contact number will be added to the Skylift UAV Ltd Operations Manual (flying on behalf of Electric Aviation) and will be available to the remote pilots in SkyFleet (the remote pilot station) should contact be required.

Electric Aviation Ltd will provide Pre-Flight Information via a telephone number as per the NOTAM activating the TDAs. The number will be manned from 30 minutes before until 30 minutes after the notified hours of operation of the TDAs.

If a North West Balloon and Airship club aircraft requires access to an active TDA, The pilot of said aircraft will call the notified Pre-Flight Information telephone number referenced above. Electric Aviation will provide the location of the RPA and request the position and intentions of the North West Balloon and Airship Club aircraft.

The remote pilot will decide the best course of action to immediately de-conflict the RPA from the North West Balloon and Airship club aircraft: stay on the ground; continue to destination; return to take-off point, return to Rally Point and loiter or, worst-case, land at the Rally Point.

[redacted]

[redacted]

[redacted]

[redacted] Letter of Agreement

[redacted]

[redacted]

1.27 Model Aircraft

On the 28th of June at 04:32 pm we received the following submission through the web portal:

Electric Aviation Limited responded on the 22nd of July at 17:12 pm that:

[redacted]

Our thanks for your comments on the airspace change process that may create a Temporary Danger Area over Morecambe Bay. There is updated information at www.morecambebaydrones.com.

With regards flying model aircraft, the Temporary Danger Area would be regarded as a Restricted Area under the Drone and Model Aircraft Code and flying would not be permitted in this area. We would like to point out however, that the dimensions of the TDA are very small, only 800' wide and 400' high above ground level. Also we should point out that we are aiming to fly in winter time and predominantly Monday to Friday 9-5. We would therefore hope that we would not affect model aircraft flying too greatly.

Should you have any further questions, or if you know of any clubs in the Morecambe Bay Area that we should be reaching out to, please do let us know.

With Kind Regards,

ELECTRIC AVIATION LTD

[redacted]

The following response was sent from Electric Aviation Limited:

[redacted]r response. It is genuinely appreciated.

I think the clearances with Purple Routes 3 and 4 will not cause us any difficulty, especially as the TDA extends on 400' either side of track not meters!

Do you have any contacts for Kendal Model Aero Club?

I will of course keep you updated with our plans and should we progress to flight, then if your club want to meet and go through how we fly, what we fly etc, we'd be happy to either invite you over or come and give you a demo at your field.

Thanks once again.

With Best Regards,

[redacted]

On the 23rd of July at 13:38 they responded.

[redacted]

You are most welcome!

Yes, I realised, after I replied, I got feet / meters confused.

Sorry, but I don't know anyone at Kendal these days.
They have a website with an email contact form, but none of the Committee have published their email address.

Thanks for the offer to get together in the future.
Most appreciated! I am very interested as I expect all our members would be.
At LAMMAC most aircraft are electric power, only a few diehard i/c men left.
A very few have "drones" .I am enjoying video making with DJI Mavic very much lately.
We have 50ish members.

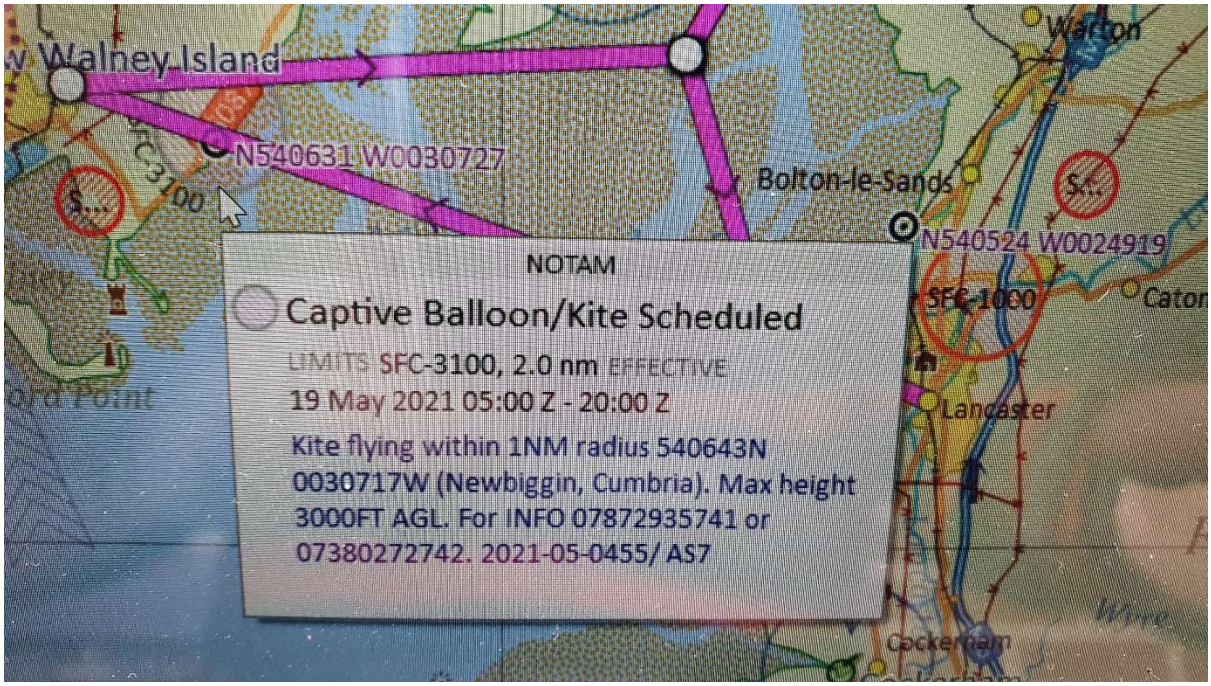
Keep in touch

Kind regards

Despite emailing Kendal Model Aircraft Club, we never heard back from them. Having plotted their club location on our GIS system we conclude that their operations will not prove a problem to the ACP nor our operations.

1.28 Kites

Previous observation of the Morecambe Bay area in terms of NOTAMS revealed that Kits do operate in the local area:



We contacted [redacted] at the Northern Kite Flying Club and talked through our plans. Khurrum furnished us with their exact GPS location where they fly along the Cumbria coast from Newbiggin.

We agreed to move the landing point for the RPAS route along the coast, such that he could effect the same NOTAM as previous, without his notified area coinciding with the TDA proposed.

We also entered into communications with [redacted] chairman of the British Kite Flying Association, whose very supportive response can be found overleaf.

We believe it very important to maintain good communications with the local kite flying fraternity as there was a Mid-air collision between a Microlight aircraft (G-EXXL) and a recreational kite, Pilling Sands, Morecambe, Heysham, Lancaster, 19 June 2016.[2]

[2] https://www.gov.uk/aaib-reports/aaib-investigation-to-zenair-ch-601xl-zodiac-g-exxl

Fri 27/08/2021 14:55

[redacted]

You replied

Dear Chris

Thank you so much for contacting the local kite flying community about your plans – it really is appreciated.

I think all of us would be 100% supportive of what is a really exciting proposal. We are limited to operations 200′ or 60m AGL (don't you just love the unit consistency in the ANO!) unless we seek permission from the CAA. If such permission were granted it would generally be to 1000′ AGL and would be for a specified area and SHOULD take your operations into account. Your application makes clear that you are planning for 250′ in a corridor up to 400′. Given that the vast majority of your proposed routes are over the Bay we think conflict is very unlikely.

The only potential area that we will need to watch is your final approach to the three hospitals. Again, I think conflict is unlikely provided your flight profile maintains your planned 250′ minimum until over your landing site at the hospital – and no one should be flying kites that close to a hospital.

If you would like to talk through anything please do not hesitate to get in touch.

[redacted]

1.29 GA Fixed Wing & Flight schools

Electric Aviation contacted the majority of the flight schools at Blackpool Airport on the mailout that occurred to support the NATMAC distribution.

Electric Aviation visit Westair

Although there was no direct response from Air Navigation Training or High-G aviation, discussions were held with John Westoby from Westair who confirmed that there was little to affect their operations with the TDA planned to be below 400' AGL

Electric Aviation's [redacted] visited Westair at 15:00 hours on Friday the 13th of August 2021 and discussed the plans with the staff and pilots present at the time. No objections were raised and all present commented that the TDA was too low to affect their operations.

Subsequently [redacted] also visited Air Navigation Training at 16:00 on Friday the 13th of August 2021 and discussed the plans with [redacted] for the TDA would affect their operations.

Electric Aviation discuss the TDA with Air Navigation Training

1.30 Queens Guide to the Sands

The Queen's Guide to the Sands is the royally appointed guide to crossing the sands of Morecambe Bay. The sands predominantly being in the ownership of Crown Estate Foreshore or the Duchy of Lancaster.

In April 2019 [redacted] local fisherman, was appointed as the Queen's guide to the sands. The guide is paid a nominal salary of only £15 a year but the holder of the post also has the use of the 700-year-old Guide's Cottage at Kents Bank, which is owned by the Crown and managed by the Duchy of Lancaster.

As part of the Stakeholder Engagement, Electric Aviation contacted Michael Wilson via telephone on the 12th of August at 12:53pm and discussed the potential for flying RPAS over Morecambe bay.

Specifically Electric Aviation asked:

Q1 When do people traditionally cross the sands?
Ans1 From the end of April to the end of August.

Q2 What routes do they follow?
Ans2 There are guided walks from Hest Bank to Grange over Sands, and Arnside to Grange.

Q3 Are there any cocklers active in the bay?
Ans3 Not for the next three years

Q4 Is there quicksand still present in the bay?
Ans4 Quicksand is present and an active hazard

Q5 Does he see much microlight activity on the sands?
Ans5 Very little activity seen

[redacted]ished the project well and Electric Aviation agreed to keep in touch.

1.31 Duchy of Lancaster

Electric Aviation have existing relationships with the Duchy of Lancaster.

When the microlight pilots indicated that they could not support the Airspace Change Proposal as they land on the sands at Morecambe Bay, Electric Aviation decided to check with the Duchy regarding the legality of this.

We evidence that the Duchy of Lancaster have not granted permission for Microlight aircraft to land on the bay below:

Fri 23/07/2021 17:21

[redacted]

RE: Duchy Land at Warton Salt Marsh

To [redacted]

You replied to this message on 16/08/2021 11:37.

[redacted]

Thank you for your email.

I cannot find anything on file which suggests any permission has been granted.

Of course if this is something that is happening on our land we are keen to address it – would you have an aircraft registration number for example?

[redacted]

[redacted]m>

[redacted]

Can you confirm if the Duchy has granted any permissions for microlight aircraft to land on duchy land within Morecambe Bay foreshore or further out?

Many Thanks,

[redacted]

Following on from said conversation the Duchy suggested a Zoom meeting to discuss the Morecambe Bay RPAS Transit Route proposal.

[redacted]

You replied to this message on 16/08/2021 12:15.

Suggested Meetings + Get more apps

Dear Chris,

Thank you for your email.

Would you be available for a Zoom call at some point to discuss your proposals in more detail?

This will enable me to consider and put forwards a proposal for consideration to our team.

Many thanks

[redacted]

Post this discussion it was decided to enter into a Letter of Agreement, such that Electric Aviation would use all endeavours to keep off the sands, but should an exceptional circumstance arise, the Duchy would grant permissions for the RPAS to land on the sands.

A copy of this Letter of Agreement, which is with the Duchy for service, is presented overleaf:

Letter of Agreement between
Electric Aviation Limited and the Duchy of Lancaster
Regarding Temporary Danger Areas
for ACP-2021-022

The Duchy of Lancaster are a considerable land owner and own significant areas of the foreshore at Morecambe Bay.

The overall principle of this Letter of Agreement (LOA) is to enable Remote Piloted Aircraft Systems operated by Electric Aviation and Skylift UAV Limited, operating within the Temporary Danger Areas (TDAs) implemented under ACP-2021-022 to land on the sands of Morecambe bay in exceptional circumstance.

Electric Aviation Ltd is the Danger Area Authority for the TDAs.

The TDA complex implemented under ACP-2021-022 is depicted in Figure 1 below, as being some or all of the routes indicated with TDA dimensions of width 400' either side of track and height 400' agl. Across all routes the maximum elevation is 505' giving a total max altitude of 905' amsl.

The final routes chosen and approved will be notified to the Duchy of Lancaster at a later date but prior to flight operations.

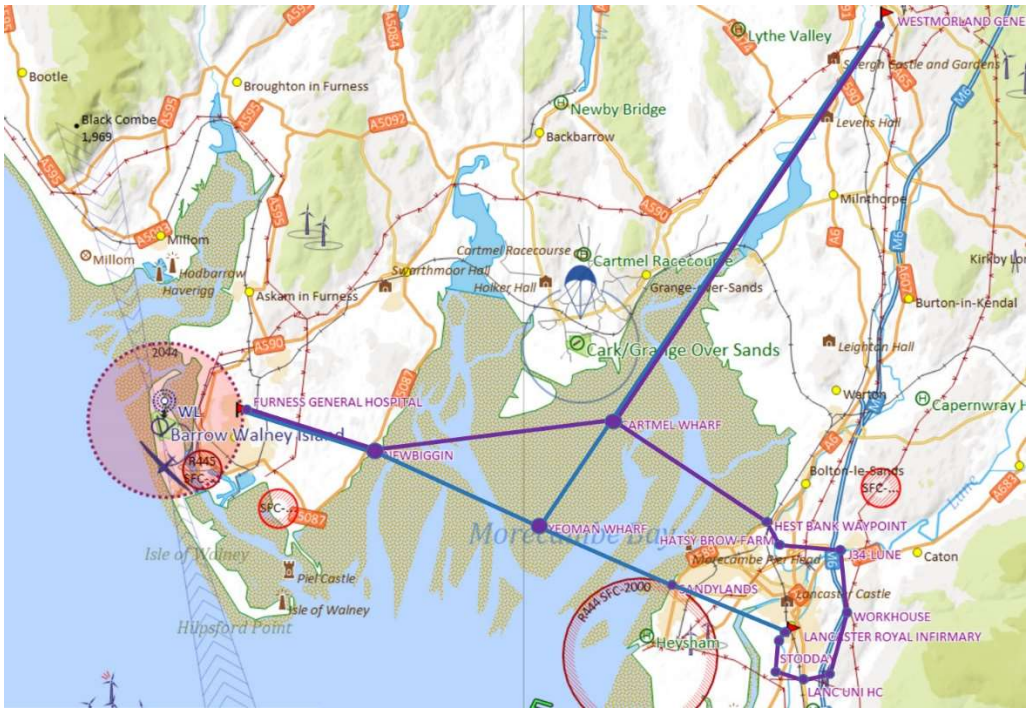


Figure 1: The proposed routes for ACP-2021-22

Reproduced with the permissions of SkyDemon.

Agreement is proposed such that:

- Electric Aviation Limited and their operators Skylift UAV Ltd will operate the Morecambe Bay RPAS Transit route as discussed in such a manner as not to land on the sands of Morecambe Bay, or any land owned by the Duchy of Lancaster, throughout normal flight operations.
- Electric Aviation Limited and their operators Skylift UAV Limited will only land on the sands of Morecambe Bay, or any land owned by the Duchy of Lancaster, in exceptional circumstance, such as a threat to life, threat to other aircraft, threat to wildlife or threat to the RPAS itslelf.
- Should Electric Aviation Limited or their operators SkyliftUAV Limited land on the sands or other land owned by the Duchy of Lancaster in exception circumstance, detailed above, then Electric Aviation, will notify the Duchy of Lancaster of the landing and the associated incident which caused it.
- The Duchy of Lancaster grant Bay Search and Rescue access to their land for the recovery of the RPAS, should it land in exceptional circumstance.

Signatories to the Letter of Agreement

1.32 Other NATMAC responses

1.32.1 BBGA

RE: Automatic reply: Morecambe Bay TDA - Stakeholder Engagement

From Marc Bailey on 2021-07-30 07:55

Details Plain text

Dear Chris,

We fully support the use of the TDA for the purpose of supporting this UAV activity. It is a temporary approval and we are working closely with our colleagues in ARPAS to ensure that the future development of low level airspace is managed appropriately in what is a fast paced period of change.

Good luck with your proposal.

Kind Regards

[redacted]

BBGA Events

2021

29th September	BBGA Connects, Networking Evening, Oxford Airport
2nd December	BBGA Christmas Drinks Reception

2022

10th March	BBGA Annual Conference and AGM. Luton Hoo
11th March	BBGA Spring Golf Day, Luton Hoo

1.32.2 Isle of Man

RE: Morecambe Bay TDA - Stakeholder Engagement

From [redacted] 2021-07-30 08:09

De

Hi Chris

Thanks for your email. We reviewed the proposal and given its location and vertical limits I would not expect any Isle of Man operator to have any necessary input. However we found the proposal of professional interest in noting the development of such airspace to enable BVLOS operations of unmanned aircraft.

Best Regards

[redacted]

1.32.3 BALPA

RE: Morecambe Bay TDA

From [redacted] on 2021-07-30 11:35

Details Plain text

Dear Chris,

Thank you for your email and for seeking BALPA's views on your airspace change proposal. I have forwarded details of the ACP to our helicopter ops specialists who will probably be the most affected sector, and will revert when I have received their response.

Kind regards,

Joji.

[redacted]

http://www.balpa.org

RE: Morecambe Bay TDA

From [redacted] on 2021-08-06 12:09

Details Plain text

[redacted]

This is the response received from the chair of our helicopter specialist group:

> *"As the local oil and gas fields are to the South/South West of the area and are serviced from Blackpool airport, there should be sufficient separation between drone and the rotary aircraft servicing the fields. My only suggestion would be that as there is often SAR activity in the area, and especially as my sources tell me that the RPAS they are planning to use has full transponder/ADS-B capability, it would be sensible to make the use of a transponder compulsory."*

I hope this helps.

Kind regards,

[redacted]

1.32.4 ACOG

RE: Morecambe Bay TDA

From Mark Swan on 2021-07-30 16:07

Details

[redacted]

Many thanks for your email. Thank you for soliciting a response from ACOG. I found the ACP extremely interesting from a personal point of view as we contemplate this future. As you may be aware, ACOGs remit is limited to 21 commercial airports and their prospective designs within their respective TMAs. As such we currently have no remit to engage/comment on other ACPs at this stage. This may of course change after the AMS refresh as the CAA and DfT consider the future of UAVs and the like into our national airspace. It would not therefore be appropriate for ACOG to offer a view, although be assured we are keeping sight on ACPs such as these routinely as they do help provide a useful picture of the developing needs of airspace, both in and out of CAS I expect.

Best wishes

[redacted]

1.32.5 ARPAS

New submission from A New Form

From Formspree on 2021-08-01 15:17

Details Plain text

New form submission

Someone just submitted a form using formspree.io. Woo!

message

On behalf of ARPAS UK we would like to wholeheartedly support this trial of BVLOS UAS flight. This is a stepping stone en route to integrated conspicuous flight for all types of aircraft user. We would encourage completing the instigation of a crossing service for other airspace users and providing more detail on the aircraft's capabilities. This should encourage acceptance by the broader aviation community. Lastly we look forward to seeing the conclusions you draw from the trial. We wish you all the best with your exciting project.

Submitted 02:17 PM - 01 August 2021

Mark as spam

1.32.6 Heavy Airlines

RE: Morecambe Bay TDA - Stakeholder Engagement

From [redacted] on 2021-08-19 16:47

Details Plain text

Dear Chris,

I hope you are well

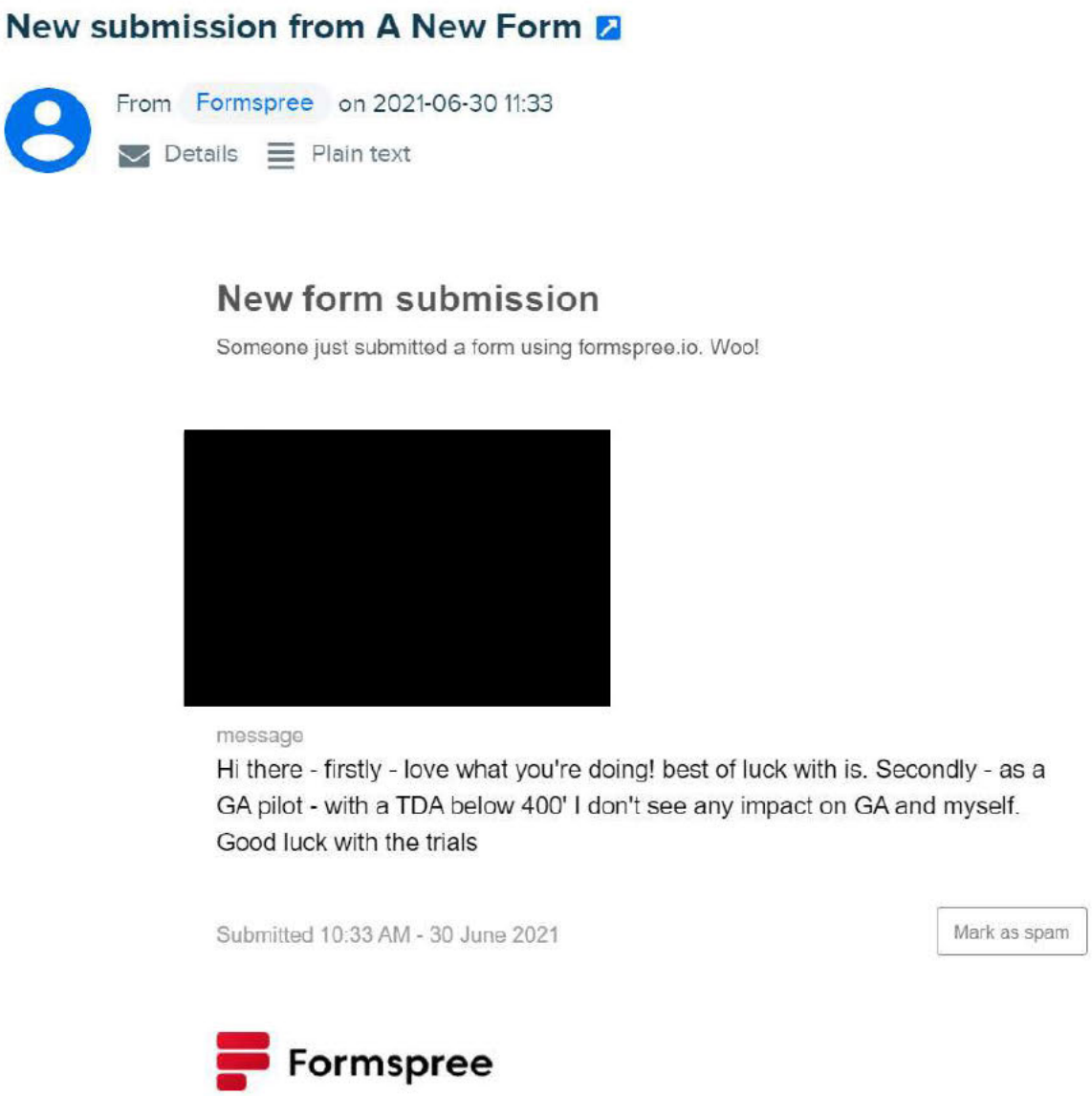
In my opinion, as the TDA is very low level it will not affect the Heavy Airlines, more importantly, I wish you all the best with your ambition to support the NHS in the region at this difficult time.

[redacted]

in safe hands

1.33 Other Correspondence received

1.33.1 GA Pilots



New submission from A New Form

From Formspree on 2021-06-30 11:33

Details Plain text

New form submission

Someone just submitted a form using formspree.io. Woo!

[redacted]

message

Hi there - firstly - love what you're doing! best of luck with is. Secondly - as a GA pilot - with a TDA below 400' I don't see any impact on GA and myself. Good luck with the trials

Submitted 10:33 AM - 30 June 2021

Mark as spam

Formspree

Re: Lancaster / morecambe/furness air space

From jaradheath on 2021-06-24 11:28

Details Plain text

[redacted]

Sent from my Galaxy

[redacted]

[redacted]

The maximum height of the drones flight is sub 400'. and across the bay we aim to be operating below 200' and as such we should not cause any issues for GA.

We are working (on the advice of the CAA) to make this clearer on the website.

With regards the multiple trials sites, I have to agree with you from a GA perspective, this is less than ideal. (I fly a PA28 out of Blackpool myself) but from a UAV industry point of view, the multitude of applications show that TDA's are not the right instrument and the CAA know this and are working to resolve this. I personally would like to see an ADSB mandatory zone instead with a 300' max height AGL but we are at the early days of both UAV technology and Electronic Conspicuity.

It is my intention with Morecambe's TDA to make it as small and easy to work with for GA as possible.

I will inform you of when the updated website is live.

With Best Wishes,

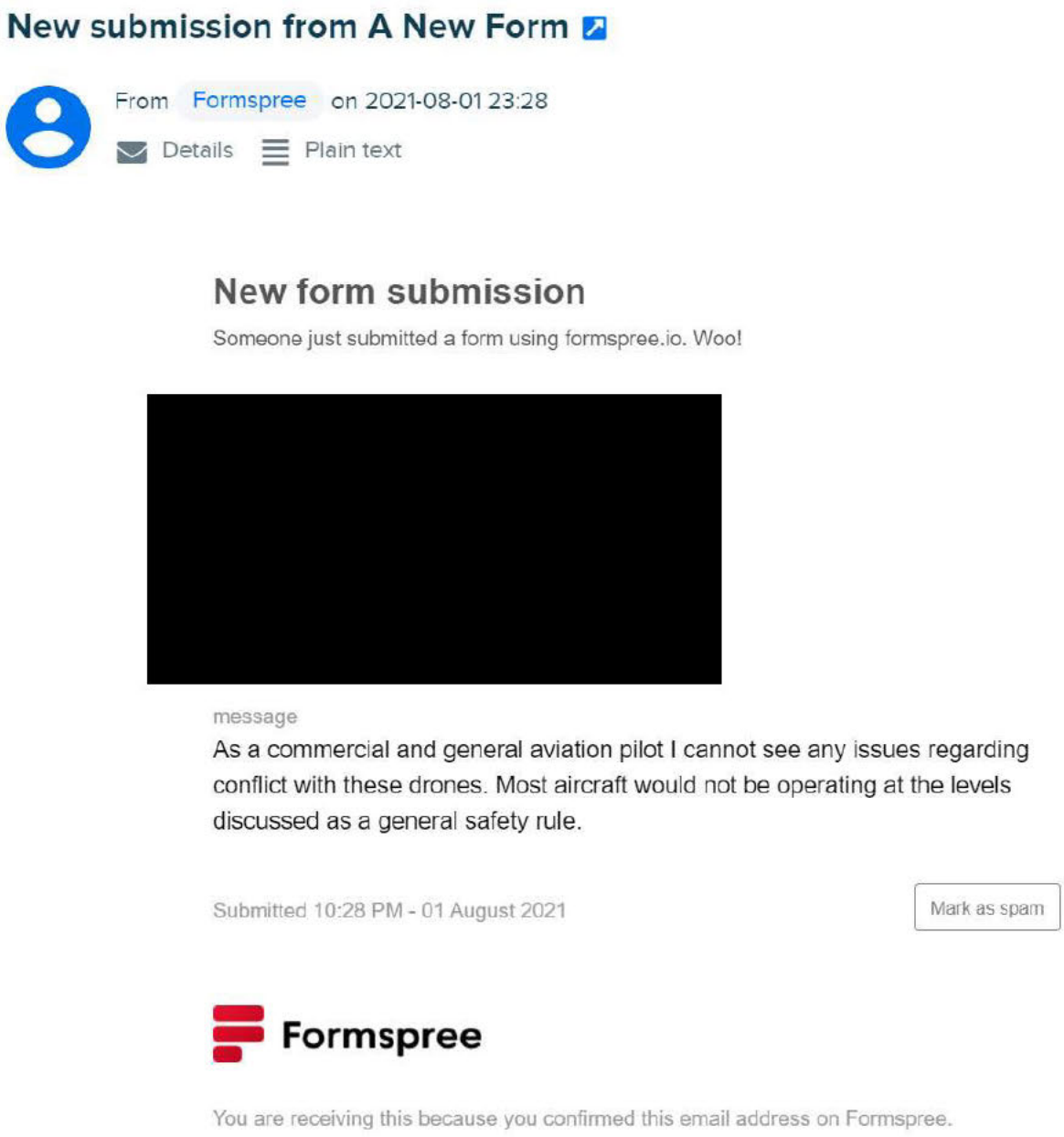
[redacted]

[redacted]

On 2021-06-23 16:31, jaradheath wrote:

> Dear Sir
> I use this route VFR regularly
> It avoids the higher ground to the east and is often the only route south with the weather in the Lakes
> I dont understand why trials are being carried out in multiple places shutting down more airspace and pushing GA into smaller and smaller pockets
> Surely you could limit the height of the drones as not to interfere with GA
> Regards
>
> [redacted]
>
> Sent from my Galaxy

1.33.2 Commercial/Military Pilots



New submission from A New Form

From Formspree on 2021-08-01 23:28

Details Plain text

New form submission

Someone just submitted a form using formspree.io. Woo!

[redacted]

message

As a commercial and general aviation pilot I cannot see any issues regarding conflict with these drones. Most aircraft would not be operating at the levels discussed as a general safety rule.

Submitted 10:28 PM - 01 August 2021

Mark as spam

Formspree

You are receiving this because you confirmed this email address on Formspree.

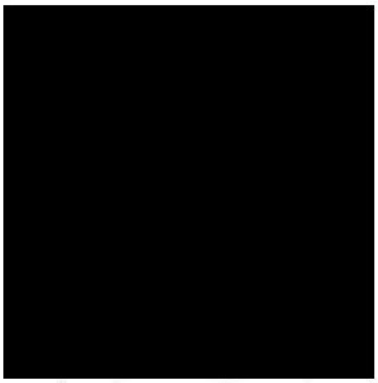
New submission from A New Form

From Formspree on 2021-08-10 16:09

Details Plain text

New form submission

Someone just submitted a form using formspree.io. Woo!



As a former military rotary pilot, I can see no issue with the airspace change. Perhaps consider a DAIS / DACS implemented by one to the local ATC units to aid coordination of the area. Wishing you all the best with this endeavour. Justin King, AAC retired.

Submitted 03:09 PM - 10 August 2021

Mark as spam

Formspree

New submission from A New Form

From Formspree on 2021-06-25 09:51

Details Plain text

New form submission

Someone just submitted a form using formspree.io. Woo!

message

For the past six or seven years we have been running flights between Blackpool Airport and Cark every weekend (Friday, Saturday, Sunday) several times a day. We usually route to the west of Heysham within gliding distance of the land. We occasionally also overfly areas ot the southern Lakes.
We assume that these proposals will not affect us in any way.

GBR-DTO-0241

Submitted 08:51 AM - 25 June 2021

Mark as spam

New submission from A New Form

From Formspree on 2021-08-11 21:38

Details Plain text

New form submission

Someone just submitted a form using formspree.io. Woo!

Being a commercial airline pilot and also current civilian (and ex-military) rotary pilot, with the required equipment on board and active NOTAMS in place, I do not see any issues with operating the SLT remote operated aircraft in this potential new role. Good luck.

Submitted 08:38 PM - 11 August 2021

Mark as spam

Formspree

RPAS Morecambe Bay

From Bob Stinger on 2021-06-21 21:28

Details

[redacted]

This is a total farce. Apart from the nuisance and restriction to GA it's impractical and an incredible waste of money. It's better and more cost effective to just stock the required medicines or supplies at each hospital. Drones operating beyond visual range will also have more chance of being knocked from the sky by the large flocks of swans , geese gulls and waders that use the bay. Have you consulted with the relevant environmental groups ?

Regards

[redacted]

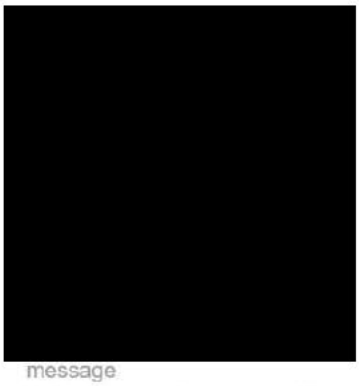
New submission from A New Form

From Formspree on 2021-06-28 16:15

Details Plain text

New form submission

Someone just submitted a form using formspree.io. Woo!



message

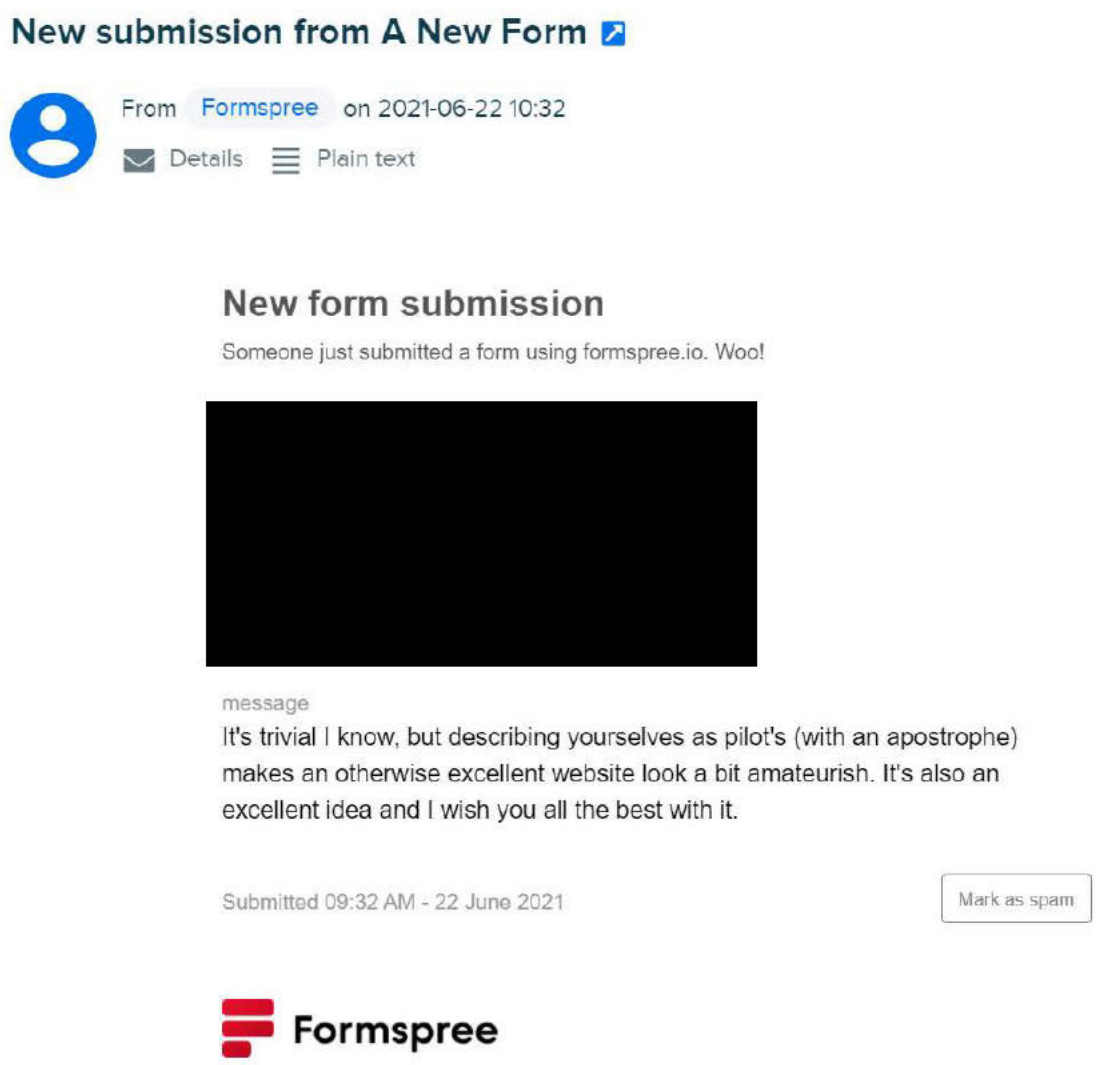
This is a much more worthy use of drone technology than getting online purchases delivered slightly more quickly. Really good to see this proposal is trialling this responsibly with Temporary Danger Areas and Mode-S transponding aircraft, over minimally populated areas. I fully support innovations that make time-critical, safety-related processes quicker and more efficient, like this one in support of the NHS. Good luck with the trial

Submitted 03:15 PM - 28 June 2021

Mark as spam

Formspree

1.33.3 Other feedback



New submission from A New Form

From Formspree on 2021-06-22 10:32

Details Plain text

New form submission

Someone just submitted a form using formspree.io. Woo!

[redacted]

message

It's trivial I know, but describing yourselves as pilot's (with an apostrophe) makes an otherwise excellent website look a bit amateurish. It's also an excellent idea and I wish you all the best with it.

Submitted 09:32 AM - 22 June 2021

Mark as spam

Formspree

New submission from A New Form

From Formspree on 2021-06-26 16:55

Details Plain text

New form submission

Someone just submitted a form using formspree.io. Woo!

message

Will the airspace under the aircraft be access able and how will operators gain access to said airspace if they need it - Note your aircraft may fly what 1-3 times a day and that blocks off large areas of class G airspace to other users when the TDA is in force - after all CAP 722C states there has to be a process for general airspace users - what is this procedure - Also amusing your using the Muggin - it's very limited payload carry abilities - why your not using a custom airframe or one with a larger carrying capacity is also interesting.

Submitted 03:55 PM - 26 June 2021

Mark as spam

Morecambe bay airspace change

From Cath Spence on 2021-06-21 18:07

Details

I've been reading the documents relating to this request. My reading is that you're seeking a TDA somewhere here but have no final proposal on which people can comment. Im not sure how that can possibly be a valid consultation as it does not allow for an assessment of impact.

The volume of traffic in class G airspace is not insignificant and any diminution of that needs to be considered with care. However, precise details are needed to assess what impact this would have. A small sliver of airspace may seem insignificant but if that sliver prevents access to an end destination without a significant detour that is problematic and potentially highly dangerous if the weather adds additional constraint. The area has a number of small airfields with local flying who could be significantly impacted by this plan depending on where the corridor is actually proposed. These are businesses already hard hit by recent events.

We're seeing an increasing number of these TDAs pop up for the purpose of running what is essentially the same test. I'd welcome information on why further tests are required in multiple locations. I can't support further erosion of already limited airspace without sufficient detail to understand what is actually proposed. So until that information is available I'd be very much against this.

[redacted]

Sent from my iPhone

NHS UAV flights across Morecambe Bay - statutory requirements regarding protected sites

From [redacted] on 2021-07-06 15:42

Details Plain text

Good afternoon

It has been drawn to my attention by a member of the public that your company is in discussion with CAA for licensing UAV flights contracted to the NHS across Morecambe Bay.

Can I draw your attention please to the statutory requirements to seek advice from Natural England for activities that may impact on features (such as migratory birds) of those protected sites. Morecambe Bay is heavily designated for both habitats and species of national, European and international importance – please see https://designatedsites.naturalengland.org.uk/SiteList.aspx?siteName=morecambe&countyCode=&responsiblePerson=&DesignationType=All

The CAA and the NHS are both section 28G bodies under the Wildlife and Countryside Act 1981: https://www.legislation.gov.uk/ukpga/1981/69/section/28G and have a duty to take reasonable steps, consistent with the proper exercise of the authority's functions, to further the conservation and enhancement of the flora, fauna or geological or physiographical features by reason of which the site is of special scientific interest (SSSI).

May I ask whether you have been in contact with Natural England about your proposals and had due consideration of any potential risk to the conservation features of this highly protected site?

Kind regards

[redacted]

New submission from A New Form

From Formspree on 2021-08-11 15:01

Details Plain text

New form submission

Someone just submitted a form using formspree.io. Woo!

message

Great idea! Anything to reduce the A road traffic through an AONB, Nature Reserve and National Park. Better air quality for all! Hope you can make this happen.

Submitted 02:01 PM - 11 August 2021

Mark as spam

Formspree

New submission from A New Form

From Formspree on 2021-08-13 20:28

Details Plain text

New form submission

Someone just submitted a form using formspree.io. Woo!

[redacted]

As someone who has worked in the field of drone airspace integration for over ten years, and a Professor of Aerospace engineering, I think this Morecambe Bay proposal is pragmatic and sensible. The routes are well thought out, and the mitigations put in place to reduce any risks to an acceptable level are clear to see. I wish you the best of luck and hope this proposal is approved. I think these types of pioneering drone applications are incredibly important for the UK.

Submitted 07:28 PM - 13 August 2021

Mark as spam

ACP-2021-022

From Pearse, Richard on 2021-08-16 15:03

Details Plain text

NT comments Airspace Change ACP-2021-022.pdf (~809 KB)

Dear Civil Aviation Authority

Thankyou for your email. It was not clear from your webpage that comments had to be submitted directly to Electric Aviation Ltd... hence my submitting comments to you via your online form. I would clarify that we have not contacted Electric Aviation directly up to now. I note that there is a contact email for the latter given on your webpage. I have therefore copied that email address into this response.

Electric Aviation – I would be grateful if you could consider our comments attached.

Regards

New submission from A New Form

From Formspree on 2021-07-10 14:09

Details Plain text

New form submission

Someone just submitted a form using formspree.io. Woo!

Submitted 01:09 PM - 10 July 2021

Mark as spam

Formspree

New form submission

Someone just submitted a form using formspree.io. Woo!

message

I am a GA pilot based at Blackpool Airport and regularly fly over the proposed TDA. An upper limit of 1000' amsl, say, would not affect my flying.
Out of interest I would like to know:
1. The total cost per mile of operating the drone;
2. The weather conditions under which the drone can operate;
3. The steps that will be taken to avoid engine failure over populated areas.
These flights will occur daily at low levels and therefore not be compliant with 'glide clear' rules;
4. Can the weight of goods carried regularly in the van be accommodated in the drone?

I look forward to hearing from you.
Regards,
Dave Aspinall

Submitted 10:29 PM - 02 August 2021

Mark as spam

This was responded to as such:

Good morning David,

Thank you for taking the time to contact us regarding our plans.

We welcome all feedback on the routes we are evaluating and have found out a lot about the different classes of airspace users through this engagement process.

You asked:

1. The total cost per mile of operating the drone;

We are unsure of this at the moment. One of the reasons for undertaking this trial is to answer such questions. The unknown factors at this stage are:

- Electricity cost to charge - we should be on a renewable tariff, but the airframe operating in winter, will require different levels of power than in summer, and thus the charge times will vary.
- Human input - at the moment owing to aviation legislation unless the hospital staff have had dangerous goods handling certification, they cannot load the samples onto the UAV's, thus we need extra staff at each location. We also may fly certain legs through Extended Visual Line of Sight, rather than Beyond Visual Line of Sight, as such this may require a pilot at each landing site.

The main aim of the stakeholder engagement is to assess the impact of the routes on airspace users and define the most favourable route. Once we have done this we can then start drilling down into the business models and thus answer the cost per mile question.

2. The weather conditions under which the drone can operate;

VFR and IFR, up to 40mph winds.

3. The steps that will be taken to avoid engine failure over populated areas. These flights will occur daily at low levels and therefore not be compliant with 'glide clear' rules;

The routes chosen are predominantly not over buildings, however there is one route that will overfly around 60 properties if chosen. The airframe has two propulsion systems, a thrust prop for normal thrust and glide flight and 8 rotors for vertical flight. Effectively the vertical flight system acts as the redundant system for the thrust flight system and can switch in very quickly (known as transitioning). The aircraft also has a ballistic parachute system as a failsafe. We also operate multiple redundant comms systems to communicate with the aircraft and we have a satellite back up system as a failsafe.

4. Can the weight of goods carried regularly in the van be accommodated in the drone?

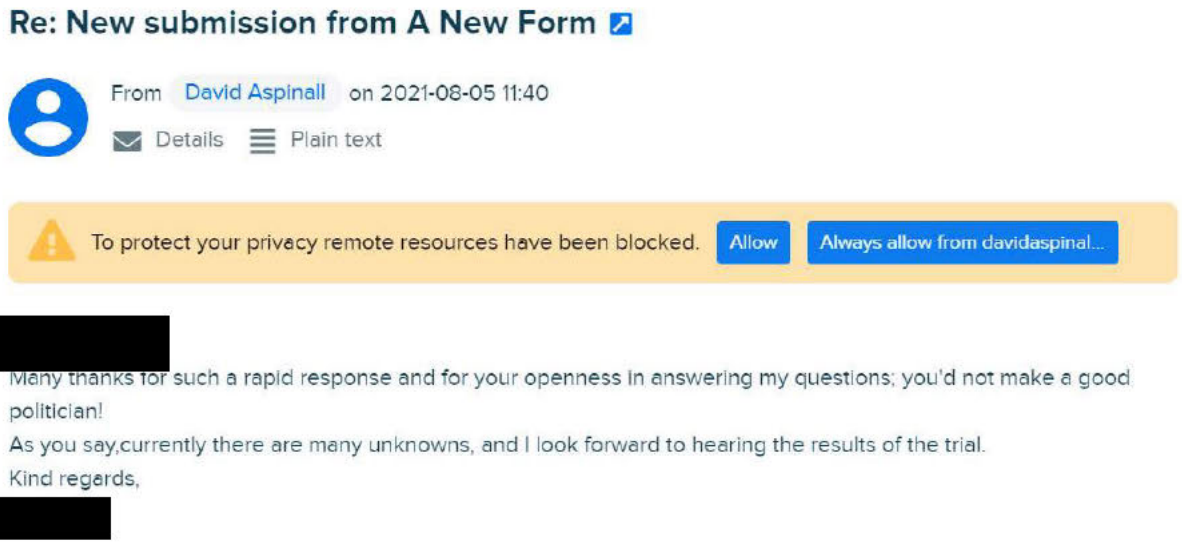
Yes and no. The typical transfer weight of the EN3373 cases the hospitals send between themselves is around 15kg of which the true payload is around 5-7kg and this can be carried via the drone. However, as the trust has been operating a round robin transit van service, other hospital departments, such as estates and facilities have used the space within the van to carry tables and chairs between sites. So for the purpose that we plan, yes we can meet the weight of goods of the existing service, but for non pathology transfers, we cannot for obvious reasons.

I hope this helps, if you have any other questions, please do not hesitate to contact us.

With Best Regards

[redacted]

And received the following reply:



New form submission

Someone just submitted a form using formspree.io. Woo!

[redacted]

message

Although I am an airspace users may comments mainly relate to the benefits analysis you have made. However it seems unreasonable to me that such operations should require extensive TDAs to avoid conflicts and the onus should be on the operators to avoid conflicting with other airspace users.

Your rudimentary calculations on CO2 savings should include comparisons with an electric van, not a diesel van to be valid. It is the means of propulsion not the mode that is producing the benefits. Also you need to take into account the effect of the weather on drone operations - how many days will you be actually be able to operate the service. If the drones are not able to fly for a period e.g. due to high wind speeds what is the contingency plan - use the van? The proportion of times when this would be necessary should be calculated from historic weather data and incorporated into your calculations of net C02 reductions.

Submitted 01:02 PM - 30 July 2021

Mark as spam

This was responded to as such:

[redacted]

Thank you for your comments. We agree with you re TDA's, however we are bound by the current CAA CAP1616 process.

I take on board your comments re Electric Vans and days that the drone can fly.

We are currently working to establish a weather modelling solution that will refine our predictive modelling.

By undertaking this flight campaign one of our key aims is to educate the business model with regards this kind of flight solution moving forwards.

With Best Wishes,

Dr Chris Crockford

Electric Aviation Limited.

And received the following reply:

Re: New submission from A New Form

From Malcolm Baldwin on 2021-07-30 18:50

Details Plain text

To protect your privacy remote resources have been blocked. Allow Always allow from malcolmrbal...

[redacted]

sounds an exciting venture.

Best of luck

[redacted]

1.34 Microlights

1.34.1 Summary Response

Electric Aviation did consider whether the Microlight responses warranted their own entire section to this report, such was the volume of response received from four individuals and one group.

The summary response from the microlight population that we have heard feedback from is that they are against this Airspace Change Proposal.

We have presented all their emails at the end of each section as they are so voluminous they can cause issues trying to follow.

1.34.2 BMAA

Interaction with the BMAA has been exceptionally tiresome.

The Chief Executive has fired off his thoughts on official BMAA paper and claimed that only he represents the BMAA, we have then received communications from two people [redacted]) claiming to be the BMAA Airspace Team.

Documents have been received by these three parties out of order, and sequentially in a manner to contradict the authority with which the author claims. It would appear that the BMAA are in disarray and obviously poorly managed, perhaps spurred on by the furious tirades sent in by one of their members.

This member will be well known to the Airspace Regulators, as he has continuously flooded Airspace Change Sponsors of UAV trials with a barrage of normally pointless comments for response.

Electric Aviation received the first negative email from [redacted] (Chief Executive – British Microlight Aircraft Association) on the 15th of July 2021. (EMAILML1) in which he claims not to have received the NATMAC distribution email, despite this being sent to all NATMAC members at the same time and numerous acknowledgements and responses from the professional entities.

Electric Aviation remain confident that the Chief Executive of the BMAA WAS sent the email at the commencement of the stakeholder engagement, furthermore the lack of professionalism shown by the BMAA, spans to their ability to operate competent IT systems.

Electric Aviation responded to [redacted] ML1 email on the 16th July 2021 at 10:52. This is evidenced in EMAILML2. Of particular note in this email is Mr [redacted] claim that:

"The BMAA has not, as is clear, made any response so far. Individual members may have, but any responses have not been encouraged or endorsed by the BMAA"

Thus the previous correspondence with [redacted], must be deemed personal views passing off as the BMAA.

[redacted] responded with EMAILML3, (copying in members of the CAA Airspace Team, obviously to try and assert some level of professionalism or to put pressure on Electric Aviation) on the 16th of July at 14:42. Electric Aviation responded with EMAILML4 (copying in the head of GA/UAS from the CAA) on the 16th of July at 15 [redacted] acknowledged with EMAILML5 on the 16th of July at 15:36 [redacted] then sent in the official BMAA view on the ACP on the 30th of July at 10:50, this is evidenced as EMAILML6.

Electric 14th acknowledged the BMAA official views (EMAILML6) on the 14th of August at 16:06.

Electric Aviation could find no points in the official BMAA view that would affect the Airspace Change Proposal.

1.34.3 BMAA correspondence

EMAIL ML1

Regards ACP-2021-022 Stakeholder Engagement

From Geoff Weighell on 2021-07-15 17:26

Details Plain text

Dear Sirs,

I am writing to express my disappointment and frustration that my initial response to your proposed ACP-2021-022 on behalf of the members of the British Microlight Aircraft Association (BMAA)has not been answered as requested now two weeks later. I have copied below my response sent through your web portal on 1st July 2021. Given the short period of engagement that you have published, 6 weeks, I feel that you have a responsibility to respond fully in a timely manner and request that you do so now. Given the poor response time on your behalf I presume that you will be extending the engagement period to allow proper engagement.

You may note that I have copied this email to a member of the airspace team at the UK CAA to ensure that my request for engagement is noted, as if your recording of engagement is as poor as your response I cannot leave to chance the inclusion of my unanswered questions.

Regards

[redacted]

Initial response from the British Microlight Aircraft Association. **(As sent 01/07/2021)**

1. *It would be useful to have a direct email address for engagement; an individual as contact; a telephone number.*
2. *As a member of NATMAC I have not received a notification of this ACP. Please advise the date upon which it was sent.*
3. *I find your operating programme somewhat difficult to understand. Are you planning to fly every day for a period of nine months? Please clarify.*
4. *Please provide route details displayed on an aeronautical chart in 1:250,000 scale so that we may assess any potential conflict with traffic from established airfields in the area, e.g. Rossall Field, St Michaels, Brook Farm.*
5. *As a national association it would be helpful if you could advise us of all local aviation interests that you have engaged with so that we can ensure all known to us have been included.*
6. *You write that the aircraft has ADSB. Please confirm whether this is both in and out or otherwise.*
7. *What process do you have in place for ensuring that the aircraft will separate from any unexpected obstacle within the TDA airspace? E.g. an aircraft infringing, birds.*
8. *Given that the aircraft will be carrying biological samples please advise us of the level of security that will be used to prevent contamination in the event that the aircraft crashes.*

Please respond in the first instance by email to confirm receipt of this submission followed in good time by your responses.

Regards

[redacted]

[redacted]

MICROLIGHTS GO TO 600KG – MORE INFO + FULL FAQ HERE

British Microlight Aircraft Association – The natural home of microlights

EMAIL ML2

Re: Regards ACP-2021-022 Stakeholder Engagement

To [redacted] on 2021-07-16 10:52
DetailsPlain text
Dear [redacted]

Thank you for your email, which is noted for its inclusion of the airspace team at the CAA. Firstly I have gone through our web portal and associated server and can confirm that we have not received any communication from you prior to this point.
Notwithstanding the above I am happy to provide answers to your questions below.

1 - The email address used for this ACP is the chris@electric-airspace.com, which is detailed on the ACP portal and your members have already started direct communications with. Our contact details can also be found on our website and my personal details were made visible on the Flyer magazine news article.

2 - The BMAA was contacted as part of the NATMAC list on Sunday 27th June at 20:36:23 and this email was sent BCC'd to your address of [redacted] This email was sent as a multiple address mail-out, addressed primarily to [redacted] This was the same email that the majority of aviation organisations on the NATMAC list received and have responded to.

3 - We are planning a flight campaign of 90 days, the timeline for the commencement of flights is as published on the ACP.

4 - We have provided flight track details in google earth form, and provided exact track details on the accompanying www.morecambebaydrones.com website. We do not own the copyright of CAA charts and thus cannot reproduce them on the web. Please note that the CAA portal for ACP uses Google Earth Maps or similar for their pictorial representation of the routes locations.
Some of your members have plotted our tracks on SkyDemon and sent them in to us. I can say that all the proposed tracks that we are planning on operating are sub 400' agl and well to the north of Rossall Field, St Michaels and Brook Farm strips.

5 - We are operating a top down and bottom up approach to this stakeholder engagement. GDPR prevents us from revealing the exact points of contact however I am happy to report that:

For Top down, we have started with all professional and commercial air-space operators and users, i.e. the Airfields at Walney, Warton and then Blackpool, along with NPAS and HEMS.

We have then reached out to all Flight Training Organisations in the area, predominantly operating out of Blackpool and Carlisle airports.
Next we come down to the small strip operators and clubs, which in the microlight fraternity includes:

- Northern Microlights – St Michael's – contacted
- Attitude Airsports – Rossall Field – contacted
- Cumbria Microlight Training – Carlisle - contacted
- Lancs Aero Club – Kenyon Hall Farm – contacted

- Bickerstaffe Aviation – contacted – but we believe they are no longer operating.

All were contacted 27th of June at 20:40 but as yet we have had no response from the clubs, only endless rambling emails from individual members.

We have however received communications from NW Microlight Aircraft Club NWMAC, who claim Morecambe Bay is "their back yard" but have not provided any airspace issue with the proposed airspace change. We have responded to their queries.

Moving forward we have spoken to the parachute club at Cark and are awaiting a response from Cockerham.

Then we have the gliding clubs, the BGA, who responded to the same email that was sent to yourself at BMAA, have advised us that we should liaise with Lakes Gliding Club, which we are doing through BAe at Walney and that they have no further objections. A very professional response.

Finally we have spoken with the kite flying clubs who operate in the area and other drone operators, such as Bay Rescue and BAe Walney.

Our bottom up approach then brings into play all land asset owners who may have an interest, liability or just a curiosity with regards our planned operations.

These stakeholders include British Aerospace Submarines, British Aerospace Warton, EDF energy, British Nuclear Constabulary, Network Rail, and National Grid along with Lancashire County Council, Lancaster City Council, Local Enterprise Partnership etc.

6. ADSB In and Out

7. The aircraft is equipped with a camera system that is relayed back to the remote pilot through multiple redundant communication systems, thus the remote pilot can avoid other airborne hazards, such as non-compliant aircraft, kites, and birdlife. The aircraft can also transition into vertical take-off mode and thus hover to avoid.

8. The aircraft carries NHS EN3373 containers which are then protected in crash tested payload containers. Our aircraft operator has the appropriate Dangerous Goods Licence from the CAA for the carriage of goods appropriate to the task.
With regards the possibility of the aircraft ditching in the bay, we are in the process of establishing a Letter of Agreement with Bay Rescue to recover the aircraft and its cargo.

Having answered your questions, I would like to raise a few points with you as CE BMAA.

Firstly we have been inundated with rambling tirades from several of your members, presumably writing outside the remit of the BMAA.

The majority of the content has nothing to do with the Temporary Danger Area or the Airspace Change Process.

However, one such claim, by a microlight pilot claims they use Morecambe Bay for Practice Force Landings (PFL's) over water. As a seaplane pilot myself, I found this statement most alarming. As an organisation, we have reviewed this claim and bought in external consultants, who have concluded that in light of SERA 3101 and SERA 3105, especially when

considering ANO Article 8, 240 and 72 that this practice is be both ill-advised and operating out of scope of the Rules of the Air.

We have thus reported a potential breach of aviation law (Application Submission Number: ABL-20363) to the CAA and have written to the Secretary of State to ask that a full investigation be carried out into this dangerous practice.

As part of the stakeholder engagement process we have spoken with Bay Rescue, the charity organisation who specialise in recovery of people and animals from Morecambe Bay and beyond. They have mentioned that they have been called out to multiple coastguard reports of microlights going into the sea at Morecambe Bay, but when they have arrived on scene there are no microlights to be found.

It is not beyond the realms of possibility that the suggested actions of your members are triggering pointless Search and Rescue responses.

Secondly, within the correspondence from your members are statements that we are planning on infringing airspace.

We take such statements extremely seriously and have passed all correspondence on to our lawyers for defamation review.

All correspondence will be placed into the Stakeholder Engagement file that we submit back to the CAA and your members would be well advised to remember that writing such comments will not come without consequence. The same should be noted for social media posts.

Finally, in correspondence with other Airspace Change Sponsors, we find that it is the same members of the microlight fraternity, every time, that have bombarded the sponsors with the same rambling tirades, often containing nothing to do with the proposed airspace change.

We would ask that the BMAA reaches out to these members and actively speaks as a voice for the microlight community.

Whilst obviously members of the public and airspace users alike have the opportunity to have their say as part of stakeholder engagement, continuous repetitive tirades from specific members of the microlight community is doing nothing for the image and reputation of the BMAA or microlights in general.

When such members go on to FOI act the NHS trust, presumably in the hope of frustrating the NHS' plans, they merely invoke more negative perception of the microlight community, not to mention draining NHS resources that could be better spent in times of pandemic.

I trust this goes some way to answering your questions, but should you require clarification on any point please do come back to me.

Yours Sincerely,

[redacted]

[redacted]

EMAILML3

RE: Regards ACP-2021-022 Stakeholder Engagement

[redacted]
Please see my responses below in Blue.
Regards

[redacted]
[redacted]LIGHTS GO TO 600KG – MORE INFO + FULL FAQ HERE
British Microlight Aircraft Association – The natural home of microlights

This e-mail is for the intended recipient only. If obtained in error, please delete and notify the sender.

From: [redacted]

[redacted]

Thank you for your email, which is noted for its inclusion of the airspace team at the CAA. Firstly I have gone through our web portal and associated server and can confirm that we have not received any communication from you prior to this point.

As noted in my email to you my initial response was through your portal as there were no direct contact details as are used in other ACPs. Perhaps there is something wrong with your portal?

Notwithstanding the above I am happy to provide answers to your questions below.

1 - The email address used for this ACP is the [redacted] which is detailed on the ACP portal and your members have already started direct communications with. Our contact details can also be found on our website and my personal details were made visible on the Flyer magazine news article.

There were no obvious direct contact details on your ACP details, just the response portal. Responses were requested through that portal. I don't read Flyer and don't consider relying upon third parties to promulgate response details a very satisfactory way of encouraging engagement.

2 - The BMAA was contacted as part of the NATMAC list on Sunday 27th June at 20:36:23 and this email was sent BCC'd to your address of [redacted] This email was sent as a multiple address mail-out, addressed primarily to [redacted] This was the same email that the majority of aviation organisations on the NATMAC list received and have responded to.

The email was not received into my inbox, nor trapped in either our server spam capture nor that in my Outlook. You say the majority of NATMAC members received the email, this implies that some did not. I certainly didn't.

3 - We are planning a flight campaign of 90 days, the timeline for the commencement of flights is as published on the ACP.

Thank you. I shall have to try again to decipher the information.

4 - We have provided flight track details in google earth form, and provided exact track details on the accompanying www.morecambebaydrones.com website. We do not own the copyright of CAA charts and thus cannot reproduce them on the web. Please note that the CAA portal for ACP uses Google Earth Maps or similar for their pictorial representation of the routes locations.

Other ACPs use aeronautical charts to depict proposals. For example ACP-2019-18. It isn't really acceptable to attempt to conduct technical engagement with aviation stakeholders using poor information.

Some of your members have plotted our tracks on SkyDemon and sent them in to us. I can say that all the proposed tracks that we are planning on operating are sub 400' agl and well to the north of Rossall Field, St Michaels and Brook Farm strips.
5 - We are operating a top down and bottom up approach to this stakeholder engagement. GDPR prevents us from revealing the exact points of contact however I am happy to report that:

Yes, I didn't ask for individuals, I requested "i*f you could advise us of all local aviation interests that you have engaged".* These will be the same details as you will eventually publish within your ACP, so not a GDPR issue.

For Top down, we have started with all professional and commercial air-space operators and users, i.e. the Airfields at Walney, Warton and then Blackpool, along with NPAS and HEMS.

We have then reached out to all Flight Training Organisations in the area, predominantly operating out of Blackpool and Carlisle airports.

Next we come down to the small strip operators and clubs, which in the microlight fraternity includes:

- Northern Microlights – St Michael's – contacted
- Attitude Airsports – Rossall Field – contacted
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- Bickerstaffe Aviation – contacted – but we believe they are no longer operating.

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Moving forward we have spoken to the parachute club at Cark and are awaiting a response from Cockerham.

Then we have the gliding clubs, the BGA, who responded to the same email that was sent to yourself at BMAA, have advised us that we should liaise with Lakes Gliding Club, which we are doing through BAe at Walney and that they have no further objections. A very professional response.

Finally we have spoken with the kite flying clubs who operate in the area and other drone operators, such as Bay Rescue and BAe Walney.

Our bottom up approach then brings into play all land asset owners who may have an interest, liability or just a curiosity with regards our planned operations.
These stakeholders include British Aerospace Submarines, British Aerospace Warton, EDF energy, British Nuclear Constabulary, Network Rail, and National Grid along with Lancashire County Council, Lancaster City Council, Local Enterprise Partnership etc.

Thank you.

6. ADSB In and Out

Thank you.

7. The aircraft is equipped with a camera system that is relayed back to the remote pilot through multiple redundant communication systems, thus the remote pilot can avoid other airborne hazards, such as non-compliant aircraft, kites, and birdlife. The aircraft can also transition into vertical take-off mode and thus hover to avoid.

Thank you.

8. The aircraft carries NHS EN3373 containers which are then protected in crash tested payload containers. Our aircraft operator has the appropriate Dangerous Goods Licence from the CAA for the carriage of goods appropriate to the task.
With regards the possibility of the aircraft ditching in the bay, we are in the process of establishing a Letter of Agreement with Bay Rescue to recover the aircraft and its cargo.

Thank you.

Having answered your questions, I would like to raise a few points with you as CE BMAA.

Firstly we have been inundated with rambling tirades from several of your members, presumably writing outside the remit of the BMAA.

The majority of the content has nothing to do with the Temporary Danger Area or the Airspace Change Process. However, one such claim, by a microlight pilot claims they use Morecambe Bay for Practice Force Landings (PFL's) over water. As a seaplane pilot myself, I found this statement most alarming. As an organisation, we have reviewed this claim and bought in external consultants, who have concluded that in light of SERA 3101 and SERA 3105, especially when considering ANO Article 8, 240 and 72 that this practice is be both ill-advised and operating out of scope of the Rules of the Air.

We have thus reported a potential breach of aviation law (Application Submission Number: ABL-20363) to the CAA and have written to the Secretary of State to ask that a full investigation be carried out into this dangerous practice.

As part of the stakeholder engagement process we have spoken with Bay Rescue, the charity organisation who specialise in recovery of people and animals from Morecambe Bay and beyond. They have mentioned that they have been called out to multiple coastguard reports of microlights going into the sea at Morecambe Bay, but when they have arrived on scene there are no microlights to be found.

It is not beyond the realms of possibility that the suggested actions of your members are triggering pointless Search and Rescue responses.

Secondly, within the correspondence from your members are statements that we are planning on infringing airspace.

We take such statements extremely seriously and have passed all correspondence on to our lawyers for defamation review.

All correspondence will be placed into the Stakeholder Engagement file that we submit back to the CAA and your members would be well advised to remember that writing such comments will not come without consequence. The same should be noted for social media posts.

Finally, in correspondence with other Airspace Change Sponsors, we find that it is the same members of the microlight fraternity, every time, that have bombarded the sponsors with the same rambling tirades, often containing nothing to do with the proposed airspace change.
We would ask that the BMAA reaches out to these members and actively speaks as a voice for the microlight community.

Whilst obviously members of the public and airspace users alike have the opportunity to have their say as part of stakeholder engagement, continuous repetitive tirades from specific members of the microlight community is doing nothing for the image and reputation of the BMAA or microlights in general.

When such members go on to FOI act the NHS trust, presumably in the hope of frustrating the NHS' plans, they merely invoke more negative perception of the microlight community, not to mention draining NHS resources that could be better spent in times of pandemic. I trust this goes some way to answering your questions, but should you require clarification on any point please do come back to me.

Yours Sincerely,

The BMAA has not, as is clear, made any response so far.

Individual members may have, but any responses have not been encouraged or endorsed by the BMAA.

I am aware of the frustration felt by some members resulting from poorly devised ACPs for drone trials, particularly in the west of Scotland. In some cases it is apparent that sponsors have little understanding of aviation resulting in pilots from all walks of recreational aviation

having to spend significant time objecting and educating when it is the sponsor's responsibility to understand the environment in which they wish to fly.

The whole point of engagement is to avoid confrontation resulting in both manned and unmanned air activity operating safely together with minimal disruption to either side.

Two good examples have been the engagement for ACP-2019-18 and ACP-2021-014. In both of these cases the sponsor had sufficient aviation knowledge to meaningfully discuss and amend proposals working with among other our members resulting in all concerned being satisfied.

[redacted] MBA. PhD. MIEEE. MACM. MBCS. AFRMet, FRGS, FRAS.
Director
Electric Aviation Limited.

EMAIL ML4

From: [redacted]

[redacted]

My thanks for your response.

With regards the email, our servers show that you were mailed in the same email, at the same time as all other NATMAC members.

With regards our competency to submit a TDA application, we have had no other concerns from any other party. I would also point out that we utilise the services of a professional aviation consultancy, and are advised by a CFI with considerable GA experience. I myself am PPL(A) Land and Sea, with IRR, complex and Night ratings. I have flown all manner of aircraft from PA18 to Mig29UB and was an ESA Astronaut Candidate in 2008 with 9 mins Zero G time.

Finally our team also includes former CAA personnel and appropriate aviation legal representation.

Putting the above issues aside, if the BMAA has any airspace issues with the TDA please do let us know and we will endeavour to respond accordingly.

Yours faithfully.
[redacted]

[redacted]

[redacted]

[redacted] on 2021-07-16 15:36

DetailsPlain text

[redacted]

Geoff Weighell
CE
MICROLIGHTS GO TO 600KG – MORE INFO + FULL FAQ HERE
British Microlight Aircraft Association – The natural home of microlights

[redacted]

EMAIL ML6

ACP-2021-022

British Microlight Aircraft Association Engagement Response

We have found the engagement process for ACP-2021-022 rather unsatisfactory. An initial request for further detail submitted through the online form hosted on the sponsor's website was unanswered and we were subsequently told that the form had not been received. There were no other contact details on the website which should have offered alternative contact options.

The information available on the sponsor's website for the engagement has led to questions which, if the information had been initially included, would have been avoided. For example, how EC is planned to be used to avoid conflict with other airspace users and agreed plans for DAIS and DACS.

The depiction of the proposed TDA on a Goggle map, using route depiction rather than the proposed TDA airspace is unsatisfactory. See point 3 & 4 below.

Please note some specific points below.

Statement of Need

1) We note that flight safety is planned to be enhanced by using "the quadrantal rule" as noted in the Statement of Need, dated 9 March 2021.

> *Safety wise - we are looking to fly direct line from a loading point on the east side of the bay to the loading point at the west side of the bay using the quadrantal rule for flight separation.*

As an observation, the quadrantal rule, when it did exist, only applied to aircraft cruising above 3,000' amsl and so would not, and does not, apply in this context.

2) We note that the Statement of Need, dated 9 March 2021, claims:

> *This proposal supports part of the plan for delivering the Airspace Modernisation Strategy with reference to CAP 1711, Page 62, paragraph 2.*

The paragraph referred to is copied below but it appears that the ACP neither modernises airport arrival nor reconfigures controlled airspace.

> *♣ changes to airspace around airports at lower altitudes (from c.7000 feet to the ground) that:*
> *♣ modernise airport arrival and departure routes to increase the throughput of traffic and better manage aircraft noise impacts; and*
> *♣ reconfigure controlled airspace structures to provide greater integration of different airspace user groups.*

3) Charting

During the engagement process we asked that the intended TDAs be depicted on a 1:250,000 aeronautical chart so that those with an aviation interest could clearly see any potential conflict with existing operations.

The sponsor refused the request citing copyright issues as the reason which prevented them from using an aeronautical chart.

The sponsor also suggested that individuals should map the TDA from coordinates given on the sponsor's website.

We consider the responses inappropriate in that it is the sponsor who is requesting the TDA and so should provide adequate accurate information for other airspace users.

We consider our request quite proper, that a proposed airspace change should be depicted accurately on an aeronautical chart. It is quite normal that this is done, and this has been pointed out to the sponsor with examples.

4) Accuracy of depiction

The proposed routes as depicted on the sponsor's website are track routes and as such do not depict the proposed TDAs which enclose them.

The sponsor has indicated several routes but not advised which will be the subject of a TDA. Will it be all, or some? Without a degree of certainty it is impossible for other airspace users to make an assessment of how this might affect our activities.

We note that during the Assessment Meeting held between the sponsor and the CAA the need to *"represent accurately the physical boundaries of the TDA."* was pointed out by CAA1. Extract copied below.

> MINUTES OF MORECAMBE BAY UAS TRANSIT ROUTE
>
> ASSESSMENT MEETING HELD ONLINE ON 26/04/21
>
> Page 6
>
> *CAA1 inferred that Electric Aviation need to ensure that the systems used need to be appropriate to engage with the stakeholders, but also need to represent accurately the physical boundaries of the TDA.*

5) Choice of route

We note that one route as shown appears to penetrate restricted area R444. We assume that if used this route will be approved as part of the ACP.

6) TDA Upper Level

The sponsor says that the upper limit of the TDA will be 400' agl. As the proposed routes are over both water and land it would be helpful if an upper limit of each section is defined as an altitude, vertical distance above mean sea level, otherwise it is left to other airspace users to determine the upper levels using elevations. This is unsatisfactory.

Summary

The BMAA can support the establishment of a TDA where the dimensions, operating procedures, and the results of engagement do not significantly negatively affect our members.

The proposal ACP-2021-022 in its current state does not give us the assurance that we need to support it.

[redacted]

EMAILML7

Re: BMAA Response to ACP-2021-022 Engagement

To Geoff Weighell on 2021-08-14 16:06

Details Plain text

image001.jpg (~11 KB)

We confirm receipt of your response.

ELECTRIC AVIATION

On 2021-08-13 17:39, Geoff Weighell wrote:

> Please confirm receipt of our response to ACP-2021-022 as requested below on 30 July 2021.
>
> [redacted]
>
> On 30 Jul 2021, at 10:50, Geoff Weighell <geoff.weighell@bmaa.org> wrote:
>
> Please find attached the BMAA's response to engagement re ACP-2021-022.
> Please confirm receipt.
> Regards
>
> [redacted]
> CE
> MICROLIGHTS GO TO 600KG – MORE INFO + FULL FAQ HERE
> *British Microlight Aircraft Association – The natural home of microlights*

1.34.4 Microlight "W"

Electric Aviation also received [redacted] (claiming to be BMAA Airspace Team – subsequently disputed by the Chief Executive of BMAA) document dated 19th July, 2021 at 17:59. (EMAILMLW01) This was also copied to a CAA Airspace team member.

Electric Aviation responded on the 20th of July at 12:08 as evidenced in EMAILMLW2.

[redacted] responded on the 23rd of July at 16:23 as evidenced in EMAILMLW3.

[redacted] responded further on the 30th of July at 12:46 as evidenced in EMAILMLW4.

Electric Aviation responded on the 30TH of July at 13:26 as evidenced in EMAILMLW5.

[redacted] responded on the 30th of July at 14:30 as evidenced in EMAILMLW6.

Electric Aviation concluded by responding to Mr [redacted] on the 30th of July 2021 at 14:39 as evidenced in EMAILMLW7.

Electric Aviation could find no valid complaints or points regarding the Airspace Change Proposal and Electric Aviation worked to answer all of Mr [redacted] in a timely and professional manner.

With regards the sheer volume of information received from so few voices claiming to represent the entire microlight community, Electric Aviation noted from [redacted] comment:

> *"I think you are a victim of the concern about increasing encroachment of Class G airspace by TDAs, etc."*

1.34.5 Microlight "W" Correspondence

EMAILMLW01

ACP-2021-022

From [redacted] on 2021-07-19 17:59

DetailsPlain text

Good afternoon,

As a pilot and member of the British Microlight Aircraft Association (BMAA) Airspace Group I would like to engage with you under the above ACP process and initially ask some questions to better understand the potential impact on our members.

1. I understand that the C.E. of the BMAA has already contacted you with some questions but after some significant time in terms of this engagement period has had no response, so forgive me if I am unsurprisingly duplicating some of those questions but I trust you can give me a prompt response to enable the engagement period to be meaningful by an adequately informed stakeholder, as the CAP requires.
2. Since this is an AIRSPACE Change process and you are required to engage with aviation stakeholders can you please provide the currently proposed ***areas of your TDAs (not just the core expected route of the UAVs)*** presented on an AIRSPACE chart, preferably, for clarity, on a 1:250,000,000 scale? This will enable us to see clearly the potential impacts on other airspace users in relation to other areas of local airspace. I understand from the information on the ACP portal that you have direct GA pilot experience so would have expected this to be a fundamental point, since you obviously use airspace charts regularly. Unfortunately, for aviation stakeholders presentations on satellite maps are pretty meaningless and can lead to errors in plotting on to airspace charts, as its necessary.
3. Since this is an ACP for a *Temporary Danger Area (TDA)* can you please present your currently proposed *actual TDA areas* rather than the central routing you expect the UAVs to fly? Clearly the CAA will require this in your formal application. In particular because: from the presentations in your power point presentation on the CAA Portal the Purple route shows the UAVs routing in a curved path to/from Lancaster Royal Infirmary (LRI) with a confluence of routes just to the east of LRI. We therefore cannot presume whether or not you would need a wider *AREA of TDA* in these locations rather than the tight 400ft each side of the expected central routing. Incidentally, the routes shown on the website you give are shown incomplete. They go off the edges of the map portions given.
4. Can you please explain why you would need the Blue route from the base of the inverted 'T' to route directly in a straight line to LRI, whereas the Purple route routes inland further to the north-east of Restricted Area R444. The latter would seem to be more sensible in that it avoids the TDA seemingly infringing R444.
5. Although your chosen presentation on a satellite view is not as accurate as showing on an airspace chart would be (another reason for requesting that it be so), it appears that the proposed UAV Blue route is at least touching R444. When I plot the waypoint coordinates you have list at least one of them is definitely within R444. Since I appreciate that this stage of the engagement period is to enable you to take into account comments and discussions before presenting your proposals formally to the CAA for a TDA can I ask why you don't make Blue route the same as the Purple route in this area, so as to definitely give R444 sufficient berth? Perhaps this is your thinking behind two proposed routing and enables you

to refine this prior to your formal submission? As you have GA piloting experience you will be well aware of the 'Take2' advice – remaining 200ft vertically and 2nm horizontally from controlled or restricted airspace. It would thus seem sensible to apply this to UAV operations as well as manned aircraft. Also, can I ask why you then say on the website "N.B. Furness General Hospital and the Sandylands Waypoint are both located outside the Walney ATZ and R444/Heysham.", when for the Blue route this is far from clear based on the coordinates that you have given? Hopefully there is an error in transposing the coordinates to the published information.

6. Can I please ask you to confirm which of the following you are already directly engaging with: St Michael's airfield; North West Microlight Aircraft Club; The Bay Flying Club; Rossall Field; Pilling Sands airfiled; Brook Farm airfiled; Cockerham airfield; Cark/Grange Over Sands airfield; Troutbeck airfield; Berrier airfield; Bedlands Gate airfield; Glassonby airfiled? Whilst not all immediately under the proposed operating area pilots based at those locations will regularly fly in the area and therefore ought to be included in your engagement.
7. Are you planning to trial any technology to develop Detect And Avoid capability to enable your UAVs to continue flying for your clients in non-segregated airspace after the proposed TDA has been deactivated?
8. Do you intend / will you be carrying any items classed as Dangerous Goods?
9. What are your proposals for a DACS or DAAIS, especially considering that it is unlikely vehicles operating below 400ft will be detectable by current radar or other EC devices?

I look forward to hearing from you as soon as possible.

[redacted]

EMAILMLW2

From: [redacted]
Sent: 20 July 2021 12:08
To: [redacted]
Subject: Re: ACP-2021-022

Dear Adrian,

Please find our responses below:

On 2021-07-19 17:59, [redacted] wrote:

As a pilot and member of the British Microlight Aircraft Association (BMAA) Airspace Group I would like to engage with you under the above ACP process and initially ask some questions to better understand the potential impact on our members.

We have responded to multiple Microlight pilots and associations already, but are happy to answer your specific questions. My apologies that the response to your email, re formats the numbering of your questions.

1. I understand that the C.E. of the BMAA has already contacted you with some questions but after some significant time in terms of this engagement period has had no response, so forgive me if I am unsurprisingly duplicating some of those questions but I trust you can give me a prompt response to enable the engagement period to be meaningful by an adequately informed stakeholder, as the CAP requires.

We established that the CE of BMAA was emailed as part of our NATMAC engagement and that he had not responded to this email correspondence. We received multiple responses from a range of organisations post the mail out confirming that they had received the email at the same time.

1. Since this is an AIRSPACE Change process and you are required to engage with aviation stakeholders can you please provide the currently proposed ***areas of your TDAs (not just the core expected route of the UAVs)*** presented on an AIRSPACE chart, preferably, for clarity, on a 1:250,000,000 scale? This will enable us to see clearly the potential impacts on other airspace users in relation to other areas of local airspace. I understand from the information on the ACP portal that you have direct GA pilot experience so would have expected this to be a fundamental point, since you obviously use airspace charts regularly. Unfortunately, for aviation stakeholders presentations on satellite maps are pretty meaningless and can lead to errors in plotting on to airspace charts, as its necessary.

We do not own the copyright of the CAA aviation charts and thus cannot provide digital copies of the TDA routes in this format. The CAA do not issue 1:250,000,000 charts, I suspect you mean 1:250,000.

The CAA utilise Google Maps on the ACP.

We have strived to present the information in a manner that is obvious to all to understand.

We spent considerable time ensuring that the width of the lines on the website correspond to the actual width of airspace that the TDA will occupy.

800' is 0.131 of a Nautical Mile and as such we would have to be exceptionally careful when drawing such airspace onto a 1,250,000 chart as the width of a 0.1 pen would have significant impact on the TDA.

We utilise a GIS system that includes the EuroControl airspace data to establish out routes.

1. Since this is an ACP for a *Temporary Danger Area (TDA)* can you please present your currently proposed *actual TDA areas* rather than the central routing you expect the UAVs to fly? Clearly the CAA will require this in your formal application. In particular because: from the presentations in your power point presentation on the CAA Portal the Purple route shows the UAVs routing in a curved path to/from Lancaster Royal Infirmary (LRI) with a confluence of routes just to the east of LRI. We therefore cannot presume whether or not you would need a wider *AREA of TDA* in these locations rather than the tight 400ft each side of the expected central routing. Incidentally, the routes shown on the website you give are shown incomplete. They go off the edges of the map portions given.

The areas of TDA required is based on the OSC of the aircraft that will undertaken the flights along with the operation, contingent and emergency buffers. RPAS aircraft do not operate as normal aircraft as they have two very different flight systems, thus the turning radius of the aircraft is unique to the airframe.

1. Can you please explain why you would need the Blue route from the base of the inverted 'T' to route directly in a straight line to LRI, whereas the Purple route routes inland further to the north-east of Restricted Area R444. The latter would seem to be more sensible in that it avoids the TDA seemingly infringing R444.

We presented the Blue and Purple routes to enable other airspace users to comment on the potential impact that these routes may have. The Blue route is indeed the more direct route but has other ground based issues for us to to consider. We have no plans to infringe R444, our route skirts around R444 and we are in communication with EDF energy with regards any airspace that may run parallel or have a buffer zone that passes through R444.

1. Although your chosen presentation on a satellite view is not as accurate as showing on an airspace chart would be (another reason for requesting that it be so), it appears that the proposed UAV Blue route is at least touching R444. When I plot the waypoint coordinates you have list at least one of them is definitely within R444. Since I appreciate that this stage of the engagement period is to enable you to take into account comments and discussions before presenting your proposals formally to the CAA for a TDA can I ask why you don't make Blue route the same as the Purple route in this area, so as to definitely give R444 sufficient berth? Perhaps this is your thinking behind two proposed routing and enables you to refine this prior to your formal submission? As you have GA piloting experience you will be well aware of the 'Take2' advice – remaining 200ft vertically and 2nm horizontally from controlled or restricted airspace. It would thus seem sensible to apply this to UAV operations as well as manned aircraft. Also, can I ask why you then say on the website "N.B. Furness General Hospital and the Sandylands Waypoint are both located outside the Walney ATZ and R444/Heysham.", when for the Blue route this is far from clear based on the coordinates that you have given? Hopefully there is an error in transposing the coordinates to the published information.

As previously mentioned we are not able to supply CAA charts, nor can we draw as accurately, our routes on CAA charts. The thickness of most pens on a 1,250,000 chart

gives a poor tolerance to visually work from. Also as previously mentioned the blue route which skirts around R444 is designed to take into consideration specific ground features. With regards the 'Take2' advice, CAP722 defines certain drone operations as being different than aircraft operations under the ANO. Finally as previously mentioned, we are in contact with EDF the operator of R444 and our discussions with them will through the stakeholder engagement process ensure that there is no restricted airspace enter by our aircraft without appropriate permissions being in place. The same applies to the Walney ATZ, with whom we are in direct discussions with and formulating a co-ordinated response as part of this TDA application process.

1. Can I please ask you to confirm which of the following you are already directly engaging with: St Michael's airfield; North West Microlight Aircraft Club; The Bay Flying Club; Rossall Field; Pilling Sands airfiled; Brook Farm airfiled; Cockerham airfield; Cark/Grange Over Sands airfield; Troutbeck airfield; Berrier airfield; Bedlands Gate airfield; Glassonby airfiled? Whilst not all immediately under the proposed operating area pilots based at those locations will regularly fly in the area and therefore ought to be included in your engagement.

We have engaged with:

- Northern Microlights
- Bickerstaff Aviation
- Attitude Airsports
- Cumbria Microlight Training
- West Lancashire Microlight School
- Lancs Aero Club

We have also subsequently heard from [redacted] West Microlight Aircraft Club.

Cark and Cockerham parachuting clubs have also been contacted.

1. Are you planning to trial any technology to develop Detect And Avoid capability to enable your UAVs to continue flying for your clients in non-segregated airspace after the proposed TDA has been deactivated?

Our airframe partner continues works with their DAA system.

1. Do you intend / will you be carrying any items classed as Dangerous Goods?

Yes and our airframe partner has appropriate CAA Dangerous goods permissions.

1. What are your proposals for a DACS or DAAIS, especially considering that it is unlikely vehicles operating below 400ft will be detectable by current radar or other EC devices?

We are working on proposals for these at the moment with multiple airfield providers.

I look forward to hearing from you as soon as possible.

Regards

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

For Electric Aviation Limited.

[redacted]

EMAILMLW4

ACP-2021-022

From [redacted] on 2021-07-30 12:46

DetailsPlain textDownload all attachments

- Trax revised TDA.airspace chart.png(~2.1 MB)
- Trax revised TDA.sat view.png(~2.1 MB)
- Lancaster RI - Furness GH.flightplan(~4 KB)
- Solent TDA.v1.airspace chart.doc(~192 KB)

RE: ACP-2021-022 Morecambe Bay Engagement Response

[redacted]

Thank you for your prompt reply to my email of 19 July. Again, apologies for my delay in replying but I was away for some days last week. I'd like to add the following comments to the Engagement:

1. My apologies for finger trouble with the '0s'! Yes, of course, I meant the 1:250,000 (Quarter Million) scale airspace chart.

1. Can you please explain what a GIS system is? Sorry for not knowing that acronym.

1. If copyright is indeed a problem then may I suggest asking the CAA for copyright approval and saying you will revert when approved, which would be more helpful to all concerned? Since other ACPs on the portal include proposals from airports and Air Navigation Service Providers (ANSPs) you will see that those naturally include representations on airspace charts. I would think the CAA would be somewhat shocked if, for example, Exteter airport submitted an application on a satellite map. Applications for a TDA are no different. Other UAV ACPs have included airspace chart presentations; e.g. the ACP by Trax International for a TDA at Goodwood, and I attach copies of their latest revision shown both on the 1:250,000 airspace chart and a satellite map to illustrate the immediate clarification this provides in relation to other airspace. Also, Skylift UAV (I believe your operator sub-contractor) for their own TDA over the Solent – see attached. I've also just received a positive and immediate response from Altitude Angel, another current ACP sponsor with their proposed TDA depicted on the 1:250,000 airspace chart. So, clearly there is no difficulty in obtaining permission to use the airspace charts. We would be extremely shocked if the CAA made it a

problem when its an *Airspace* Change. Yes, they use Google maps on the initial ACP page (curious also) but I suspect they leave it to the sponsor to correctly identify their requirement. Curiously, as a pilot, I would have thought it your natural inclination. So, once again, I ask that you present your proposals on the 1:250,000 airspace chart, especially because your proposed routings are complex and to avoid errors in any stakeholder transposing them. It would be helpful but its your ACP so its up to you if you want your engagement to be 'meaningful' with 'informed stakeholders', as the CAP requires.

1. I read what you say about the accuracy of thickness of line to represent the proposed width of your TDA but still feel that, e.g. Skylift UAVs presentation of a similar TDA is significantly clearer and more appropriate for an *Airspace* Change proposal. Again, something I emphasise for noting by the CAA also. I cannot comprehend how the CAA does not require an *airspace* change application on an *airspace* chart at some point in the ACP process. Surely they must need to look at that when considering the application.

1. You particularly asked for feedback regarding airspace issues and in my previous email I did ask you to explain why your Blue route is so close to R444 when your Purple route clearly gives it a wide berth. We would therefore submit that your Purple route is far better than your Blue route in respect of avoiding conflict with existing airspace. You did say that there are other ground-based issues to consider but did not explain what those are. Again, presentation on an airspace chart may make this more easily visible; for things such as urban areas or high terrain, etc. Whilst I don't feel its stakeholders' job to plot your whole routings on to airspace charts, since that's part of your ACP responsibility, from your stated waypoint coordinates, I have plotted your Blue routing between Lancaster Royal Infirmary to Furness General Hospital on the 1:250,000 chart of SkyDemon, to illustrate the points. Please see below. If you have access to SkyDemon or other moving map systems within your organisation (and being a GA pilot yourself, perhaps you do) you can open the attached file, which enables you to zoom in or out. This indeed illustrates the point that it shows so much more obviously and clearly the proposed routing relative to other airspace, airfields and terrain, urban areas, hazards, etc. Assuming that SkyDemon are accurate with their projections (and they are extremely well respected and obtain their data from the CAA so are widely used by GA pilots) its interesting to note the proximity of your Blue route to R444. In fact, you can zoom right in to see that one waypoint IS indeed inside R444. Accepted that you now hope to obtain permission from EDF to route through this RA (which indicates you are aware that it does), nevertheless, as part of this engagement I would say that your Purple route clearly avoids this requirement and therefore I would consider the latter preferable. You did not explain what the other issues are that the Purple route raises so I cannot comment on those.

SKYDEMON CHART REMOVED AS NO EVIDENCE PROVIDED THAT IT WAS REPRODUCED WITH PERMISSION OF SKYDEMON

1. I look forward to hearing details of the DAA technology to be trialled or deployed, which will indeed be breaking new ground and welcome.

1. I look forward to details of your arrangements for a DACS or DAAIS in your final application for a TDA.

[redacted]

EMAILMLW5

Re: ACP-2021-022

To [redacted] on 2021-07-30 13:26

DetailsPlain text

[redacted]

Please find our response to your queries below.

We have also received this morning a formal response from the BMAA.

We welcome all engagement, but we will, for clarity, respond to you as a member of the BMAA, but in this case not officially representing the BMA.

Please find my responses below in RED

With Best Regards,

Chris

On 2021-07-30 12:46, [redacted] wrote:

RE: ACP-2021-022 Morecambe Bay Engagement Response

Dear Chris,

Thank you for your prompt reply to my email of 19 July. Again, apologies for my delay in replying but I was away for some days last week. I'd like to add the following comments to the Engagement:

1. My apologies for finger trouble with the '0s'! Yes, of course, I meant the 1:250,000 (Quarter Million) scale airspace chart.

No Problems

1. Can you please explain what a GIS system is? Sorry for not knowing that acronym.

Geographic Information System - effectively a commercial geographic database system - we have the full Eurocontrol Airspace data held within this.

1. If copyright is indeed a problem then may I suggest asking the CAA for copyright approval and saying you will revert when approved, which would be more helpful to all concerned? Since other ACPs on the portal include proposals from airports and Air Navigation Service Providers (ANSPs) you will see that those naturally include representations on airspace charts. I would think the CAA would be somewhat shocked if, for example, Exteter airport

submitted an application on a satellite map. Applications for a TDA are no different. Other UAV ACPs have included airspace chart presentations; e.g. the ACP by Trax International for a TDA at Goodwood, and I attach copies of their latest revision shown both on the 1:250,000 airspace chart and a satellite map to illustrate the immediate clarification this provides in relation to other airspace. Also, Skylift UAV (I believe your operator sub-contractor) for their own TDA over the Solent – see attached. I've also just received a positive and immediate response from Altitude Angel, another current ACP sponsor with their proposed TDA depicted on the 1:250,000 airspace chart. So, clearly there is no difficulty in obtaining permission to use the airspace charts. We would be extremely shocked if the CAA made it a problem when its an *Airspace* Change. Yes, they use Google maps on the initial ACP page (curious also) but I suspect they leave it to the sponsor to correctly identify their requirement. Curiously, as a pilot, I would have thought it your natural inclination. So, once again, I ask that you present your proposals on the 1:250,000 airspace chart, especially because your proposed routings are complex and to avoid errors in any stakeholder transposing them. It would be helpful but its your ACP so its up to you if you want your engagement to be 'meaningful' with 'informed stakeholders', as the CAP requires.

Please see next response

1. I read what you say about the accuracy of thickness of line to represent the proposed width of your TDA but still feel that, e.g. Skylift UAVs presentation of a similar TDA is significantly clearer and more appropriate for an *Airspace* Change proposal. Again, something I emphasise for noting by the CAA also. I cannot comprehend how the CAA does not require an *airspace* change application on an *airspace* chart at some point in the ACP process. Surely they must need to look at that when considering the application.

The main point to make here, is that to keep the volume of airspace that will be affected by this TDA to an absolute minimum, we have only requested a volume of width 800' by height 400'. Whereas other sponsors may ask for larger volumes, we have not. To use the CAA 1:250000 chart, we would need to use a 0.1mm pen to show the outline of the 800' width of airspace required, which would mean us being successfully able to draw around a 0.75mm box, which just is not practical. As you have shown below, you are perfectly able to plot our routes on SkyDemon from the information that you have acquired from the website.

Out of the Gliders, Handgliders, Paramotors, Kite Flyers, Model Aircraft Clubs, NATS, NPAS, HEMS, BAe and the MOD, the only people who are struggling with the proposed routing for this Airspace Change Proposal are the Microlight community.

1. You particularly asked for feedback regarding airspace issues and in my previous email I did ask you to explain why your Blue route is so close to R444 when your Purple route clearly gives it a wide berth. We would therefore submit that your Purple route is far better than your Blue route in respect of avoiding conflict with existing airspace. You did say that there are other ground-based issues to consider but did not explain what those are. Again, presentation on an airspace chart may make this more easily visible; for things such as urban areas or high terrain, etc. Whilst I don't feel its stakeholders' job to plot your whole routings on to airspace charts, since that's part of your ACP responsibility, from your stated waypoint coordinates, I have plotted your Blue routing between Lancaster Royal Infirmary to Furness General Hospital on the 1:250,000 chart of SkyDemon, to illustrate the points. Please see below. If you have access to SkyDemon or other moving map systems within your organisation (and being a GA pilot yourself, perhaps you do) you can open the attached file, which enables you to zoom in or out. This indeed illustrates the point that it shows so much more obviously and clearly the proposed routing relative to other airspace, airfields and

terrain, urban areas, hazards, etc. Assuming that SkyDemon are accurate with their projections (and they are extremely well respected and obtain their data from the CAA so are widely used by GA pilots) its interesting to note the proximity of your Blue route to R444. In fact, you can zoom right in to see that one waypoint IS indeed inside R444. Accepted that you now hope to obtain permission from EDF to route through this RA (which indicates you are aware that it does), nevertheless, as part of this engagement I would say that your Purple route clearly avoids this requirement and therefore I would consider the latter preferable. You did not explain what the other issues are that the Purple route raises so I cannot comment on those.

We thank you for taking the time to plot our routes and this does show that the information that you have been presented on the website allows you to fully understand the routes.

Your comment regarding the Purple Route being more preferable to the Blue Route is noted, but we are asking stakeholders for comments on airspace that might affect them. We are really looking to get feedback from you with regards the routing and how that may affect microlight pilots in the area.

We are well aware of the issues with R444 and gaining permissions to enter the Restricted Zone.

Interestingly when you source airspace data from Eurocontrol as we have in our GIS system, certain features appear differently and even in different locations from other data sources such as https://3dairspace.org.uk/index.php/airspace/ It is not for us to comment on the accuracy of all airspace modelling software.

Please see below for an example of how when using open source airspace data in Google Earth, waypoints appear outside R444.

1. I look forward to hearing details of the DAA technology to be trialled or deployed, which will indeed be breaking new ground and welcome.

   We would be happy to keep you informed

1. I look forward to details of your arrangements for a DACS or DAAIS in your final application for a TDA.

You will be able to read about them in our final application.

Finally I would re-iterate that despite many many hours of communications with Microlight pilots, some claiming to be speaking on behalf of BMAA, the only feedback we have received that could affect our plans for airspace change are from microlight pilots claiming they use Morecambe Bay for low level flight below 500' and for Practice Forced Landings, but when we ask for more location details or evidence of such activities, none to date has been received.

Regards,

[redacted]

[redacted] Group

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Please find our response to your queries below.

We have also received this morning a formal response from the BMAA.

We welcome all engagement, but we will, for clarity, respond to you as a member of the BMAA, but in this case not officially representing the BMA.

Due to the multiple ACPs this past year, potentially affecting Class G airspace across the country the BMAA, which, like many GA organisations, is largely assisted by volunteer time, has enlisted local expertise to ensure members are aware of the potential risks and restrictions to look out for. As such I am a member of that team. I call it being well informed and well organised.

Please find my responses below in RED

With Best Regards,

[redacted]

On 2021-07-30 12:46, adrian.whitmarsh1@gmail.com wrote:

RE: ACP-2021-022 Morecambe Bay Engagement Response

Dear Chris,

[redacted]

[redacted]

Thank you for your prompt reply to my email of 19 July. Again, apologies for my delay in replying but I was away for some days last week. I'd like to add the following comments to the Engagement:

1. My apologies for finger trouble with the '0s'! Yes, of course, I meant the 1:250,000 (Quarter Million) scale airspace chart.

No Problems

1. Can you please explain what a GIS system is? Sorry for not knowing that acronym.

Geographic Information System - effectively a commercial geographic database system - we have the full Eurocontrol Airspace data held within this.

1. If copyright is indeed a problem then may I suggest asking the CAA for copyright approval and saying you will revert when approved, which would be more helpful to all concerned? Since other ACPs on the portal include proposals from airports and Air Navigation Service Providers (ANSPs) you will see that those naturally include representations on airspace charts. I would think the CAA would be somewhat shocked if, for example, Exeter airport submitted an application on a satellite map. Applications for a TDA are no different. Other UAV ACPs have included airspace chart presentations; e.g. the ACP by Trax International for a TDA at Goodwood, and I attach copies of their latest revision shown both on the 1:250,000 airspace chart and a satellite map to illustrate the immediate clarification this provides in relation to other airspace. Also, Skylift UAV (I believe your operator sub-contractor) for their own TDA over the Solent – see attached. I've also just received a positive and immediate response from Altitude Angel, another current ACP sponsor with their proposed TDA depicted on the 1:250,000 airspace chart. So, clearly there is no difficulty in obtaining permission to use the airspace charts. We would be extremely shocked if the CAA made it a problem when its an *Airspace* Change. Yes, they use Google maps on the initial ACP page (curious also) but I suspect they leave it to the sponsor to correctly identify their requirement. Curiously, as a pilot, I would have thought it your natural inclination. So, once again, I ask that you present your proposals on the 1:250,000 airspace chart, especially because your proposed routings are complex and to avoid errors in any stakeholder transposing them. It would be helpful but its your ACP so its up to you if you want your engagement to be 'meaningful' with 'informed stakeholders', as the CAP requires.

Please see next response

1. I read what you say about the accuracy of thickness of line to represent the proposed width of your TDA but still feel that, e.g. Skylift UAVs presentation of a similar TDA is significantly clearer and more appropriate for an *Airspace* Change proposal. Again, something I emphasise for noting by the CAA also. I cannot comprehend how the CAA does not require an *airspace* change application on an *airspace* chart at some point in the ACP process. Surely they must need to look at that when considering the application.

The main point to make here, is that to keep the volume of airspace that will be affected by this TDA to an absolute minimum, we have only requested a volume of width 800' by height 400'. Whereas other sponsors may ask for larger volumes, we have not. To use the CAA 1:250000 chart, we would need to use a 0.1mm pen to show the outline of the 800' width of airspace required, which would mean us being successfully able to draw around a 0.75mm box, which just is not practical.

As you have shown below, you are perfectly able to plot our routes on SkyDemon from the information that you have acquired from the website.

I note that you are unwilling or unable to present your ***Airspace*** Change Proposal on an ***airspace*** chart. Airports and ANSPs have no difficulty in presenting the edge of airspace widths on an airspace chart so I think your reasoning is illogical. That, of course, is my view, which you asked for, so I'll leave it for the CAA to decide if that is acceptable but would like to state to both you and the CAA that I find it, by definition, unacceptable. Its not my job to present your TDA. As I said, its your ACP so up to you how you present it formally to the CAA and for them to make a decision. I'm just commenting, as you requested.

Out of the Gliders, Handgliders, Paramotors, Kite Flyers, Model Aircraft Clubs, NATS, NPAS, HEMS, BAe and the MOD, the only people who are struggling with the proposed routing for this Airspace Change Proposal are the Microlight community.

That indicates to me that the microlight community are more organised on these matters and interested to protect the precious freedoms we have.

1. You particularly asked for feedback regarding airspace issues and in my previous email I did ask you to explain why your Blue route is so close to R444 when your Purple route clearly gives it a wide berth. We would therefore submit that your Purple route is far better than your Blue route in respect of avoiding conflict with existing airspace. You did say that there are other ground-based issues to consider but did not explain what those are. Again, presentation on an airspace chart may make this more easily visible; for things such as urban areas or high terrain, etc. Whilst I don't feel its stakeholders' job to plot your whole routings on to airspace charts, since that's part of your ACP responsibility, from your stated waypoint coordinates, I have plotted your Blue routing between Lancaster Royal Infirmary to Furness General Hospital on the 1:250,000 chart of SkyDemon, to illustrate the points. Please see below. If you have access to SkyDemon or other moving map systems within your organisation (and being a GA pilot yourself, perhaps you do) you can open the attached file, which enables you to zoom in or out. This indeed illustrates the point that it shows so much more obviously and clearly the proposed routing relative to other airspace, airfields and terrain, urban areas, hazards, etc. Assuming that SkyDemon are accurate with their projections (and they are extremely well respected and obtain their data from the CAA so are widely used by GA pilots) its interesting to note the proximity of your Blue route to R444. In fact, you can zoom right in to see that one waypoint IS indeed inside R444. Accepted that you now hope to obtain permission from EDF to route through this RA (which indicates you are aware that it does), nevertheless, as part of this engagement I would say that your Purple route clearly avoids this requirement and therefore I would consider the latter preferable. You did not explain what the other issues are that the Purple route raises so I cannot comment on those.

We thank you for taking the time to plot our routes and this does show that the information that you have been presented on the website allows you to fully understand the routes.

Agreed, but its not my job to present your TDA for you to the CAA. Its your ACP and for the CAA to decide if your presentation is acceptable. At some point they are going to have to look at your proposal against existing airspace. I've demonstrated that it makes the whole process transparent and clear and thus meaningful. Otherwise, you could be proposing to fly through any restricted or controlled

airspace. I'm suggesting its in your own interest. But its your decision and will be seen in that context.

Your comment regarding the Purple Route being more preferable to the Blue Route is noted, but we are asking stakeholders for comments on airspace that might affect them. We are really looking to get feedback from you with regards the routing and how that may affect microlight pilots in the area.

Any TDA that is close in proximity to existing airspace can create a 'pinch point' and thus have an impact they may not have been intended but nevertheless exists. We have seen the CAA require changes to TDA proposals in other ACPs because of this. I'm suggesting you consider this carefully.

We are well aware of the issues with R444 and gaining permissions to enter the Restricted Zone.

Noted.

Interestingly when you source airspace data from Eurocontrol as we have in our GIS system, certain features appear differently and even in different locations from other data sources such as https://3dairspace.org.uk/index.php/airspace/ It is not for us to comment on the accuracy of all airspace modelling software.

Possibly not but I'm sure the CAA will take a keen interest in the accuracy compared to their UK airspace charts.

Please see below for an example of how when using open source airspace data in Google Earth, waypoints appear outside R444.

Then I'd suggest you're using inaccurate or the wrong data. I rest my case about presenting it on the relevant airspace chart. You've answer the point clearly, thank you.

SKYDEMON CHART REMOVED AS NO EVIDENCE PROVIDED THAT IT WAS REPRODUCED WITH PERMISSION OF SKYDEMON

1. I look forward to hearing details of the DAA technology to be trialled or deployed, which will indeed be breaking new ground and welcome.

   We would be happy to keep you informed

1. I look forward to details of your arrangements for a DACS or DAAIS in your final application for a TDA.

You will be able to read about them in our final application.

Finally I would re-iterate that despite many many hours of communications with Microlight pilots, some claiming to be speaking on behalf of BMAA, the only feedback we have received that could affect our plans for airspace change are from microlight pilots claiming they use Morecambe Bay for low level flight below 500' and for Practice Forced Landings, but when we ask for more location details or evidence of such activities, none to date has been received.

That's noted and I'm sure the CAA will also. However, it is Class G airspace and, like all such, can be regularly flown in without such data being collated. As long as pilots are not flying within 500ft of any person, vehicle or structure they are at liberty to fly below 500ft. There are precious few areas where that can be done in Britain but PFL's are an enabling reason anyway. Again, I think you are a victim of the concern about increasing encroachment of Class G airspace by TDAs, etc. You asked for comments and they have made them. Its engagement so I'd suggest you acknowledge it and move forward with your formal proposals to the CAA.

[redacted]

[redacted]

[redacted]

EMAILMLW07

Re: ACP-2021-022

To [redacted] 2021-07-30 14:39

DetailsPlain text

[redacted]

My thanks for your response.

I conclude this by thanking you for your comments and close with two notes.

1) The Airspace system we utilise within our GIS is from EUROCONTROL and not from open source websources.

2) Performing PFL's over water or open quicksand, cannot in our estimation, nor that of our consultants, be performed in a safe, nor effective manner that conforms to the ANO.

Regards,

[redacted]

1.34.6 Mircolight "C"

It should be noted that this Airspace Change Request was for airspace close to [redacted] airfield and thus perhaps triggered a personal tirade from him.

Even before the Stakeholder Engagement phase had commenced, [redacted] submitted an email on the 10th of June 2021 raising concerns regarding the stakeholder engagement, which had not even started. (EMAILMLC1)

[redacted] submitted a 3000 word tirade against this Airspace Change Proposal on the 25th of June at 13:29 even though stakeholder engagement would not start for another three days. [redacted] submitted a 6000 word extended and updated tirade as his version 2 document on the 5th of July, 2021 at 16:59.

Upon review of this outpour of vituperation and censure, Electric Aviation would discover a lot of comment that was defamatory.

Upon consulting with Blakistons Chambers, it was confirmed that such defamation had no place in a stakeholder engagement document and as such Blakistons wrote to [redacted] (EMAILMLC2) advising him that if he continues this approach, Blakistons would advise Electric Aviation Limited to pursue a claim for defamation in the court. This was done for [redacted] benefit and protection as he is obviously oblivious to common law.

We have not included either tirade for brevity at this stage, however we enclose the full tirade and appropriate response to Mr C, sent at close of stakeholder engagement on the 14th of August at 17:06pm. We evidence this in EMAILMC3.

Electric Aviation answered all of his comments (EMAILMLC3) [redacted] 3.14 stating with shocking grammar that Microlights

"Practice Emergency Landings onto Water Equally instructors from Blackpool and elsewhere use the Bay to demonstrate and for pilots to practice forced landings onto water"

This was the only comment in 9000 words reviewed by Electric Aviation that could bear any impact on the Airspace Change Proposal.

In conversation with instructors from ANT and Westair, two air training organisations, operating out of Blackpool, neither party uses the bay to practice forced landings onto water.

1.34.7 Microlight "C" Correspondence

EMAILMLC1

ACP-2021-022

From HC on 2021-06-10 09:20

DetailsPlain text

Dear Sir or Madam

I'm contacting you at the suggestion of the CAA regarding the Morecambe Bay ACP 2021-022. I am a member of the British Microlight Aircraft Association (BMAA) Airspace Team which manages our responses to such proposals and I have an additional interest as a microlight/GA pilot local to your proposal.

I have been very concerned about the lack of engagement given a published engagement start date on the ACP Portal of 14 May, but the CAA assures me that the engagement period has not yet started; can you confirm this is correct? Could you also confirm please your proposed start date?

You should be aware that the BMAA and its members (as well as the much wider GA community) have serious concerns about the multiplicity of NHS Logistics:RPAS trials that have been undertaken, are being undertaken and are proposed and the Class G airspace implications. Can you please explain why these trials cannot be coordinated so that a single trial is conducted and the results shared amongst the NHS Trusts and RPAS operators?

I look forward to your response.

Regards

[redacted]

EMAILMLC2

BLAKISTON'S

Chambers of Richard Ryan, Glendeuglie House, Hayfield Road, Glenfarg, Perth PH2 9QH
Tel: +447867807008 Email: richard.ryan@blakistons.com

29 July 2021

Private & Confidential

[redacted]

12 Briar Avenue

Chorley

Lancashire

PR7 6BG

By email only: hcook.biz20@outlook.com

[redacted]

NHS UAV flights across Morecambe Bay - ACP-2021-022 MORECAMBE BAY RPAS TRANSIT ROUTE v2

I represent Electric Aviation Limited. I am writing in response to your document to my client dated 4 July 202.

Having reviewed the document, it is clear that you have made numerous defamatory comments that relate to my client. It is considered that the defamation relates to what has been stated in the report is material that is something that adversely affects a person's reputation, namely Mr Crockford and/or Electric Aviation Ltd. What is evident in the document are a number of statements, which individually and/or collectively amount to a lowering of the individual or the company in the estimation of right-thinking members of society generally and/or the aviation community:

1. *"...thoroughly unprofessional and displays a 2 potentially serious and cavalier attitude..."*
2. *"...information is deliberately withheld..."*
3. *"...Considering the cavalier attitude..."*
4. *"...either a deliberate falsehood or an error..."*
5. *"...another falsehood..."*
6. *"...a less-than-professional approach..."*

Feedback should be given in a manner that is both professional and factual when engaged in such a process. The above statements that you have made are a clear attempt in support of your feedback in the consultation process to undermine the reputation of my client at any cost.

With a project such as this, it is important to engage with many relevant stakeholders to learn more and understand the basis of such concerns insofar as they relate to the aviation process when seeking a change to

BLAKISTON'S

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Chambers of Richard Ryan, Glendeuglie House, Hayfield Road, Glenfarg, Perth PH2 9QH
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airspace. Furthermore, my client takes safety of flight seriously and is constantly engaged with the Civil Aviation Authority in that endeavour.

Please take this letter as a formal notice for you to cease and desist making such defamatory remarks about my client. In the event that you continue to make such defamatory remarks, then I shall advise my client to pursue injunctive relief proceedings against you and additionally seek necessary corrections with respect to such remarks, and an apology with monetary damages. I shall also advise my client to claim any associated costs with such an application, including legal fees and court fees.

Yours faithfully,

[redacted]

BLAKISTON'S

EMAILMLC3

Electric Aviation
Final Response to [redacted]
14/08/21
Responses are made in Red

ACP-2021-022 MORECAMBE BAY RPAS TRANSIT ROUTE v2
Reference documents:
1. SoN from published dated 9 Mar 21 from DAP1916V2ACP-2021-022-Redacted, published 23 Apr 21 ('SoN 1')
2. Updated SoN dated 23 Apr 21 from DAP1916V2-Updated-ACP-2021-022-Redacted, published same day ('SoN 2')
3. Assessment Meeting Minutes DAP1916V2-Updated-ACP-2021-022-Redacted, published 14 May 21 ('Minutes')
4. CAP1616 Airspace Change ('CAP')
5. www.morecambebaydrones.com (website)

This amended Feedback is the result of the Sponsor's very late change of engagement period together with other important aspects of the ACP. My changes/additions to the Feedback are shown in blue text.

Electric Aviation opted to delay the stakeholder engagement phase to enable us to investigate the IFP Safeguarding Assessment with regards the Instrument Approach at Walney Island.

1. SUMMARY

This is yet another NHS Logistics:RPAS trial which repeats the aim of so many others. It is disappointing that these multiple trials are not better coordinated for efficient and effective use of UK public money and airspace. Surely not every NHS Trust needs to conduct Logistics:RPAS trials?

Author is making assumptions with no credible basis. The author has no obvious knowledge of the NHS structure and is making assumptions as to the funding for this trial.

It would be much more effective if NHS Trusts and RPAS operators collaborated, to share one trial and the results. The operators might, then, be able to devote time and money to a robust DAA system for RPAS to operate safely in unsegregated airspace, where they would be welcomed by GA pilots like me.

The Author is entitled to his opinion although we anticipate that he would object to an ACP such that DAA may be tested.

Until there is much better coordination of trials for NHS Logistics using RPAS I am entirely opposed to this proposal.

The Author is entitled to his opinion

However, this Proposal has other, more serious deficiencies detailed in the following paras which preclude my support for it. By far the most serious deficiency is the complete and utter

lack of engagement with the GA community - not 'limited engagement' but absolutely none at all. This ACP is thoroughly unsatisfactory and I object to it entirely.

This totally false accusation will be negated when the stakeholder engagement report is submitted to the CAA by the sponsor.

The Sponsor published on the Portal an engagement start date of 14 Jun and reinforced that to me in an e-mail; accordingly, I submitted v1 of my Feedback on 25 Jun. Three days later the Sponsor published a revised Proposal and start date, with the Proposal incorporating some of the issues/points I had raised.

The sponsor does not recall any points of merit from the author's early engagement, but had the sponsor acted upon [redacted] suggestions this would add weight to the Sponsor's stakeholder engagement process being successful.

It is disappointing that the Sponsor has changed many of the details of this Proposal without alerting potential Stakeholders through the ACP Portal that there was a delay and that changes were being made. Many stakeholders are volunteers in their organisations, especially the GA organisations, and their time should not be wasted; timely information from Sponsors would help a great deal and stakeholders time should not be wasted on nugatory assessment/feedback of Proposals that are not definitive.

Only the author, who seems to be a frequent and resolute ACP objector, raised any objections to the sponsor delaying the start of the Stakeholder Engagement phase to ensure appropriate consideration was given to a matter first raised by the CAA, post initial meeting and pre stakeholder engagement.

Overall, this revised ACP gives every impression of being rushed, without the attention to detail – and important detail – that should be expected.

The author is entitled to his opinion, his obvious limited technical knowledge and understanding may slant his opinions.

In particular, the proposed routing through R444 at Heysham (Blue 1 & 2) is thoroughly unprofessional and displays a 2 potentially serious and cavalier attitude to airspace and planning.

The author shows a poor knowledge of the operation of Restricted Zones and the appropriate permissions protocol to enter them. This is obviously affecting his judgement.

Any GA pilot planning and flying such a route would rightly have their licence revoked, should not the same sanction apply to an RPAS operator?

The rules of the air apply equally to a GA pilot as to an RPAS operator
This error is not the only one and while I have not assessed all the waypoints/routes there is a further significant error at the start of Purple 1 (& Purple 3).

The author contradicts himself later in this monstrous diatribe as he has plotted every route and discussed them with multiple other pilots.

I have raised 6 key questions in this Feedback and I hope the sponsor will engage by answering them.

The sponsor will of course answer all 6 questions.

Unless satisfactory answers are provided I remain of the opinion that this ACP is seriously flawed and causes me to question whether, if the Proposal is granted, the Sponsor is capable of running a safe and professional trial.

The author is entitled to his opinion.

He would do well to consider the use of his words in public documents.

For this trial to proceed a new ACP is required, addressing all the issues raised by me and by others. I remain entirely opposed to this ACP.

The author is entitled to his opinion.

2. OPERATIONAL FEEDBACK

2.1 Unclear Statement of Need/Justification
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.

The sponsor thanks the author for reciting CAP1616 here for clarity.

Yet in none of the documents supplied and/or published is any issue clearly identified.

We direct the author to the opening paragraph of the Statement of Need found in the file DAP1916V2-Updated-ACP-2021-22-Redatced

2.1.1 Covid-Related

SoN 1 – ***"Action is required to establish and fly a months' worth of COVID related supplies and tests between the two locations to effect a faster response to testing and the roll out of COVID-19 vaccines."*** Yet, the vaccine rollout is well under way and will be largely complete by the time this ACP is decided.

The author is citing the original statement of need which was superseded by a file, designated with the moniker "updated" to provide an indication that the original file was out of date.

2.1.2 Pathology Samples
SoN 2 refers to moving pathology samples between sites, presumably to add justification to the Proposal. Yet at Item 2 of the Minutes the Sponsor reveals that the Government had equipped all the hospitals with their own testing centre
"Pandemic saw pathology sample testing focus by the government, but before RPAS could be deployed as an optimised transport solution the hospitals were equipped with testing machines thus negating the need for pathology samples to be flown from remote locations."
So this attempt at justification no longer has any relevance, like all the other reasons given.

The author seems to think that pathology services in hospitals only process COVID-19 tests, this is not the case and highlights the author's lack of understanding of the subject area.

2.1.3 Driving Distances/Times

In contrast to 2.1.1 above the SoN 2 focuses on the supposed difficulties of driving between the 3 sites, for everything from patient records to pathology samples.
Yet the Minutes clearly state *"Pandemic saw pathology sample testing focus by the government, but before RPAS could be deployed as an optimised transport solution the hospitals were equipped with testing machines thus negating the need for pathology samples to be flown from remote locations."*
So, there is no longer a need to move pathology samples while patient records are surely better and more effectively moved between sites electronically.

The author seems to think that pathology services in hospitals only process COVID-19 tests, this is not the case and highlights the author's lack of understanding of the subject area.

2.1.3a Confusing Driving times.
Driving times between sites are variously stated as:
- 1hr 9 min vs 12 mins by RPAS (SoN 1), Lancaster to Barrow
- 7hr 20 mins per day (SoN 2) for a day's driving
- 40 mins and 17hrs (SoN 2) for chemotherapy drugs to the correct hospital
- 1hr 21 mins (SoN 2) – 'round robin'

These are times provided to the sponsor by the NHS trust.

Obviously the Proposal is far from clear about what times it is seeking to address

Only the author seems to be confused.

2.1.3b Not Like-for-Like Comparison.
In the SoN 2 the apparent justification is a reduction of driving time from 1h 21 mins for the route from Lancaster – Kendal – Barrow to 28 mins. However, the comparison is NOT valid because the driving route takes in all 3 hospitals whereas the RPAS route is ONLY:
"direct line from a loading point on the east side of the bay to the loading point at the west side of the bay" (SoN v1), and the loading points:
"Unmanned aerial systems (drones) across Morecambe Bay between Hest Bank (LA2 6EQ) and Newbiggin (LA12 0RJ)" (SoN v1)

The author is trying to compare statistics from two documents, one that supersedes the other with the sole intent of trying to create confusion.

These E & W loading points are each at least 15 mins drive from the respective hospitals, so that getting RPAS supplies to /from loading points must be taken into account. These would add an additional 30 mins or more to the road journey and is ignored in this ACP.

Once again, the sponsor is confident that the figures and data provided by the NHS Trust are more accurate than the assumptions of the author.
The journey time reduction – now 1h 9 mins to 42 mins - is nowhere near as clear cut as the sponsors suggest.

Once again, the sponsor is confident that the figures and data provided by the NHS Trust are more accurate than the assumptions of the author.

All-in-all the driving times provided in this Proposal are not for comparable journeys and this is far from clear in the documents. Once again, this lack of clarity suggests at best a lack of clear thinking in trying to justify the Proposal or at worst deliberate obfuscation.

Once again, the sponsor is confident that the figures and data provided by the NHS Trust are more accurate than the assumptions of the author.
The sponsor rejects the author's unfounded claims of deliberate obfuscation and suggest the author consider the effects of his words in a public document.

The revised website suggests the van (current delivery vehicle) is 100 times more polluting than the RPAS, but takes no account of the much greater cargo carrying capacity of the van which can be 100 times that of the RPAS. So that a single van journey - petrol/diesel - would emit the same CO2 as the electricity generation for the same weight of RPAS cargo delivery, while an EV Van would be even better still.

The sponsor is fascinated to know how the author calculates the volume of an NHS trust van compared to an RPAS payload bay, when the author has not seen the later and probably not the former.

Indeed, in the CO2 graphic the suggested RPAS CO2 emission is 99gm whereas the text offers 155gm, again a significant difference. While the text offers no comparison with an electric van which would, of course, generate similar or lower CO2 emissions per kg per km than the RPAS.

The sponsor is fascinated to know how the author decided which form of energy charging system the sponsor will utilise to charge the RPAS?

Moreover, RPAS are inflexible, offering no protection to cargo from the elements, and they offer no option to transfer people or large bulky items between sites.

This is factually incorrect. Many RPAS systems are in development to carry people. Moreover the chosen RPAS for this trial provides a weather proof payload system that meets EN3373 and the CAA carriage of dangerous goods requirements.

Finally, the comparison journey times offered seem to take no account of the additional time an RPAS will need to re-charge batteries between journeys.

More speculation from the author. Maybe, just maybe, the sponsor has two sets of batteries for the RPAS.

None of the comparisons offered are valid.

Most of the author's comments are invalid

2.1.4 Unable to Make Informed Comment

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

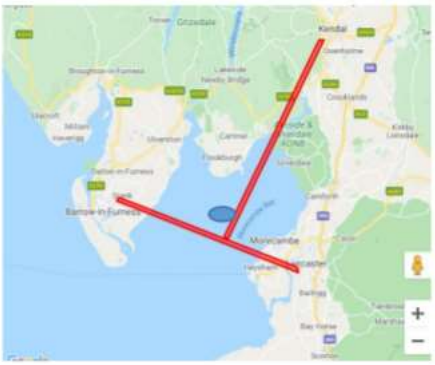
"whether an airspace change is a relevant option to consider" (CAP table on page 31), Without clarity neither stakeholders, the CAA nor the change sponsor can ensure that *"proposals are received by an informed, engaged audience"* (CAP page 175).
It is equally difficult to see how - without a clear aim or issue to address a trial or a TDA can be properly designed and carried out.

The CAA has already determined that this project is in scope of the airspace change process and that a Temporary Danger Area (TDA) will be required for the route to segregate our operation. This negates the author's comments above.

2.2 TDA Dimensions & Airspace Matters

In the revision of the Proposal the Sponsor refers to the delay being caused "Owing to an airspace technicality, which required further regulatory consultation", but shouldn't the notes, etc from that discussion be published on the Portal?
Cap Para 73 page 24 "*"For the purpose of transparency, the CAA runs an online portal. The portal holds all relevant information on airspace change proposals.."* and
"Thus, in particular, interested parties are able to see, and be consulted on where appropriate: ….progress of a proposal through defined incremental 'gateways'"
Table A2 on page 153 of the CAP requires the Sponsor to provide the proposed TDA dimensions *"lateral limits"*, *"upper limit"* and *"lower limit"*. Yet nowhere on the ACP Portal are the dimensions even vaguely shown; the only depiction is shown below.

The portal was updated at the commencement of the stakeholder engagement process with the full TDA dimensions.

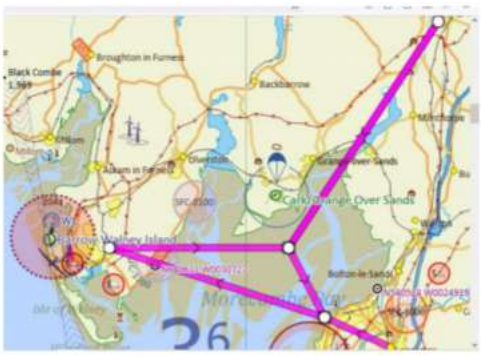


Moreover, in the SoN 1 the Sponsor states: *"our proposed routing is 100% over water with the exception of the operating base at Cark"* (shown as a blue oval). Yet it is quite obvious that the N-S leg and not insignificant parts of the E-W leg are overland.

Author cites out of date Statement of Need.

The 'Stakeholder Invitation to Respond' directs stakeholders to an additional website for "*Details of the proposed TDA"* but the 'new' website provides no details, just a slightly more detailed map with additional legs to the TDA (below).

Author penned this prior to launch of the stakeholder engagement phase.



First of all, which map is the correct one as the 2 are quite different?

Obviously the author still has not grasped the concept of the word "updated"

Equally, it is obvious from this 'new' map that the routes are far from *"100% over water"*, indeed, the website admits that flight will take place over populated areas flying *"up to 400' to clear the residential or industrial conurbations"*.

Author cites outdated Statement of Need

It is not acceptable for a Sponsor to publish a diagram of the proposed TDA on a separate website; it is a requirement of the CAP that the ACP Portal is the repository for all relevant information.

External website received many compliments from a range of airspace users. Website content and delivery was discussed with CAA prior to stakeholder engagement phase commencement.

Cap Para 73 page 24 "*"For the purpose of transparency, the CAA runs an online portal. The portal holds all relevant information on airspace change proposals.."* and
Thus, in particular, interested parties are able to see, and be consulted on where appropriate: ….progress of a proposal through defined incremental 'gateways'"

The Airspace Change Portal holds parallel information to the accompanying website

The exact positions and dimensions of the proposed TDA should also be published on the Portal but have not been; indeed, they are not published anywhere at all.

The Author can find all the dimensions and locations of the TDA on both the website and the Airspace Change Portal

There can be nothing more relevant to this ACP than the exact positions and dimensions of the TDA.

The sponsor agrees with the author

Stakeholders cannot make informed comment if information is deliberately withheld. This ACP is entirely unacceptable.

No information has been deliberately withheld. The Author is welcome to his own opinion.

2.2.1 Airspace Amendment

In the 'Routes' section of the website the sponsor states "We are considering two routes shown below, in Purple and in Blue, between the three hospital sites". But Waypoints for 7 routes are then itemised – 3 x Blue and 4 x Purple.
In its revision the Sponsor has published a much changed TDA (website) – shown below. The original shape on the Portal was a simple T, which then graduated to a 'T plus triangle' at the original engagement start date, and then to the much more complex shape now under consideration.

The sponsor was advised by the CAA to seek stakeholder feedback on a range of routes.

The sponsor has not received a request from the author to recreate the website's content.

The sponsor advises the author to read up on Copyright law.

Pilots seeking to avoid the potential of infringing the TDA are most likely to treat it as a single irregular shape bounded by at least the outer routes. They are likely increase the avoidance area even more by creating and artificial straight line as an E boundary to the irregular shaped Eastern track.

The sponsor refuses to correct the author's grammar

The shape covers a large area, over 50 sq nm.

The author has failed to grasp that the TDA will be the width of the lines only, not the area between any two lines.

The volume of airspace that the purple routes will occupy is 97,044,203,281.184 cubic feet

The volume of airspace that the blue routes will occupy is 62,058,264,353.889 cubic feet

Without a DACS/DAAIS (see para 2.4) it is unreasonable to expect pilots to do anything other than to observe the complete shape all the time irrespective of the RPAS route planned to be flown.

The author makes this assumption, incorrectly as the author has misunderstood the dimensions of the TDA.

2.2.2 R444 Heysham Airspace Infringement

The website diagrams provided offer nothing to aid accurate assessment of the TDA routes, why is an aviation chart not provided?
Because it is impossible to draw an 800 foot width TDA on a 1:250,000 chart.

Furthermore [redacted] Head of Aeronautical Information Management at the CAA advises that the CAA require written permission for any reproduction of their charts. So as not to swamp AIM/AIS with requests and such that the sponsor may impart the information in an effective manner, we chose to use other digital tools.

It is extremely difficult to assess aviation matters from a small, poor quality satellite image although the diagram of all the routes on the previous page does indicate one problem area.

The sponsor refers the author to every moving map Garmin display in every glass cockpit found in today's "modern" aircraft.

The sponsor states on the website in the 'Routes' section: *"The exact longitude and latitude for the routes and their associated volumetric airspace can be found below the comments section of this website."* It also states *"N.B. Furness General Hospital and the Sandylands Waypoint are both located outside the Walney ATZ and R444/Heysham".*

Yet, a detailed and accurate plot of the waypoints provided – "*The exact longitude and latitude*" - for routes Blue 1 and Blue 2 (undertaken independently by 4 experienced pilots using RunwayHD and SkyDemon) clearly show that waypoints 4 and 5 of that route fall inside the airspace of R444 – Heysham Nuclear Power Station (UK Government SI 2016 No. 1003). When the lateral 400ft is added parallel to the track this increases further the infringement of R444.

The two products the author mentions are 2D systems. Had the author used a 3D GIS system incorporating Eurocontrol data, the author would see that the route can be done outside R444.

It is extremely unlikely that the Sponsor has been granted permission to seek to establish the TDA inside this airspace.

It is extremely unlikely that the Author knows exactly with whom the Sponsor has been speaking.

TWO GRAPHICS HERE REMOVED SO AS NOT TOP BREACH COPYRIGHT.

Using RunwayHD and SkyDemon waypoint 5 is definitely inside R444 at 1.9nm from the Restricted Airspace centre, defined in 'ENR 5.1 PROHIBITED, RESTRICTED AND DANGER AREAS'. An additional accurate plot using Google Earth further confirms the distance at 1.87nm.
Waypoint 4 from Google Earth (and other sources) is a few tens of feet inside the RA.

The Sponsor is happy that their routing will have the requisite permissions required should it pass through a restricted zone.

For a manned aircraft, should the pilot infringe such airspace the CAA would rightly be concerned and take some enforcement action. Had the pilot deliberately planned that

infringement I strongly suspect the pilot might have their licence revoked and would be prosecuted.

More speculation and dramatics on the part of the author.

Either the Sponsor has deliberately provided an untrue statement *"N.B. Furness General Hospital and the Sandylands Waypoint are both located outside the Walney ATZ and R444/Heysham"*,

The Sponsor is happy that their routing will have the requisite permissions required should it pass through a restricted zone.

or they have plotted their own "exact longitude and latitude" incorrectly.

The sponsor questions the author's logic as only a few paragraphs back the author was claiming he could not ascertain enough information.

Neither option suggests the attention to detail that stakeholders, the aviation community and the CAA should expect.

The sponsor thinks the author means "would" expect.

Q1. Would the Sponsor provide an aviation chart showing the "exact longitude and latitude" plotted for waypoints 4 and 5 on route Blue 1? Confirming whether and why the Sponsor thinks they are inside or outside the R444?

The sponsor has provided photographs of the 1:250,000 CAA map where the routes and chart may be deemed incidental and the copyright of the photographs lies with the sponsor. The sponsor will not breach the CAA's copyright on their charts knowingly.

Q2. If the waypoints are inside R444 will the sponsor explain why, and why they made the statement that they are "outside the Walney ATZ and R444/Heysham".

The Sponsor is happy that their routing will have the requisite permissions required should it pass through a restricted zone.

2.2.2a Other Airfields.

Without a published engagement list it is impossible to tell whether any account at all has been taken of other airfields and sites.

The sponsor is not required to furnish the author with a list of stakeholders contacted. Furthermore the sponsor wishes to make it known to the author that his constant telephoning of all ATC services in the local area regarding this TDA is unwarranted, unwanted and a distraction to the ATC services. The author will not wish to know the expletives used in his reference by ATC staff.

Considering the cavalier attitude to R444 I have no confidence that due account will have been taken of Cark, Walney or Barrow Heliport,

The author has no right or privilege to know the airfields, ATC services, air training organisations etc, with whom the sponsor has corresponded or engaged.

because:
• the routes pass very close to Cark airfield, (so the author can read the sponsors maps!)
• the W end of the routes is right on the ATZ boundary of Walney airfield.
• the W end of the routes is close (about 1nm) to Barrow heliport

Unless the operation is to be based at Cark – and that does not seem to have been agreed – should not the Sponsor adopt the CAA's 'Take 2' approach, remaining 2nm and 200ft min from notified airspace. The route otherwise is unnecessarily close to Cark.

The route passes outside of Cark's Drop Zone and the separation distances have been agreed with the parachute school at Cark.

Equally, for a trial there is no need to risk infringement of the Walney ATZ and the route could end – as originally proposed and as still shown on the Portal - some distance from the hospital.

The sponsor thanks the author for his concern, but the matter will be dealt with by the sponsor and Walney ATC.

Walney airfield, I believe, has no radar and ADS-B and Mode S on the RPAS are immaterial.

The author shows his total ignorance to the benefits of ADS-B and how radar can be repeated remotely in this technological age.

There appears to be no account at all taken of the Heliport yet it is clearly described on the Walney airfield chart.

The sponsor thanks the author for his concern, but the matter will be dealt with by the sponsor and Walney ATC.

If Hospital operations are a requirement of the trial these could be achieved at either of the other sites. These 3 issues alone suggest a single route and single trial using the Lancaster and Kendal hospitals would be prudent.

The sponsor thanks the author for his input, but suggest perhaps the NHS are the best arbiter of what is required operationally.

Q3. Would the sponsor explain what engagement has been undertaken to date with the 3 airfields/sites above and what the outcomes are?

The author can read the stakeholder engagement report and final proposal when the author has sent it in to the Airspace Change Portal and a redacted version is made available. The redacted version should protect the author from liability of prosecution.

2.2.3 Routes Purple 1, 3 & 4

2.2.3a Waypoints and Diagram Do Not Match.

Waypoints for route Purple 1 are listed and shown as
IMAGE HERE REMOVED TO PROTECT COPYRIGHT
Yet an accurate plot of the first 5 waypoints results in the following SkyDemon and RunwayHD tracks:

IMAGE HERE REMOVED TO PROTECT COPYRIGHT
IMAGE HERE REMOVED TO PROTECT COPYRIGHT

At the S end of Lancaster the shape is quite different to that of the website diagram, so why is the Sponsor's route diagram different to that plotted from their waypoints "exact longitude and latitude"?

The sponsor was alerted to a single digit typographic error on the website that was immediately corrected.

It leads me to question whether any of the plots, tracks and waypoints have been accurately assessed and checked.

The sponsor thanks the author for his concerns, but the author need not worry.

Q4. Would the sponsor explain why the route diagram provided is different to the plot achieved using the "*exact longitude and latitude"?*

The sponsor was alerted to a single digit typographic error on the website that was immediately corrected.

2.2.3b. GPS Accuracy, Heights Flown & Safe Separation
The RPAS is due to fly at 250ft agl "The RPAS will operate at 250' above Ground Level" (website) presumably on GPS alone. This is rather lower than manned aircraft are permitted to fly and is close to the normal operating height permitted for most military aircraft.

The sponsor moots that the author is incorrect as the author will no doubt later claim that microlights may fly lower than 500' providing they are not within 500' of structures, people, vessels etc.

The one difference is that military aircraft operate not to 'agl (above ground level) but to 'msd' (minimum separation distance) – that is a bubble around the aircraft into which structures, terrain, ground, water, etc are not allowed to penetrate.

The sponsor suggests that the aircraft needs to be operated such that it does not come within the msd, not the other way around as the author suggests.

The difference might seem semantic but it ensures safe separation from all objects/obstacles providing a measure of safety for people and pilots.

The sponsor thanks the author for taking the time to explain

2.2.3c GPS Accuracy. GPS accuracy is usually assumed to be + 5m but that is only in the horizontal plan, vertically, GPS accuracy is + 15m, c50ft. Moreover, GPS systems generally use a 'model' of the earth's terrain and its elevation above mean sea level, and then use this to make their height calculations. So that the GPS calculated elevation minus terrain elevation = RPAS height above ground level.

The sponsor requests that the author use the term GNSS rather than GPS and familiarise himself with the technological development of GNSS RTK

GPS systems do not generally use a DSM – Digital Surface Model – a computer model of all the structures and significant vegetation (trees, etc) on the terrain. Flight at 250ft agl, therefore could easily equate to flight below 200ft above houses, with even less clearance over apartment blocks (high rise), trees, pylons, etc. I have not assessed every route but some of the 'early' waypoints of Blue 1 and Purple 1, 3 & 4 routes – SkyDemon & RunwayHD charts in paras 2.2.2 & 2.2.3a previous - are of particular concern because they pass over and very close (c450ft laterally and in several places) to large high voltage pylons 50m tall or more.

Flight at an accurate 250ft agl with a minus 50ft GPS height error over pylons 165ft tall leaves very little margin for error.

The sponsor thanks the author for his concern but works to reassure the author insofar that all pylons to be overflown have been identified and discussed with National Grid as part of the stakeholder engagement.

Q5. Would the sponsor explain the RPAS system accuracy and tolerance in height-keeping to ensure safety over tall man-made structures?

The sponsor requests that the author use the term GNSS rather than GPS and familiarise himself with the technological development of GNSS RTK

The sponsor is happy to confirm that all routes are flown in synthetic environments first with accurate LIDAR imagery, third party Digital Elevation Models, Digital Terrain Models, Synthetic Aperture Radar imaging and other aerial photography to ensure that all risks have been reduced to be as low as reasonably possible prior to flight.

2.2.3d. Sponsor Plotting Inaccuracy & Geofencing.

Whether the listed waypoints or the graphic shown are correct cannot be determined, but it is unacceptable and rather unprofessional to have listed waypoints different to a route diagram.

The sponsor's website team made a typo, it has been corrected.

This and the proposed infringement of R444 add considerable doubt about the accuracy and professional approach to the whole proposal.

The sponsor has warned the author that such comments will be treated as defamation should they be repeated.

Indeed, if the Sponsor cannot plan routes accurately, cannot plot points accurately or cannot draw tracks accurately then what confidence is there in the Geofencing they propose, or indeed in anything else in the Proposal?

The sponsor has warned the author that such comments will be treated as defamation should they be repeated.

As a result, it also causes me to doubt if any trial that might subsequently be conducted would be conducted professionally and safely.

The sponsor has warned the author that such comments will be treated as defamation should they be repeated.

2.2.3e. GPS Vulnerability.

GPS is not invulnerable, it is easy to jam and there are over 200 illegal jamming incidents in the UK every year. In addition, spoofing of GPS signals – the deliberate seduction of GPS signals to create an inaccurate position - is becoming more common. Most of these are associated with the theft and transport of high value cars and they occur mostly on/near motorways. The jammers used are of low power (like GPS itself) but they can easily affect an RPAS at 250ft agl and some nm range from the jammer. There are also frequent military exercises which are NOTAM'd as using GPS jammers and spoofers and the Spadeadam range is often used for this purpose, often to a range of effect of 150nm.

The sponsor does not accept the author's statements as wholly credible.

The sponsor reminds the author that the majority of the routes for the RPAS are over Morecambe Bay away from most car jackers, except those on the Heysham ferry.

As routes Purple 1, 3 & 4 all follow the M6 motorway for some distance the RPAS is likely to be more vulnerable to illegal GPS jamming and spoofing, while Spadeadam is only 30nm from Kendal (N end of all the routes). These concerns generate 2 questions regarding system redundancy in the RPAS:

1. What navigation/height keeping redundancy does the proposed RPAS system have to maintain track and height in the event that a valid GPS signal is lost?

The sponsor responds to reassure the author that the RPAS systems have inertial measurement systems, which unless Spadeadam is knocking out the Earth's magnetic core as well, will enable to aircraft to fly through dead reckoning.

2. How will spoofing be identified and handled if the RPAS deviates from its planned track and height due to spoofing.

The sponsor responds to reassure the author that the RPAS systems have inertial measurement systems, which unless Spadeadam is knocking out the Earth's magnetic core as well, will enable to aircraft to fly through dead reckoning.

Q6. Would the sponsor detail the RPAS navigation system redundancy to ensure safe operation in accordance with the plan if GPS jamming and/or spoofing are experienced?

The sponsor reminds the author that the TDA proposal is for a low level corridor, such that if Spadeadam are jamming the GPS signals, the Lake District Hills should protect the RPAS from such activity, unless of course Spadeadam are jamming the GPS signals vertically to 150Nm, whereupon the airliners might also be struggling with their own navigation.

Should the RPAS experience any GPS failure, then firstly there are redundant GPS systems on board and secondly the pilot will be able to fly the aircraft remotely using the inertial measurement system and dead reckoning, in a similar manner to a GA pilot having to fly waypoints and a whizz wheel when their SkyDemon or other GPS based navigation support products fail.

2.2.4 TDA Dimensions Small?

Ignoring the potential collision risk identified in 2.2.3e above,

2.2.3e refers to GPS vulnerability, it is pure dramatics on the part of the author to suggest that this is a potential collision risk.

the lateral and vertical dimensions of the airspace seem remarkable small, especially when compared to almost all other NHS:Logistics RPAS trials, including Skylift UAV's other trial on the S Coast (ACP2021-002). Similar TDAs (inc ACP-002) have been about 1nm wide and at about 850ft agl,

The sponsor advises the author, that the sponsor has from the outset tried to make the TDA as small as is possible. It is bemusing as to why the author should be complaining about this, unless it is a complaint for complaints sake only.

It would be interesting to understand why the Sponsor believes they can successfully and safely use a smaller volume for, presumably, the same sort of trial and the same type of RPAS? What are the safety considerations for the Vehicle to glide should it lose power?

The author makes the incorrect assumption that it is the "same type of RPAS"

The glide profile of the RPAS is suitable for the operation and is detailed in the Operational Safety Case.

More importantly, it would be grossly unfair if the Sponsor was attempting to generate few critical stakeholder responses by offering a relatively small volume of low-level airspace now, only to seek to increase the TDA size in its final proposal to the CAA. At the very best that would surely require further stakeholder engagement for the requirement *"proposals are received by an informed, engaged audience"* (CAP page 175)" to be met. More likely such a change would be seen as *"variation in the content of consultation documents can be interpreted as the change sponsor deliberately attempting to hide or obfuscate information"* (CAP page 13 para 33).

The sponsor reminds the author that he may wish to re-consider his words in documents that will be placed into the public domain.

2.3 Options

Little consideration seems to have been given to any alternative means of 'communicating' between sites with, for example, hovercraft to reduce journey times or the use of a dedicated electric vehicle.

The sponsor reminds the author that Hovercraft are technically aircraft.
The sponsor reminds the author that the requirements came from the NHS and the sponsor does not believe the author to be qualified to comment on healthcare logistics or operational management. If the author is a healthcare professional, the sponsor thus apologises.

At p6 of the Minutes the CAA raised the possibility of a "stand alone vehicle" giving a journey time of "40 minutes" and this was not disputed/corrected by the sponsor. A 40 min journey time by a dedicated vehicle compares MOST favourably with the 42 mins site-to-site RPAS

journey. Similarly, "Reduction of Carbon Footprint" is considered as part of the plan (Minutes) yet no consideration is given to use of the train, with Lancaster to Barrow at just 1hr.

The sponsor reminds the author that the requirements came from the NHS and the sponsor does not believe the author to be qualified to comment on healthcare logistics or operational management. If the author is a healthcare professional, the sponsor thus apologises.

The consideration of other options is entirely lacking

The sponsor reminds the author that the requirements came from the NHS and the sponsor does not believe the author to be qualified to comment on healthcare logistics or operational management. If the author is a healthcare professional, the sponsor thus apologises.

2.4 Lack of Air Traffic Service (ATS)

Even after a further 2-week delay there is still no clarity over an ATS, the sponsor "aim to secure a Danger Area Crossing or Information Service prior to operations". It would be unacceptable to approve a TDA without a DACS/DAAIS.

The author is welcome to his opinion.

The commercial arrangements between the sponsor and ATC providers in the area is commercial in confidence.

The use of ADS-B and Mode S by the RPAS is of absolutely no value to most GA users which do not have any form of Electronic Conspicuity detection.

The author is showing his ignorance to the benefits of EC and the CAA's progress in this field. As GA pilots ourselves, we regularly fly in the local area with full mode S and ADSB. That the author chooses not to do so is his choice.

It is also doubtful whether Warton radar – the nearest suitably equipped ATS – will be able to detect such low level targets (Warton – Cark =25nm). Again, the RPAS having ADS-B and Mode S is probably irrelevant for Warton radar.

The key word the author uses is "probable". The above statement is conjecture and not based on fact. The ability for Warton controllers to use ADSB reporting is a matter for Warton and not the author.

The option of a telephone service is almost laughable.

And yet the majority of NOTAM's provide telephone service information.

Many small strips (like my own) are remotely located with poor (if any) phone service and it is not good airmanship for pilots to use their phones even for text messages when airborne.

In the days of femtocells, one wonders how the author manages

The sponsor cannot condone the use of mobile phones by pilots at any stage of the operation of aircraft.

For a TDA in a busy GA and military operating area some form of ATS will be essential. The Sponsor states *"for the DACS the company has connections with BAe at Warton and that he envisaged Warton Radar providing a DACS service for the Morecambe Bay UAS Transit Route"* (Minutes). Yet as para 3.1.4 below shows BAE Systems at Warton has not been approached, for comment on the ACP or to provide DACS/DAAIS.

The sponsor is under no requirement to report the progress of commercial discussions with members of the public.

3. CONSULTATION FEEDBACK

It is extremely disappointing that the Sponsor chose to delay the start of the engagement without either publishing that information or contacting me direct

The author submitted his mighty tome of prejudicial comments based on inaccurately interpreted information prior to the commencement of the stakeholder engagement.

(I was already in touch with them – para 3.1.2 below). Stakeholders have a right to accept information published on the Portal and to act on the dates published.

The dates were updated on the portal

Many, if not all, of us do not have time to assess Proposals time and again just because the Sponsor cannot make timely updates to engagement start dates and other important information.

And yet the author still manages to swamp all ACP proposals with endless gripe, conjecture and prejudicial commentary

As of cease work Thur 1 Jul the BMAA, for example, has still not been consulted, and a targeted engagement list has not been published on the CAA Portal

The BMAA were consulted at the same time as all members on the NATMAC list.

The consultation/engagement with stakeholders is utterly and completely inadequate, lacking all the elements that might make even a barely acceptable engagement.

More dramatics based on conjecture

3.1 Stakeholder List & Engagement

3.1.1 Stakeholder List Absent from Portal

No stakeholder list – targeted or otherwise – is provided by the sponsor on the Portal as of 25 Jun 21, despite having been sent the NATMAC list by the CAA by e-mail immediately after the Assessment Meeting (Minutes).

The sponsor is not required to provide members of the public with its stakeholder engagement lists. Furthermore the Sponsor refuses to share such information as the Author will only telephone them all needlessly, thus making himself out to be an annoyance to the professional aviation community.

Of course, the absence of a published engagement list might be designed to reflect exactly the Sponsor's engagement, as the Sponsor seems not to have engaged anyone at all – see 3.1.2 below.

The author may read with whom the sponsor has engaged in the sponsor's stakeholder engagement report when it is submitted to the ACP.

3.1.2 Stakeholder Engagement Absent

As of 25 Jun 21 neither the LAA nor the BMAA has been consulted about this proposal, formally or informally.

This is incorrect as both parties were on the NATMAC list contacted at the same time.

Similarly, Northern Microlights (a flying school), the NW Microlight Aircraft Club (my Club at St Michaels airfield 16nm from the TDA) and the Bay Flying Club (a colleague's Club at Rossall Field airfield, 13nm from the TDA) have not been approached, yet all are just a few miles from the proposed TDA area. Both Clubs use the area extensively, routing along the coast for transits to and from the N Lakes/Scotland, avoiding bad weather.

The sponsor has contacted the majority of these clubs.

In addition to the Pilling Sands site (mentioned by the Sponsor) occasionally used by microlights, Knott End beach is used at least as often (by light aircraft and microlights) and Bardsea is also used.

The sponsor notes that the Duchy of Lancaster has no record of permitting Microlights to operate from the sands of Morecambe Bay.

It is not known if Bedlands Gate, Troutbeck and Berrier airfields (all less than 20nm from the Kendal hospital) have been consulted but they too are likely to use the area for transits and training. A cursory examination of the CAA VFR chart would have uncovered this and it leads to have doubts about the GA expertise claimed by the Sponsor.

Yes more conjecture on the part of the Author.

Finally, following my contact with the Sponsor pre-engagement the Sponsor replied by email on 11 Jun 21 *"The consultation phase of the TDA application commences on Monday 14th and I will ensure you are added to the list."*. Perhaps not surprisingly, given the absence of any engagement with NATMAC organisations, I heard nothing.

Factually incorrect again

3.1.3 Microlights Do Roam the UK

The Sponsor claims that GA aircraft (microlights are GA) transit the Lakes along the coast and 'along' the M6 if the weather is good, and only occasionally directly through the hills. My own experience and those of my Club and other pilots in Lancashire is that we transit directly through the Lakes in good weather to enjoy the views, using the coastal and M6 routes when cloud prevents flying over the hills.

In many cases, including this one, it is as if the sponsors assume microlight aircraft are tied to their home bases by an invisible strap only a few nm long.

Conjecture

In fact, pilots from all these bases roam far and wide in their microlights regularly flying to Scotland inc the Highlands and Islands. This proposed TDA will directly and significantly affect the Clubs and airfields mentioned.

The sponsor believes this to be incorrect

3.1.4 Practice Emergency Landings onto Water Equally instructors from Blackpool and elsewhere use the Bay to demonstrate and for pilots to practice forced landings onto water.

The sponsor believes this practice to be wholly dangerous, potentially in breach of the ANO and certainly believes that no microlight insurer would cover such risk.

3.1.5 BAE Systems Warton Airfield & Blackpool Airport - No Consultation

BAE Systems operates military aircraft through the area but this is not mentioned by the Sponsor. The Company was also supposed to be approached by the Sponsor to provide a DACS (Minutes) yet as of Wed 16 Jun 21 ATC at BAE Systems airfield Warton had also not been contacted or heard of the proposal.

The sponsor has been speaking to BAe at Warton for several months prior to the Stakeholder Engagement. As a commercial organisation, BAe are hardly likely to answer such questions from members of the public phoning ATC.

It is not known whether Blackpool Airport and its resident Flying Schools has been consulted but the most likely Facebook source of information (EGNH Pilots group) would suggest they have not been (as of 24 Jun 21)

Using social media as a source of information is always reliable

.

3.1.6 Failure to Consult is Inexcusable

Having been e-mailed by the CAA immediately after the Assessment Meeting with the NATMAC distribution list (Minutes) the above omissions are inexcusable. They are compounded by the Sponsor's failure to include an e-mail or postal address in the *'Stakeholder Invitation to Respond'*

The inability for the author to read the sponsors contact details from the website are noted.

Having assessed a number of ACPs this is the worst 'engagement' I have experienced.

More dramatics

At best it casts considerable doubt on any claims of the sponsoring organisations to have GA experience. At worst it leads me to consider whether: *"variation in the content of consultation documents can be interpreted as the change sponsor deliberately attempting to hide or obfuscate information"* (CAP page 13 para 33)

More dramatics

The sponsor reminds the author that it will be the CAA who decide not the author and his microlight colleagues.

3.2 Evidence Provided for Lightly Used Airspace

3.2.1 'No-one On Frequency So No-one Uses the Airspace'

In the Minutes the Sponsor claims as evidence of little used airspace: *"ELECTRIC1 reported that he flew the route at 9am on April the 12th, the first day of recreational GA post lockdown, as an evaluation and reported that when over the TDA locations he was the only airspace user on frequency."*

Were this topic not so serious this comment would be ludicrous but it amply demonstrates the inadequacy of the Sponsor's evidence and engagement. First of all, 12 Apr 21 was the date on which dual flying - instruction, etc - could re-commence as solo flying had been permitted from 29 Mar 21.

The sponsor points out to the author that many pilots were out of time for insurance purposes and needed to revalidate post the lockdown periods, thus this was the first time pilots who were previously unable to fly, could take to the skies, with an instructor.

Moreover, instructional flying would start again from early exercises, mostly local to airfields rather than any cross-country flying. The implied 'scramble' for GA on 12 April would not therefore be expected and certainly not to be on the route at 9am, as many small airfields operate to a 'good neighbour' policy of no activity before 9am.

The author is focussing his argument on his own small airfield and not taking into consideration the larger, busier, commercial entities.

As for Electric 1 claiming to be "the only user on frequency" (Minutes) and therefore the only aircraft airborne, this comment beggars belief because:

The author is entitled to disbelieve what Blackpool ATC can confirm.

- In Class G airspace no radio is required at all and many microlight and light aircraft pilots do not use it (and in today's skies they do so at their peril)

- Not all light and microlight aircraft pilots have a FRTOL (a radio licence) and either do not switch the radio on or do not transmit. For many small airfields (St Michaels, Rossall Field, etc) radio use is not mandatory. The sponsor plans to campaign to ensure all for all flight radios are compulsory and has made this known to the secretary of state.

- There is more than one frequency available for use in the area, so which frequency is Electric 1 referring to:

    - Warton LARS
    - Blackpool approach
    - Microlight air-to-air
    - Microlight air-to-ground

- Safetycom
- London information
-

The sponsor confirms Blackpool Approach was used

- The terrain/hills of the Lakes often limit radio transmission/reception ranges
- Handheld radios such as those used in many microlight aircraft have limited ranges - typically only a few miles

This is like saying 'I heard no-one on the radio so no-one in the UK was flying'; this "*evaluation*" claimed by Electric 1 is worthless.

The author is welcome to his opinion

3.2.2 Further 'Evidence'

Further opinion is offered regarding traffic levels:

"the biggest season variation in traffic would be from rotary craft going up to Windermere etc" and
"the old rule 5 prevent flight below 500' that he was confident that the proposed TDA would not impact too much any seasonal variance increase in airspace users."

Both statements have absolutely no evidence to support them and display a complete lack of understanding of activity in the area.

The author is welcome to his opinion

4. SUMMARY

This ACP duplicates all the other ACPs for NHS Logistics:RPAS trials, surely a most ineffective and inefficient use of public money (they are all UKRI funded), NHS time, CAA time and Stakeholder time.

This ACP has many differences from others including airframe, avionics, payload and above all else business model. As the author has no vision of these differences, his statement is thus not valid.

Not to mention an inefficient use of UK Class G airspace.

The sponsor does not understand how the author quantifies efficiency of airspace.

Like the others this ACP also attempts to use, as justification, the Covid pandemic and then adds further reasons behind the Covid fig leaf. In this case the key additional reason for the ACP seems to be a reduction in driving times between hospitals, but the comparisons provided are far from clear.

The author fails to understand that a statement of needs may be updated.

There is no single issue or opportunity as required by the CAP identified for this ACP.

And yet the CAA are happy that there is

In claiming a 'lightly used' area of Class G airspace the Sponsor has ignored published information on Flying Schools and airfields local to the area (CAA VFR map for example), citing only limited use of the airspace. While the 'assessment' and other 'evidence' given to support that assertion is worthless.

The sponsor has not ignored published information, the sponsor has followed the stakeholder engagement process as detailed in CAP1616 and from instruction given by the CAA. The author is making this up. How can the author know if the sponsor has looked at a chart?

The TDA dimensions are not detailed and information given about its routing is contradictory. It is claimed to be "100% over water" when both maps clearly show otherwise.

The author cannot understand the word "updated"

In addition to the above and most importantly the Sponsor has made absolutely no attempt at all to engage with stakeholders, inc many of those mentioned in the documents and on the NATMAC list.

The sponsor has engaged with the entire NATMAC list

On its own the total lack of engagement is reason to reject this ACP and I object to it entirely.

The author is entitled to his opinion

SUMMARY ADDENDUM

I will not re-iterate concerns expressed in my original Feedback but the revisions offered by the Sponsor only add to that concern.

The area covered is now large and complex and the Proposal still offers no useful means of communicating its activity.

The area is not large nor is it complex.

Pilots will need to assume, therefore, that **all** routes are active whenever any one route is NOTAM'd as active, and that is likely to be much of the time.

The NOTAM will detail which routes are active

This TDA will significantly inhibit GA aircraft transiting N-S through/around the Lake District and the Bay in poor weather, at a time of year when poor weather is more frequent.

This is incorrect

The planning to infringe a Restricted Area (routes Blue 1 & 2) whilst claiming it will not do so is either a deliberate falsehood or an error, and neither is acceptable.

This is incorrect

While the mismatch between a route diagram and the published waypoints in routes Purple 1 & 3 is another falsehood or error.

This is incorrect

If, as seems likely, the aircraft relies solely on commercial GPS I am concerned that it will be vulnerable to jamming and spoofing in an area where such activity occurs not infrequently.

This shows the authors staggering ignorance regarding avionics, GPS and other inertial measurement systems.

Taken together with the proximity to other airfields, a heliport and tall, high voltage pylons the whole Proposal displays a less-than-professional approach and a lack of attention to detail which should not be acceptable.

The author may wish to reconsider this comment, when reading the stakeholder engagement report

A number of questions are posed in this Feedback but 6 questions are more prominently shown relating to airspace and safety; these provide an opportunity for the Sponsor to address my principal concerns.

The sponsor hopes he has answered all of the authors concerns.

Until then and unless those concerns are allayed, my view of this Proposal will not change. Indeed, because of the planned infringement of Notified Airspace I don't think the Sponsor could allay my concerns except through a comprehensive revision, re-writing and re-submission as a new ACP.

The sponsor reminds the author that such comments are defamatory and legal action will be taken should such comments appear any further within the public domain.

[redacted]
4 Jul 2021
GA Pilot

The sponsor concludes by stating that nothing received by the author has led the sponsor to believe that any part of this ACP will negatively affect aviation operations within the vicinity of the proposed TDA.

ELECTRIC AVIATION 14/08/21

1.34.8 Other Microlight entities

We also received communications from two further microlight entities:

- North West Microlight Aircraft Club
- [redacted]

1.34.9 NWMAC

North West Microlight Aircraft Club contacted Electric Aviation through the web portal on the 7th of July at 06:33am. The Club informed Electric Aviation that:

The NW Microlight Aircraft Club (NWMAC) is a club of over 60 members based largely but not solely at St Michael's airfield in N Lancashire. Members fly a mix of flex wing and 3 axis (fixed wing) microlight aircraft of varying types.

This is the airfield from which Microlight "C" operates.

The club asked seven questions, which Electric Aviation duly answered.as evidenced in EMAILMLNW1

The club also made the statement that:

When transiting the area below cloud it is not at all uncommon to be at 500ft agl when our pilots 'manage' their height flying 'by eye'. At 500ft the risk for inadvertent 'conflict' with the TDA/drone is not low and the alternative will be for our flying to be seriously limited.

On the 29th of July, Electric Aviation requested via email further information regarding the areas over Morecambe Bay where low level flight is practiced and where practiced forced landings are taught or practiced.

The response received by Electric Aviation from NWMAC (EMAILMLNW2) stated amongst other things that:

"We can confirm that we regularly fly across Morecambe Bay below 500 ft amsl to practice forced landings either on the sandbanks in the bay or upon Pilling Sands to Knott End at low tide."

This practice is obviously conducted without permissions of the Duchy of Lancaster, to whom the majority of the foreshore belongs. Please see section 1.29.

On the 16th of August, Electric Aviation wrote to NWMAC advising them that Electric Aviation believed the stakeholder engagement with the microlight community to be unrepresentative of the typical microlight pilot and offered to come and talk to the clubs in the area. (EMAILMLNW3)

To date no response has been received.

The concept of low level flight was passed on to the Points arising from Microlight Stakeholder register, found in section 1.34 following.

1.34.10 NWMAC Correspondence

EMAILMLNW1

Re: New submission from A New Form

To [redacted] on 2021-07-07 14:18

DetailsPlain text

Dear Sirs,

Many thanks for taking the time to respond to our stakeholder engagement programme.

Please find our response to your questions below in italics:

Q1, Why was NWMAC not consulted?

NWMAC is one of many airspace users in the North West of the UK. Consultation happens through the Stakeholder Engagement process as defined in CAP1616. It is during this engagement process that we seek your views on the routes proposed. This is one reason why we have suggested two key routes between the three hospitals across the bay area. Once we have received all the feedback, we are then able to propose routes to the CAA for their final decision.

Q2. Why cannot the results from these other trials be shared in a 'National' Health Service?

This question is out of the scope of the Airspace Change Procedure as it does not relate to airspace and how that may impact other users of such. However, we can say that the National Health Service is disparate in nature and individual trusts have procured service level agreements between themselves and private providers on an ad-hoc and local basis, thus the logistical solutions, say for pathology, that work for one trust, will not work for another.

As an aside to this question you also claim that

"Obviously we know your proposed operating area very well and use it extensively. When transiting the area below cloud it is not at all uncommon to be at 500ft agl when our pilots 'manage' their height flying 'by eye'. At 500ft the risk for inadvertent 'conflict' with the TDA/drone is not low and the alternative will be for our flying to be seriously limited."

We do not believe this to be the case as our RPAS will be operating at 250', it is the airspace contingency and emergency zones that extend up to 400', thus even at 500' your aircraft should be clear above the TDA restricted airspace.

We would also remind you that any hobbyist drone operator can operate their equipment up to 400' with no notification to anyone, providing they are adhering to the drone code.

We would also point out that our plans are to operate during weekdays during the winter months when airspace utilisation, we believe to be at a minimum.

Q3. What other means can you offer to make flyers aware of the precise routes and times of TDA activity?

We have offered NOTAM, Telephone service and are in consultation with regards providing a DACS or DAIS service at the moment.

As an aside to Q3 you mention Routing & Heysham (R444) Infringement

We are in conversations with the CAA and with EDF energy about permissions for our contingency and emergency areas to operate within R444.

We have no plans to infringe R444 and any suggest of such in a public forum will be viewed as libel.

Q4. Have you been given permission to enter Heysham airspace?

We are in conversations with the CAA and with EDF energy about permissions for our contingency and emergency areas to operate within R444.

Q5. If not, why is a route planned into that airspace?

We are in conversations with the CAA and with EDF energy about permissions for our contingency and emergency areas to operate within R444.

The whole point of stakeholder engagement is to allow a period of time for all airspace users to make their views heard and for us to take on board such views, and demonstrate to the CAA that informed decision has been made.

As an aside to Question 5 you have asked:

We note the drone is due to fly at 250ft agl – far lower than we are permitted to fly – and that routes are planned over built-up areas. Can you please explain why you consider it safe to fly that low over built-up areas given the recent Goodwood and Network Rail drone accidents?

Drones are operated with Operational Authorisation from the CAA to CAP722. To achieve Operational Authorisation the operator submits an Operational Safety Case to the CAA which is then approved. During this process the risks are assessed and mitigated accordingly. We can also add here that as our RPAS system has two powerplants for thrust and VTOL, we have inherent redundancy systems built in giving us the ability to stop and hover if required. The aircraft are operated by a remote pilot who has visual reference from the drone at all times backed by multiple redundant communication systems.

While they are marked on aviation charts you seem, also, to have missed the very large high voltage pylons that emanate from Heysham. Your routes take the drone over and along the pylons, is that safe at 250ft agl?

We are aware of the pylons and as part of the stakeholder engagement procedure are in communications with National Grid.

Q6. What surety can you offer those who live under the routes chosen that the drone will never fail? A failure (such as the Goodwood or Network Rail ones – see AAIB reports) could easily cause a fatal injury.

Please see our answer to Q5 which focuses on redundant power plants and communication systems.

Q7. Is the transmission line operator (National Grid?) aware of the proposal and happy with your planned proximity to its assets?

Please see our answer to Question 5.

As an aside to Q7 you also commented:

We strongly believe that in view of the safety concerns regarding the height to be flown there will be an amendment to the height, putting the top of the TDAs closer to 1000ft. That might address clearance over man-made objects but it will just further hamper our ability to fly in and through 'our' operating area.

We take on board your concerns regarding any increase to the height of the proposed TDA.

Summary

While we look forward to the benefits that drones will bring us in our lives and while we understand the need for trials to achieve that we do not believe that the proposed trial and TDA will safely further the aim of those benefits. Moreover, it will seriously hamper our operations limiting our ability to fly through and round the Lakes.

At the very least your proposed infringement of R444 will undoubtedly adversely affect the general population's view of flying including our microlight flying, and potentially risks leading to further flying restrictions around Heysham and similar installations.

Similarly, we are very concerned about the risks posed by low-level flying over built-up areas and by flying over and near the very tall pylons from the power stations. Once again, we believe the risks could lead to further restrictions on all flying inc manned flying and we would prefer to see those risks removed.

If you wished to submit a new proposal we would be happy to consider helping with the aim of achieving what you want and to do so without unduly risking microlight flying's enviable reputation or our Club's ability to continue to practice the Sport we all enjoy.

As it stands, because of the concerns I have outlined the NWMAC cannot support your proposal and we think it unlikely that those concerns can be easily allayed.

RESPONSE TO SUMMARY

We take on board the concerns of NWMAC, most of which we believe we have discharged.

We have not received any valid airspace concerns regarding operation of Microlight aircraft in the airspace we have proposed as the airspace ceiling is set at 400'.

Any public claims of "proposed infringement of airspace" will trigger litigation.

Electric Aviation Limited

On 2021-07-07 07:33, Formspree wrote:

New form submission

Someone just submitted a form using formspree.io. Woo!

name

[redacted]

phone

message

NWMAC Feedback ACP-2021-022 MORECAMBE BAY

The NW Microlight Aircraft Club (NWMAC) is a club of over 60 members based largely but not solely at St Michaels airfield in N Lancashire. Members fly a mix of flex wing and 3 axis (fixed wing) microlight aircraft of varying types.

The Club as a group and its members individually fly far and wide with regular group 'fly aways' to places all around the UK. As flying recommenced (post lockdown) members have flown to Eshott (NE England), Troutbeck in Cumbria and Stonehill Farm in Scotland. Plans are also being made for flights to Oban, Inverness and Edinburgh as well as the Isle of Wight, Lundy and Cornwall; members roam far and wide whenever weather permits irrespective of the season. Club members regularly transit Morecambe Bay, flying either through the Lake District or along the Cumbrian coast if the weather inhibits flying through the hills.

Introduction

We were surprised to see the Proposal (ACP) for a large, complex set of TDAs over the Bay and the S Lakes and not to have been be formally consulted. The area is, after all, our back yard.

Q1, Why was NWMAC not consulted?

We have serious concerns about the TDAs which need addressing before we would be prepared to support the ACP. We are not, please note, opposed to drones; indeed, we look forward to sharing our field and the airspace with them when they are suitably equipped with Detect And Avoidance and other systems. Nor are we unconcerned about helping the NHS improve, it's just that we do not believe this proposal addresses either of these aspects.

We know there have been/are several similar TDAs and trials assessing NHS Logistics with drones and cannot understand why another is needed. Moving supplies of any sort between hospitals is not unique to Morecambe Bay, so:

Q2. Why cannot the results from these other trials be shared in a 'National' Health Service?

Activity Notification and ATC Service

The telephone service proposed is of limited benefit as phone signal at St Michaels airfield is not consistent and, of course, the use of the phone while flying is not good airmanship.

So in general, we will not be able to operate by noting only the active routes, our members will assume the whole area to be active when it is NOTAM'd – that is a large part of our operating area that we will then need to avoid.

Even at a few '000 ft radio performance to 'local' ATC units is far from guaranteed and anyway microlights are notoriously difficult to see on radar. Most microlights do not carry SSR nor do they tend to carry any form of EC equipment; the drones' ADS-B and Mode S is of no value to us.

Obviously we know your proposed operating area very well and use it extensively. When transiting the area below cloud it is not at all uncommon to be at 500ft agl when our pilots 'manage' their height flying 'by eye'. At 500ft the risk for inadvertent 'conflict' with the TDA/drone is not low and the alternative will be for our flying to be seriously limited. Any increase in height of the TDA will almost certainly curtail or fling in the area during the months of your trial and we would oppose that most strongly.

Q3. What other means can you offer to make flyers aware of the precise routes and times of TDA activity?

Routing & Heysham (R444) Infringement

As it is our 'back yard' we have more detailed knowledge than many so we are surprised that the routes are planned for 250ft agl and to enter R444, the Heysham RA. In the distant past we have used Middleton Sands microlight airfield but that hasn't been an option for many years because of sensitivity surrounding the nuclear power stations. Do you have approval to enter the RA airspace?

If so we would be very surprised (and jealous, we would love to go back to Middleton Sands), and if you do not have approval why is the route so planned? Should one of our members plan to infringe notified airspace we would consider that to be most unprofessional and would support some form of CAA sanction – action like that jeopardises all airspace users inc microlights. At the very least a planned infringement will tarnish our reputation with the public and politicians.

Q4. Have you been given permission to enter Heysham airspace?

Q5. If not, why is a route planned into that airspace?

Height Being Flown

We note the drone is due to fly at 250ft agl – far lower than we are permitted to fly – and that routes are planned over built-up areas. Can you please explain why you consider it safe to fly that low over built-up areas given the recent Goodwood and Network Rail drone accidents?

While they are marked on aviation charts you seem, also, to have missed the very large high

voltage pylons that emanate from Heysham. Your routes take the drone over and along the pylons, is that safe at 250ft agl?

Q6. What surety can you offer those who live under the routes chosen that the drone will never fail? A failure (such as the Goodwood or Network Rail ones – see AAIB reports) could easily cause a fatal injury.

Q7. Is the transmission line operator (National Grid?) aware of the proposal and happy with your planned proximity to its assets?

We strongly believe that in view of the safety concerns regarding the height to be flown there will be an amendment to the height, putting the top of the TDAs closer to 1000ft. That might address clearance over man-made objects but it will just further hamper our ability to fly in and through 'our' operating area.

Summary

While we look forward to the benefits that drones will bring us in our lives and while we understand the need for trials to achieve that we do not believe that the proposed trial and TDA will safely further the aim of those benefits. Moreover, it will seriously hamper our operations limiting our ability to fly through and round the Lakes.

At the very least your proposed infringement of R444 will undoubtedly adversely affect the general population's view of flying including our microlight flying, and potentially risks leading to further flying restrictions around Heysham and similar installations.

Similarly, we are very concerned about the risks posed by low-level flying over built-up areas and by flying over and near the very tall pylons from the power stations. Once again, we believe the risks could lead to further restrictions on all flying inc manned flying and we would prefer to see those risks removed.

If you wished to submit a new proposal we would be happy to consider helping with the aim of achieving what you want and to do so without unduly risking microlight flying's enviable reputation or our Club's ability to continue to practice the Sport we all enjoy.

As it stands, because of the concerns I have outlined the NWMAC cannot support your proposal and we think it unlikely that those concerns can be easily allayed.

Submitted 06:33 AM - 07 July 2021

Mark as spam

EMAILMLNW2

Morecambe Bay TDA - Stakeholder Engagement

Re: Morecambe Bay TDA - Stakeholder Engagement

From [redacted] 2021-08-09 13:32

DetailsPlain text

Dear Electric Aviation,Thank you for your response and we appreciate your engagement. We can confirm that we regularly fly across Morecambe Bay below 500 ft amsl to practice forced landings either on the sandbanks in the bay or upon Pilling Sands to Knott End at low tide.

We are more than happy to engage with you to reach a mutually amicable solution and would welcome your proposed routes and TDA on an aeronautical chart to give our region the required assurance to support it and look forward to hearing from you in due course. We would also confirm that there are upwards of 50 "flying"members in the club at St Michaels ...and also to bear in mind that there exists a number of other flying clubs and Parachute drop centres operating within this area.

Regards NWMAC Committee

On Thu, 29 Jul 2021 at 18:[redacted]

Dear Sirs,

Following on from our response to your questions regarding our planned airspace change, we would request the following information from you.

It has been put to us that microlights operate across Morecambe Bay below 500' and that you also use the bay to Practice Forced Landings over water.

Might we ask that, if there are specific areas, that such activities take place, could you indicate where such areas might be?

Our ambition has always been to work with other airspace users to develop routes that do not affect other users operations. If your members have specific areas of Morecambe Bay, or the surrounding areas, that they utilise for low level flight or PFL's we would welcome an indication of where such areas might be. We can then see how we can route around them accordingly.

We'd welcome any input.

Yours faithfully,

ELECTRIC AVIATION LIMITED

EMAILMLNW3

Unrepresentative Engagement

[redacted] 2021-08-16 10:40
DetailsPlain text

Dear Sirs,

The stakeholder engagement phase for the Morecambe Bay RPAS Transit Route (ACP-2021-22) has now closed.

We received responses from all manner of airspace users from model aircraft flyers, to paragliders, to the RAF.

Even before the engagement phase had started we received a huge document from one of your members claiming to be from the airspace team of the BMAA.

We responded to this and were met with another barrage of accusations and defamatory remarks.

We subsequently received another smaller, more concise response from another member claiming to be from the BMAA airspace team, and then mid engagement phase we received communications from [redacted] of the BMAA claiming that the other two members did not represent the BMAA.

Two hours after [redacted] sent in his final thoughts on behalf of the BMAA we received yet more feedback from someone else claiming to be the BMAA airspace team.

We have also, obviously, had communications with NWMAC and we have tried to answer your questions accordingly.

We will be sending in all correspondence to the CAA that we have received from all parties during the stakeholder engagement. But, we do not believe that the responses of NWMAC will be heard over the voluminous correspondence from individuals claiming to be from the BMAA and the BMAA itself.

As such we believe this to be unrepresentative engagement from the microlight community. When we look at the engagement we received from the Gliders, Paragliding and Model Aircraft Flying communities etc. it has been vastly different.

The BGA responded to the initial NATMAC list email, commented on TDA's and then put us in touch with the two main gliding clubs, both of whom we subsequently had good interaction with. Sadly this has not been the case with the Microlight community.

As such we would like to come and meet with your club members and talk through our plans with you.

We believe that there is still an opportunity to alleviate any fears that your members may have, whilst working to find a common route forward, but this can only be done at an individual club and member level, owing to the BMAA's scattergun approach to Airspace Change Proposals.

If you would like us to attend the clubs in the area, please do let us know.

Electric Aviation.

1.34.11 Microlight "D"

[redacted] Electric Aviation on the 22nd of June, before the stakeholder engagement process had commenced, objecting to the airspace change. Electric Aviation entered into communication with [redacted] asking for evidence of low flying in the Morecambe Bay Area, but sadly none was forthcoming.

With the exception of Mr [redacted] that Electric Aviation quoting the relevant SERA and ORSA articles regarding Low Flying was incorrect, a case where Electric Aviation believe Mr Dixon has misconstrued our implications, Electric Aviation Limited worked to answer all of [redacted]

The concept of low level flight was passed on to the Points arising from Microlight Stakeholder register, found in section 1.33.14 following.

1.34.12 Microlight "D" Correspondence

EMAILMLD1

RE: Airspace Change Proposal - Morecambe Bay RPAS Transit Route

From [redacted] 2021-07-29 10:46

DetailsPlain text

Chris,

...responding despite my better judgement...

I'm also not trying to be unhelpful, just finding it frustrating to quote back a person's won words then have those same words challenged as invalid. Very hard to make sense of that.

Pilots at the numerous local airfields will be able to tell you that, if you engage with them: Cark / Grange Over Sands, Barrow Walney Island, Cockerham, Pilling Sands, Rossal Field, Brook Farm, St Michaels, Blackpool. You can get contact details for all those airfields via Google, or on Skydemon.

That's it now, I'm out.

[redacted]

[redacted]
Sent: 29 July 2021 10:37
[redacted]
Subject: Re: Airspace Change Proposal - Morecambe Bay RPAS Transit Route

[redacted]

All I am trying to do is ascertain where in Morecambe Bay, PFL's are practised, likewise low level flying.

It is a big place and has plenty of areas of quicksand.

If there are specific areas or regions of the bay, that either PFL's are practiced, or low flying specifically takes place, then please do let us know.

We are genuinely interested in local airspace users areas of operations, but to claim the whole of the bay is used for these activities is not that enlightening nor helpful.

[redacted]

On 2021-07-29 09:24, alistair.dixon@btinternet.com wrote:

[redacted]

I'm increasingly puzzled as to your position. In your own email to me, you said "the UK has an exemption to this rule (ORS4 No. 1496) which allows flight no CLOSER than 500ft to any person, vessel, vehicle or structure". That's also my understanding, and is what I paraphrased below. ""anything which might reasonably be expected to contain a person" perhaps you might enlighten me as to which rule that comes from?" – same place you got your understanding from in your initial email. We appear to be making precisely the same point, but when I make it and agree with you, you challenge me. A bit confusing perhaps?

When I read your initial email, I interpreted "PART-SERA.5005 dictates no aircraft is to fly below 500ft above the surface (the UK adopted PART-SERA in 2016), the UK has an exemption to this rule (ORS4 No. 1496) which allows flight no CLOSER than 500ft to any person, vessel, vehicle or structure. However, ORS4 No. 1496 also states that the permission "does not relieve pilots from their responsibilities under SERA.3101 - Negligent or reckless operation of aircraft - and SERA.3105 – Minimum Heights" as meaning that you were implying that to fly below 500' was somehow negligent or reckless. Indeed, re-reading it now, I still take that as your implication, and I infer the same conclusion from it. Please accept my apologies if that wasn't what you were implying, but I would be grateful therefore if you would clarify the point you were trying to make in your statement. However, be that as it may, my basic point is that flight below 500' is neither negligent nor reckless, nor is it illegal, nor is it especially unusual.

Given that flight below 500' isn't negligent, reckless, and nor is it illegal or especially uncommon in areas where it doesn't bring you into proximity with people, I don't feel a need to justify any special scenario where this might occur, because it isn't particularly special. The general scenario of aircraft flying low over tidal areas where large stretches of sand are exposed at low tide isn't unusual, it occurs all over the UK in suitable locations. Low flying is one of the skills a good GA pilot will normally practice, and there are only so many locations around the UK where this can take place without risking infringement of the regulations (it would be negligent to do so in a place or manner where you could reasonably expect that to bring you closer than 500' feet to a person), Morecambe Bay being one of those safe and responsible low-flying areas. A long, linear danger area running across it is the worst possible scenario for disrupting this entirely legitimate aviation activity. Another scenario will be practise of forced landings (PFLs). Microlights have only a single engine by law, and that engine is nearly always uncertified, therefore one of the scenarios that microlight pilots are trained to practice very regularly – every flight if possible – is an unpowered forced landing. Engines are far more likely to stop at idle rather than cruise or climb power, hence the need to have available a feasible safe landing site underneath you when performing a PFL. Large, unpopulated coastal sands are therefore ideal for PFLs, and Morecambe Bay is a great example. To my knowledge, local microlights from any of numerous airfields in the local area can be found doing this nearly every flyable day. Your proposed TDA would obstruct this. If you are unsure of where the local microlight airfields are, I suggest consulting the CAA 1:500,000 chart, it shows quite a number of them in the vicinity of your proposed TDA.

I come back to my central point: I don't really buy your proposition that your particular trial requires tier 1 A&Es to be within the danger area. Trials are usually meant to demonstrate a principle, not be 100% dress rehearsals for the real life scenario proposed. Given that, there are numerous locations in the country with existing danger areas where you could carry this out. If everyone who wants to trial a particular use case of drone technology sets up a new TDA for their individual trial, the entire country would soon be covered with TDAs. Class G airspace is supposed to be there for everyone, not reserved willy-nilly for small interest groups in unnecessary ways.

[redacted]

[redacted]

[redacted] Airspace Change Proposal - Morecambe Bay RPAS Transit Route

[redacted]

Please provide us a scenario where you may be flying below 500' over any of the routes that we have proposed for this TDA.

At no point below do I claim that it is negligent or reckless to fly below 500' If you read the text we sent you it merely states that:

ORS4 No. 1496 also states that the permission "does not relieve pilots from their responsibilities under SERA.3101 - Negligent or reckless operation of aircraft - and SERA.3105 – Minimum Heights"

https://publicapps.caa.co.uk/docs/33/ORS4%20No.1496.pdf

There is also no mention in ORSA No.1496 regarding "anything which might reasonably be expected to contain a person" perhaps you might enlighten me as to which rule that comes from?

Your views on trials are noted.

It is most important to us that we understand the concerns of other airspace users, thus I re-iterate - Please provide us a scenario where you may be flying below 500' over any of the routes that we have proposed for this TDA.

[redacted]

On 2021-07-22 15:58, alistair.dixon@btinternet.com wrote:

[redacted]

[redacted]

Your interpretation of air law is interesting, but incorrect. As a CAA authorised examiner qualified in air law, I can tell you aircraft regularly fly below 500', quite legally – I do myself all the time, as do all the other instructors and examiners I know. The 500' rule means aircraft can't go within 500' of a person or anything which might reasonably be expected to contain a person. It is most certainly not negligent or reckless simply to fly below 500'. That's just plain wrong.

Chopping up class G into parts separated by danger areas does effectively diminish the free airspace available to all other users, whether those danger areas are 1 inch or 1 mile wide. Linear danger areas are the worst culprits for this.

The proposition that, in order to be useful for a trial, the danger area must contain a tier 1 A&E seems very odd. Surely the trial could simulate delivery to several points, it seems pretty unlikely that those points have to be in a real hospital for the tests to be valid. The world is full of trials where the principle of the thing being proposed is investigated in an artificial environment, without the need for the real thing to make the findings valid. I don't really buy that argument, sorry.

[redacted]

[redacted]

Subject: Re: Airspace Change Proposal - Morecambe Bay RPAS Transit Route

[redacted]

Thank you for taking the time to respond to our proposals for the airspace change.

The TDA dimensions are available on www.morecambebaydrones.com but to clarify we seek to erect a TDA with dimensions of 800' wide and a service ceiling of 400'.

PART-SERA.5005 dictates no aircraft is to fly below 500ft above the surface (the UK adopted PART-SERA in 2016), the UK has an exemption to this rule (ORS4 No. 1496) which allows flight no CLOSER than 500ft to any person, vessel, vehicle or structure. However, ORS4 No. 1496 also states that the permission "does not relieve pilots from their responsibilities under SERA.3101 - Negligent or reckless operation of aircraft - and SERA.3105 – Minimum Heights"

As such we cannot see how our TDA affects the microlight community.

With regards Class G being a diminishing resource we have tried to make the TDA dimensions deliberately small and the routes as direct as possible.

With regards utilisation of established UAV test Danger Areas, there are no permanent Danger Areas with two active Tier 1 A&E hospitals within their confines.

We thank you for your input and should you have any further thoughts on how the airspace may be affected, then please do let us know.

Electric Aviation Limited

On 2021-06-22 09:18, [redacted] wrote:

I object to the establishment of this new temporary danger area.

Contrary to the general statements made in 'Purpose Of This Change', this new danger area would not be without serious impact to GA traffic. For instance, there is significant microlight activity in that area, with the proposal impacting on airfields at NWMAC, St Michaels, Tarn, Troutbeck and others.

The size of the danger area does not appear to be specified clearly anywhere in the documents.

There are already quite a number of other temporary danger areas already established or being proposed elsewhere in the UK for the purpose of drone testing. Class G 'free' airspace is a diminishing resource in the UK, which is a relatively small country with commensurately small airspace above it, before you start reserving great lumps of that limited resource for small, highly specialised groups or commercial interests. This airspace is supposed to be for the use of everyone in the aviation community, and drone testing should be conducted in one of the existing areas already set aside for this purpose. It is simply not feasible for a new TDA to be established every time another commercial drone company wants to test a proposal. Using the Covid-19 pandemic as a fig leaf is not acceptable, you can and should do this testing in the places already set aside for this use. There is a huge amount of precedent for this; for instance, there are already many, many danger areas established around the UK for military testing. When some new weapons system needs to be tested, the team take it to one of those existing danger areas, they don't ask for a new one next door to the factory where the new system is being produced. Please follow this sensible precedent.

[redacted]

[redacted]

[redacted]

[redacted]

perhaps rightly so bearing in mind [redacted] has shown just how a single lone voice can disrupt an entire process.

[redacted]hounding of the various ATC services was not appreciated by Electric Aviation and was viewed unfavourably by FISO and ATCO staff at the various ATC units he plagued with calls.

Electric Aviation have made numerous apologies on behalf [redacted] his colleagues for their behaviour, prior to and during the stakeholder engagement towards professional members of the aviation community.

It is perhaps telling that despite emailing directly Northern Microlights, Bickerstaffe Aviation, Attitude Airsports, Cumbria Microlight Training, West Lancashire Microlight School, and Lancs Aero Club not one reply was received, perhaps this is down to them being members of NWMAC, or perhaps they have read on social media that [redacted] speaking for them all.

It has saddened Electric Aviation that the response from the Microlight community was so poorly organised.

There are comments from NWMAC that suggest they would like to engage, but these Electric Aviation feel have been closed down by the influence [redacted] et al. the *luddites* of this engagement. Electric

Aviation propose that to move forward a direct mailing of the clubs themselves will be required and engagement through demonstration will be the route forward. We need to remove the voices who shout the loudest and speak with all members of the microlight fraternity around Morecambe Bay.

1.34.14 Points arising from Microlight stakeholder register

Two key points have arisen from the limited microlight stakeholder response:

- PFL over water
- Low level flight over Morecambe Bay

These are now discussed in detail

1.34.15 PFL over water

We referred the feedback from Messrs [redacted] our consultant Flight Examiner Nigel Willson (GBR.FE.256601K). (See Section 1.7 for Biography). Nigel responded that:

Practice Forced Landings – Exercise 16

The syllabus for PART-FCL, NPPL, and NPPL(M) licenses regarding this exercise all contain the following key items of training as a requirement:

- forced landing procedure
- choice of landing area, provision for change of plan
- gliding distance
- descent plan
- key positions
- engine cooling
- engine failure checks
- use of radio
- base leg
- final approach
- landing
- actions after landing

The objective of the exercise is to give the pilot airborne practice (in particular) in field selection, and descent planning. It is important that the exercise is conducted in a way where the pilot is under no illusion as to whether their selection and execution of the exercise is successful, resulting in a landing in their SELECTED field.

For this to be undertaken successfully, there needs to be a positive identification of the landing area that is visibly distinctive enough for the student to be able to accurately describe and point out the landing area to the instructor. Similarly, depending on the method of descent planning used, other land marks are usually necessary to establish whether the aircraft is likely to land in the designated area at an early stage of the process – otherwise re-assessments of the proposed landing are should be undertaken.

Practice Forced Landings (PFL) over open water or areas with indistinguishable features (such as expanses of mud or sand) is not a recognised nor recommended practice.

In practical detailed terms;

- The whole purpose of performing PFL's is to allow a pilot to practice the emergency procedure checks, FIELD SELECTION (taking into account the surface wind), and then practice at judging the glide of the aircraft in the engine off configuration to enable a landing to be made into the selected FIELD.

- Obviously, over open water or featureless areas, there is no field to select, and therefore no field to "aim for" to practice the judgement of the glide to ensure the chosen field is achieved. There is therefore no value in performing this exercise in these conditions.

- The practicing of the emergency procedures can take place at any point in time – it does not have to be over open water. Some aspects (e.g. touch drills and the

"procedural" part of the exercise) could even be performed on the ground in the aircraft.

- With regards to "ditching practice" (PFL over water) then this can be done over any part of the water – not confined to the areas within which the route occupies. However, even ditching practice "to the water surface" is not a standard nor recommended practice due to the risks involved (see below). It is also recommended that such practices are confined to near the coast for obvious reasons – which in fact is a major objective of the "ditching brief" – to land as close to land (i.e. help) as possible.

Threat and Error Management (TEM)

All flight exercises must have a Treat and Error Management aspect briefed as part of the exercise. This is part of the pre-exercise brief with the student, and determines the main areas of risk, and how they will be managed.

For this exercise, it is envisaged that the following would be considered best practice.
(Lack of TEM planning is not acceptable since this is an inherent part of flight training.)

- Suitability of area for the practice
    - Open water of featureless terrain will impact height and distance judgement with a risk of accidental touch-down
    - Legal requirement for life jackets and/or dinghies to be carried if out of reach of land
- Airspace – away from known areas where airspace would be impacted (e.g. Instrument Approach Procedures established outside of controlled airspace), Danger Areas, NOTAM'd areas
- Lack of communication facilities at low level should a problem arise requiring assistance
- Legal implications of low flight (these apply since the aircraft is not taking off nor landing) (***See Note 1**)
    - 1000ft rule (SERA.5005)
    - 500ft Rule (SERA.5005 plus UK CAA ORS4. No.1496)
- Legal implications of endangering an aircraft (placing an aircraft in a situation that endangers it or its occupants on purpose) (**See Note 1**)
    - ANO Article 240 (endangering an aircraft)
    - ANO Article 8 (flight over water considerations)
    - ANO Article 72 (equipment to be carried for flight over water)
    - SERA.3101 (Negligent or reckless operation of aircraft)
- Wind, location, fuel and unnoticed drift during the exercise resulting in placing the aircraft in an unknown or undesired location

- Suitability of the surface

    - The surface should be suitable to land on in the event the exercise turns into a "real" situation during the exercise!
    - In other words, over water or known quicksand locations is not considered a suitable area of this reason alone.
    - *ELECTRIC AVIATION add (Please see the last paragraph of section 1.20)*

- Impact of the exercise on other emergency services

    - If a forced landing ends as a real forced landing in a remote and/or unsuitable area (water/quicksand) then this will impact other emergency services, detract from other possibly more important (and not self-inflicted) call-outs.

    - Numerous phone calls from concerned members of the public to those services will lead to one of two things;

        - Unnecessary calls to the emergency services with further investigative work required by them (or false call-outs) as a result

        - If the members of the public see the exercise often enough, they will not report any instance of a real forced landing requiring assistance in the future ("cry wolf" syndrome).

        - ELECTRIC AVIATION add (Please read section 1.20)

NOTE 1: See also further information regarding flight below 500ft in general.

Thus it is Electric Aviation's opinion that Practiced Forced Landings should not be practiced over Morecambe Bay. The founder of Electric Aviation holds SEP(Land & Sea) and as such has first-hand experience in landing aircraft on water. The Glassy Water Landing approach from a seaplane perspective emphasises the need for perspective.

Without depth perception necessary to judge your height above the water, you can't do a normal landing flare and you must develop a completely separate technique to accommodate this limitation.[3]

Morecambe Bay can appear dead calm with glassy water present, likewise when the tide is out it can be a vast expanse of sand and quicksand.
Without a clear Initial Aiming Point, (IAP) and it is not going to be possible to use a sheet of sand, from which to judge a forced landing, the rate of descent cannot be properly maintained. Reviewing the Trevor Thom, The Air Pilot's Manual, Book 1, Flight Training, perhaps the most popular flight training manual published, clearly states in section 17a Forced Landing without Power – Select a Suitable Field.

"crops and beaches should be avoided"[4]

[3] Glass Water Landing, Page 36, Notes of a Seaplane Instructor, Burke Mees, ASA publishing.
[4] Thom. T. The Air Pilot's Manual, Book 1, Flight Training. P294

Electric Aviation purchased a copy of Flylight Airsports Limited's Microlight Fixed Wing Briefing Notes (incorporating the 2019 NPPL M Training syllabus. Page 102 details the constant aspect method for exercise 16, and states:

"It is important that constant visual contact is kept with the landing area"

When the landing area is a flat featureless surface it will be virtually impossible to identify an IAP and to keep focussed on that.

This practice of landing on the sands at Morecambe Bay has lead to serious injury in the past. The AAIB report summary into Pegasus Quik, G-CDOM, 12 May 2008[5] reads:

After completing six successful landings on the beach at Pilling Sands, the aircraft crashed on the seventh landing. The pilot broke both wrists and received facial injuries. Subsequently, he was unable to recall anything about the events leading up to the accident, and no witness information was available. The wind at the time of the accident was reported to light and variable, and it was considered possible that this, coupled with a lack of visual cues from the wide expanse of exposed sand, may have contributed to the accident.

The AAIB report into Thruster T600N 450, G-ORUG, 26 November 2006[6] details:

The pilot was practising cross-wind approaches on a beach, however he misjudged his height and landed unintentionally. During the attempted takeoff, the aircraft started to turn and the takeoff was abandoned, causing the nosewheel to dig into the sand and the aircraft flipped over and came to rest inverted.

The AAIB report into Medway Eclipser, G-CCGA, 2 July 2006[7] further details the perils of landing onto tidal sand.

Electric Aviation thus believe that undertaking a PFL over land which may contain quicksand, in perhaps one of the most inhospitable and inaccessible areas of coast makes the choice of Morecambe Bay to practice PFL's shows poor planning and an obvious deviation from the training syllabus. As such Electric Aviation have thus reported a potential breach of aviation law (Application Submission Number: ABL-20363) to the CAA and have written to the Secretary of State to ask that a full investigation be carried out into this dangerous practice.

In summary, Electric Aviation believe that PFL's being performed over Morecambe Bay are reckless and show poor planning and a lack of understanding of the appropriate training elements. We believe the CAA should act to prevent such activities taking place before more injury occurs.

[5] https://www.gov.uk/aaib-reports/pegasus-quik-g-cdom-12-may-2008
[6] https://www.gov.uk/aaib-reports/thruster-t600n-450-g-orug-26-november-2006
[7] https://www.gov.uk/aaib-reports/medway-eclipser-g-ccga-2-july-2006

1.34.16 Low level flight over Morecambe Bay

[redacted] UKFE.

Flight Below 500ft

Whilst PART-SERA.5005 dictates no aircraft is to fly below 500ft above the surface (the UK adopted PART-SERA in 2016), the UK has an exemption to this rule (ORS4 No. 1496) which allows flight no CLOSER than 500ft to any person, vessel, vehicle or structure.

However, ORS4 No. 1496 also states that the permission "does not relieve pilots from their responsibilities under SERA.3101 - Negligent or reckless operation of aircraft - and SERA.3105 – Minimum Heights" (expanded upon below):

- SERA.3101: An aircraft shall not be operated in a negligent or reckless manner so as to endanger life or property of others.
- SERA.3105: Except when necessary for take-off or landing, or except by permission from the competent authority, aircraft shall not be flown over the congested areas of cities, towns or settlements or over an open air assembly of persons, unless at such a height as will permit, in the event of an emergency arising, a landing to be made without undue hazard to persons or property on the surface. The minimum heights for VFR flights shall be those specified in SERA.5005(f) and minimum levels for IFR flights shall be those specified in SERA.5015(b).
- The UK Air Navigation Order applies to all flights in UK airspace and UK registered aircraft (wherever they operate). The ANO states the following (bear in mind that if PFL's are being practiced over water that the aircraft will not be able to make landfall):
- ANO Article 240: Endangering safety of an aircraft: A person must not recklessly or negligently act in a manner likely to endanger an aircraft, or any person in an aircraft.
- ANO Article 8: Flight Over Water:

  (1) Where—
  - (a) a flying machine flies beyond autorotational or gliding distance from land suitable for an emergency landing;
  - (b) a flying machine takes off or lands at an aerodrome or operating site where, in the opinion of the pilot in command, the take-off or approach path is so disposed over water that there would be a likelihood of a ditching in the event of an emergency; or
  - (c) a seaplane operates over water,
  - it must be equipped with a life-jacket for each person on board, or equivalent individual floatation device for each person on board younger than 24 months, which must be worn or stowed in a position that is readily accessible from the seat or berth of the person for whose use it is provided.

- ANO Article 72: Survival Equipment: 72
  - (1) This article applies to any aircraft registered in the United Kingdom.
  - (2) The pilot in command must be satisfied on reasonable grounds before take-off that the aircraft carries such additional equipment as the pilot in command reasonably considers necessary for the purposes of facilitating the survival of the persons carried in the aircraft.

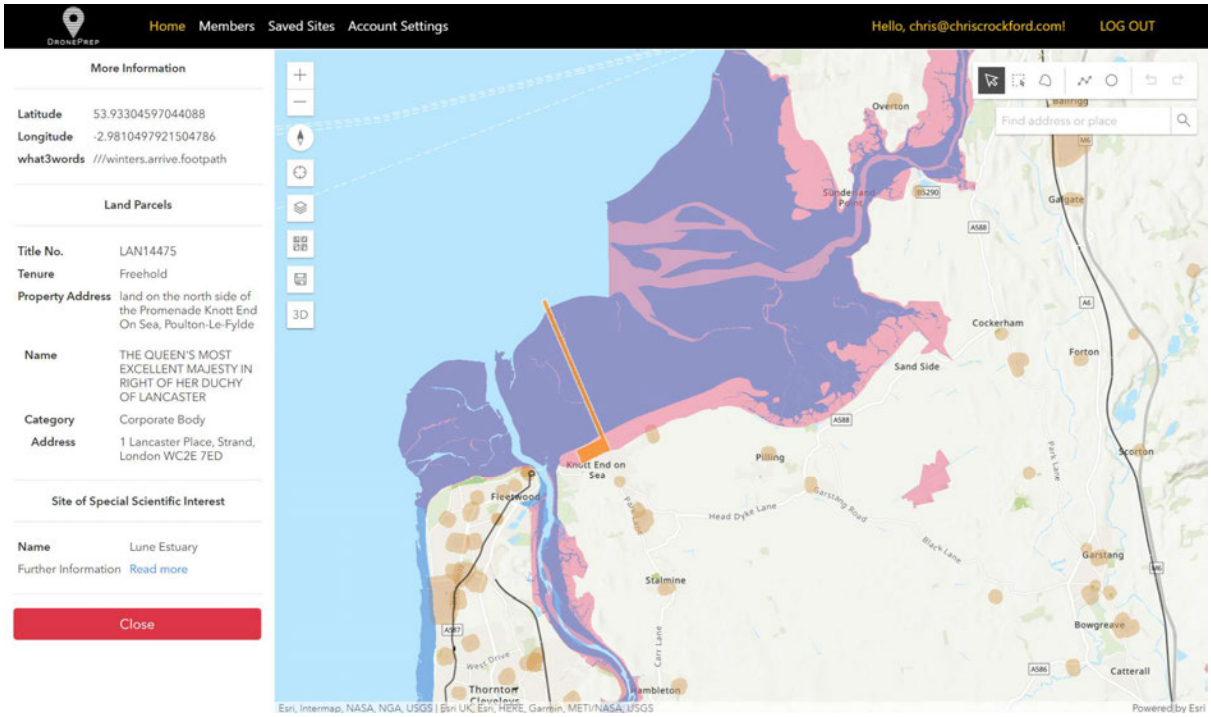
- (3) In complying with paragraph (2) the pilot in command must have regard to the circumstances of the intended flight, including in particular the likelihood of ditching and the availability of search and rescue facilities.
- (4) The pilot in command must determine the risks to survival of the occupants of the aircraft in the event of a ditching when deciding if life-jackets must be worn by all occupants.

- Other considerations
  - Once again, every flight should be evaluated with Threat and Error Management. What is the objective for flying below 500ft, and what are the risks involved? Are they acceptable in the light of regulation (see above) and "common sense"?
  - There is a reason why SERA states that flight below 500ft above the surface is not permitted. Whilst the UK has an exemption to this rule (for use in UK airspace), this is not an invitation to abuse common sense or risk assessment procedures.

It is known that microlights land on Morecambe Bay at various locations. The only feedback to date that we have had from any microlight pilots is through the engagement with North West Microlight Aircraft Club who have stated that:

"We can confirm that we regularly fly across Morecambe Bay below 500 ft amsl to practice forced landings either on the sandbanks in the bay or upon Pilling Sands to Knott End at low tide."

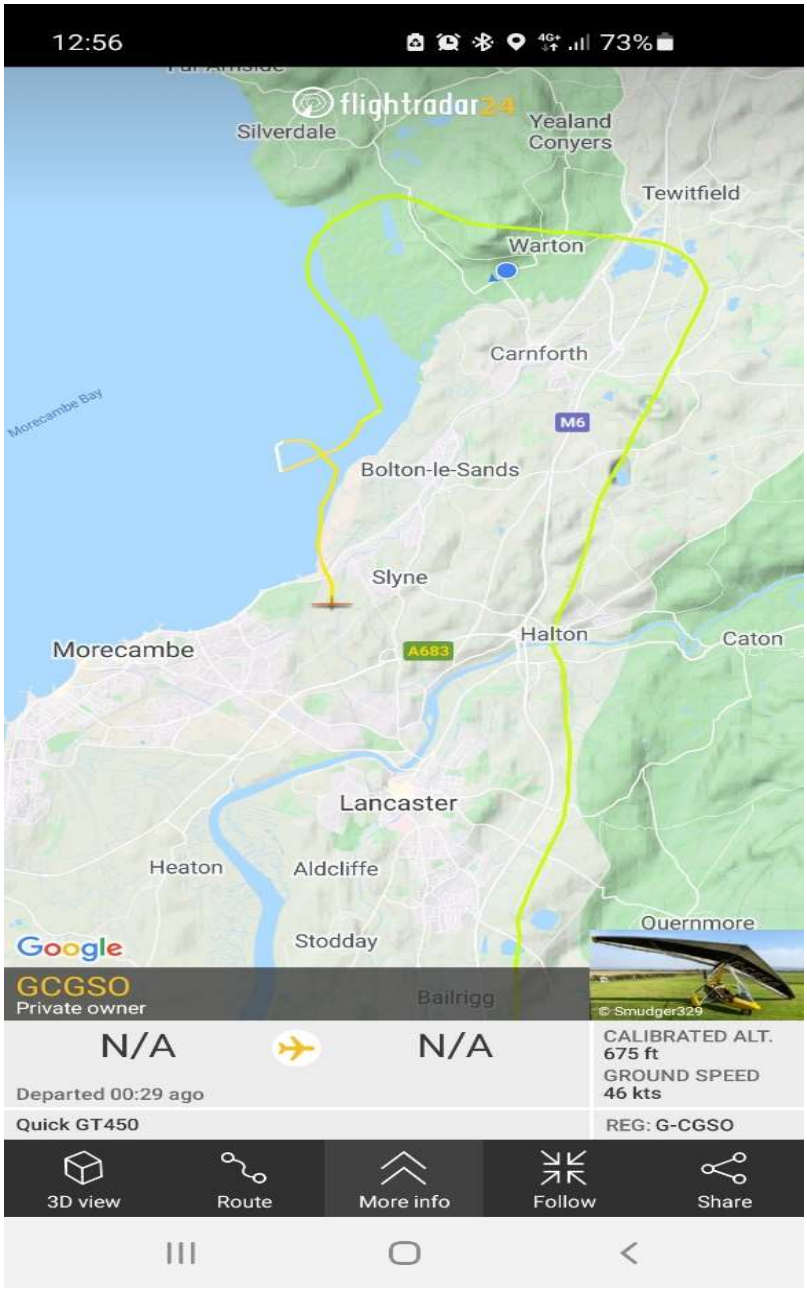
Piling Sands/Knott End beach seems to be the predominant beach that microlights seem to land upon, despite the land owner confirming that no permissions have been sought. (see 1.31).



Sample land parcel shown to belong to the Duchy of Lancaster. (Recreated with permission from DronePrep)

Electric Aviation have noticed Microlights historically landing on the beach at Bolton le Sands, further north and a historical analysis of low flying by microlights can be found in section 2.0 of this report. Whilst Microlight pilots do have the right to fly below 500', operating to the rules, cited by Nigel Willson above in this section, one has to question the provenance of the thinking and flight management behind doing so.

A review of the Flight Radar Track of a microlight pilot, operating out of Rossall Field, shows the pilot descend over the sand at Bolton Le Sands down to a height of 250ft. One assumes that the beach was clear of people and horses at the time, although as the pilot of this aircraft flew directly through the Gas Venting Site at Nether Kellet and went on to infringe R444 at Heysham, the professionalism of the pilot has to be called into question.



Microlights do operate below 500' occasionally across Morecambe Bay

1.34.17 Microlight Engagement Summary

It has not been a successful engagement with the microlight community. This has been caused by the overarching voice of [redacted]

The response from the BMAA Chief Executive contains no points of relevance to this Airspace Change. The BMAA have compounded the issue by issuing their formal response, which unsurprisingly does not support the application, [redacted] to also represent the views of the BMAA to email in his points 96 minutes later.

We are aware that Microlights do fly across Morecambe Bay and occasionally below 500'.

The Microlight fraternity based out of St Michael's claim to undertake Practice Forced Landings over Morecambe Bay, a practice we believe to be dangerous and not within scope of exercise 16.

We know microlights do fly below 500' over the bay but we would question the safety and flight management logic of such activity.

We know from our conversations with the rescue services that microlights have caused needless search and rescue deployment.

Section 2 of this report analyses flight data and will present the statistical evidence we have of flights across Morecambe Bay and how we believe that the Microlight claims are grossly exaggerated.

We believe that this may have been caused by the knee jerk reaction of [redacted] grand objector to Airspace Change, when as NWMAC put it, he discovered that this Airspace Change was located in 'his backyard'.

From our analysis in Section 2, we conclude that this Airspace Change Proposal and its subsequent TDA's will not affect the Microlight community in the slightest.

We ask the CAA to consider the microlight fraternity's claims, in light of the evidence we have shown demonstrating their consistent infringement of R444 and their lack of permission to operate on the sands of Morecambe Bay, such that their actions are triggering needless and false Search and Rescue deployments.

1.35 Stakeholder Engagement Summary

Electric Aviation believe we have conducted thorough and extensive Stakeholder Engagement with regards the Airspace Change Proposal.

We have received favourable responses from:

- BAe Warton
- BAe Systems Submarines
- EDF Energy
- ATC Walney Island
- Blackpool Airport
- Skydive NorthWest/Cark Airfield
- Black Knights Parachuting/Cockerham Airfield
- HEMS including North West and Great North Air Ambulances
- National Police Air Service
- British Nuclear Constabulary
- Bay Search & Rescue
- MOD
- Duchy of Lancaster
- Network Rail
- National Grid
- Westair
- ANT
- Lakes Gliding Club
- Cumbria Soaring Club
- Numerous individual Paragliders
- North West Kite Club
- Lancaster and Morecambe Model Aircraft Club
- North West Balloon and Airship Club
- Multiple GA pilots (non microlight)
- Multiple Commercial Pilots (rotary and fixed wing)
- Public support
- Lancaster City Council
- Lancashire County Council
- Lancashire Local Enterprise Partnership
- University of Central Lancashire

We have received unfavourable responses containing unfounded claims from

- Microlight fraternity

We have asked for further direct engagement from the microlight fraternity at a local level but have not received a response.

Electric Aviation thus conclude that we have the necessary community support for this Airspace Change Proposal.

ELECTRIC AVIATION

22/08/21