LAND'S END AIRPORT

CAP 1616 – AIRSPACE CHANGE PROPOSAL

FOR THE

LAND'S END TRANSIT CORRIDOR

-

STAGE 2 : DEVELOP & ASSESS

Stage 2A: Airspace Change Design Options

ID : ACP-2019-75

LAND'S END AIRPORT

ACP SUBMISSION STEP 2A : AIRSPACE CHANGE DESIGN OPTIONS

SEPTEMBER 2020

CONTENTS

i. Abbreviations & Glossary of Terms

ACP	Airspace Change Proposal	The process by which a sponsor applies for a change to the design of a part of the UK airspace
ADS-B	Automatic Dependant Surveillance Broadcast	A way for an aircraft to determine its position via satellite navigation and periodically broadcast it, enabling it to be tracked
AIAA	Area of Intense Aerial Activity	
ATC	Air Traffic Control	
ATCA	Air Traffic Control Assistant	
ATCO	Air Traffic Control Officer	
ATCU	Air Traffic Control Unit	
ATM	Aerodrome Traffic Monitor	A type of radar used to assist in the safe operation of runways and airport utilisation
CAA	Civil Aviation Authority	The UK's aviation regulator ensuring that aviation reaches the highest safety standards
CAP	Civil Aviation Authority Publication	
CAT	Commercial Air Transport	
DP	Design Principal	
EC	Electronic Conspicuity	A means of aircraft transmitting their position to other ground or air-based systems
GA	General Aviation	
IFR	Instrument Flight Rules	A term used to describe a pilot flying and navigating the aircraft with reference to the instruments in the flight deck
ISSC	Isles of Scilly Steamship Company	
ISSG	Isles of Scilly Steamship Group	
LETC	Land's End Transit Corridor	

MLAT	Multilateration	A navigation and surveillance technique used to provide information on the position of an aircraft
PAX	Passengers	
PINS	Point In Space	A non-precision instrument approach mainly used by helicopters
RMZ	Radio Mandatory Zone	A designated piece of airspace that requires all aircraft to be fitted with and operate suitable two-way radio equipment
RNAS	Royal Naval Air Station	
RNAV	Area Navigation	A method of navigation that allows an aircraft to choose any course within a network of navigation beacons
SAR	Search and Rescue	
TCAS	Traffic Collision Avoidance System	Suitably equipped aircraft communicate digitally, between themselves, information regarding range, altitude and bearing to provide advice on airborne collision avoidance
TMZ	Transponder Mandatory Zone	A designated piece of airspace that requires all aircraft to be fitted with and operate electronic conspicuity equipment
UK	United Kngdom	

1 Introduction

1.1 This document forms part of the document set required in accordance with the requirements of the CAP1616 airspace change process.

1.2 This document aims to provide adequate evidence to satisfy Stage 2 Develop and Assess Gateway, Step 2A Airspace Change Design Options.

1.3 Land's End Airport is proposing to introduce an improved airspace solution to the Land's End Transit Corridor (an existing block of airspace linking the mainland to the Isles of Scilly) that could provide mitigation to the current unknown traffic environment. With an increase in air traffic movements within the Land's End Transit Corridor, the commencement of a second commercial operator (Penzance Helicopters) and the introduction of multiple IFR approaches (with more planned) a need for an Airspace Change was identified.

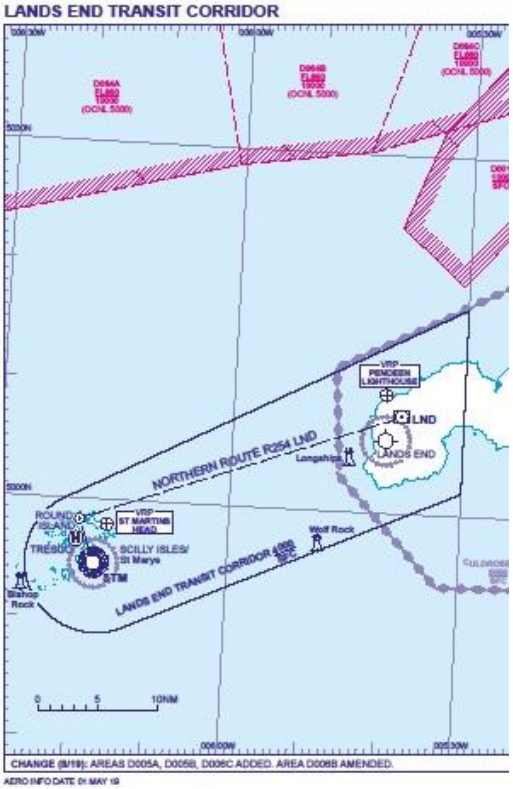
1.4 The owner of Land's End Airport, the Isles of Scilly Steamship Company (ISSC), has been providing lifeline services between the mainland and the islands for over 100 years. Air services provide a year-round lifeline link between the mainland and the Isles of Scilly and this proposal represents the final stage of a major investment program for the benefit of the island-based community and visitors.

1.5 This proposal is related to improving the safety of existing services and not about stimulating new traffic or altering any existing routes.

1.6

The Land's End Transit Corridor is situated in the far South-West of England and is an established block of airspace approximately 38nm long and 15nm wide (Surface to 4,000ft altitude) linking the mainland to the Isles of Scilly.

It is situated in Class G airspace and partially within the RNAS Culdrose AIAA.



1.7 The LETC is used predominantly by scheduled passenger and freight carrying flights - both fixed-wing and, as of March 2020 from Penzance Heliport, rotary aircraft. In addition, it is used by military aircraft (both fixed-wing and rotary), SAR & Helimed helicopters, Trinity House helicopters, General Aviation flights and other charter and air-taxi operators.

Aircraft using the LETC become funnelled within a very narrow lateral and vertical area of airspace. In order to provide increased protection for all users, and in particular, the scheduled public transport flights - some of which may be conducting IFR RNAV approaches - a need for an airspace change was identified.

Air Traffic Control Officers (ATCO's) at Land's End Airport and St. Mary's Airport oversee the safe, orderly and expeditious flow of aircraft using the LETC. The current LETC operation is further enhanced by an existing Letter of Agreement made between Operators and Land's End and St. Mary's ATCU's. An additional specific Letter of Agreement between Land's End ATCU and RNAS Culdrose ATCU details the procedures for when the Land's End RNAV approaches are in use.

There are now four Airports/Heliports situated within the LETC – Land's End Airport, St. Mary's Airport, Penzance Heliport and Tresco Heliport. All these destinations are served by commercial air transport and all have, or intend to have, their own IFR RNAV or PIN's approaches.

1.8 Land's End Airport handled 15,042 aircraft movements (11,177 Airport Movements and 3,865 Overflights) and 64,000 terminal pax in 2019 (Jan-Dec). This makes it the 36th busiest Airport in the UK.

St. Mary's Airport handled 12,329 Airport Movements and 94,000 terminal pax in 2019 (Jan-Dec). This makes it the 35th busiest Airport in the UK.

2 Options Development – brief history

2.1 Land's End Airport has explored many ways that airspace can be managed and considered a number of options to help enhance safety in LETC and during this process, has examined and considered the following main themes

- Operational impact on current and potential future flights
- Economic impact on existing commercial operators and the local communities directly economically effected by flights between the Isles of Scilly and the mainland
- Safety management and risk analysis of both the current situation and any potential changes in the future
- Technical constraints and opportunities available to major stakeholders
- Environmental impacts including noise, Co2 and air quality

We also sought guidance and information from the CAP 493 (Manual of Air Traffic Services) to help us take into account the needs of airspace users and the possible impact on aircraft and airport operations within different airspace environments.

Taking all these into account the following options as to how safety margins could be increased have been considered

- Do nothing
- Obtain a radar feed from an existing radar unit
- Install a radar at or near Land's End Airport
- LETC reclassified as Class D controlled airspace
- LETC reclassified as Class E controlled airspace
- Establish a RMZ
- Establish a TMZ
- Establish a combined RMZ/TMZ
- Alter the size and dimensions of the LETC
- Utilise ADS-B technology

3 Stakeholder Engagement on Options Development

3.1 Land's End Airport is a small but busy airport, located near the village of St Just, approximately seven miles west of Penzance. As a result of its proximity to both urban and rural areas, Land's End had to undertake to identify stakeholders that are affected by current airport operations and those that could be affected by any changes associated with an ACP.

Our general approach was to engage with as many organisations as possible which included:

- those who are currently impacted by Land's End Airport operations and selected those who could be affected by any future changes, even though those changes are expected to have negligible impact.

- those who may have non-aviation related opinions to ensure a full range of factors were considered.

3.2 In forming our stakeholder selection, we covered those referenced in both Appendix C of CAP 1616 and the indicative list in the CAA's engagement plan template. We also used previous ACP engagement experience to assist with the selection (ie our recent RNAV Approach ACP).

3.3 In Stage 1, to ensure we were able to correctly communicate to stakeholders and potential stakeholders alike, we utilised not only email but also sent out written letters as well. We chose to write to stakeholders rather than any other approach because of the opinion that the ACP was more of a more technical change and would have a negligible effect on many of the stakeholders. The first engagement documents were sent out on the 26th March 2020.

Due to the onset of country based COVID-19 restrictions the initial deadline for engagement was extended and invitations for stakeholder comment were resent 30th April 2020 with a final deadline of the 7th May 2020.

3.4 Notwithstanding that the engagement was targeted primarily at the listed stakeholder consultees, Land's End Airport has given appropriate community publicity to this engagement. An example of this is that we asked the local Air Safety Committee, organized by Newquay Airport, to distribute the stakeholder letter (4th May 2020).

3.5 The chronology of the engagement activity is summarised in the table below:

STAGE 1 ENGAGEMENT ACTIVITY	DATE
Identifying Stakeholders	16th - 20th March 2020
Initial Engagement Documents circulated	26th March 2020
Notification of Engagement extension Circulated (COVID-19)	30th April 2020
Local Air Safety Committee circulate engagement documents	4th May 2020
Engagement Deadline	7th May 2020
Draft Design Principles with Stakeholders for comment	29th May – 10th June 2020
Submission to the CAA	12th June 2020

3.6 After receiving feedback from several stakeholders we were able to compile a list of draft design principles which were distributed to all stakeholders regardless of whether feedback was received or not and after incorporating further feedback was able to amend the draft design principles to produce the final table of design principles.

3.7 Final Design Principles

DP1	The airspace design and its operation must be as safe or safer than today for all airspace users that are affected by the airspace change.
DP2	Subject to the overriding design principle of maintaining a high standard of safety, the highest priority principle of this airspace change is that it accords with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it.
DP3	Ensure that all airspace users, current & future, retain the ability to have safe and efficient access to the airspace.
DP4	Ensure that all possible technical solutions – both existing and emerging – are considered (e.g. RADAR, ADSB, MLAT, TCAS). The lifecycle cost of options shall be affordable to the Airport's and commercial operator's income, the equipment costs for GA and other users.

DP5	Controlled airspace options should ensure there is safe and efficient access for other types of operations, and should explore measures, including classification and flexible use of airspace, where possible and appropriate, to improve access and decrease airspace segregation.
DP6	Options should consider an RMZ and / or TMZ solution.
DP7	Ensure that any changes fully consider any environmental impact – to include noise, air pollution and social issues.
DP8	As feedback was received regarding the size of the airspace (some requesting a small volume and others a larger volume), both the height and breadth of the LETC will be fully considered.
DP9	The airspace design shall consider operation by a single authority.

3.8 Engagement during Stage 2 has been with the stakeholders identified in Stage 1 and three others who had expressed interest during the process so far. Two of the additional stakeholders had heard about the process from a staff member at the airport and so we included them in the engagement. The third, Cobham Aviation Services Ltd, were starting to be interested in operating from Land's End and so we engaged with them as well.

Since we had email contact details for all stakeholders, it was deemed to be appropriate and sufficient to email, rather than post, a copy of the design options on 4th September 2020 asking for feedback to be submitted by the 11th September. Due to COVID pressures and staff availability we were only able to offer one week until the response deadline but considered that this was adequate due to the seemingly non contentious and mostly technical nature of the options being presented. This was proven to be so as we received a good number of items of feedback from a variety of stakeholders that were also more detailed than in Stage 1. A follow up email was sent out to all on the 9th September to remind all stakeholders of the deadline for feedback.

3.9 A further email was sent to all stakeholders on the 7th October with an option that was omitted from the 7th September email. The option omitted was "Alter the size and dimensions of the LETC". Again, one week was offered as ample time for this option to be considered for the same reasons stated above.

STAGE 2 ENGAGEMENT ACTIVITY	DATE
Engagement Document for Stage 2 emailed	4th September 2020
Update to the ACP Portal link emailed	7th September 2020
Reminder of closing date emailed	9th September 2020
Engagement Letter for "Alter the size and dimensions of the LETC" option that was omitted from first document emailed	7th October 2020

3.9 Email feedback was received from a number of stakeholders and is listed in Appendix A.

3.10 The full list of stakeholder engagement is published on the portal as Appendix A with the evidence provided in Appendix B.

4 Options Considered

4.1 Do Nothing

The "Do Nothing" option assumes that there are no mitigating design principles implemented.

4.2 Obtain Radar feed from existing Radar unit

This option calls for Radar information to be fed into an Air Traffic Monitor (ATM) unit at Land's End airport. Agreements and contracts would need to be entered into between all parties and specific tests and assurances made to ensure accuracy, reliability and availability. All ATCO's would need to be further trained in the use of the ATM and a renewal of ATCO currency and competency examination carried out by SARG.

4.3 Install Radar

This option calls for the purchase and installation of a Radar system at Land's End airport. A suitable site would need to be found for the installation and necessary planning permissions obtained before any physical equipment could be installed. All ATCO's at Land's End would need to be trained and qualified in the use of Radar and a maintenance contract by an outside Air Traffic Engineering contractor entered into.

4.4 Class D controlled airspace

This option calls for the reclassification of the LETC from class G to class D airspace. All ATCO's would have to undergo further inhouse training to cover the airspace differences and a renewal of ATCO currency and competency examination carried out by SARG.

4.5 Class E controlled airspace

This option calls for the reclassification of the LETC from class G to class E airspace. All ATCO's would have to undergo further inhouse training to cover the airspace differences and a renewal of ATCO currency and competency examination carried out by SARG.

4.6 Radio Mandatory Zone (RMZ)

This option calls for the reclassification of the LETC to an RMZ. The dimensions of an RMZ would not necessarily match the current LETC, the exact size and boundaries would be established through further engagement and discussion with adjacent ATCUs and operating agencies of the RMZ decided upon.

4.7 Transponder Mandatory Zone (TMZ)

This option calls for the reclassification of the LETC to a TMZ. The dimensions of an RMZ would not necessarily match the current LETC, the exact size and boundaries would be established through further engagement and discussion with with adjacent ATCUs and operating agencies of the TMZ decided upon along with any standard SSR codes for aircraft operating within the LETC. All aircraft

4.8 Implementation of a combined RMZ / TMZ

This option calls for the reclassification of the LETC to a combined RMZ / TMZ. All aircraft wishing to operate within the LETC would need to be both transponder and radio equipped and be in contact with the appropriate agency before entering.

4.9 Alter the size and dimensions of the LETC

This option calls for the size of the LETC to be altered in order for the IAP's and holds for runways 16/34 to lie wholly within the boundaries of the LETC.

5.0 Automatic Dependent Surveillance – Broadcast (ADS-B)

ADS-B is a surveillance technology in which an aircraft determines its position via satellite navigation and periodically broadcasts it, enabling it to be tracked. The information can be received by air traffic control ground stations. ADS–B is "automatic" in that it requires no pilot or external input. It is "dependent" in that it depends on data from the aircraft's navigation system. (https://en.wikipedia.org/wiki/Automatic_dependent_surveillance_%E2%80%93_broadcast)

This option calls for the installation of an ADS-B receiver at the airport. At present this technology is on trial in the UK and not available for air traffic control use. It would be limited to providing planning information only.

Appendix A: Stakeholder Engagement Email Stage 2A

Below is a copy of the covering email sent to all stakeholders:

Dear All,

Please find attached a document detailing the next stage of our Airspace Change Proposal (ACP) being put forward to the Civil Aviation Authority (CAA) for the block of airspace known as the Land's End Transit Corridor (LETC).

The change sponsor is Land's End Airport, however the proposal is being developed by all regular users of the airspace including St. Mary's Airport, Penzance Heliport, Tresco Heliport, Sloane Helicopters and Isles of Scilly Skybus. This ACP is following the guidance contained within the CAA publication CAP 1616 and you have received this notification as a nominated stakeholder for this proposal.

We are seeking your views on a set of Airspace Change Options that have been developed following previously defined Design Principles and stakeholder feedback received to date. Please provide further feedback on these Options using the feedback form included in Appendix B of the attached document. The document can also be found using the following web-link: https://airspacechange.caa.co.uk/ProposalArea?pID=199

Please note that the deadline for feedback on these Draft Design principles is:

12:30 on Friday, 11th September 2020.

If you require any further information – please do not hesitate to contact me.

I look forward to any comments, or if applicable, a statement of no impact/comment.

Kind Regards,

Chris.

---------- ENDS ----------

ACP-2019-75

Proposed airspace changes to the Land's End Transit Corridor

Stakeholder Feedback Form

Name	
Organisation	
Email Address	
Telephone Number	

Options Appraisal

The change sponsor, Land's End Airport Ltd, has appraised all the available options and come to the conclusion that there are two viable options to take forward in this process, however we are open to receiving feedback on all of the above options.

All Options	Feedback on all available options
Option 1	Establish an RMZ
Option 2	Establish a combined RMZ/TMZ

Please provide feedback, using the following tables, for both options.

We thank you for taking time to engage with us in this important part of the airspace change proposal. Please would you return any completed forms to us before 1230 on 11th September 2020.

All Options General Feedback on all Options
Please provide feedback on any of the above options in section 2
Please provide feedback on any particular safety issues that concern your organisation and how these should be addressed.
Please provide any further comments or questions. We will get in touch to answer your queries.

Option 1 Establish an RMZ

Please provide feedback on how establishing an RMZ would affect the operations or interests of your Organisation.

Please provide feedback on any particular safety issues that concern your organisation and how these should be addressed.

Please provide any further comments or questions. We will get in touch to answer your queries.

Option 2 Establish a Combined RMZ/TMZ

Please provide feedback on how establishing a Combined RMZ/TMZ would affect the operations or interests of your Organisation.

Please provide feedback on any particular safety issues that concern your organisation and how these should be addressed.
Please provide any further comments or questions. We will get in touch to answer your queries.

Appendix B: Stakeholder Engagement Letter Stage 2A (Addendum Option)

Land's End Airport Limited

7th October 2020

Dear Stakeholder,

Firstly, I would like to take this opportunity to thank you for your engagement and feedback so far in this process it has been invaluable in helping develop design principles and options for us to take forward. I am writing to you again with an addendum to the design options that were recently sent out. It concerns the option to modify the size of the Land's End Transit Corridor (LETC).

Brief Description of the Current Situation

Situated in the far South-West, the Land's End Transit Corridor (LETC) is an established block of airspace (Surface to 4,000ft altitude) linking Land's End Airport to the Isles of Scilly. The Corridor is situated in Class G airspace and partially within the RNAS Culdrose AIAA.

The LETC is used predominantly by scheduled passenger and freight carrying flights - both fixedwing and, as of March 2020 from Penzance Heliport, rotary aircraft. In addition, it is used by military aircraft (both fixed-wing and rotary), SAR & Helimed helicopters, Trinity House helicopters, General Aviation flights and other charter and air-taxi operators.

Land's End has Instrument Approach Procedures (IAP's) in place serving the four main runways. These IAP's increase the resilience of the lifeline service (which includes passenger transport, Royal Mail Cargo, NHS Stretcher Flights and other essentials) to the Isles of Scilly community.

The drawing below (Fig 1) shows the area around Land's End Airport with the Instrument Approaches laid on top in black. The two racetrack patterns are the airborne holds that aircraft may use before carrying out the approach. The dark purple lines show the current boundary of the LETC. As depicted, some of the approach legs and both holds are currently outside of the LETC.

The chart on the right (Fig 2) shows the whole of the LETC encompassing the route between the mainland and the Isles of Scilly.

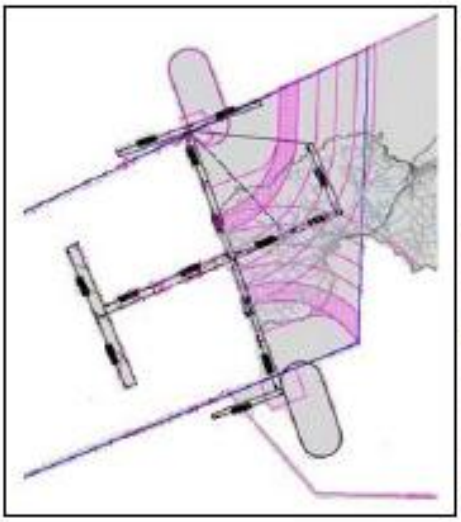


Fig 1: Land's End IAP's

Fig 2: LETC to the Isles of Scilly

Option – Modify the size of the LETC to include the IAP's and Holds within it

Design Principle 8 (DP8) states:

"As feedback was received regarding the size of the airspace (some requesting a small volume and others a larger volume), both the height and breadth of the LETC will be fully considered."

The sponsor believes that making the LETC smaller is not a valid option as this wouldn't enhance the safe, orderly and expeditious flow of air traffic for any of the airspace users and would concentrate the busy traffic environment into an unacceptably small area.

However, increasing the size of the LETC, but only to incorporate the Land's End Airport IAP's to the North and South of Land's End Airport, would potentially help protect aircraft flying on these approaches (often in in reduced meteorological conditions). No vertical increase is being proposed (the LETC is currently promulgated as being Surface to 4,000ft altitude) and no change to current aircraft routing is expected.

Stakeholder Feedback

I am asking for your feedback regarding the above option. Please include any comments or suggestions on the attached form. **Please ensure feedback is returned to Land's End Airport no later than 12:30 on the 15th October 2020.**

Yours Sincerely,

C M Pearson.

Chris Pearson
SATCO & Airport Manager
Land's End Airport

ACP-2019-75

Proposed Airspace Changes to the Land's End Transit Corridor (LETC)

Stakeholder Feedback Form

Name	
Organisation	
Email Address	
Telephone Number	

Options Appraisal - Addendum

Option	Modify the size of the LETC

Please provide feedback, using the following tables.

We thank you for taking time to engage with us in this important part of the airspace change proposal. Please would you return any completed forms to us before 12:30 on 15th October 2020.

To: cpearson@issg.co.uk

or

Land's End Airport,
Kelynack,
St. Just,
Penzance,
Cornwall,
TR19 7RL

Option: Modify the size of the LETC
Please provide feedback on how modifying the size of the LETC would affect the operations or interests of your Organisation. Please also include any suggestions/restrictions on where any new boundaries for the LETC should be located.
Please provide feedback on any safety issues that may concern your organisation and how these should be addressed.

Appendix C: Record of Stakeholder Engagement

See separate document

Appendix D: Evidence of Stakeholder Engagement

See separate document

Appendix E: Evidence of Stakeholder Engagement (Addendum Option)

See separate document