Land's End Airport

LAND'S END AIRPORT – AIRSPACE CHANGE PROPOSAL

Isles of Scilly Steamship GROUP

Group of Companies

Travel | Skybus | Scillonian

Land's End | Engineering | Gry Maritha

Dry Dock | Westward

LAND' S END AIRPORT

FORMAL ACP SUBMISSION

NOVEMBER 2015

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1. Introduction

Land's End Airport are submitting this formal submission to the Civil Aviation Authority on 26 November 2015.

This formal submission has been compiled by Land's End Airport according to the CAA's Guidance on the Application of the Airspace Change Process, document reference CAP 725.

2. Executive Summary

Land's End Airport is proposing to introduce GNSS procedures (LNAV and LPV) for aircraft landing on runways 07, 25, 16 and 34 following the guidelines contained in CAA CAP1122. These procedures will be used in conjunction with the existing visual approach procedures to each runway.

The proposed approaches have all been designed by a CAA approved designer in accordance with ICAO Document 8168 and CAA policy guidance and regulation (CAP725), and are in line with CAA best practices and standards across the UK.

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 nearly 100 years. Air services from Land's End Airport are now the most important year-round link between the mainland and the Isles of Scilly. The proposal for the new navigation procedures represents the final stage of a major investment programme to make year-round air services more resilient for the benefit of the island-based community and visitors. The proposals are related to improving the reliability of existing services and not about stimulating new traffic over and above what would otherwise use the airport.

3. Operational Requirements

a) Justification for the Change and Analysis of Change Options

Land's End Airport is an important life-line link to the Isles of Scilly. Following on from recent major Airport improvement works, the Airport is now looking to increase its reliability in reduced visibility weather conditions. This will mean that key services such as mainland medical/hospital appointments, stretcher flights, Royal Mail deliveries, newspapers, magazines as well as the business trips will be better served.

Land's End Airport is the closest mainland gateway to the Isles of Scilly and the reliability of its air services help to underpin tourism that makes up 85% of the economy of the islands. The further consolidation of confidence in year-round air links to the Isles from the busiest mainland gateway airport could prevent damage to the longer-term sustainability of the community.

The Airport decided that the introduction of GNSS instrument approaches was the best option due to their reliability, accuracy and the lack of requirement to install expensive ground based equipment. The Airport signed up to the European ACCEPTA project as one of the pioneer Airports in March 2012 – a European initiative and funding programme designed to promote GNSS procedures based on the EGNOS system. With guidance from the project and following its own internal consultation as to operational need, it was decided to design approaches to all of our four main runways – both LNAV and LPV.

The introduction of these procedures is consistent with UK CAA policy regarding the future implementation of new navigation technology. ICAO has a General Assembly Resolution to implement GNSS approaches with Vertical Guidance at all runways by 2016, and European States are expected to mandate this capability in 2018.

The new procedures will provide instrument approaches that are aligned with the runway centre lines. This is optimal for both flight operations and safety.

The new procedures will also provide an opportunity for aircraft to be configured more efficiently as they approach to land, which is likely to have benefits in terms of reducing aircraft noise and emissions.

During this Airspace Change Proposal process, many design options were initially considered for the procedures. These included:

i) GNSS approaches to the four main runways
ii) GNSS approaches to one runway
iii) Design offset or straight-in approaches
iv) Design 'T-bar' approaches to all runways for operational flexibility, or use truncated 'L-bar' approaches
v) Standard approach leg lengths or reduced leg lengths
vi) Use of combined IAF/IF
vii) Number of holds required

Operationally, GNSS approaches to the four main runways at Land's End was the preferred option rather than to just one runway. After discussions with based operators, this became even more paramount as the type of aircraft used (light category) are susceptible to cross-winds (27kt limit on most frequently used type – De-Havilland Twin-Otter) and require an into wind runway.

A simple cloud break procedure was also considered, but the resulting applicable visual maneuvering height to reposition to another runway would have been too restrictive.

Offset approaches were considered for both terrain and noise abatement reasons, but after discussions with the CAA, the Airport was advised that

straight-in approaches were the only option due to the limited infrastructure at Land's End Airport (ie non-instrument runways, limited approach lighting).

The approach designs were also thoroughly reviewed and examined. The end of this review resulted in the approaches to runways 25 and 34 having truncated 'L-bar'. This was for two main reasons – to ensure maximum separation distance from RNAS Culdrose operations and to avoid overflying the town of Penzance (population 21,200).

After consultation with potential users and operators, and following a CAA meeting, it was decided to reduce the initial and intermediate approach legs from the standard 5nm to 2.8nm respectively. This resulted in many benefits in terms of track miles flown; reduced noise and CO_2 emissions, time and fuel saved and size of affected airspace. It was also decided to use combined IAF/IF which will enable more direct routings resulting in similar benefits to those above.

The number of holds were also rationalised during the design phase – initially each of the four approaches having a hold at their respective IAF/IF aligned with the intermediate track. After discussions, only two holds, located at the IF/IAF of runways 16 and 34, were adopted. This was to further reduce the overall impact – particularly to the neighbouring airports of St. Mary's and RNAS Culdrose.

Following the above discussions and rationalisations, two options were formally presented in our Airspace Change consultation – to implement the GNSS approaches to four runways, or 'do nothing'. The proposed option to implement the GNSS approaches to four runways was unanimously supported by all stakeholders who held a view on the proposal.

b) Airspace Description

At present, there are no instrument approaches promulgated for Land's End Airport. Aircraft arriving at and departing from Land's End Airport operate within the Lands End Transit Corridor (LETC), an area of airspace (surface to 4,000ft) that is primarily in existence to support commercial air transport aircraft flying into or out of Land's End and St Mary's Airports.

Air Traffic Controllers use the LETC on a daily basis to support the safe, orderly and expeditious flow of aircraft arriving and departing from both airports. 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. This existing airspace is illustrated in Appendix A.

The airspace in the vicinity of Land's End Airport, including the LETC, is categorised as Class G airspace. In all the proposed GNSS approaches, the final approach segments lie within the LETC, although the initial approach segments for RWYs 16 and 34 are marginally outside of the corridor.

Prior to the GNSS approaches being brought into service, 'Letters Of Agreement' with St. Mary's, RNAS Culdrose and Newquay ATCU's will be established. Initial talks have taken place and are being finalised with the CAA ATC inspectors.

The hours of operation of the proposed approaches would be co-incidental with the hours of operation of the Airport (currently Summer: Mon-Sat, 0745-18:30 and Winter: Mon-Fri, 08:15-17:30 & Sat 08:15-12:15).

Land's End Airport will handle approximately, 4,775 (predicted 2015 figure) landings this year. Of these, it is estimated that the four proposed GNSS approaches would take account of 10% of the 4,775 landings per year. When runway 07 is excluded from these figures, due to there being no change in flight procedures, it is believed that GNSS approaches would represent only approximately 7% (334) of all landings (or less than one per day on average) on the other three runways. The exact number at any point in time would be dependent upon prevailing weather conditions and the overall level of aircraft movements planned to be using the airport. The remaining number of aircraft landings (93%) would be operated as they are today, visually.

c) Supporting Infrastructure/Resources

The approaches are being implemented under the CAP1122 (Application for IAP's to Aerodromes without an instrument runway and/or approach control) process. Land's End Airport anticipates that one runway strip (34/16) may be classified as an instrument runway following acquisition of some neighbouring land, but the other strip (07/25) will remain non-instrument. In addition, Land's End Airport ATC is provided by Aerodrome rated ATCO's – there is no approach control.

To support this proposal, an ATS and Aerodrome Safety Case has been submitted and reviewed by the CAA. The Safety Case addresses the hazards that have been identified and argues that the approaches can be safely implemented. The Safety Case is currently undergoing some final minor amendments – the latest version is included in Appendix B.

As a contingency, Newquay Radar has also agreed to assist with the separation of aircraft should an unexpected scenario occur that cannot be safely managed by Land's End Airport ATC.

RTF coverage has been proven during the flight validation of the approaches - Land's End Tower (120.250 Mhz) has a DOC of 25nm/4,000ft. Land's End

ATC has three independent VHF radio systems backed by UPS' s and a diesel generator. In the event of radio failure, standard radio failure procedures (UK AIP) should be followed.

Failure modes with the GNSS (EGNOS) system have been covered in the Safety Case referred to in Appendix B.

The introduction of the approaches does have the potential to increase the complexity and workload of the ATCU' s involved – primarily Land's End and St. Mary' s. However this is being mitigated by updated Letters of Agreement, sending the Land's End ATCO' s on an ADI APC course at the ATC college 'Global ATS', followed by an in-house training programme and CAA examination. In addition, an ATC voice switch and the possibility of ATC assistants are being considered. The ATM of the new procedures is still being discussed with the CAA – this was further progressed at a recent joint meeting (28th October 2015) at the Airport. A draft ATC training programme has been produced – please see Appendix C.

d) Operational Impact

Operational impact of the new approaches will be managed mainly by Letters of Agreement between adjacent ATCU' s and frequent airspace users.

In addition, Land's End Airport has applied for a SSR code (4501) for traffic flying the GNSS approaches which will assist both RNAS Culdrose and Newquay radar units.

In the weather conditions that the approaches will be operational (IMC), very few aircraft movements take place in the vicinity of Land's End Airport. The based airline, Skybus, also owned by the Isles of Scilly Steamship Group is the most frequent user in such conditions and procedures will be put in place to aid the ATM (ie they are involved in, and a signature to, the Letters of Agreement).

Any free-calling inbound/overflying flights that may be in the vicinity of the Airport while a GNSS approach is being flown will be instructed to hold outside the ATZ (within the privileges of an ATC Aerodrome Control license) and, as necessary, to hold clear of the approach and missed approach areas (ie hold over St. Ives).

As the approaches will be overseen by Aerodrome only ATCO' s, the flow of air traffic movements will reduce considerably. After discussions with the CAA (28th October 2015), this is likely to be in the order of one inbound aircraft every 15 minutes. The use of PPR and 'Release Subject Tower' procedures will ensure that this procedure is adhered to. Operators will be made aware of this reduced movement rate in order to manage expectations.

e) Economic Impact

As stated in the 'Justification for Change' section above, the economic advantages are numerous for the lifeline service provided at Land's End Airport for the community of the Isles of Scilly. Key services such as mainland medical/hospital appointments, stretcher flights, Royal Mail deliveries, newspapers, magazines as well as the business trips will be better served during inclement weather.

The number of delays and/or cancelled flights that are currently experienced would be greatly reduced resulting in less wasted passenger journeys to the Airport and any subsequent follow-on costs associated with their travel plans.

The proposed approaches have longer track miles than the current visual approaches, but the current proportion of failed attempts to land involve further track miles in order to conduct missed approach procedures or diversions to an alternative airport, (ie Newquay Airport, which would involve at least an additional 36 nm track miles). Any diversion also results in

repositioning the aircraft once the weather improves and the road transport of the diverted passengers and their baggage.

f) Safety Management

The Safety Management System at the Airport (covers both ATC and Airport hazards) has been followed which resulted in the Safety Case attached (Appendix B). The based airline 'Skybus' (expected to be the most frequent user of the approaches) has also conducted a Risk assessment under the 'Change' process of their own SMS.

g) Airspace and Infrastructure Requirements

The airspace surrounding the new approaches will remain as Class G airspace. As such, an unknown air traffic environment exists. To increase the awareness in this airspace a number of initiatives are, or will be, in place:

i) Letters of Agreement between Land's End, St. Mary's, RNAS Culdrose and Newquay ATCU's. An Agreement already exists with St. Mary's but will need to be modified to accommodate the approaches. Talks with the SATCO's at Newquay and RNAS Culdrose have also taken place and initial ideas developed. All the indications are that agreements can be put in place, and we have received written supportive comments from all these ATCU's. In addition the main expected operator/user of the approaches, the airline 'Skybus' based at Land's End Airport, will also be a signature of the Agreements.

ii) Land's End Airport holds an 'Ordinary' Aerodrome License (Number P568). This allows the Airport to have a direct say over who uses the Airport as detailed in condition 1 of the license:

> 1 The aerodrome is licensed for use only by the licence holder and by persons specifically authorised by him.

The Airport exercises this right by promulgating the requirement in the UK AIP for all pilots intending to use the Airport to obtain PPR ('Prior Permission Required') by telephone from the Land's End ATCU. This PPR requirement ensures there is a control procedure in place to regulate inbound traffic.

iii) The ATCU at Land's End has a very close relationship with the neighboring ATCU' s and are in daily co-ordination with them. This is especially true with St. Mary' s ATCU where a 'special relationship' exists and from where the majority of aircraft, inbound to Land's End Airport, originate from. A dedicated, direct telephone tie-line exists between the two ATCU' s to assist with the daily close co-ordination. Inbound aircraft will require a clearance / PPR 'slot' from Land's End ATCU before being accepted. The approach plates also have the following warnings annotated on them:

NOTE 1 Use of this RNAV procedure is strictly PPR from the Aerodrome Authority.
2 Pilots must be appropriately qualified to fly GNSS approaches. See EGHC AD 2.20 Para 4.

iv) The approaches will be promulgated in the UK AIP. Pilots will be able to familiarize themselves with the approaches and be alerted to their presence. Before the approaches become operational they will be subject to a double AIRAC cycle.

v) To further the visibility of these approaches, the CAA series 1:250,000 VFR chart will be annotated with approach cones ('feathered' symbol). The following is from a recent AIS newsletter extract:

Latest information affecting 1:250,000 Sheet 7 The West & South Wales Chart. These VFR chart amendments have been received and process by NATS within the last AIRAC period. Full details of amendments affecting the current version are available on the NATS AIS Website.

- LANDS END (EGHC)

  Our Ref: 072624
  Year: 2015
  Effective: 04/02/2016
  Details: LANDS END (EGHC)

  Add IAP cone ('feathered' symbol) to RWY 07 (THR coordinates 500605.27N 0054043.04W).

iv) The Airport has also secured a dedicated SSR code (4501) for aircraft flying the GNSS approaches at Land's End. This will allow RNAS Culdrose and Newquay radar units to be aware of/monitor aircraft flying the approaches.

v) Land's End ATCU will monitor the use of the GNSS approaches and record the details of each approach in the aircraft movements log. Records will also be kept of any issues that arise so that any trends can be identified and procedures put in place/altered as required.

vi) It is also the intention of Land's End Airport, in the medium term, to apply for a RMZ (Radio Mandatory Zone) for the LETC.

h) Supporting Maps, Charts and Diagrams

Runway 07 Approach Chart:	Appendix D, page D-1
Runway 16 approach Chart:	Appendix D, page D-2
Runway 25 approach Chart:	Appendix D, page D-3
Runway 34 approach Chart:	Appendix D, page D-4
Diagram detailing all Approaches:	Appendix D, page D-5

4. Environmental Report

a) Description of Airspace Change

Land's End Airport is proposing to introduce GNSS instrument approaches to runways 25, 07, 16 and 34. These will be used in conjunction with the existing visual approaches to all runways.

b) Traffic Forecasts

Land's End Airport will handle approximately, 4,775 (predicted 2015 figure) landings this year. Of these, it is estimated that the four proposed GNSS approaches would take account of 10% of the 4,775 landings per year. When runway 07 is excluded from these figures, due to there being no change in flight procedures, it is believed that GNSS approaches would represent only approximately 7% (334) of all landings (or less than one per day on average) on the other three runways. The exact number at any point in time would be dependent upon prevailing weather conditions and the overall level of aircraft movements planned to be using the airport. The remaining number of aircraft landings (93%) would be operated as they are today, visually.

c) An assessment of the effects on noise

As there are no extra movements or change in aircraft types should this proposal be implemented, the Airport and its key aviation stakeholders believe there will be no net increase in noise from aircraft operations. However, noise may now be distributed differently when the Instrument Approaches are used (for each Instrument Approach flown there will be less noise on the corresponding visual approach track and additional noise on the Instrument Approach track). This has been addressed in a

detailed noise study report within the Airport' s Consultation Document. Please refer to Appendix E.

d) An assessment of the change in fuel burn/ CO_2

The GNSS approach proposed will allow aircraft to fly on a straight line over the ground to land with minimal alterations to their direction of travel and engine settings. This type of approach will allow pilots to configure the aircraft more efficiently and potentially minimise fuel burn, CO_2 and noise during the approach.

The Airport is confident that CO_2 emissions, fuel burn and noise will not increase as a result from the implementation of this proposed airspace change. Please refer to Appendix E.

e) An assessment of the effect on local air quality

The Airport has considered the effects the proposed change may have on local air quality and in particular the effect on local air quality in the area surrounding the airport below 1,000 ft.

The Airport has concluded that there is no net change in air quality as there is no increase in aircraft movements from this proposal. The number of individual aircraft movements under the new GNSS proposals by small and efficient aircraft is so small in absolute terms that the impact is believed to be negligible. Please refer to Appendix E.

f) An economic valuation of environmental impact

As the Airport believes there will be a negligible environmental impact, it has concluded that any economic valuation is inconsequential.

5. Consultation Report

a) Executive Summary

On 18th August 2015, Land's End Airport launched a stakeholder consultation seeking views on the introduction of a Global Navigation Satellite System, known as GNSS, for aircraft landing on runways 07, 25, 16 and 34.

The consultation closed on the 16th October 2015. The timespan of the consultation was agreed with the Civil Aviation Authority (CAA) as detailed in the full consultation document, and this report is the 'Report of the Sponsor Consultation' and forms part of the Airspace Change Proposal (ACP) to be submitted to the CAA Safety and Airspace Regulation Group (SARG).

Notwithstanding that the consultation was targeted primarily at the listed stakeholder consultees, Land's End Airport has given appropriate community publicity to this consultation.

Submissions from individuals who were not listed as stakeholder consultees were welcome and have been considered by Land's End Airport.

A total of 49 Consultation invitations were sent to stakeholder consultee organisations or individuals, comprising airlines and other local airspace users, members of the National aviation organisations represented on the CAA's National Air Traffic Management Advisory Committee (NATMAC), Councillors and Officials of County, District and Parish Councils, and other representative organisations of communities which may be affected by the proposed change. Certain environmental organisations were included, as well as the Airport's representative Member of Parliament.

b) Overview of Responses

A total of 23 responses were received, which included 6 emails, 6 letters and 11 feedback forms. Within the 23 responses received; 10 were from local residents, 4 were received from NATMAC members, 1 was received from MPs, 2 were from Councils, 1 was from a Health representative, 2 were from local ATCU' s and 3 were from Environmental representatives.

Please refer to Appendix F.

c) Useable Responses

All responses received were useable and have been included in our Consultation Summary Report. Please refer to Appendix E

d) Modifications of the Proposal

Following extensive consultation, and engagement with the Airport' s stakeholders, the Airport and its Design team found there were no modifications suggested or needed to the proposed procedures.

e) Supporting Documentation

Please refer to Appendix F.