

London Heathrow – Arrival Procedures ACP-2017-49

Airspace Change Decision

CAP 2236

Published by the Civil Aviation Authority, 2021

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First published 2021

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Chapter 1

Executive Summary

Objective of the Proposal

- 1.1 Airspace Change Proposal (ACP) ACP-2017-49 considers the permanent adoption of 3.2° RNAV slightly steeper approaches (SSA) at Heathrow Airport; with the aim of being a small incremental step to reducing the impact of Heathrow's noise footprint. Two live trials have been conducted (during 2016 and 2017) to enable the Change Sponsor to investigate the effect of SSA on a number of factors, including safety, the airport's operations and the environment. 3.2° RNAV SSA are currently in operation at Heathrow, permitted by the CAA on a temporary basis whilst this permanent ACP progressed.

Summary of the decision made

- 1.2 The CAA has decided to approve the permanent adoption of 3.2° RNAV SSA at Heathrow Airport.

Next steps

- 1.3 Implementation of SSA at Heathrow Airport will be notified through a single Aeronautical Information Regulation and Control (AIRAC) cycle (AIRAC 12/21), which will be effective from 02 December 2021.
- 1.4 The CAA's Post Implementation Review (PIR) of the changes approved by the CAA in this decision will commence at least one year after implementation of those changes. It is a condition of the CAA's approval that the Change Sponsor provides data required by the CAA throughout the year following implementation to carry out that PIR. The Change Sponsor will be advised in due course of the specific data sets and analysis required, and the dates by when this information must be provided. Section 3.8 provides further details.
- 1.5 There is an update to the CAA's PIR requirements in response to COVID-19 on the CAA website¹.

¹ <https://www.caa.co.uk/Commercial-industry/Airspace/Airspace-change/Reviews/Airspace-changes-post-implementation-reviews/>

Chapter 2

Decision Process and Analysis

Chronology of the Proposal Process

Statement of Need and Assessment Meeting

- 2.1 The Change Sponsor notified the CAA of their proposal to permanently adopt 3.2° RNAV SSA at Heathrow Airport with the submission of a Statement of Need (SoN) to the CAA in July 2017. A revised SoN (V2) was received by the CAA in January 2018. During the Assessment Meeting in May 2018, the Change Sponsor advised the CAA that they intended to make a slight amendment to the published SoN (V2) and subsequently issued V3; all SoNs are available on the Airspace Change Portal.
- 2.2 An Assessment Meeting was held on 11 May 2018 during which the Change Sponsor discussed with the CAA the issues giving rise to the proposed change, how the change would address those issues, and how the Change Sponsor intended to proceed.
- 2.3 The CAA determined that the proposal was in scope of the CAP1616 airspace change process. The SoN (V1, V2 and V3), Assessment Meeting agenda and minutes have been published on the CAA Airspace Change Portal.

Process followed to arrive at the Proposal's Design Principles

- 2.4 The Change Sponsor developed a suitable set of Design Principles (DPs) through appropriate engagement with approximately 90 stakeholders, including industry stakeholders and existing forums that included representation from local authorities. The final list of 8 DPs was submitted to the CAA as part of CAP 1616 Stage 1, Step 1b and the Design Principles Report was uploaded to the Airspace Change Portal.

Define Gateway

- 2.5 A Define Gateway assessment was conducted on 30 August 2019. The CAA was content that the DPs had been developed through appropriate engagement and that the requirements of CAP1616 had been met.
- 2.6 The following statement was uploaded to the CAA Airspace Change Portal:
'The CAA has completed the Define Gateway Assessment for ACP-2017-49 Slightly Steeper Approaches and is satisfied that the change sponsor has met the requirements of the Process up to this point. The CAA approves progress to the next Step.'

Options development and appraisal

- 2.7 The Change Sponsor explored four design options and each option was evaluated against the DPs. A sufficient explanation for the discounting of options was provided and a single viable option was identified and taken forward to Step 2b of the CAP1616 process. The Options Development Report (V1 and V2) was submitted to the CAA as part of CAP 1616 Step 2a and uploaded to the Airspace Change Portal.
- 2.8 The Change Sponsor completed an initial appraisal of the single viable option (introduce 3.2° RNAV approaches, to be used in conjunction with 3.0° ILS approaches) against the 'do nothing' baseline. The Initial Options Appraisal was submitted to the CAA as part of CAP 1616 Step 2b and uploaded to the Airspace Change Portal. The CAA's Initial Options Appraisal Assessment has been uploaded to the Airspace Change Portal.

Develop and Assess Gateway

- 2.9 A Develop and Assess Gateway assessment was conducted on 28 February 2020. The CAA was content that the Change Sponsor had demonstrated that sufficient stakeholder engagement had been undertaken during this stage and that the options presented had been assessed in a satisfactory manner.
- 2.10 The CAA determined that this was a Level 1 airspace change.
- 2.11 The following statement was uploaded to the CAA Airspace Change Portal:
- '28 February 2020 The CAA has completed the Develop and Assess Gateway Assessment and is satisfied that the change sponsor has met the requirements of the Process up to this point. The CAA has determined that the confirmed level will be a Level 1. The CAA approves progress to the next step.'*
- 2.12 The ACP was paused from March 2020 to September 2020, due to the Covid-19 Pandemic. Upon re-starting the ACP in September 2020, the Change Sponsor confirmed to the CAA that the ACP had not altered contextually since it was paused in March 2020; the options remained unchanged and community engagement had taken place to inform stakeholders of the intention to resume the proposal.

Consult Gateway

- 2.13 The Change Sponsor completed a Full Options Appraisal with the preferred single viable option assessed in more detail against the 'do nothing' baseline. Both the Full Options Appraisal and CAA's Full Options Appraisal Assessment have been uploaded to the Airspace Change Portal.
- 2.14 The Consultation Strategy included justification for a reduced consultation period of 4-weeks, citing a) the benign nature of the SSA proposal, b) SSA currently in

operation at Heathrow (permitted by the CAA on a temporary basis whilst this ACP progressed), c) SSA had not been considered controversial in prior engagements and trials, d) SSA had demonstrated to have only positive impacts, e) no complaints related to SSA had been received and f) the extent of SSA engagement to date. Furthermore, the Change Sponsor committed to extending the consultation period in the event of an unforeseen disruption to the consultation. The rationale for a 4-week consultation period was accepted by the CAA. The Consultation Strategy has been uploaded to the Airspace Change Portal.

2.15 A Consult Gateway assessment was conducted on 26 February 2021 where the CAA reviewed the Change Sponsor's consultation strategy and consultation materials against the criteria set out in CAP 1616. The CAA determined that the strategy met the best practice consultation principles in that it was targeting the right audience, communicating in a way that met the requirements of the stakeholders and provided sufficient information to enable stakeholders to make informed judgements. Furthermore, it was acknowledged that mechanisms for stakeholder consultation feedback were appropriate. The CAA concluded that the requirements of CAP 1616 had been met.

2.16 The following statement was uploaded to the CAA Airspace Change Portal:

'The CAA has completed the Consult Gateway Assessment and is satisfied that the change sponsor has met the requirements of the Process up to this point. The CAA approves progress to the next Step.'

Public consultation and consultation responses

2.17 The Stage 3 consultation commenced on 5 March 2021 for a planned 4-week duration. A letter via email was sent to all targeted stakeholders informing them of the consultation start date. The consultation was advertised using Heathrow Airport's existing social media platforms and its website. The consultation was conducted through Citizen Space, the Government's consultation platform, with moderation of stakeholder comments carried out by the CAA in accordance with CAP 1616. A mid-way reminder was posted on Heathrow Airport's social media platforms and a final reminder was sent via email to all targeted stakeholders. The consultation was held entirely online, with no associated public events. The Change Sponsor committed to post hard copies of the consultation to stakeholders upon request. The Change Sponsor maintained a 'Frequently Asked Questions' (FAQs) page on the Airspace Change Portal. A total of 134 responses were received (consolidated to 132 due to two cases of duplication). The consultation closed as planned on 2 April 2021.

2.18 The Change Sponsor's analysis of the consultation responses was presented in the Categorisation of Responses Document (CAP 1616 Step 3d), which was uploaded to the Airspace Change Portal. The CAA accepted that the

categorisation had been conducted in a fair, transparent and comprehensive manner.

Proposal update and submission to CAA

- 2.19 The Consultation Response Document (CAP 1616 Step 4a) was submitted to the CAA and uploaded to the Airspace Change Portal on 4 June 2021. The conclusions of the Consultation Response Document align with the final Airspace Change Proposal and the CAA was content that re-consultation was not required.
- 2.20 The Final Options Appraisal (CAP 1616 Step 4a) was submitted to the CAA and uploaded to the Airspace Change Portal on 4 June 2021.
- 2.21 The final Airspace Change Proposal and supporting annex (CAP1616 Step 4b) was submitted to the CAA and uploaded to the Airspace Change Portal on 4 June 2021.
- 2.22 A satisfactory document check was concluded by the CAA on 11 June 2021.

Secretary of State call-in

- 2.23 The Secretary of State call-in window was initiated on 11 June 2021 via the CAA Airspace Change Portal and closed on 9 July 2021 with no feedback having been received.

Public Evidence Sessions and written statements

- 2.24 The CAA determined that it was not proportionate to hold a Public Evidence Session (PES); the responses to the consultation indicated that a PES was not necessary and the Change Sponsor has conducted two trials (extended on a temporary basis and currently in use) with continued stakeholder engagement.

Revised Submission and Supplementary Documents

- 2.25 As part of the CAA's assessment of the proposal, the Change Sponsor was asked to provide additional details and clarification. The Consultation Response Document was re-issued to V2.0 following a minor edit to correct the duration of the CAA's Decision Period. The Final Options Appraisal was re-issued to V2.0 following a minor edit to the Cost Benefit Analysis table. The Change Sponsor responded to the CAA's request for additional details through a supplementary document ('CAA Questions & Heathrow Clarifications'), that has been published on the Airspace Change Portal.

CAA assessment of the Change Sponsor's Final Options Appraisal

- 2.26 The CAA is satisfied that the Change Sponsor has completed the Final Options Appraisal (V2) in accordance with CAP 1616 process.

CAA analysis of the material provided

- 2.27 As a record of our analysis of this material the CAA produced the following:
- Consultation Assessment.
 - Final Options Appraisal Assessment.
 - Environmental Assessment.
 - Operational Assessment.
- 2.28 The CAA Assessments have been published on the CAA Airspace Change Portal.

CAA assessment and decision in respect of consultation

- 2.29 The fundamental principles of effective consultation are: targeting the right audience, communicating in a way that suits them, and giving them the tools to make informative, valuable contributions to the proposal's development. The CAA is satisfied that these principles have been applied by the Change Sponsor before, during and after the Stage 3 consultation.
- 2.30 The CAA is also satisfied that the Change Sponsor has conducted this consultation in accordance with the requirements of CAP1616 and that they have demonstrated the Government's consultation principles and the Gunning Principles.

CAA consideration of factors material to our decision whether to approve the change

Explanation of Statutory Duties

- 2.31 The CAA's statutory duties relating to air navigation are laid down in Section 70 of the Transport Act 2000.

Conclusions in respect of safety

2.32 The CAA's primary duty for air navigation is to maintain a high standard of safety in the provision of air traffic services and this takes priority over all other duties².

In this respect, with due regard to safety in the provision of air traffic services, the CAA is satisfied that the proposal maintains a high standard of safety for the following reasons:

- i. the proposal has been subject to an extended trial period and relevant procedures in use without any safety issues being raised.
- ii. communication and radar surveillance are within extant procedures.
- iii. the 3.2° RNAV SSA procedure is elective and alternative 3° ILS approaches remain available.
- iv. the proposal does not have a negative impact on provision of ATC services.

Conclusions in respect of securing the most efficient use of airspace

2.33 The CAA is required to secure the most efficient use of the airspace consistent with the safe operation of aircraft and the expeditious flow of air traffic³.

2.34 The CAA considers that the most efficient use of airspace is defined as that which 'secures the greatest number of movements of aircraft through a specific volume of airspace over a period of time so that the best use is made of the limited resource of UK airspace'.

2.35 The CAA considers the expeditious flow of air traffic to involve each aircraft taking the shortest amount of time for its flight. It is concerned with individual flights.

2.36 In this respect the CAA is satisfied that efficient use of airspace is not compromised by this proposal because the ACP does not introduce any changes to the existing volumes of airspace.

Conclusions in respect of aircraft operators and owners

2.37 The CAA is required to satisfy the requirements of operators and owners of all classes of aircraft⁴.

² Transport Act 2000, Section 70(1)

³ Transport Act 2000, Section 70(2)(a)

⁴ Transport Act 2000, Section 70(2)(b)

- 2.38 In this respect the CAA is satisfied that the proposal satisfies the requirements of operators and owners. The SSA procedure is an elective procedure and an alternative ILS 3° approach procedure remains available.

Conclusions in respect of the interests of any other person

- 2.39 The CAA is required to take account of the interests of any person (other than an owner or operator of an aircraft) in relation to the use of any particular airspace or the use of airspace generally⁵.
- 2.40 In this respect the CAA considers that the proposal will not negatively impact other interests and will not have a discernible impact on the general public. This is because the proposal:
- i. does not propose to make any changes to Controlled Airspace or any existing access arrangements.
 - ii. does not change the number of aircraft arriving at Heathrow, operating hours or how the airspace is used.
 - iii. introduces a reduction in the aerodrome's noise footprint.

Conclusions in respect of taking into account the Secretary of State's guidance to the CAA on environmental objectives

- 2.41 In performing the statutory duties, the CAA is obliged to take account of the extant guidance provided by the Secretary of State⁶, namely the 2017 Guidance to the CAA on Environmental Objectives.
- 2.42 The airspace change is not expected to change existing lateral flight tracks, nor increase the number of aircraft operating at Heathrow. It is therefore considered unlikely that there would be any adverse impact upon noise, CO₂ emissions, local air quality, tranquillity and biodiversity. Measured noise data collected from previous steeper approach trials at the airport demonstrated an overall minor reduction in noise per flight when compared to the conventional 3.0° approaches. This data was used to inform the noise modelling which showed a similar trend. The reduction in noise was demonstrated along the approach path with the greatest reductions further away from the airport where aircraft are higher. Due to a minor reduction in average engine thrust and hence fuel burn, a negligible reduction in CO₂ emissions is also expected. In addition, there is not expected to be any impact on air quality, tranquillity or biodiversity. In this respect, the CAA is satisfied that all environmental factors have been considered in-line with government policy.

⁵ Transport Act 2000, Section 70(2)(c)

⁶ Transport Act 2000, Section 70(2)(d)

Integrated Operation of Air Traffic Services

- 2.43 The CAA is required to facilitate the integrated operation of air traffic services provided by or on behalf of the armed forces of the Crown and other air traffic services⁷.
- 2.44 In this respect the CAA is content that this proposal will not impact the operational requirements of Crown or other air traffic service providers.

Interests of National Security

- 2.45 The CAA is required to take account of the impact any airspace change may have upon matters of national security⁸.
- 2.46 In this respect the CAA is satisfied that the proposal has no impact on national security.

International Obligations

- 2.47 The CAA is required to take account of any international obligations entered into by the UK and notified by the Secretary of State⁹.
- 2.48 In this respect the CAA is satisfied that the proposal has no impact on international obligations.

⁷ Transport Act 2000, Section 70(2)(e)

⁸ Transport Act 2000, Section 70(2)(f)

⁹ Transport Act 2000, Section 70(2)(g)

Chapter 3

CAA Regulatory Decision

Decision

- 3.1 This proposal maintains a high standard of safety, supports environmental objectives and does not introduce any discernible negative impacts to the interests of any other person. The ACP will provide a positive impact in terms of noise, and although this will contribute to only a small noise reduction overall, it meets with Heathrow Airport's aim of being a small incremental step to reducing the impact of Heathrow's noise footprint. Noting the anticipated impacts on the material factors we are bound to take account of, we have decided to approve the permanent adoption of SSA at Heathrow Airport.

Conditions

- 3.2 There are no conditions that the Change Sponsor must fulfil prior to implementation.
- 3.3 It is recommended that, where practicable, the Change Sponsor promotes the use of SSA to operators in order for greater environmental benefits to be realised.

Period Regulatory Decisions Remain Valid for Implementation

- 3.4 The Change Sponsor is to discuss with the CAA any anticipated delays to implementation so that any potential impacts can be assessed.

Implementation

- 3.5 The adoption of SSA at Heathrow Airport is expected to become effective on 2 December 2021 and will accord with the AIRAC schedule for the proposed implementation date, notified by a single AIRAC period. Any queries are to be directed to the Airspace Change Account Manager via airspace.policy@caa.co.uk.

Post Implementation Review

- 3.6 In accordance with standard CAA procedures, the implications of the change will be reviewed after approximately one full year of operation, at which point CAA staff will engage with interested parties to obtain feedback and data to contribute to the analysis.

- 3.7 There is an update to the CAA's PIR requirements in response to COVID-19 on the CAA website¹⁰.
- 3.8 The Change Sponsor is required to collect the following data for the PIR:
- i. Record the number of RNAV 3.2° approaches flown and to detail any incentivisation/uptake action taken. This should be captured in a format to enable any trends to be identified.
 - ii. Record details of any go-arounds resulting from RNAV 3.2° approaches.
 - iii. Record details of any safety related issues associated with RNAV 3.2° approaches.
 - iv. Collate related stakeholder observations (enquiry/complaint data) and report it to the CAA. Any location/area from which more than 10 individuals have made enquiries/complaints must be plotted on maps displaying a representative sample of aircraft track data plots.
 - v. Monitor and report the noise impact of aircraft operating RNAV 3.2° approaches compared to the 3.0° ILS approaches for all runways.
 - vi. Monitor the flight behaviour of traffic operating 3.2° RNAV SSA.
 - vii. Liaise with aircraft operators to understand any changes in fuel burn, in addition to any changes in Continuous Descent Approach (CDA), between the RNAV 3.2° approaches and the 3.0° ILS approaches.
- 3.9 CAP 1616 provides post implementation review guidance and lists further potential post implementation review data requirements (Appendix H, table H1).

¹⁰ <https://www.caa.co.uk/Commercial-industry/Airspace/Airspace-change/Reviews/Airspace-changes-post-implementation-reviews/>

Annex A

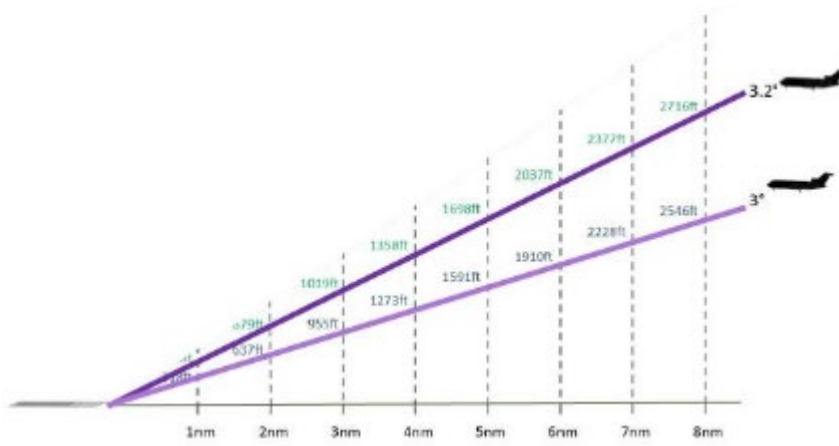


Figure 1. SSA height difference

Figure copied from ACP-2017-49 Airspace Change Proposal