Safety and Airspace Regulation Group

LONDON BIGGIN HILL AIRPORT RUNWAY 03 INSTRUMENT APPROACH PROCEDURE AIRSPACE CHANGE DECISION

CAP 2500

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Chapter 1

Executive summary

Objective of the proposal

1. The airspace change proposal looks to introduce an Area Navigation (RNAV) Instrument Approach Procedure (IAP) to Runway 03 at London Biggin Hill Airport (LBHA).

2. At present an aircraft requiring an instrument approach to Runway 03 must perform an IAP to Runway 21, acquire the required visual references, then perform a visual circling manoeuvre to reposition onto the final approach to land for Runway 03. Although safe the sponsor proposes that this manoeuvre is an inefficient method of operating, particularly in poor weather, and can lead to extensive delays to successive inbound flights and to aircraft awaiting departure. The proposed airspace design will remove the need for this manoeuvre for suitably equipped aircraft landing at LBHA.

Summary of the decision made

3. The CAA has decided that the overall objectives of the proposal are ones which the CAA supports as they are in accordance with the CAA's Airspace Modernisation Strategy. However, the CAA does not approve the proposed Instrument Approach Procedure as currently designed and submitted by the Sponsor, as depicted in Annex A and the documents submitted as listed below because the CAA has decided it will not maintain a high standard of safety.

Decision rationale

4. In summary, but explained in more detail below and in the CAA documents referred to in this decision, the CAA has concluded that the final proposed design does not address the concerns raised by the CAA over the complexity and non-standard nature of the proposed design. By way of example the proposed design

contains a non-compliant segment, i.e. the design of the intermediate segment does not meet international design criteria.

5. The CAA has taken into account the complex environment surrounding the airport in this decision. LBHA is situated in a congested area of airspace used by a wide variety of airspace users and aircraft. It is surrounded by pre-existing airspace structures and over a relatively densely populated area. As well as the London Terminal Manoeuvring Area (TMA) overhead, it is in close proximity to London City, Gatwick, and Heathrow Airports with their associated Control Areas (CTAs), and with some large towns and cities nearby.

6. The cumulative impact of the non-standard and complex design (complexity in part created by the environment the airport finds itself located in as described above) coupled with the airspace constraints and busy General Aviation (GA) activity operating in the same proposed location is a significant factor in the CAA's conclusion that the proposed design does not maintain a high standard of safety and the CAA decision not to approve the proposal.

7. The CAA notes the environmental and economic impacts the sponsor anticipates the proposal will deliver, and the sponsor's view that such a design is the most efficient use of airspace. However, the CAA's primary statutory duty is to maintain a high standard of safety in the provision of air traffic services. As the CAA has concluded that this proposed design will not do so the CAA must refuse the proposal.

8. With regard to next steps, the CAA and DfT, as co-sponsors, have commissioned a UK Airspace Change Masterplan. LBHA has submitted an ACP as part of that Masterplan which aims to design and introduce new and/or revised departure and arrival routes that will fully and properly integrate with the new London Terminal Area architecture which will result from the airspace modernisation programme. The Masterplan process will enable that ACP to be developed in liaison with interdependent airports (especially Gatwick) from a whole aviation system perspective and allow interdependencies and trade-offs between different objectives to be considered in a coordinated way.

Chapter 2

Decision Process and Analysis

Aims and Objectives of the proposed change

9. The aim of the proposal is to provide an instrument approach capability to Runway 03 and utilise the enhanced navigational capabilities of the generation of business aircraft currently operating at LBHA, thereby enabling approaches in poorer weather conditions than can currently be achieved.

10. The objective of the proposal is to lower the height at which an aircraft can descend to on an approach to Runway 03 before having to perform a Missed Approach Procedure and potentially divert to another aerodrome.

11. Currently to perform an instrument approach when Runway 03 is in use an aircraft must perform an IAP to Runway 21, acquire the required visual references, then perform a visual circling manoeuvre to reposition onto the final approach to land for Runway 03.

12. The minimum obstacle clearance height (OCH) at which the visual manoeuvre can be carried out is dependent on the category (size and performance capability) of the aircraft and, for smaller aircraft (Category A), may be as low as 551ft above the aerodrome elevation. The proposed Global Navigational Satellite System (GNSS) Lateral Navigation (LNAV) non-precision approach has an OCH of 443ft for Category A, B and C aircraft.

Chronology of Proposal Process

Framework Briefing

13. A Framework Briefing took place at CAA House, London on 22nd April 2015. During this LBHA outlined its proposal to introduce ‘an all-weather operations capability to both runways at LBHA’ by establishing ‘an IAP which delivered a straight-in approach to Runway 03 ‘with significant safety benefit, better suited to aircraft with automatic flight systems and crew capability’ which were now the

more usual type of aircraft to use the airport. LBHA advised that local resident groups had been lobbying for a change to flight procedures to enable environmental benefit to be accrued, in particular allowing residents North East of the airport who are overflown by all IAP aircraft some respite. LBHA stated that there was no link between the proposed procedure and any growth in air traffic and that the ACP was not being pursued as an enabler for growth.

14. LBHA outlined the proposal and details of early stakeholder engagement which identified 'numerous airspace issues that need to be addressed'. For example, NATS[1] (who provide an ATC service to LBHA aircraft in the London TMA before they transfer to the airport) had stated that there were numerous issues and that a radar vectored straight in approach was not tenable.

15. The impact of the proposal on Gatwick Airport Standard Instrument Departures (SIDs) was highlighted. These engagement discussions included potential solutions such as modifying Gatwick SIDs or part of the Gatwick CTA. Whilst LBHA do not use surveillance equipment in the delivery of its Air Traffic Services (ATS) as part of the change they stated the intention to introduce Advanced use of the Aerodrome traffic Monitor (ATM) to give a better 'air picture' and improve awareness for controllers at LBHA. Other potential solutions and mitigations were discussed, including use of a Radio Mandatory Area. It was agreed that the various options to resolve control and airspace configuration should be explored further in the Safety Assurance Hazard Identification (HAZID) and Focus Group sessions.

16. The CAA stated that known community noise groups should be included in the list of consultees, and LBHA should identify how other members of the public could access the Sponsor's Consultation. The data that needed to be collected in order to assess the anticipated environmental impact of the proposed change as detailed in CAP 725 were outlined by the CAA to LBHA.

17. The CAA highlighted the requirements for IAP design and evaluation. The process for evaluation includes preparing, and agreeing with the CAA, a valuation plan, running simulator tests and subsequently live flight tests. The live

[1] National Air Traffic Services (NATS) En-Route PLC (NERL) are the UK's civilian en-route air navigational service provider

tests include an independent suitably qualified crew fly the procedure to create an objective-based report. The CAA stated that 'the procedure design must enable an average pilot to fly the procedure without intervention (e.g. excessive use of speed brake) and therefore any simulation of the profiles tested should include variables'.

Consultation

18. A public consultation took place between 18th November 2015 and 26th February 2016. A comprehensive list of 121 (70 aviation and 51 non-aviation) stakeholders were targeted by the Sponsor, and an acceptable response rate of 26% was achieved. In addition to those received from targeted stakeholders, a further 38 consultees responded in an individual or representative capacity. The consultation was in accordance with the requirements of CAP 725 and demonstrated the Government's consultation principles.

19. The consultation document received support from airport users and local residents, but some concerns were raised by certain interfacing Air Navigation Service Providers (ANSPs), elements of the GA community and residents particularly in the Coulsdon area. NATS outlined serval operational and institutional issues which required resolving prior to submission to the CAA. In addition, LBHA stated it would look to address community issues by modifying the proposal if achievable.

20. To mitigate operational and environmental concerns identified in the consultation LBHA elected to modify elements of the southerly aspect of the proposed IAP and in accordance with the process detailed in CAP 725 performed a supplementary consultation.

Supplementary Consultation

21. The CAA specified that the supplementary consultation may be limited to those original consultees who may directly be affected by the changes proposed to the IAP. The Supplementary Consultation took place between 27th February and 10th April 2017.

22. The supplementary consultation targeted 122 stakeholders (70 aviation and 52 non-aviation) and an acceptable response rate of 15% was achieved. In addition to those received from targeted stakeholders, a further 79 consultees responded in an individual or representative capacity.

23. The CAA is satisfied that the consultation was in accordance with the requirements of CAP 725 and demonstrated the Government's consultation principles.

24. The scope of the supplementary consultation was limited to the modifications made to the proposed IAP following the original consultation. Some consultees suggested that there was insufficient information in the supplementary consultation document. However, in the CAA's view that consultation document was satisfactory; it was structured in a logical order, with an appropriate amount of context being provided in terms of the principal concerns arising from the original consultation, the change sponsor's response to them, the modified design, and the related anticipated impacts.

25. The CAA notes there were some minor discrepancies between the 'raw data' consultation responses, consultation consultee spreadsheet and the consultation document. However, the CAA is satisfied that the change sponsor has fairly and adequately identified several 'themes and issues of concern' from the feedback received and, for the most part, that these have been sufficiently acknowledged and addressed in their consultation response document. In light of feedback received further modifications were made, and the change sponsor has continued to engage with relevant aviation and non-aviation stakeholders since the end of this supplementary consultation.

26. The CAA is satisfied that LBHA completed a meaningful supplementary consultation which meets the required regulatory standards.

Submission of Airspace Change Proposal

27. On 22nd May 2017 the CAA received the majority of the formal ACP submission. In addition to responses for supplementary information on 14th Jun 2017 the CAA received the sponsors Environmental Impact Assessment; on 27th Jun 2017 the

RNAV GNSS LNAV IAP Flight Validation Plans, and the Safety Case on 27 Jul 2017.

28. On 01st September 2017 the CAA wrote to the sponsor stating the need to 'stop the clock' on the standard CAP 725 16-week decision period. This was to provide additional time for LBHA to respond to, and subsequently resolve, issues surrounding the safety case.

29. On January 2018 CAP 1616 replaced CAP 725 as the process under which the CAA would consider proposals to change airspace design. With the agreement of the DfT (whose agreement was necessary due to the need otherwise to comply with the Secretary of State's 2017, rather than 2014 Air Navigation Guidance) the sponsor was not required to commence this proposal again under the CAP 1616 process but was permitted to remain on the CAP 725 process.

30. Throughout 2018 various iterations of the safety case were resubmitted to the CAA in addition to the Advanced ATM Training document and ongoing clarification questions. In October 2018 the CAA received safety case issue 1 prepared by the sponsor's new consultant and received safety case issue 2 in December 2018.

31. On 27th November 2019 the CAA received Safety Case issue 4 and supporting mitigation from Air Navigation Solutions Limited (ANSL)[2] regarding interactions between the proposal and Gatwick Airport departures.

32. On 24th April 2020 the CAA stated they were satisfied with the safety case (i.e. with the overarching principle of introducing an instrument approach as opposed to the safety assessment of the actual IFP design for which see below). However the CAA noted that the design had been altered since original ACP submission on 19 May 2017. The CAA requested an Addendum to the submission reflecting the changes to the original submission, why they have been made and what level of consultation/engagement had been conducted around these, and an argument and supporting evidence as to why the sponsor believes the original and supplementary consultations are still valid.

[2] Gatwick Airport's Air Traffic Control provider.

33. On 03rd July 2020 the CAA received the ACP Addendum and Engagement Report, and on 15th October 2020 the CAA received all associated references against which the CAA assessed the proposal.

34. On 17 November 2020 the CAA completed an initial Operational Assessment. Under CAP 725 ordinarily the Operational Assessment contains the culmination of input from all subject matter experts including, but not limited to, technical, air traffic management and instrument flight procedure regulators, and is used to assess safety provision. Owing to the significant time delay between the sponsors original ACP submission (May 2017) and Addendum submission (July 2020), a period within which there had been a significant change in process with CAP 1616 superseding CAP 725 coupled with the impact on the aviation industry of the Covid-19 pandemic as a whole at that time, the CAA recognised the sponsor's request for more immediate feedback. To achieve this the CAA agreed to produce its Operational Assessment out of sequence and **before** the Instrument Flight Procedure (IFP) Regulator had formally assessed the final submitted design. To realise this the CAA's original Operational Assessment was written mindful of a 'best case scenario' and made the assumption that there would be no issues with any aspect of the IAP design. (The issues that could not be assessed until the IFP assessment included but were not limited to, interactions with adjacent ANSPs, obstacle clearance, or infringement of controlled airspace (CAS) by the 'protection areas' of the IAP design.)

35. In September 2021 the CAA received Biggin Hill R03 RNP IAP Design Document v3.3 dated 24 Sep 2021. The IFP Assessment of that design document was concluded on 21 December 2021.

36. The CAA reached preliminary conclusions that in light of the proposed IFP design the proposal did not maintain a high standard of safety and as a result the proposal could not be approved

37. Due to the non-standard sequence of the latter stages of the process this preliminary conclusion was shared with LHBH at a meeting on 14 January 2022. Following a formal request, the CAA agreed to provide LBHA with written draft safety conclusions which were shared and discussed at a meeting on 3 March 2022.

38. LBHA was given an opportunity to explain in writing to the CAA if and why they believed those preliminary conclusions were wrong.

39. LBHA provided that analysis to the CAA on 30 June 2022 which the CAA has fully considered prior to making its final decision which is described in this document.

Documents considered by the CAA

40. In assessing the proposal and making this decision, the CAA has taken account of the following documents received from the Sponsor:

    i. Doc 00 – Covering Letter from London Biggin Hill Airport dated 22 May 2017
    ii. Doc 01 – CL-5220-ACP-026-LBHA ACP Part A-v1.0 dated 19 May 2017
    iii. Doc 02 – CL-5220-ACP-026-LBHA ACP Part B-v1.0 dated 19 May 2017
    iv. Doc 03 – CL-5220-ACP-026-LBHA ACP Part C-v1.0 dated 19 May 2017
    v. Doc 04 – CL-5220-ACP-026-LBHA ACP Part D-v1.0 dated 19 May 2017
    vi. Doc 05 – CL-5220-ACP-026-LBHA ACP Part E-v1.0 dated 19 May 2017
    vii. Doc 06 - CL-5108-Doc-024 Sponsor Consultation Doc Issue 1.0 - 16 Nov
    viii. Doc 07 - CL-5220-DOC-021 Supplementary Consultation Document V1.0 dated 24 Feb 2017
    ix. Doc 08 - CL-5108-RPT-059 Post Consultation Report Final dated 25 Apr 2016
    x. Doc 09 - CL-5220-RPT-025 Report of the Supplementary Consultation - V1.1
    xi. Doc 10 - Consultee Letters - Initial Sponsor Consultation dated Feb 2016

xii. Doc 11 - CL-5220-DOC- 033 Supp Con Consultee Letters dated 10 Apr 2017
xiii. Doc 12 - CL-5108-DOC-056 V1-5 LBHA Sponsor Consultation Consultee Spreadsheet dated 01 Mar 2016
xiv. Doc 13 - CL-5220-DOC-024 Supplementary Consultation Response Spreadsheet dated 19 May 2016
xv. Doc 14 - Letters sent by LBHA - Supplementary Consultation dated 15 May 2017
xvi. Doc 15 - High Quality IAP Diagrams dated 19 May 2017
xvii. Doc 16 - CL-5108-RPT-060 Interaction Assessment (Revised Edition) V1.0 - Copy 6 of 6 dated 25 May 2016
xviii. Doc 17 - CL-5220-RPT-013 V1.0 LHR SID Analysis Final - issue to CAA SARG dated 18 Jan 2017
xix. Doc 18 - CL-5220-DOC-035 EIA Supplementary Data V2.0 dated 09 Jul 2017
xx. Doc 19 - A9912 N02 DC Biggin Hill Runway 03 Approach - Extended Assessment dated 06 Jan 2016
xxi. Doc 20 - A9912 N03 DC Biggin Hill Runway 03 Approach - New Track Assessment dated 16 Feb 2017
xxii. Doc 21 - LOAs - Supplementary Consult 19 May 2017
xxiii. Doc 22 - CL-5108-MIN-007 CAA Mtg notes dated 09 Feb 2015
xxiv. Doc 23 - CL-5108-MIN-014 CAA FWB Mtg notes Issue 1 dated 22 Apr 2015
xxv. Doc 24 - CL-5108-Min-013 Radar Vectored RNAV – Final dated 17 Apr 2015
xxvi. Doc 25 - CL-5108-MIN-064 - Final - Interactions Meeting 1, 14 June 2016
xxvii. Doc 26 - Presentation 4 Jan 2017 V1.0
xxviii. Doc 27 - CL-5108-MIN-065 - Final - Interactions Meeting 2, 04 Jul 2016
xxix. Doc 28 - CL-5108-PRE-020 FG3 (Based Operators) dated 19 May 2017
xxx. Doc 29 - CL-5108-DOC-025 FG1 Formal Notes Issue 1 dated 23 Jun 2015

xxxi. Doc 30 - CL-5108-MIN-042 FG 2 Minutes Issue 1 dated 02 Jul 2015

xxxii. Doc 31 - CL-5108-DOC-027 FG3 Formal Notes Issue 1 dated 23 Jun 2015

xxxiii. Doc 32 - CL-5108-DOC-026 FG4 Formal Notes Issue 1.1 dated 23 Jun 2015

xxxiv. Doc 33 - CL-5108-DOC-045 FG5 Formal Notes Issue 1 dated 23 Jun 2015

xxxv. Doc 34 - CL-5220-SC-036 RNAV GNSS LNAV IAP RWY 03 Safety Case V1.0 dated 27 Jul 2017

xxxvi. RNAV GNSS LNAV IAP Flight Validation Plan 1 dated 05 May 2017

xxxvii. RNAV GNSS LNAV IAP Flight Validation Plan 1 dated 05 May 2017

xxxviii. LBHA ATM Training V2.0 – 29 Nov 2017

xxxix. CL-5220-DOC-040 Memo re LHR Trial SID dated 13 Dec 2017

xl. CL-5220-MIN-042 Minutes of Meeting at Farnborough on 5 Jan 2018 V1.0

xli. CL-5220-RPT-043 V2.1 BH Report Comments dated 21 May 2018

xlii. CL-5220-DOC-044 V1.0 Mitigation of 'Blunder' into Gatwick CTA

xliii. CL-5220-DOC-045 Response to CAA Clarifying Questions dated 31 Jan 2018

xliv. CL-5220-MIN-046 Minutes of Meeting at Gatwick on 21 Mar 2018

xlv. CL-5220-DOC-047 Summary of Communications with Kenley Glider Site Sep 2017 - Apr 2018

xlvi. CL-5220-DOC-049 Minutes of Telecon with 2 FTS dated 03 Jul 2018

xlvii. RAF Kenley Draft LoA V2 dated Nov 2018

xlviii. 20191105 ANS Gatwick Response to Biggin Hill Proposal

xlix. 20191214 ANS Gatwick Follow up Letter

l. 03 SAFETY CASE SUBMISSION LETTER – 27th November 2019

li. EGKB, EGKK and NATS Meeting Minutes dated 08 Jan 2020

lii. 71223 LBHA RNAV Rwy 03 RNAV IAP Safety Case Issue 5 dated 21 Feb 2020

liii. 71311 006 LBHA ACP RNAV IAP to Rwy 03 Addendum Issue 1 dated 03 Jul 2020

liv. 71311 007 London Biggin Hill Airport 03 RNAV ACP Engagement Report Issue 1 dated 01 Jul 2020

lv. 71223-007-Biggin Hill RNAV GNSS RWY 03 Chart V3.2 dated Jul 2020

lvi. A11103-N14-09 LBHA Rwy 03 Noise Assessment – 51 dB LAeq Contours dated Jul 2020

lvii. A11103-N14-DR LBHA Rwy 03 Noise Assessment – Revised Proposed Track dated 24 Jul 2020

lviii. Biggin Hill – Introduction of Rwy 03 RNP Approach - Draft SI dated Oct 2020

lix. Biggin Hill R03 RNP IAP Design Document v3.3 dated 24 Sep 2021

lx. LBHA response to CAA observations on 03 RNAV App Letter dated 30 Jun 2022

lxi. LBHA response to CAA observations on 03 RNAV App - Annex dated 30 Jun 2022

CAA Analysis of the Material provided

41. In assessing the proposal and making this decision, the CAA has taken account of the following documents produced by CAA:

i. ACP-2013-08 Biggin Hill Runway 03 IAP Environmental Assessment dated 19 Nov 2020

ii. ACP-2013-08 Biggin Hill Runway 03 IAP Original Consultation Assessment dated 19 Nov 2020

iii. ACP-2013-08 Biggin Hill Runway 03 IAP Supplementary Consultation Assessment dated 19 Nov 2020

iv. ACP-2013-08 Biggin Hill Runway 03 IAP Initial Operational Assessment dated 29 Nov 2020

v. ACP-2013-08 Biggin Hill Runway 03 IAP Final Operational Assessment dated 22 Nov 2022

vi. CAA analysis dated 22 Nov 2022 of LBHA response to CAA observations on 03 RNAV App - Annex dated 30 Jun 2022

CAA assessment and decision in respect of Consultation

Original Consultation

42. A public consultation took place between 18th November 2015 and 26th February 2016. The scope of this consultation was limited to the implementation (or not) of a single proposed IAP. The consultation document was clear, written in plain-English and was suitable for all audiences. Whilst consultees suggested that there was insufficient information in the consultation document, it was structured in a logical order, with an appropriate amount of context being provided in terms of the need for change, the pre-existing arrival operations, the proposed IAP and the related anticipated impacts.

43. The change sponsor has provided a 'consultation consultee spreadsheet' which indicates that read receipts were used and that hastening correspondence was distributed to encourage/elicit responses, indicating that they were proactive in terms of tracking feedback from the targeted stakeholders. An acceptable response rate of 26% (31 responses from 121 targeted stakeholders) was achieved and this, alongside the additional responses from 38 non-targeted stakeholders, indicates that reasonable steps were taken by the change sponsor to distribute/promulgate the consultation.

44. During the assessment it was noted that there were discrepancies when cross-checking the raw data consultation responses, consultation consultee spreadsheet (which appears incomplete) and the consultation response document. The consultation assessment is based on a comprehensive review of the raw data consultation responses provided and for this reason the statistics presented below differ from those presented in the change sponsor's consultation response document.

45. Of the 18 aviation consultee responses 12 (67%) supported the proposal and 3 (17%) objected to the proposal. Of the 13 non-aviation consultee responses 2 (15%) supported the proposal and 7 (54%) objected to the proposal. In addition to the targeted consultees the change sponsor received feedback from 38 consultees responding as an individual or representative capacity. Of these 11 (29%) supported the proposal and 21 (55%) objected to the proposal.

46. The raw data consultation responses have been reviewed and whilst there are some examples where specific points of feedback have not been acknowledged/addressed by the change sponsor, the CAA is satisfied that the 'issues and themes of concern' contained within the consultation response document is a fair and adequate representation of consultee feedback. The change sponsor has included their response to each within the consultation response document and in some cases, they felt it necessary to respond directly to the consultee (examples of outgoing correspondence have been provided and reviewed as part of the assessment). In light of feedback received, the change sponsor modified the proposed IAP and completed a supplementary consultation on the modified design (see below).

47. The CAA is satisfied that the fundamental principles of effective consultation have been applied by the change sponsor before, during and after the consultation. The CAA is also satisfied that the change sponsor has conducted this consultation in accordance with the requirements of CAP 725, and that they have demonstrated the Government's consultation principles.

Supplementary Consultation

48. The Supplementary Consultation took place between 27th February and 10th April 2017. The CAA specified that the supplementary consultation may be limited to those original consultees who may directly be affected by the changes proposed to the IAP. The scope of the supplementary consultation was therefore limited to the modifications made to the proposed IAP following the original consultation. Whilst consultees suggested that there was insufficient information in the consultation document, it was structured in a logical order, with an appropriate amount of context being provided in terms of the principal concerns arising from the original consultation, the change sponsors response to them, the modified design, and the related anticipated impacts.

49. The change sponsor developed a list of 122 (70 aviation and 52 non-aviation) targeted stakeholders, and an acceptable response rate of 15% (18 responses) was achieved. This, alongside the additional responses from 79 non-targeted stakeholders, indicates that reasonable steps were taken by the change sponsor

to distribute/promulgate the consultation to the targeted stakeholders and a wider audience.

50. A ‘consultation consultee spreadsheet’ was again provided suggesting read receipts were used and hastening telephone calls used to encourage/elicit responses, again indicating that they were proactive in terms of tracking feedback.

51. Discrepancies were again noted between the raw data consultation responses, the consultation consultee spreadsheet, and the consultation response document; therefore, the assessment was performed using the raw data responses.

52. Of the 9 aviation consultee responses 2 (22%) supported the proposal and 5 (56%) objected to the proposal. Of the 9 non-aviation consultee responses 2 (22%) had no objection to the proposal (this was categorised as a response which supported the proposal by the sponsor) and 4 (44%) objected to the proposal. In addition to the targeted consultees the change sponsor received feedback from 79 consultees responding in an individual or representative capacity. Of these 8 (10%) supported the proposal and 69 (87%) objected to the proposal.

53. The raw data consultation responses have been reviewed and again whilst there are some examples where specific points of feedback have not been acknowledged/addressed by the change sponsor, the CAA is satisfied that the ‘issues and themes of concern’ contained within the consultation response document is a fair and adequate representation of consultee feedback. The change sponsor has included their response to each within the consultation response document and in some cases, they again felt it necessary to respond directly to the consultee (examples of outgoing correspondence have been provided and reviewed as part of the assessment).

54. In light of feedback received, further modifications were made to the IAP design and safety mitigations, and the change sponsor has continued to engage with relevant aviation and non-aviation stakeholders since the end of this supplementary consultation.

55. The CAA is satisfied that the fundamental principles of effective consultation have been applied by the change sponsor before, during and after the consultation. The CAA is also satisfied that the change sponsor has conducted this consultation in accordance with the requirements of CAP 725, and that they have demonstrated the Government's consultation principles.

56. The CAA's full assessment of the consultations is contained in the CAA's Consultation Assessment and Supplementary Consultation Assessment referred to above and as published on the CAA's website.

57. The CAA is satisfied that the quality of LBHA's consultations and response to consultation feedback was sufficient for the CAA to proceed to consider whether to approve the proposal.

Post Consultation Engagement

58. Owing to the significant time delays between the Supplementary Consultation and subsequent ACP and then ACP Addendum submissions (the latter including minor amendments,) the CAA requested evidence of continued engagement with relevant aviation and non-aviation stakeholders. The sponsor provided document '71311 007 London Biggin Hill Airport 03 RNAV ACP Engagement Report Issue 1' dated 01 Jul 2020.

59. This document details how LBHA has continued to engage with both aviation and non-aviation stakeholders since the original ACP submission in 2017, and how the proposal has been further amended with a view to alleviating where possible some further concerns raised in the consultations.

60. The CAA is content that the document provides the requested evidence of continued engagement and sufficient detail on the changes made since the Supplementary Consultation.

CAA Consideration of Factors material to our decision whether to approve the change

Explanation of statutory duties

61. Pursuant to the Civil Aviation Authority (Air Navigation) Directions 2017 Direction 5, it is one of the CAA's air navigation functions to decide whether to approve a proposal for a permanent change to airspace design in accordance with our published strategy and procedures, that is our Airspace Modernisation Strategy (CAP 1711) and (for the purpose of this proposal) CAP 725.

62. The CAA's statutory duties when carrying out its functions under Direction 5 are contained in Section 70 of the Transport Act 2000 (the Transport Act). The CAA must exercise its air navigation functions so as to maintain a high standard of safety in the provision of air traffic services. That duty is to have priority over the CAA's other duties in this area of work.

63. Noting that priority, the CAA's duties in relation to air navigation is to exercise its functions in the manner it thinks best so that:

    a) It secures the most efficient use of airspace consistent with the safe operation of aircraft and the expeditious flow of air traffic.
    b) It satisfies the requirements of operators and owners of all classes of aircraft.
    c) It takes account of the interests of any person (other than an operator or owner) in relation to the use of any particular airspace or airspace generally.
    d) It takes account of any guidance on environmental objectives given to the CAA by the Secretary of State.
    e) It facilitates the integrated operation of air traffic services provided by or on behalf of the armed forces and other air traffic services.
    f) It takes account of the interests of national security.
    g) It takes account of any international obligations of the UK notified to the CAA by the Secretary of State.

64. The analysis of the application of the CAA's function and statutory duties in this airspace change proposal is set out below.

Conclusions in respect of the CAA's Airspace Modernisation Strategy

65. The proposal seeks to deliver benefits in respect of four of our Airspace Modernisation Strategy's objectives or **ends**, namely

    i. Maintaining and enhancing high aviation safety standards;

    ii. Securing the efficient use of airspace;

    iii. avoiding flight delays by better maintaining the airspace network; and

    iv. improving environmental performance by …. better managing noise.

66. The proposal seeks to deliver Initiative 8 in our Airspace Modernisation Strategy, that is '**Satellite Navigation route redesign:** redesign of new arrival and departure routes using satellite- based navigation standards'.

67. The objectives of the proposal are in accordance with our Airspace Modernisation Strategy.

68. However, for the reasons set out below, we have concluded that the proposal will not be able to deliver maintained and enhanced high aviation safety standards and therefore cannot deliver the objectives of our Airspace Modernisation Strategy.

Conclusions in respect of our safety duty

69. The CAA's primary duty is to maintain a high standard of safety in the provision of air traffic services, and this takes priority over all other duties.[3]

70. For the reasons set out above the CAA completed an initial Operational Assessment in November 2020, prior to the sponsor providing the CAA with the final IFP design and prior to that design being assessed by the CAA's IFP team. The initial Operational Assessment acknowledged the significant change to the proposed IAP design from original concept owing to numerous issues including airspace constraints surrounding Biggin Hill Airport, adjacent ANSPs, and looking to incorporate feedback and concerns raised by stakeholders. The final

[3] Transport Act 2000 (legislation.gov.uk)

design looks to descend aircraft out of the London TMA earlier than originally anticipated, route through a busy restricted funnel of uncontrolled Class G airspace following popular GA visual flight rules (VFR) line features, in close proximity to sport and recreational flying sites. These observations were reflected in stakeholder feedback from the consultations along with the associated potential for 'conflict in Class G airspace'.

71. The CAA acknowledges that it is possible to establish IAPs in Class G airspace in some situations. However, no situation is the same and each application must be evaluated individually based on its own circumstances, environment and influencing factors.

72. LBHA's Supplementary Consultation Report details changes to the procedure design which were necessary to resolve operational interactions, and to revisit some environmental concerns. This also documented the enablers required for the introduction of the proposed IAP, one of which is Advanced use of the Aerodrome Traffic Monitor. The report states, '*LBHA ATC is not equipped with radar. It provides a Procedural Approach Control Service (APC) and Aerodrome Control Service (ADC or TWR). However, to assist the controllers in spatial awareness of the surrounding traffic situation LBHA ATC is equipped with an Aerodrome Traffic Monitor (ATM). This provides a radar-derived 'air picture' of the local area using NATS onward-routed radar data (provided under contract by NATS). The use and operation of the ATM is detailed in the Manual of Air Traffic Services (MATS) Part 1 and it must not be used to provide radar services. No radar rating is required for its use by TWR controllers. LBHA is making application to CAA SRG ATS Regulation to permit advanced use of the ATM by LBHA ATC controllers in order that meaningful traffic information can be passed to aircraft carrying out an IAP or to transiting VFR flights in proximity to the IAP and to assist in the sharing of traffic information with Redhill ATC. Once approval is given by the CAA the LBHA controllers will require specific training in the advanced use procedures. Advanced use of the ATM is considered an essential enabler for the proposed IAP*'.

73. However, after the original ACP submission, but before the Addendum submission, LBHA withdrew its application for Advanced use of the ATM. Listed

as provided in the original concept, Advanced use of the ATM had been proposed as essential mitigation, facilitating the provision of radar derived traffic information of itinerant aircraft to IAP aircraft and to monitor and warn IAP aircraft of the risk of infringement of the Gatwick CTA.

74. As recorded in the CAA's initial Operational Assessment, because of the cumulative impact of safety related issues surrounding the proposed IAP in a constrained funnel of Class G airspace, and the consequential impact and risk to other airspace users, and the removal of the proposed Advanced use of the ATM mitigation, the initial Operational Assessment recommended that the ACP be refused.

75. However, pursuant to The Civil Aviation Authority (Air Navigation) Directions, Direction 5(2)[4] 'the CAA may make its approval of a proposal subject to such modification and conditions as the CAA considers necessary'. Noting, as set out above, that all CAA preliminary conclusions at this time were subject to a compliant IFP design, the CAA concluded at that time (November 2020) the CAA would consider the proposed IAP maintained a high standard of safety if the mitigation of Advanced Use of the ATM was reintroduced and successfully incorporated into Biggin Hill's supporting Safety Argument. Reintroduction of Advanced Use of the ATM would, it was considered at the time (and subject to the proviso that this preliminary view was subject to an assessment of the actual IAP design) mitigate the risks sufficiently as to maintain a high standard of safety primarily because it would address the risk of and to autonomous, transiting, non-transponding VFR aircraft in the Class G airspace, and would support already agreed provisions for CAS infringement in regard of Heathrow and Gatwick Airports departing Instrument Flight Rules (IFR) traffic.

76. This provisional view was relayed to the sponsor as part of their request for more immediate feedback in December 2020. The recommendation was conditional on the final approved RNAV IAP IFP design matching the proposal as consulted and agreed with other stakeholders and was written prior to the IFP Regulator's

[4] Air Navigation Guidance 2017

assessment of the IAP being performed. It was made clear to the sponsor that as such the design itself has not been approved.

IAP Assessment

77. The original IAP design package was submitted to the CAA on 22 May 2017. Initial feedback from an overview, rather than formal assessment, raised queries over the technical nature of the design and interactions with adjacent controlled airspace.

78. CAA IFP Regulation maintained dialogue with the sponsor's Approved Procedure Design Organisation (APDO), providing feedback and comment when requested, and raising queries and asking for mitigations and rationale to address concerns be provided in future iterations.

79. Following design changes leading up to the ACP Addendum submission, the CAA received Addendum IFP Assessment package V3.2 on 09 Sep 2020. Annex A Figure 1 shows Biggin Hill RNP IAP Runway 03 Chart V3.2.

80. CAA IFP Regulation assessed V3.2 providing a technical report, coding table, and feedback form to the sponsor's APDO on 09 Mar 2021. This provided considerations on the way ahead and clarification on how design criteria should be implemented, in particular to the intermediate segment. Several concerns were highlighted including a request for the non-compliant segment to be redesigned.

81. The sponsors APDO responded to the CAA technical report on 24 Sep 2021, submitting V3.3 (Annex A Figure 2). In this the CAA concerns over the complexity and non-standard nature of the proposal, including the request for the non-compliant segment to be redesigned, have not been addressed. The following list summarises the outstanding issues:

    a) The IAP as proposed is non-standard in content. The norm in the UK for an RNP (Required Navigational Performance) IAP is a T-Bar, Y-BAR or straight-in runway aligned IAP, whereas this IAP is presented as a figure of eight (8). This design and its presentation will increase the workload for pilots in ensuring the IAP is understood and flown correctly.

b) The segments lengths from ITSUM are all of a minimum length which means there is no flexibility available should the many variables which can cause a procedure to breakdown occur, e.g., weather conditions, aircraft/flight management system (FMS) issues, pilot actions when correcting FMS discontinuities, waypoint (WP) bypass etc.

c) With descent mandated after ITSUM into an area of busy GA traffic the extensive track miles of the procedure, west of Kenley down to and along the M25 while routing east to Biggin Hill, will exacerbate the issues of pilot workload, interactions with other airspace users, and create possible conflicts in Class G.

d) The segment length between KEW02 and GOBVI does not support stabilised flight in all circumstances e.g. a strong tailwind on the downwind section.

e) The intermediate segment (IF) is non-compliant as the length is less than that required to support a stabilised approach by all aircraft.

f) The use of a step-down fix (SDF) to achieve a lower procedure minimum adds further complexity to an already complex non-standard IAP.

g) The visual segment surface (VSS) penetrations have not been removed. The assessment of an OCS (obstacle clearance surface) does not remove the requirement of the sponsor to remove the VSS penetrations. VSS penetrations would need to be removed to ensure any IAP to runway 03 can be viable in the future.

h) Chart clutter is caused by the complex and non-standard nature of the IAP.

i) Due to the number of issues raised above, the CAA does not accept that the impacts on human factors and pilot workload have been suitability mitigated within this proposal. Additionally, the workload will be increased for pilots arriving from outside of the UK, who are used to flying IAPs which are wholly contained within controlled airspace.

82. The LBHA Runway 03 IAP as proposed diverges from the International Civil Aviation Organisation (ICAO) principles for the design of IFPs, namely safe, simple, and economical of both time and airspace. The use of minimum segment lengths, non-compliant intermediate segment, procedure complexity and chart clutter will result in increased pilot workload and are a cause for concern. The

cumulative effect of the issues raised above amounts to an IAP with serious safety issues which have not been addressed by the sponsor.

83. On 30 June 2022 the sponsor provided its rationale as to why they believed the reasons behind the CAA's preliminary conclusions that the proposal did not maintain a high standard of safety were incorrect. The CAA has considered this in detail. The CAA's review has included an additional review by the CAA's IFP regulator, Technical regulator and ATM regulator.

84. The CAA has produced a detailed response to the sponsors document dated 30 June 2022 and the assessment recorded in that document forms an important part of the information that the CAA has taken into account before reaching its final decision.

85. By way of summary only (and for full reasons see the CAA assessment documents) the proposal is for an IAP that does not meet the standards of international criteria, partly in very busy non-controlled airspace, and has concluded that the consequential impacts on human factors and pilot workload (notwithstanding the mitigations proposed) mean that approving the proposal as submitted would not maintain a high standard of safety. Additionally, the CAA has concluded that the workload (and so impact on safety) will be increased for pilots arriving from outside of the UK, who are used to flying IAPs which are wholly contained within controlled airspace.

86. In the respect of the Air Navigation Order (2016) Article 187(2)[5] 'the CAA must not notify or approve an instrument flight procedure unless it is satisfied that the procedure is safe for use by aircraft'. In addition, when making airspace change decisions the CAA's primary duty is to maintain a high standard of safety in the provision of air traffic services, which takes priority over all other duties. The CAA is not satisfied that approving the proposed design will do so for the reasons detailed above.

Conclusions in respect of securing the most efficient use of airspace

87. 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 traffic.[6]

[5] The Air Navigation Order 2016 (legislation.gov.uk)
[6] Transport Act 2000, Section 70(2)(a).

88. The CAA considers that the most efficient use of airspace is defined as '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'.

89. In this respect the proposal is intended to reduce the number of delays and to enable aircraft approaching Runway 21 to land without the need to acquire the required visual references, perform a visual circling manoeuvre to reposition onto the final approach and to land on Runway 03. This would improve the efficiency of the use of airspace and be a more expeditious flow of traffic. Additionally, this proposal does not include the creation of new or modified controlled airspace. The intention is to commence the IAP in the pre-existing airspace structure of the London TMA and continue beneath in Class G airspace.

90. In this respect the CAA is satisfied that the most efficient use of airspace would be secured were it safe to implement this proposal.

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

91. The Secretary of State has given the CAA specific guidance on environmental objectives relating to the exercise of its air navigation functions. The current version is dated October 2017; however, the Secretary of State has guided the CAA that for those ACPs submitted under CAP 725 and consulted on before 01 January 2018 the version of Guidance on Environmental Objectives relevant to consideration is the 2014 Guidance.[7]

92. The proposal is looking to implement a new IAP to Runway 03 at LBHA, therefore new tracks over the ground will be flown and accordingly communities affected who were not previously overflown. The sponsor has considered this in the design phase and subsequently from consultation feedback, and looked to amend the flight path accordingly to reduce the environmental impact to as great a degree as possible within the constraints of the proposed design and location.

[7] Guidance to the Civil Aviation Authority on Environmental Objectives Relating to the Exercise of its Air Navigation Functions (publishing.service.gov.uk)

The proposal does however afford 'respite'[8] to communities on the approach to Runway 21 who are currently overflown by all IAPs to LBHA.

93. The sponsors argument that increased fuel burn and emissions owing to increased track distance of the proposal compared to the current procedure is offset by the greater assurance of completing a successful landing and therefore avoiding the additional fuel burn and emissions currently encountered when an aircraft has to divert to an alternate airport is noted by the CAA.

94. The CAA is content that the sponsor has considered the environmental requirements under CAP 725 and the Guidance on Environmental Objectives (2014).

95. The CAA acknowledges the anticipated environmental impact of the proposed change and has taken this into account when weighing the factors that the CAA is required by statute to consider when making its decision whether to agree to the proposed change.

Conclusions in respect of aircraft operators and owners

96. The CAA has a duty to satisfy the requirements of operators and owners of all classes of aircraft.[9]

97. In this respect 7 of the 25 airport users targeted for consultation responded, all supporting the proposal along with 3 non-targeted aviation stakeholders. However, 85% of both targeted and non-targeted aviation stakeholders over both consultations, including national bodies, objected to the proposal based primarily upon the perceived risk of mid-air collision (MAC).

98. The sponsor has looked to mitigate these risks to as low as reasonably practicable by, pending a successful outcome, offering to provide transponders for the gliders at Kenley, Traffic Collision Avoidance Systems (TCAS), Letters of Agreement (LoAs) with adjacent ANSPs, existing procedures, charting and notification, and introduction of Advanced use of the ATM.

[8] Respite is planned and predictable alleviation from aircraft noise.
[9] Transport Act 2000, Section 70(2)(b).

Conclusions in respect of the interests of any other person

99. 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 generally.

100. The CAA considers the words “any person (other than an operator or owner of an aircraft)” to include airport operators, air navigation service providers, members of the public on the ground, owners of cargo being transported by air, and anyone else potentially affected by an airspace change proposal.

101. The CAA examined several anticipated impacts, including the environmental impact on the public created by new tracks over the ground, and the impact on airfields and other specific activities within or adjacent to the proposal.

102. The sponsor has looked to mitigate environmental impacts where possible, including redesigning the proposed IAP, and has initiated LoAs with adjacent airfields such as Redhill and Kenley. Gatwick airport are content that procedures are in place to cater for an aircraft incursion into their CTA should such a scenario occur.

103. The CAA is satisfied that the interests of other persons has been taken into account.

Integrated operation of ATS

104. 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 services.[10]

105. In this respect, the proposal has been coordinated with NATS. Manager ATM Procedures confirmed suitable mitigation is in place against Heathrow departures and a suitable concept of operations (CONOPS) has been drafted for integration of aircraft inbound to LBHA through the London TMA.

106. The CAA is content that the integrated operation of ATS has been facilitated.

[10] Transport Act 2000, Section 70(2)(e).

Interests of national security

107. The CAA is required to take into account the impact any airspace change may have upon matters of national security.[11] There are no impacts for national security.

International obligations

108. The CAA is required to take into account any international obligations entered into by the UK and notified by the Secretary of State.[12]

109. None has been notified to the CAA.

[11] Transport Act 2000, Section 70(2)(f).
[12] Transport Act 2000, Section 70(2)(g).

Chapter 3

CAA's Regulatory Decision

110. Noting the anticipated impacts on the material factors we are bound to take into account, we have decided not to approve the proposal to introduce an Area Navigation (RNAV) Instrument Approach Procedure (IAP) to Runway 03 at London Biggin Hill Airport (LBHA), because the submission fails to satisfy the CAA's statutory duty to maintain a high standard of safety as detailed above.

111. The CAA's primary statutory duty is to maintain a high standard of safety in the provision of air traffic services, which takes priority over all other duties. In the respect of the Air Navigation Order (2016) Article 187(2)[13] 'the CAA must not notify or approve an instrument flight procedure unless it is satisfied that the procedure is safe for use by aircraft'. In this the CAA safety concerns over the complexity and non-standard nature of the proposal, including a non-compliant intermediate segment, remain.

Next Steps

112. The CAA has concluded that the objective of the proposal (but not the specific design) is in accordance with the CAA's Airspace Modernisation Strategy.

113. The CAA and DfT, as co-sponsors, have commissioned ACOG to prepare a UK Airspace Change Masterplan (or Masterplan, for short). The purpose of the masterplan is to set out a single coordinated implementation plan for airspace changes in the UK up to 2040 to upgrade the UK's national airspace system and deliver the objectives of airspace modernisation at a system level.

114. The CAA notes that the sponsor has submitted an ACP which is being taken forward as part of the masterplan programme (ACP-2018-69). The Statement of Need for that ACP explains that the intent of the ACP is to design and introduce new and/or revised departure and arrival routes that will fully and properly

[13] The Air Navigation Order 2016 (legislation.gov.uk)

integrate with the new London Terminal Area architecture which will result from the airspace modernisation programme.

115. The sponsor is encouraged to continue developing ACP-2018-69 through the coordinated Masterplan process and in liaison with interdependent airports (especially Gatwick). This would enable an ACP to be developed from a whole aviation system perspective, with interdependencies and trade-offs between different objectives able to be considered in a coordinated way.

Civil Aviation Authority

20 December 2022

Annex A

Diagrams relating to change.

Figure 1 - Biggin Hill RNP IAP Runway 03 Chart V3.2

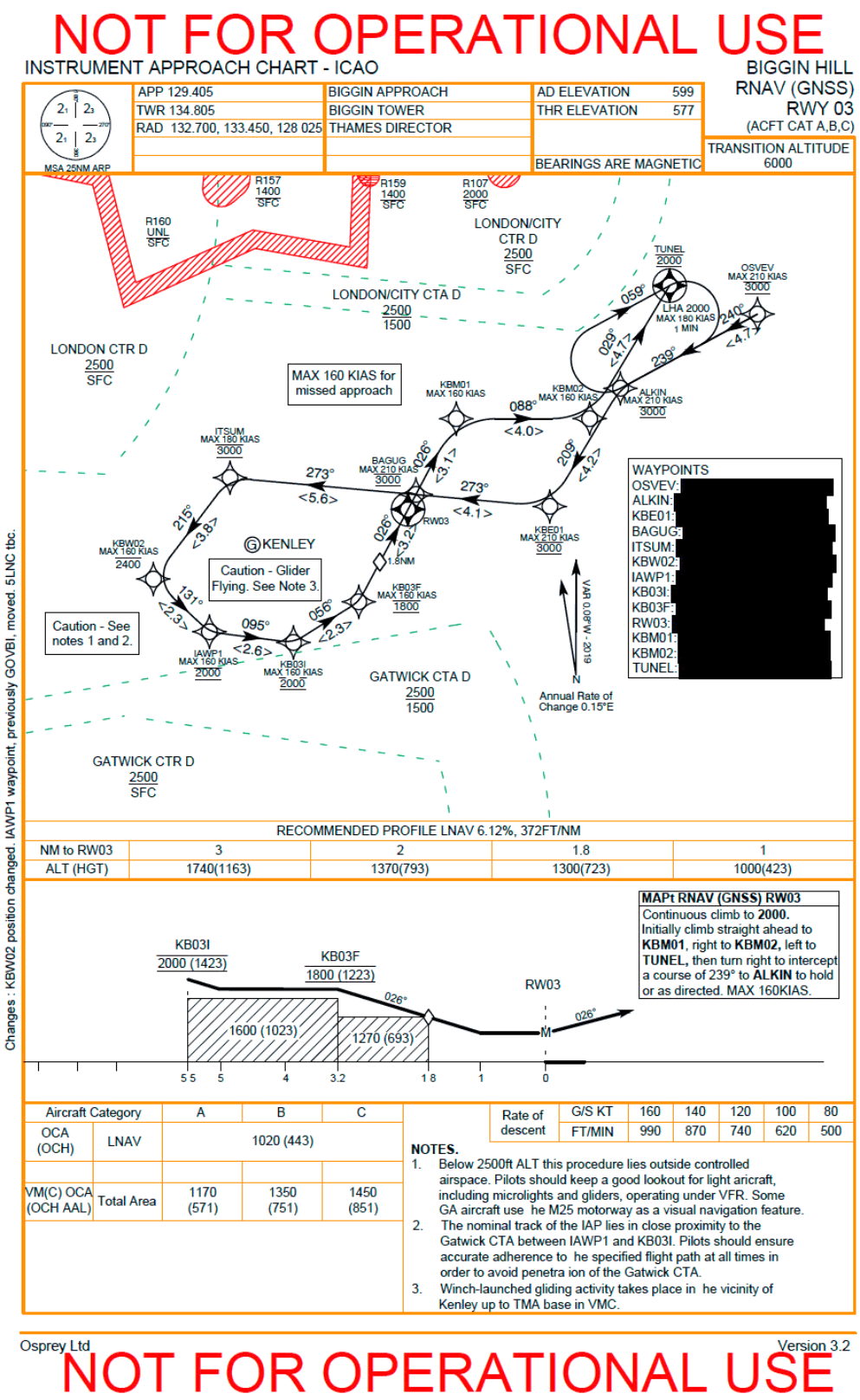

Figure 2 - Biggin Hill RNP IAP Runway 03 Chart V3.3