

London Stansted Airport RNP1 (RF) (ACP-2014-01) – Post Implementation Review

CAP (Civil Air Publication) 2249

Published by the Civil Aviation Authority, 2021

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First published September 2021

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Contents

Contents	3
Executive summary	4
Scope and background of the PIR	6
What is a Post Implementation Review?	6
Background to our conclusions in this PIR Decision	6
Conditions attached to the CAA's decision to approve the change.	7
Relevant events since change (if any)	8
Sources of Information	8
Objectives and anticipated impacts	9
The original proposal and its objectives	9
Anticipated Impacts	9
CAA assessment	10
Operational Assessment	10
Safety	10
Air Navigation Service Provision	10
Utilisation and Track Keeping	10
Traffic	11
Infringements and Denied Access	11
Letters of Agreement	11
Environmental Assessment	11
Community Stakeholder observations	11
Internationally Agreed Obligations	11
Ministry of Defence Operations	11
Any other impacts	12
Conclusion	13
Note on plain language	14

Executive summary

1. The CAA requires the change sponsor of any permanent change to the published airspace design to follow our airspace change process. This airspace change process is set out in CAP 1616¹, which commenced on 2 January 2018. Airspace change proposals submitted before that time were assessed against the policy framework and change process in CAP 725².
2. The final stage of both processes is the Post-Implementation Review (PIR). The purpose of the PIR is to consider how an airspace change has performed, including whether anticipated impacts and benefits in the original proposal and decision have been delivered.
3. On 3 February 2016 London Stansted Airport (the Sponsor) submitted to the CAA an Airspace Change Proposal (ACP), following a trial report which was submitted to the CAA on 3 March 2015. The ACP was to introduce two Required Navigation Performance (RNP)1 Standard Instrument Departures (SIDs) in addition to the existing conventional SIDs already in use. The SIDs being proposed were the CLACTON 1E RNP1 SID (CLN 1E RNP1 SID) for Runway 22 and the DETLING 1D RNP1 SID (DET 1D RNP1 SID) for Runway 04. The objective of the proposal was to reduce the number of people directly over-flown by departing aircraft by improving aircraft navigational accuracy immediately after take-off.
4. The ACP was accepted by the CAA on 3 May 2017³ and implemented on 30 August 2017. The content and outcome of the PIR process by the CAA is detailed in this report including its annexes.
5. A PIR should normally be commenced around 12 months after a change is implemented. For this ACP, the original PIR commencement date was January 2018. However, the PIR has been delayed. This does not affect the conclusions of the CAA's assessment in this report since the PIR report produced by the Sponsor was submitted in January 2018 as per the conditions stipulated at Annex A of the CAA's Decision Letter (CAP 1547).
6. The CAA decision to approve the ACP was made under the former process contained in CAP 725. Following the introduction of the new airspace change process in CAP 1616, we have conducted this PIR in accordance with the more rigorous process requirements of CAP 1616. However, when assessing the expected

¹ <https://publicapps.caa.co.uk/modalapplication.aspx?appid=11&mode=detail&id=8127>

² <https://publicapps.caa.co.uk/modalapplication.aspx?appid=11&mode=detail&id=395>

³ Decision formally published: [https://www.caa.co.uk/London Stansted RNP1 SIDs Decision Letter](https://www.caa.co.uk/London%20Stansted%20RNP1%20SIDs%20Decision%20Letter)

impacts against the actual impacts, we have used the methodology adopted at the time of the original CAA decision in order to do so.

7. During the review process, the CAA considered the formal response from the Sponsor which is contained in the Sponsor's documents:

- Post Implementation Review Feedback Form
- Post Implementation Review Report

Redacted versions of these documents are available on the [CAA website](#).

8. As a result of this PIR, the CAA has reached the following conclusion:

- The CAA is satisfied that the implementation of the new RNP1 SIDs has satisfactorily achieved the intended objectives and the impacts have been as anticipated, and the change is confirmed.

9. This report, and its annexes, provide the information the CAA has reviewed and taken into account before reaching this conclusion.

Scope and background of the PIR

What is a Post Implementation Review?

10. The CAA's guidance and procedure in relation to the development, making and consideration of airspace change proposals are explained in its *Airspace Change Guidance on the regulatory process for changing the notified airspace design and planned and permanent redistribution of air traffic, and on providing airspace information*, CAP 1616. This detailed guidance provides that the seventh and last stage of the airspace change process is a review of the implementation of the decision, particularly from an operational perspective, known as a Post Implementation Review (PIR).
11. CAP 1616 commenced on 2 January 2018. Airspace change proposals submitted before that time were assessed against the policy framework and change process in CAP 725. We have conducted this PIR in accordance with the more rigorous process requirements of CAP 1616.
12. The CAP 1616 guidance states that the purpose of a PIR "is for the change sponsor to carry out a rigorous assessment, and the CAA to evaluate, whether the anticipated impacts and benefits in the original proposal and published decision are as expected, and where there are differences, what steps (if any) are required to be taken".
13. If the impacts are not as predicted, the CAA will require the change sponsor to investigate why and consider possible mitigations or modifications for impacts that vary from those which were anticipated to meet the terms of the original decision.
14. A PIR is therefore focused on the effects of a particular airspace change proposal. It is not a review of the decision on the airspace change proposal, and neither is it a re-run of the original decision process.

Background to our conclusions in this PIR Decision

15. In approving the ACP, the CAA was required to take account of any guidance on environmental objectives given by the Secretary of State. In this regard, the CAA acknowledged that if the RNP1 SIDs were fully utilised, a large number of people will be directly overflowed less often once these procedures are introduced, than was currently the case with the published conventional SIDs, but also that a smaller number of people would be directly overflowed more often. Overall, it was the CAA's view that the proposal meets the terms of the Government's guidance to the CAA in respect of our environmental duty and in particular the altitude-based priorities with respect to the noise impact. The introduction of the procedures would improve navigation accuracy, increase resilience and reduce reliance on ground-based

infrastructure in accordance with Future Airspace Strategy⁴ (known as FAS) and international obligations. Combined, these elements could also allow more aircraft to use a given volume of airspace in a given time period making the most efficient use of Stansted assigned airspace, commensurate with the CAA's FAS and efficient use of airspace.

16. Improved navigational accuracy and a reduced number of controller interactions would, we anticipate, ensure the expeditious flow of air traffic.
17. The introduction of the RNP1 procedures would satisfy the requirements of applicable equipped operators and owners of all classes of aircraft, as all those aircraft suitably equipped would be able to use the procedures and for those who were not suitably equipped, the conventional SIDs would remain in place.
18. The decision was made having fully assessed the operational need and objectives, analysed the environmental impacts if the change was implemented and assessed the consultation process, the responses received and the Sponsors' comments on those responses.
19. On the 17 February 2017, the CAA approved the implementation of the 2 RNP1 SIDs at London Stansted Airport to reduce the number of homes being overflown and increase the navigational accuracy of aircraft departing the airport. This change was implemented on the 30 March 2017.

Conditions attached to the CAA's decision to approve the change.

20. There were no conditions which must be met before implementation attached to the CAA decision.
21. The following PIR requirements were attached at Annex A to the CAA decision (CAP 1547):
 - Make available to CAA, Safety and Airspace Regulation Group, Airspace Regulation figures for usage of both RNP1 SIDs, and comparison to the usage of the remaining conventional SIDs. Data to be available by PIR commencement date, planned for 18th January 2018.
 - Make available to CAA, Safety and Airspace Regulation Group, Airspace Regulation, track diagrams that enable a comparison between pre-implementation and post-implementation traffic patterns for aircraft up to 7,000ft. The diagrams should portray both traffic dispersion and extent of any concentration (i.e. a density plot of traffic). Data to be available by PIR commencement date, planned for 18th January 2018.

⁴ <http://www.caa.co.uk/Commercial-Industry/Airspace/Future-airspace-strategy/Future-airspace-strategy>

Note: this has subsequently been replaced by CAP1711 Airspace Modernisation Strategy.

Relevant events since change (if any)

22. A PIR should normally be commenced around 12 months after a change is implemented. For this ACP, the original PIR commencement date was January 2018. However, the PIR has been delayed.
23. The COVID-19 pandemic has seen a dramatic reduction in aviation activities. This global reduction in aircraft movements means that airspace use since March 2020 is unrepresentative of previous years' data collection. The CAA decided that any PIR data collected by a change sponsor and any analysis by the sponsor which has been completed by 27 February 2020 can be used to as part of a PIR dataset necessary to complete the PIR review in accordance with CAP 1616, but that data collection after that time may need to be suspended.⁵
24. The data collected by the Sponsor and submitted to the CAA since the change was implemented is therefore appropriate for the purposes of this PIR. The delay of this report does not affect the conclusions of the CAA's assessment since the PIR report produced by the Sponsor was submitted in January 2018 as per the conditions stipulated at Annex A of the CAA's Decision Letter (CAP 1547).

Sources of Information

Change Sponsor

25. In addition to the original ACP submission and supporting material, the Sponsor provided a PIR report and a PIR feedback form to the CAA explaining why they considered the implementation of the airspace change to have been successful.

⁵ <https://www.caa.co.uk/Commercial-industry/Airspace/Airspace-change/Reviews/Airspace-changes-post-implementation-reviews/>

Objectives and anticipated impacts

The original proposal and its objectives

26. The objective for this airspace change was to provide additional departure flight procedures, designed to support aircraft with RNP capable systems. Aircraft that follow routes supporting the RNP navigation specification will do so with improved navigational accuracy. This will reduce the number of people affected by direct overflights, when compared against the existing conventional routes that aircraft follow on departure from London Stansted Airport.

Anticipated Impacts

27. Introduction of RNP1 SIDs would provide a high standard of safety due the improvement in navigational accuracy requiring less controller inputs which in turn would result in less controller interactions, reducing workload and increasing controller capacity. There are no positive or negative safety impacts on any persons other than the positive impacts on the owner or operator of the aircraft.
28. The CAA concluded that the introduction of RNP1 procedures and technology was necessary to secure the most efficient use of UK airspace. This is reflected in the CAA's FAS (and now the Airspace Modernisation Strategy), including the UK's relevant international obligations in this area.
29. The CAA concluded that the proposed change was not anticipated to have any significant environmental impacts. This was because the overall exposure of any individual or community to noise on the ground was not anticipated to increase to a level that exceeds 57dB LA_{eq16 hour}.
30. There were no other environmental impacts with regards to CO2 emissions, Local Air Quality and Areas of Outstanding Natural Beauty (AONBs) and National Parks.
31. The procedures were in the interests of all aircraft operators that are suitably equipped to fly them as systemisation benefits result from less controller interactions and more expeditious routeing. There were no anticipated detrimental impacts to those aircraft not equipped to fly the procedures as the existing conventional procedures would remain in place.
32. There was a clear positive benefit to the Sponsor who seeks to improve its ongoing relationship with the local consultative committee and members of the general public through taking steps to reduce the impact of noise.

CAA assessment

33. We have taken into consideration the interval since implementation and the change in utilisation of UK airspace when conducting this assessment.

Operational Assessment

Safety

34. The Sponsor reported that there were no identified safety issues for the first year of operations. Operational feedback from one operator was received asking if the speed restriction on the RF turns could be increased to enable a 'clean' configuration at their highest take-off weight. The CAA IFP Team informed them that any change to the procedure was likely to alter the ground track and would require a separate ACP.
35. No further action or enquiry was received by the airport or the operator once the feedback was received.

Air Navigation Service Provision

36. The Sponsor reported no issues with the provision of Air Navigation Services.

Utilisation and Track Keeping

37. Detailed utilisation and track keeping records have been kept and the Sponsor has confirmed that both RNP1 SIDs were utilised since implementation, with the CLN 1E RNP1 SID being the most frequently utilised by operators departing off Runway 22.
38. Data presented by the Sponsor showed that utilisation of the RNP1 SIDs had increased since implementation and the CLN 1E RNP1 SID accounted for 91% of departures from Runway 22 and the DET 1D RNP1 SID accounted for ~ 34% of departures from Runway 04 at the time of the Sponsor's PIR report.
39. Data presented by the Sponsor showed that track keeping was much improved on both the CLN 1E RNP1 SID and the DET 1D RNP1 SID with over 98% of aircraft within the +/- 500m swathe on these PBN SIDs. The latest report shows that the track keeping percentage on the 22CLN is between 98-100% and for 04DET is between 94-97%.
40. Additional reporting of RNP1 compliance and usage is now reported through the Noise and Track Keeping Working Group (NTKWG) and the data is reported quarterly and published at the following link to the airport website. [Who Does What | London Stansted Airport](#)

Traffic

41. Aircraft equipped with the navigational equipment to be able to fly RNP1 procedures had increased since implementation and has led to the objectives of the ACP being met.

Infringements and Denied Access

42. Not applicable as this airspace change does not involve changes that deny access or generate infringement reports.

Letters of Agreement

43. Not applicable as the introduction of the RNP1 SIDs is not subject to any Letters of Agreement.

Environmental Assessment

44. The Sponsor considered that the ACP delivers an environmental improvement, even if this cannot be quantified. This is achieved by a greater number of aircraft flying a more accurate navigational procedure when flying the RNP1 SIDs as opposed to the existing conventional SIDs.
45. From the PIR data submitted, the track plots clearly showed that the navigational accuracy had improved and that the number of people directly over-flown by departing aircraft had reduced.

Community Stakeholder observations

46. No observations were reported. The Sponsor, in partnership with their NTKWG and the Environmental Interest Group of the Airport Consultative Committee, had developed additional reporting of RNP1 SID compliance.
47. Since the uplift in RNP1 operations in August 2017, the Sponsor has delivered an information leaflet to 500 homes in the Hatfield Heath and Hatfield Broad Oak areas. There has been no adverse community feedback since the leaflet drop or the uplift in RNP1 SID departures in August 2017.

Internationally Agreed Obligations

48. Not applicable as this airspace change is wholly contained within the London Flight Information Region and does not reach any international borders.
49. The change satisfies the internationally agreed obligations and policy set out in the CAA's FAS (now the AMS).

Ministry of Defence Operations

50. Not applicable as this airspace change does not have any impact on Ministry of Defence operations.

Any other impacts

51. No other impacts have been identified.

Conclusion

52. The CAA is satisfied that the implementation of the RNP1 SIDs at London Stansted Airport has satisfactorily achieved the intended objectives and the impacts have been as anticipated, and the change is confirmed.

Note on plain language

53. The CAA has attempted to write this report as clearly as possible. Our approach has been to include all the relevant technical material but also to provide a summary of the conclusions the CAA has reached in reliance on it in as understandable a way as possible. Nevertheless, when summarising a technical subject, there is always a risk that explaining it in more accessible terms can alter the meaning.