

# Q60 Airway – Post Implementation Review

CAP 1899



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## Executive summary

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1. The CAA's airspace change process is a seven-stage mechanism that is set out in detail in CAP 725/CAP1616. Under this process NATS submitted proposals to the CAA to introduce a new Conditional Route (CDR) known as "Q60" over southern England and Wales. Stage 7 of this process is a Post Implementation Review (PIR) that normally begins one year after implementation of the change. The new Conditional Route was implemented on 15<sup>th</sup> September 2016, following approval of the proposed Airspace Change by the CAA on 27 July 2016. Competing priorities for the allocation of resources resulted in a delay to us starting this particular review. The CAA commenced the PIR of the impact of its decision and the implemented change on 7<sup>th</sup> August 2019. Given this delay, for simplicity the sponsor provided data for calendar year 2015 and calendar year 2017 as the "before" and "after" information. The content and outcome of the review process by the CAA is discussed in detail in this report including its annexes.
2. On 2 January 2018 the CAA introduced a new process for making a decision whether or not to approve proposals to change airspace design. Irrespective of whether the CAA decision to approve the change was made under the previous process (set out in CAP 725), we will conduct all Post Implementation Reviews in accordance with the process requirements of CAP1616. However, when assessing the expected impacts against the actual impacts we will use the methodology adopted at the time of the original CAA decision in order to do so. We have also taken into consideration the interval since implementation and the fact that all changes are in controlled airspace above Flight Level 245 (approximately 24,500 feet dependent upon atmospheric pressure) when conducting this assessment.
3. During the review process, the CAA considered responses from the Sponsor following requests for information/data.
4. As a result, the CAA has reached the following conclusion:

The CAA is satisfied that the introduction of the new conditional route Q60 over southern England and Wales satisfactorily achieved the objective stated in the CAA's decision document, and the change is confirmed.
5. This report, and its annexes, provide a summary of the information the CAA has reviewed and taken into account before reaching these conclusions. However, all the information the CAA has taken into account will be published on our website/portal.

## Scope and background of the PIR

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### What is a Post Implementation Review?

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6. The CAA's approach to decision-making in relation to proposals to approve changes to airspace is explained in its Guidance on the Application of the Airspace Change Process, CAP [725/1616]. This detailed Guidance provides that the seventh and last stage of the process is a review of the implementation of the decision, particularly from an operational perspective, known as a Post Implementation Review (PIR).
7. The 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".
8. 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.
9. 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

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10. On the 27<sup>th</sup> July 2016 the CAA approved the introduction of a new Conditional Route (CDR) to be known as "Q60" over southern England and Wales. In our Decision document of the same date, we provided factual information and background to the change. The Decision document can be found at [https://www.caa.co.uk/uploadedFiles/CAA/Content/Standard\\_Content/Commercial\\_Industry/Airspace/Files/Q60\\_Conditional\\_Route/20160727Q60DecisionDocument%20-%20redacted.pdf](https://www.caa.co.uk/uploadedFiles/CAA/Content/Standard_Content/Commercial_Industry/Airspace/Files/Q60_Conditional_Route/20160727Q60DecisionDocument%20-%20redacted.pdf).

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

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11. No conditions were attached to the CAA Stage 5 decision.

### Relevant events since change (if any)

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12. The Sponsor reports that between 2015 and 2017, overall traffic flying from point "CPT" to point "LANON" (the start and end points of the new route Q60) has increased by 7.3%, from 13,187 flights to 14,147 flights.

13. The Sponsor also reports that a further shortening of the flight-plannable route occurred in November 2019, as part of the “SAIP AD5” airspace change. This further shortening was requested by the Airspace Flight Efficiency Partnership (AFEP), in part due to the successful implementation of this ACP.

## Data collected for the purpose of the PIR

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### Sources of Information

#### Change Sponsor

14. Following correspondence between the CAA and the Sponsor (NATS) between 14<sup>th</sup> August 2019 and 10<sup>th</sup> January 2020, the Sponsor provided the analysis/data required to complete this report. Information the CAA has taken into account will be published on our website/portal.
15. The key traffic/utilisation data for this PIR is provided at Annex A.
16. Given the nature of this airspace change the CAA concluded that it was not necessary to seek other sources of information in order to conduct this review.

## Objectives and anticipated impacts

### The original proposal and its objectives

- The objective for the introduction of a new Conditional Route (CDR) known as "Q60" over southern England and Wales was to reduce fuel burn and CO<sub>2</sub> emissions for aircraft flying towards Dublin and the Atlantic by shortening their planned route.

### Anticipated Impacts

- The anticipated impact was to allow aircraft to flight plan a route between point "CPT" and point "LANON" which is 4NM shorter than that previously available for planning purposes (combined red and blue line in Figure 1 versus the black line).
- Shortening the overall planned route length reduces the predicted amount of fuel to be burnt. Commercial aircraft are required to carry the amount expected to be burnt in flying the planned route, plus an appropriate reserve. Reducing the predicted fuel burn therefore reduces the amount of fuel required to be carried to fly the route.
- Reducing the amount of fuel to be carried reduces the overall weight of the fuel. This in turn reduces the amount of fuel burnt in simply carrying the required amount of fuel, further improving fuel consumption on this route.

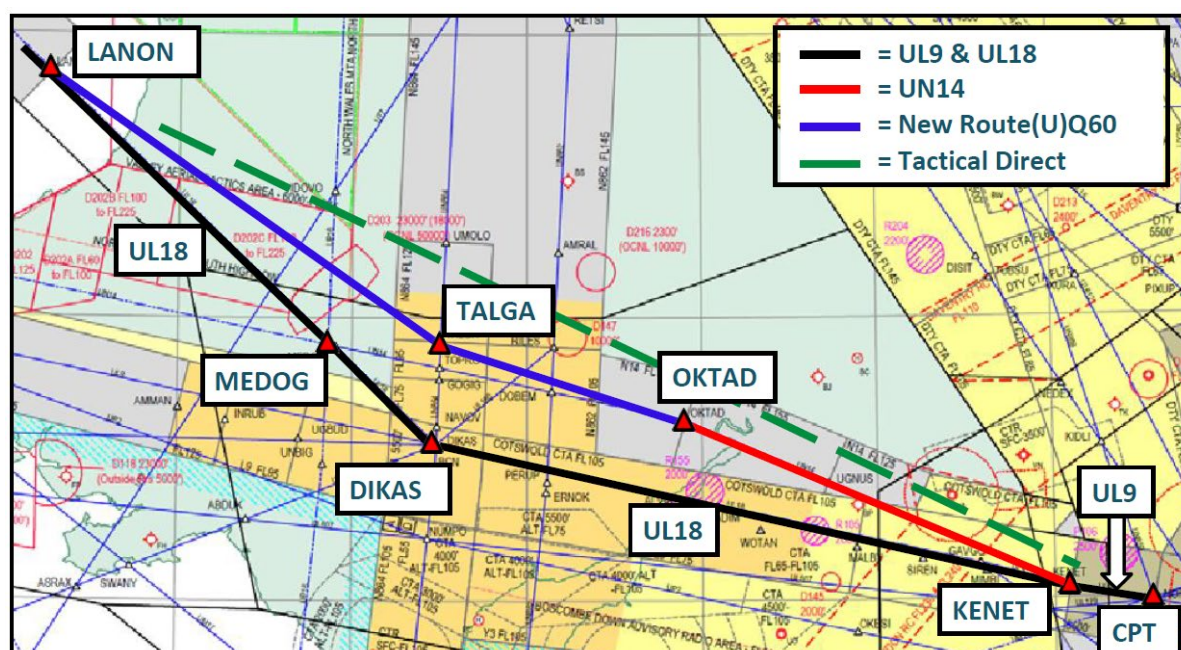


Figure 1: Previous Flight Planned Route, New Route (U)Q60, and Tactical Direct Route



21. Although in many cases a tactical direct route (green line in Figure 1) between CPT and LANON might be permitted by ATC (reducing the actual fuel burn still further), this is not guaranteed. Aircraft are therefore required to carry enough fuel to fly the planned route.
22. Note: the modern naming convention for routes is to call them by a single letter + number combination (e.g. Q + 60 = Q60). However, in the past, “upper” routes were prefixed with U (e.g. UQ60), while “lower” routes simply used a single letter. In situations where both the upper and lower component were relevant, the U would be placed in brackets, as in (U)Q60 in Figure 1.

## CAA assessment

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23. We have taken into consideration the interval since implementation and the fact that all changes are in controlled airspace above Flight Level 245 when conducting this assessment.

### Operational Assessment

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#### Safety

24. The Sponsor reports that there have been no identified safety issues associated with this change. This statement was made over three years after the implementation of the change.

#### Operational Feedback

25. The Sponsor reports that no feedback has been received relating to unforeseen or unintended operational impacts of the change, as at three years after the implementation of the change.

#### Air Navigation Service Provision

26. The Sponsor reports no adverse impacts in terms of air navigation service provision.

#### Utilisation and Track Keeping

27. The Sponsor reports that the new route Q60 took 55% of the relevant traffic during 2017. No track keeping issues or other adverse operational impacts have been identified.

#### Traffic

28. The Sponsor reports that in 2017 55% of the relevant flights flew the new shorter route as opposed to the old longer one (7,727 flights v 6,460 flights). Overall, between CPT and LANON the Sponsor reports an increase of 7.3% (14,147 flights v 13,187 flights) between 2017 and 2015.

#### Infringements and Denied Access

29. Not applicable as no new controlled airspace was created to support the introduction of this new route.

#### Letters of Agreement

30. Not applicable - the Sponsor identified no formal Letters of Agreement between different operational units which needed to be updated in line with this change.

## Environmental Assessment

31. Based on information provided by the Sponsor, the Director's Decision letter noted that the potential savings due to fuel uplift reduction would be 280 tonnes of fuel and 890 tonnes of CO<sub>2</sub>, based on 12,000 aircraft flying from CPT to LANON. The sponsor's original submission noted that these were theoretical maximum savings if all relevant flights planned to use the new route.
32. In 2017, 14,147 aircraft flew between CPT and LANON. 7,727 of them (55%) used the new Q60 route, delivering a saving of 180 tonnes of fuel and 572 tonnes of CO<sub>2</sub> compared with the previous route. This represents 64% of the identified potential maximum reduction in fuel burn and CO<sub>2</sub> emissions.
33. This ACP has therefore delivered a reduction in both fuel burn and CO<sub>2</sub> emissions. This consistent with the conclusion in the Director's Decision letter that there would be "a small but positive environmental impact as a result of the reduced fuel uplift."

## Community Stakeholder observations

34. Not applicable as all changes occurred above Flight Level 245.

## International Obligations

35. Not applicable as this airspace change is wholly contained within the London FIR and does not reach any international borders.

## Ministry of Defence Operations

36. The Sponsor reports that the MoD have confirmed there had been negligible impact, and no effect on Swanwick (Mil) Operations.

## Any other impacts

37. The Sponsor reports that since the implementation of Q60, airspace users requested a further shortening of the flight plannable route as part of the NATS "SAIP AD5" airspace change (ACP-2017-77). In providing feedback to support this PIR, the airspace users stated that this request for a further shortening should be seen as positive feedback on the implementation of Q60.

## Conclusion

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38. The CAA is satisfied that the introduction of the new Conditional Route Q60 over southern England and Wales satisfactorily achieved the objective stated in the CAA's decision document, and the change is confirmed.

## Note on plain language

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39. 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 and 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.

# Annex A

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## Route Utilisation Data

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<b>Direct Route</b>	<b>2015 Flights</b>	<b>2017 Flights</b>	<b>Change 2017 vs 2015</b>
CPT – DIKAS – LANON (Original Route)	13,187 (100%)	6,460 (45%)	-6,727 (-51%)
CPT – TALGA – LANON (New Conditional Route Q60)	0 (0%)	7,727 (55%)	+7,727 (N/A)
Total Flights	13,187	14,147	+960 (+7.3%)